An Insider's Guide to Academic Medicine

A Clinical Teacher's Perspective

David C. Aron

Springer

An Insider's Guide to Academic Medicine

David C. Aron

An Insider's Guide to Academic Medicine

A Clinical Teacher's Perspective

Springer

David C. Aron
School of Medicine
Case Western Reserve University
Cleveland, OH, USA

ISBN 978-3-031-19534-1 ISBN 978-3-031-19535-8 (eBook)
https://doi.org/10.1007/978-3-031-19535-8

© The Editor(s) (if applicable) and The Author(s), under exclusive license to Springer Nature Switzerland AG 2023
This work is subject to copyright. All rights are solely and exclusively licensed by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.
The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.
The publisher, the authors, and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, expressed or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

To my students and teachers from whom I have learned much, often more from the former than the latter. And to my wife of 51 years without whom, I would have learned nothing.

Preface

This is a book about careers in both senses of the word. As a noun, career usually refers to an occupation undertaken for a significant period of a person's life and with opportunities for progress. As a verb it means move swiftly and in an uncontrolled way in a specified direction.[1] My career in academic medicine has taken up most of my life. I began medical school in 1971 which makes me a PGY45, i.e., I am in my 46th postgraduate year of training. Within academic medicine I have had sub-careers as a clinician, teacher, researcher, and administrator. Sometimes the changes were not predictable, and I have been fortunate that there have been more times with a soft landing than careering into a wall or going over a cliff. There are recipes to become a successful physician scientist in academic medicine or to become a successful clinician affiliated with an academic medical center. The recipes are fairly straightforward. There are tracks. Just don't go off the rails. However, there is a big difference between being a short order cook and a chef de cuisine. Moreover, there are some who don't stick to a track. I was once called into the Dept. Chairman's Office, where the Chairman told me that I had to get off the fence; I was half researcher and half clinician educator and that I would fail. I could be a physician scientist and do research 80+% of the time (funded by external sources of course) or I could be a clinician educator seeing patients 80% of the time (and parenthetically generating revenue to support the researchers) and doing some teaching. He said that either was OK,[2] but I had to choose. I never got off that fence, but I did survive.

[1] https://www.google.com/search?q=Dictionary#dobs=career&spf=1564582674322. Accessed 7-31-19.

[2] That wasn't really true. Researchers are valued in medical schools far more than clinicians. (See Chap. 3.) I don't think he was being disingenuous, but I know he valued research the most. Apart from the fact that he was an outstanding researcher himself, his explicit goal upon taking the chairmanship was to move the department up in the NIH funding rankings from the mid-twenties to the top ten.

Academic medicine takes all kinds of people.[3] Even as I approach the end of my career, I am still straddling that fence, continuing to slide down the razor blade of academic life,[4] risking some pretty nasty wounds to my ego if not my person. Have I been successful? By the traditional standards of academe, no. I did not get tenure. I did not achieve membership in the two honorary organizations: American Society for Clinical Investigation (ASCI) and Association of American Professors (AAP).[5, 6] I will never become a member of the National Academy of Medicine. I have never had a paper published in *Nature* or *Science* or *Cell*[7] and I don't think that my laboratory career ever exceeded the mediocre.[8] In fact, my heart was never completely in the laboratory, and I think I did better and far more impactful research outside the laboratory. One of the reasons I pursued lab work was because I thought that bench research was a necessary, if not sufficient, basis for a career in academic medicine. The ideal was the so-called triple threat, an individual who did research, saw patients, and taught, though primacy was given to research.[9] I tried to do all three in an era of specialization where such an ideal was obsolete. And yet, in several ways, I have had great success, especially as a teacher. That I have succeeded at all can be attributed to persistence despite the many obstacles that I either failed to leap over or just blindly ran into. In retrospect, one thing is very clear: when I entered academic medicine, I really had no clue how it really worked. I have survived and often thrived in academic medicine despite failing to make up my mind and getting off the fence or perhaps making up my mind *not* to make up my mind. It has not been easy. Having a survival manual might have helped. It would help those who have made up their minds. However, a "manual" implies that there are specific steps

[3] The joke is that a university/medical school is made up of individuals with diverse interests united over the issue of inadequate parking.

[4] The phrase sliding down the razor blade of life comes from the mathematician and satirical song writer Tom Lehrer.

[5] These two organizations are referred to as Young Turks and Old Turks. The AAP was founded first, and its membership was limited to a fixed number, and they tended to be more senior. The ASCI was founded to foster collegiality and collaboration among younger men who were not yet members of the AAP. The organization was also known as the "Young Turks" in allusion to the rebellious spirit in which it was founded, as well as the fact that one provision of the ASCI constitution was that a member became emeritus at the age of 45. The older and more traditional AAP acquired the moniker of Old Turks.

[6] Brainard ER. History of the American Society for Clinical Investigation, 1909–1959. The Journal of Clinical Investigation 1959;38:1784–837.

[7] When I was on the promotions committee, these were the top-rated journals, followed by *New England Journal of Medicine*, *JAMA*, and *Proceedings of the National Academy of Sciences*.

[8] Harsh perhaps, but nonetheless true, and it is important to recognize one's limitations.

[9] The idea of a physician being a triple threat or in fact, any kind of threat, seems incongruous. The term is thought to derive from the early era of football where a triple threat was one who could run, pass, and kick: https://english.stackexchange.com/questions/305458/what-is-the-origin-of-the-phrase-triple-threat. Now, even kickers are specialized so that some do punts while others kick field goals and few do both. The term has been applied to other sports as well as other fields, e.g., someone who can sing, dance, and act is a triple threat performer.

in a linear process. That is not the reality that I have experienced in academia, a career with sudden twists and turns ruled by chance as much as design. Therefore, I have tried to bring an insider's view. I hope that what I have learned will be helpful to you on your journey, whether it takes place in academia or not. But, if inside academic medicine, what is it that you are actually inside?

Cleveland, OH, USA David C. Aron

Acknowledgments

This book could not have been written without the help and inspiration of many others. I have tried to cite some of them in the text, but there were countless others. Of these, no one has been more important than my wife of 51 years, Vicky. There were many times at which I would have been happy to throw in the towel but didn't do so because of her. My son, Joshua, has never been far from my mind and my parents, Paul and Beatrice, have continued to inspire me years after they passed away. The poem *There Are Stars* by Hannah Senesh says it better than I could ever do. Both the Cleveland Veterans Affairs Medical Center and Case Western Reserve University have been environments in which I could thrive, often because of them, often despite them. The VA, particularly, and remarkably perhaps, has been a place that truly values teaching. I have also taught at the Weatherhead School of Management which is an academic environment of a different sort, but which has provided a wonderful environment to learn. Good students are challenging, and I have benefited from that. I have always learned more from my students than they have from me. This includes the hundreds of medical students and other physician trainees with whom I have had interactions as a lecturer, small group leader, and ward or clinic attending. I have also been privileged to mentor many fine individuals at various stages of their careers, and mentoring is a two-way street. I have worked with many fine researchers and research assistants (though for me, the line between them is pretty blurry). Several of my colleagues and students have read the manuscript (besides my collaborators). Special mention is merited by Elizabeth Edmiston, RN, PhD, whose suggestions were critical. I have made many revisions and corrections based on their suggestions, but the responsibility for any and all remaining errors are mine alone. I have used the university's plagiarism detection software (how pathetic that there is such a thing, but a sign of the times I guess) and did my best to ensure that I have cited everything appropriately. If there are any mistakes, I will correct them in a future edition (how optimistic of me, but dum spiro spero).

Contents

About the Authors

David C. Aron, MD, MS is an Emeritus Professor of Medicine at Case Western Reserve University. He is a retired clinical endocrinologist, health services researcher (although not completely retired as a researcher), and leader of the VA Quality Scholars Fellowship Program, a training program in quality improvement. Program Research and Education at the Cleveland VA Medical Center. He was a professor of Medicine and Epidemiology and Biostatistics at the School of Medicine as well as an adjunct professor of Organizational Behavior at the Weatherhead School of Management where he still teaches a class on Managing Complex Systems. He is a graduate of Columbia College (1971) and College of Physicians and Surgeons (1975). Internship and residency were completed at UCSD and endocrinology fellowship at UCSF. In 2018, he was a visiting scholar in the Department of History and Philosophy of Science and visiting fellow at Clare Hall (College), University of Cambridge. He retired from the VA and CWRU after 41 years but remains active academically. Who knows what will come next.

Rene Hearns, MPA CRA has been a research administrator for over 30 years working in three different states and holding numerous positions including two directorships. She received a B.A. from Baldwin Wallace University and a Master's in Public Administration from Cleveland State University. She continued pursuing graduate work at Cleveland State but left, alas, ABD (All but dissertation). She is currently the Administrative Officer of the Interprofessional Improvement, Research, Education, and Clinical Center (IIRECC) at the Cleveland VA Medical Center where she not only makes things work but also does qualitative research, writes the required volumes of reports, assists with publications (both writing and editing), and has the seemingly thankless job of being the liaison of the IIRECC to the Institutional Review Board.

Mamta K. Singh, MD, MS is the Jerome Kowal, MD Professor of Geriatric Health Education at Case Western Reserve University School of Medicine. She is a general internist, medical education researcher, and Director of the VA Quality Scholars Program and Health Professions Education Evaluation Research (HPEER)

Fellowship for the Louis Stokes Cleveland VA site. She is the Director of the Interprofessional Improvement Research Education and Clinical Care Center where she works with an amazing interprofessional team to improve the care of the veteran through workforce development and systems improvement. She is a graduate of Southern Methodist University (1990) and University of Texas Southwestern at Dallas Medical School (1994). Her academic interests include primary care redesign, quality improvement, and patient safety. This has led her to design and implement a comprehensive series of Quality and Patient Safety initiatives that span the medical education continuum. Additionally, in developing innovative primary care delivery models, she has worked on systems thinking and interprofessional education models. She has developed assessment tools around systems-based practice and quality improvement competencies (QIKAT-R) and published guidelines on presenting QI education improvement (SQUIRE EDU). She was the physician director for the Cleveland VA Center of Excellence in Primary Care Education (COEPCE) and served as the National Physician Consultant for the COEPCE's coordinating center within the VA's Office of Academic Affiliations. She was the former inaugural Assistant Dean of Health System Science at Case Western Reserve University School of Medicine. As a VA Quality Scholar alumnus, she believes that improving the healthcare system is part of the physician's responsibility and educational initiatives must show learner and systems impact. As a mentee of Dr. Aron, she has always subscribed to his philosophy of "your work is not worth doing, if you are not having fun" and she can confidently say it has been a fun journey!

Contributors

Rene Hearns, MPA, CRA Louis Stokes Cleveland Department of Veterans Affairs Medical Center, Cleveland, OH, USA

Mamta K. Singh, MD, MS School of Medicine, Case Western Reserve University, Cleveland, OH, USA

Louis Stokes Cleveland Department of Veterans Affairs Medical Center, Cleveland, OH, USA

Part I
Academic Medicine as a Complex System

Chapter 1
Introduction: Inside What?

The definition of academic medicine varies. Broadly speaking, academic medicine encompasses the institutions that share to varying degrees the tripart mission of research, teaching, and clinical care. There is an underlying assumption of synergy among these three missions. Of them, I put research first, for reasons that will become clear as you read the book. Others put education first. For example, Kanter, editor of the journal *Academic Medicine*, wrote that the traditional tripartite mission consisted "of educating the next generation of physicians and biomedical scientists, discovering causes of and cures for disease, and advancing knowledge of patient care while caring for patients" [1]. The British tend to emphasize the role of clinicians. For example, Royal College of Physicians of London stated that "Academic medicine is the work undertaken by clinicians with responsibilities to both their University and their NHS Hospital Trust. They usually combine service delivery with research, teaching and/or administration" ([2], p. 205).[1] However, research is key. "Academic medicine involves active research in order to drive forward the study and practice of medicine and the conveying of current best practice through teaching, writing and presenting" [3]. Similarly, Kanter wrote: "All of these attempts to define academic medicine tend toward a common central theme: that academic medicine is the discovery and development of basic principles, effective policies, and best practices that advance research and education in the health sciences, ultimately to improve the health and well-being of individuals and populations" ([4], p. 205).

Research has been a defining characteristic of the three institutions with which I am most familiar: Columbia College of Physicians and Surgeons where I went to medical school, University of California, San Diego where I was an intern and resident, University of California, San Francisco where I was an endocrinology fellow

[1] The National Health System (NHS) Hospital Trust an NHS organizational unit that provides secondary health services within the English National Health Service. The organizational framework of the NHS has changed several times in the past two decades.

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8_1

and now Case Western Reserve University (CWRU) School of Medicine where I have been a faculty member for 40 years. Each of these institutions prides itself on its research. The following is drawn from a 2019 'Position and Candidate Specification—Dean, School of Medicine and Senior Vice President for Medical Affairs,' at CWRU.

> Case Western Reserve University (CWRU) is an independent research university located in Cleveland's University Circle, a square-mile urban district full of cultural, medical and educational institutions, as well as thriving dining, retail and residential options. CWRU holds membership in the Association of American Universities (AAU), is fully accredited by the Higher Learning Commission and by several nationally recognized professional accrediting associations and is ranked 42nd among national research universities by US News and World Report and 39th in the Wall Street Journal/Times Higher Education College Rankings. Nationally, CWRU is ranked 17th among private institutions of higher education in federal research expenditures, and 39th overall. Additionally, a recent Brookings Institution report ranked CWRU 13th in the country for effectiveness in translating research breakthroughs into commercial success…
>
> 2018 marked the 175th anniversary of the Case Western Reserve University School of Medicine. Since 1843, the school has been at the forefront of medical education and dedicated to enhancing human health, and it has been a leader and innovator in healthcare education and biomedical research. The School's mission is threefold: providing excellence in medical education through its unique curriculum, advancing discoveries from its laboratories to patients, and improving the health of its community.
>
> The School of Medicine is one of the top-25 medical schools in the country and both the #1 medical school and largest biomedical research institution in Ohio. It consistently ranks in the top tier of medical schools for NIH research funding, with a very strong record of successful funding from the NIH, as well as from foundations, industry, the state of Ohio, the Centers for Disease Control, and the Department of Defense. Federal and nonfederal research support totaled $324 million in FY2018, with more than $276 million in NIH funding [4].

It is quite true that how one deals with the various issues I describe in this book will be contingent upon institutional specifics, CWRU is similar to other research-intensive universities and its medical school(s) contribute to that research intensity.[2] My experience as a faculty member, though been limited to one institution, will still be relevant to many other institutions within the world of American academic medicine. CWRU is typical in many ways. It is not at the very top of the heap (as

[2]The Carnegie Foundation developed a classification of universities. The category Doctoral Universities includes institutions that awarded at least 20 research/scholarship doctoral degrees during the update year and also institutions with below 20 research/scholarship doctoral degrees that awarded at least 30 professional practice doctoral degrees in at least 2 programs. The first two categories include only institutions that awarded at least 20 research/scholarship doctoral degrees and had at least $5 million in total research expenditures (as reported through the National Science Foundation (NSF) Higher Education Research & Development Survey (HERD)). There are R1: Doctoral Universities with Very high research activity; R2: Doctoral Universities with High research activity; and others—D/PU: Doctoral/Professional Universities. Of the 431 doctoral universities, 131 were R1 and 135 were R2. http://carnegieclassifications.iu.edu/downloads/CCIHE2018-FactsFigures.pdf. Accessed 12/11/19.

measured by research dollars), nor is it close to the bottom. Lessons learned here are likely to apply more generally; the personalities may differ, but the same fundamentals apply.

There are several features which are common to research intensive medical schools and some that vary widely among institutions, e.g., the nature of the relationship between the medical school and the hospital(s). How some of these similarities and differences play out will be discussed in subsequent chapters. Nevertheless, some general rules for an academic career can be inferred. It is true that general rules go only so far, but they are a place to start when thinking about addressing specific challenges.

References

1. Kanter SL. What is academic medicine? Acad Med. 2008;83(3):205–6.
2. Royal College of Physicians of London. Clinical academic medicine: the way forward. A report of the forum on academic medicine. Salisbury: Sarum ColourView Group; 2004.
3. Mid-Career Entry to Academic Medicine – BMA. https://www.google.com/search?client=firefox-b-d&q=https%3A%2F%2Fwww.bma.org.uk%E2%80%BA+media+%E2%80%BA+files+%E2%80%BA+pdfs+%E2%80%BA+committees+%E2%80%BA+masc.
4. Furman MI, Sugerman KS, Yeatman SL. Position and candidate specification, Dean, School of Medicine and Senior Vice President for Medical Affairs. www.spencerstuart.com.

Chapter 2

The Ecosystem of Academic Medicine and Academic Health Centers

A university is made of individuals with diverse interests united over the issue of inadequate parking. (Anon)[1]

Academic medicine constitutes a system.[2] Common to definitions of system are the inclusion of elements or items or things and their interactions [1, 2]. Borders define the limits of the system and distinguish what is internal and what is external to the system.[3] These borders are to some degree arbitrary. For example, as an endocrinologist I deal with hormonal regulatory systems. Cortisol is an essential hormone that is made in the adrenal gland which is regulated by a negative feedback system whose components also include specific portions of the hypothalamus and the pituitary gland—the hypothalamic-pituitary-adrenal (HPA) axis. The hypothalamus of the brain secretes the hormone (corticotropin releasing hormone or CRH) which stimulates the pituitary gland to secrete adrenocorticotropic hormone—(ACTH).

[1] Clark Kerr said that multiversity could be described as "a series of individual faculty entrepreneurs held together by a common grievance over parking." Clark Kerr, *The Uses of the University* (Cambridge, MA: Harvard University Press, 1963), 1–2, v–vi, 6, 20, 87. I heard it as what I stated above; I think that a university is far more than its faculty and it is true that everyone complains about parking. I didn't realize how true this statement was until I went to a talk by the CEO of the Houston Medical Center Corporation which includes many independent hospitals, medical schools and research institutions. He said the only thing he had actual control over was the parking lots and that was a big problem in itself.

[2] The term system appeared in English only in the early seventeenth century and in the 1630s meant 'set of correlated principles, facts, ideas.' It was used in a way similar to the term "treatise." The meaning "animal body as an organized whole, sum of the vital processes in an organism" is recorded from 1680s.

[3] A boundary or border can be closed or open. When closed, the system is isolated and there is no exchange of energy or matter whereas in an open system there are such exchanges. Most critical for us earthlings is the exchange of energy. Energy from outside the boundaries of the earth allows our system to maintain its integrity; life on earth depends on the continuing energy derived from sunlight because a closed system would eventually end in utter disorder because of the second law of thermodynamics.

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8_2

ACTH stimulates the synthesis and secretion of cortisol from the adrenal. Cortisol feeds back negatively at both levels. However, this is a narrow view and might be considered looking with high magnification which excludes other components. Lowering the magnification somewhat reveals connection between these three components and other entities related to stress and its response, e.g., immune components such as T and B cells, monocytes/macrophages, and their cytokines that is Tumor Necrosis Factor-α (TNF-α), Interferon Gamma (IFN-γ) and various interleukins [3]. Lowering the magnification further brings hormone-producing cells of the gut, and other hypothalamic-pituitary axes into view. Systems are nested within broader systems. The HPA axis is nested in the endocrine system which in turn is nested within the intact human. How the systems and subsystems are connected, and the nature of the interactions determine how things work.[4] And, to reiterate, like other ecosystems, the structure of academic medicine can be described as a network of interactions between different subsystems [4].

Three of the essential elements of academic medicine include the university, the medical school, and the primary hospital/healthcare system affiliate.[5] Of course, things are not so simple. Even limiting the discussion to a single academic health center reveals a large number of components. An academic health center encompasses all the health-related components of universities, including their health professions schools, patient care operations, and research enterprise. Thus, an academic health center consists of an allopathic or osteopathic medical school; one or more other health profession schools or programs such as, Allied Health, Dentistry, Graduate Studies, Nursing, Pharmacy, Public Health, Veterinary Medicine, and one or more owned or affiliated teaching hospitals or health systems [5]. Some medical schools have joint programs with the business schools of their universities. In addition, medical schools are nested within universities and hospitals are nested within the health care system. Universities are nested within communities and regions. Within medical schools we find departments. It is a complex system [6]. Consider the 'case' of Case Western Reserve University (CWRU) which is often referred to as 'Case'.)

The School of Medicine is one school within Case Western Reserve University (CWRU); which, also includes schools of business, nursing, law, engineering, and applied social sciences, as well as undergraduate and graduate studies. The medical school has four affiliated hospitals—University Hospitals of Cleveland (formerly the primary affiliate, but now just one of four), the (world famous) Cleveland Clinic[6]

[4] For a deeper discussion of systems, especially complex systems, see my book on Complex Systems in Medicine: A Hedgehog's Tale of Complexity in Clinical Practice, Research, Education, and Management. Springer Nature; 2019. (Shameless promotion).

[5] There are always exceptions. There are freestanding schools such as the Medical College of Wisconsin, the Mayo Clinic School of Medicine, and more recently, the Kaiser Permanente Bernard J. Tyson School of Medicine. There are also research institutions that focus on biomedical research, e.g. the Rockefeller Institute and the Scripps Research Institute. They are institutions with faculty and provide doctoral (PhD) training.

[6] You can't be in Cleveland and refer to the Cleveland Clinic without saying 'world famous.' When I am out of town and I am asked where I am from, I say Cleveland and am usually met with 'are you at the Cleveland Clinic?'

(possibly primum intra pares), MetroHealth Medical Center (a public hospital) and the Cleveland Veterans Affairs Medical Center where I have been on the staff since 1980. In fact, things are much more complicated. There are actually two schools of medicine. There is the school founded in 1843 now referred to as the university program[7] and the Cleveland Clinic Lerner College of Medicine which is referred to as the college program. The Cleveland Clinic Foundation (CCF) sees the Mayo Clinic as its primary competitor on the national and world stage. Since the Mayo Clinic had a medical school, CCF needed one too. It created a boutique[8] school focused on training people to become physician investigators. It is a 5-year program with 32 students per class.[9] CCF also has its own research institute as more recently does University Hospitals. Each of the hospitals has a network of outpatient clinics so that each is a system in itself. In the School of Medicine, there are departments such a "basic science" departments like biochemistry, physiology and biophysics, and population health and quantitative sciences. There also are clinical departments, but faculty in the latter are generally based at their hospitals.[10] There are also centers which combine both basic science and clinical activity. Changes in one system can affect the others. Links to the changing economy of healthcare has brought changes in the organization of the hospitals with effects on the medical school. Several hospitals that were once affiliated with the School of Medicine no longer exist. It is also important to note that the university is nested within organizations of universities—the medical school is a member of the American Association of Medical Colleges, and the university is a member of the Association of American Universities.

Within these structures, there are many sub-structures which support the tripartite mission of research, education and health care (in which the university is involved only indirectly). For example, there is a research office for grants administration. There are floors of laboratory space with individual laboratories and rooms for equipment used in common. There is a Vice Dean for Education (and many other deans as well). There are classrooms of various types. There are departments

[7] https://case.edu/medicine/about/history (accessed 12/12/19).

[8] Perhaps is a bit harsh. It is a very nice boutique though.

[9] In 2002, the Cleveland Clinic Lerner College of Medicine (CCLCM) was established as a partnership between Cleveland Clinic and CWRU with a $100 million gift from Al and Norma Lerner. I think that CCF would have preferred to have its medical school separate from CWRU, but that apparently didn't fly with the state Board of Regents. Attempts to affiliate with other schools, in particular, Ohio State University, didn't work out and CCF relented. A former dean said the CCF had autonomy issues. What the medical school got out of it at first was two things: (1) the school could count NIH funding at CCF as coming from CWRU and since the indirect cost rate for CCF was lower than that of CWRU, the medical school got the difference ~6% or so. Much more would come later, but those are stories for other chapters. Did I mention that all students receive full scholarships? https://portals.clevelandclinic.org/cclcm/About-the-College (accessed 12/12/19) A description of the competition between University Hospitals and CCF is found in: Kastor JA. Specialty Care in the Era of Managed Care: Cleveland Clinic versus University Hospitals of Cleveland. JHU Press; 2005 Oct 7.

[10] The financial ins and outs will be the subject of a separate chapter.

representing various disciplines and within disciplines there are divisions or sections.[11] And I shouldn't forget to mention students, those who graduate with medical degrees, but also students in the basic science department who graduate with master's or doctoral degrees.

One thing about complex systems is that the borders are somewhat arbitrary. Figure 2.1 shows Case Western Reserve University and though it is nested within other systems, e.g., AAMC, it is also part of a much broader ecosystem at the local, regional, national, and international levels. Medical schools and academic medical centers are part of what has been termed the "medical-industrial complex" [7]. CWRU and its affiliated hospitals are nested within the Cleveland community, and they have a major impact on the economy. Medicine is big business. Health care accounts for approximately 18% of US. GDP.[12] Once a center of the steel and automobile industries, Cleveland's main industry is health care [8]. It has become a

[11] The precise terminology depends upon the particular organization. For example, in the department of medicine, there divisions for each of the medical subspecialties. At the VA, there are sections for medical subspecialties within medical 'service.'

[12] There has been a flurry of interest about the amount of waste in the health care system with estimates pegged at about 25%, a figure that I think is problematic. In this 2019 paper by Shrank et al. and its related commentaries (Berwick, Bauchner, Lum, Figueroa), waste, though never explicitly defined refers to a report from the Institute of Medicine which appears to use a consensus definition of waste: health care spending that can be eliminated without reducing the quality of care (Delaune). This definition makes the assumption that the purpose of the healthcare system is to improve health outcomes. Would that assumption be true? (Okay the preceding just doesn't make sense to me) However, there is substantial evidence to the contrary. First, the definition of waste as a term in economics is contested (McCormick). Second, and more important is the maxim that one person's costs is another person's income. The overuse of antibiotics, medical devices, and services in general, is reflected in the more favorable bottom lines and returns to shareholders of the companies that provide them. From the companies' perspective, that is income, not waste. We suggest that at least how it has developed in the United States, the purpose of the healthcare system is to improve both health and economic outcomes. To the extent that the latter outweigh the former constitutes waste only from the standpoint of health outcomes. Therefore, it is hardly surprising that waste/income is so difficult to reduce. Until such time that the consequences of reducing waste on the economy at large are addressed explicitly, we fear that little progress will be made. (a) Shrank WH, Rogstad TL, Parekh N. Waste in the US health care system: estimated costs and potential for savings. Jama. 2019 Oct 15;322(15):1501–9; (b) Berwick DM. Elusive waste: the Fermi paradox in US health care. Jama. 2019 Oct 15;322(15):1458–9; (c) Bauchner H, Fontanarosa PB. Waste in the US Health Care System. Jama. 2019 Oct 15;322(15):1463–4; (d) Lum F, Lee P. Waste in the US Health Care System—Insights For Vision Health. JAMA ophthalmology. 2019 Dec 1;137(12):1351–2; (e) Figueroa JF, Wadhera RK, Jha AK. Eliminating Wasteful Health Care Spending—Is the United States Simply Spinning Its Wheels?. JAMA cardiology. 2020 Jan 1;5(1):9–10; (f) Maddox KE, McClellan MB. Toward evidence-based policy making to reduce wasteful health care spending. Jama. 2019 Oct 15;322(15):1460–2; (g) Olsen L, Saunders RS, Yong PL, editors. The healthcare imperative: lowering costs and improving outcomes: workshop series summary. National Academies Press; 2010 Dec 17; (h) Delaune, J., and W. Everett. 2008. Waste and inefficiency in the U.S. Health Care System clinical(capitalize?) Care: A comprehensive analysis in support of system-wide improvements. *New England Health Care Institute p. 1;* (i) McCormick K. Towards a definition of waste in economics: A neoinstitutional approach. Review of Social Economy. 1986 Apr 1:80–92.

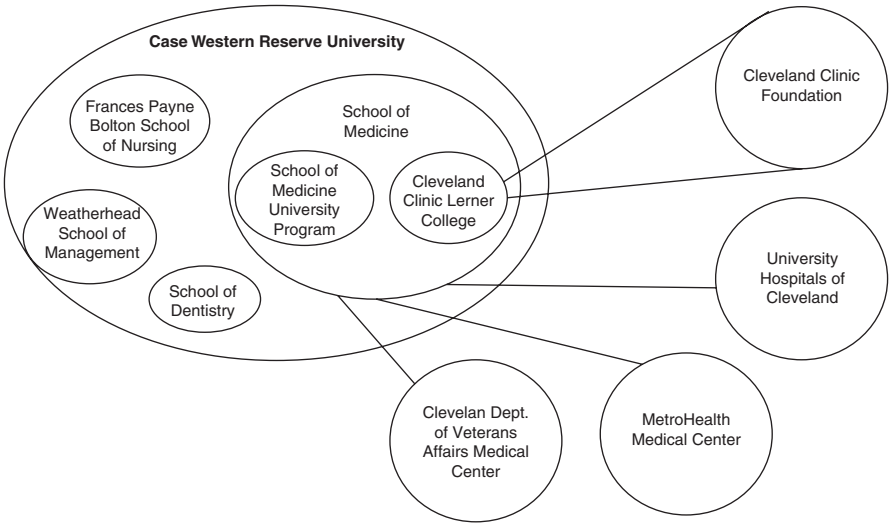


Fig. 2.1 Structural view of Case Western Reserve University

"medical metropolis."[13] Of the top 10 largest employers, 4 are health care systems, and the university comes in at 11th biggest.[14] In addition to biomedical research, healthcare technology is seen as a potential focus of growth of the Cleveland economy. This is reflected in The Global Center for Health Innovation which describes itself as "a one-of-a-kind healthcare-focused innovation hub. Located in the heart of downtown Cleveland, our community brings together entrepreneurs, investors, world-renowned healthcare institutions, advisors and industry leaders to facilitate collaboration, discovery and partnerships that have the power to transform healthcare."[15] CWRU is looking to patent technology developed within its walls. Several start-up companies have been founded by medical researchers. Similarly, the medical school and university reflect society and are affected by changes in that society. The four hospitals are located in poverty-stricken areas of the city of Cleveland. Three of them are in the University Circle area which has been undergoing a rejuvenation in the past decade with new housing construction and

[13] Andrew T. Simpson in The Medical Metropolis: Health Care and Economic Transformation in Pittsburgh and Houston. University of Pennsylvania Press, 2019, described the development of the postindustrial city into what he termed the "medical metropolis," a city where health care plays a dominant role in its economy and identity. He describes this process beginning in the 1940s. He also describes the relationship between not-for-profit health care and efforts to use biomedical research to help reinvent the postindustrial city. It is an interesting story.

[14] https://en.wikipedia.org/wiki/Economy_of_Greater_Cleveland. accessed 12/12/19.

[15] https://theglobalcenter.com/ accessed 12-19-19 This project was begun as a $465 million joint venture by Cuyahoga County and a developer—MMPI. Having had difficulty getting sufficient numbers of tenants, it has already been transformed into an extension of the Cleveland Convention Center. Meanwhile, there has been considerably commercialization of research-derived patents by the university, University Hospitals, and the Cleveland Clinic Foundation.

restaurants.[16] The university and medical school are even talking about a commitment to the community![17] Within the ecosystem,[18] each element has a role and usually more than one. Academic medicine has typically been described as having a tripartite mission: education, research, and health care. This is the subject of the next chapter.

References

1. Backlund A. The definition of a system. Kypernetes. 2000;29:444–51.
2. Mele C, Pels J, Polese F. A brief review of systems theories and their managerial applications. Serv Sci. 2010;2(1–2):126–35.
3. Mahbub-E-Sobhani, Haque N, Salma U, Ahmed A. Immune modulation in response to stress and relaxation. Pak J Biol Sci. 2011;14:363–74.
4. Golley FB. A history of the ecosystem concept in ecology: more than the sum of the parts. New Haven: Yale University Press; 1993.
5. https://www.aahcdc.org/About/Academic-Health-Centers. Accessed 20 Dec 2019.
6. Aron DC. Complex systems in medicine: a Hedgehog's tale of complexity in clinical practice, research, education, and management. London: Springer Nature; 2019.

[16] Encouraging people to move to the area rather than commute has been associated with a degree of gentrification.

[17] This is a far cry from the time I moved here when the Cleveland Clinic, despite its location in a poor and medically underserved area did not even have an emergency room. Ambulances took patients to University Hospitals, thereby turfing poor and uninsured patients to someone else. Turfing means getting an unwanted patient off your hands and sent somewhere else, i.e., getting it onto someone else's turf. More commonly this has been referred to as patient dumping, i.e., refusal to treat people because of inability to pay or insufficient insurance or transferring or discharging emergency patients on the basis of high anticipated diagnosis and treatment costs. I remember getting a patient when I was an intern at UCSD rotating in the emergency department. The patient who was obviously disheveled and was a drug addict with a high fever (it was acute bacterial endocarditis) said that he had first been taken to another hospital in the suburbs of San Diego which wouldn't let him into their emergency department and told him to go elsewhere. The practice of patient dumping was made illegal in 1986 when the Emergency Medical Treatment and Active Labor Act (EMTALA) was passed by the United States Congress. That such a law had to be passed at all is a sad commentary on the "nobility" of the medical profession. Nevertheless, wallet biopsies are still done in ERs and patients are still being transferred. I think that when I arrived in Cleveland and for years after, the community was looked at primarily as a source for research subjects.

[18] In the course of writing this book, I have read many books. One of the most interesting was Wulf A. The invention of nature: Alexander von Humboldt's new world. Knopf; 2015. Von Humboldt was a pioneer in the field of ecology and identified the concept of a keystone species. "A keystone species is one whose effect is large, and disproportionately large relative to its abundance." (p. 609) Power ME, Tilman D, Estes JA, Menge BA, Bond WJ, Mills LS, Daily G, Castilla JC, Lubchenco J, Paine RT. Challenges in the quest for keystones: identifying keystone species is difficult—but essential to understanding how loss of species will affect ecosystems. BioScience. 1996 Sep 1;46(8):609–20. It is interesting to speculate who or what are the keystone species in academic medicine. I am not sure that there is one, although sometimes an individual faculty member is treated as s/he were.

7. Relman AS. The new medical-industrial complex. N Engl J Med. 1980;303(17):963–70.
8. Harris M, Holley K. Universities as anchor institutions: economic and social potential for urban development. In: Higher education: handbook of theory and research. Cham: Springer; 2016. p. 393–439.

Chapter 3
The Tripartite Mission of Academic Medicine

You can't ride two horses with one tuckus [1].[1]

Academic medical centers have been described as having a tripartite mission: education, research, and health care. This distinguishes them apart from organizations with two missions or even one, e.g., research institutions, which also provide education at the graduate level and hospitals, which may have education activities such as residency training. This tripartite mission is reflected in the mission statements of medical schools and their affiliated hospitals. For example, Table 3.1 shows the mission statements of the two medical school programs and four hospitals which constitute the Case Western Reserve University medical enterprise.[2]

University Hospitals gets points for pithiness, but fundamentally they are all very similar. This is consistent with Lewkonia's analysis of mission statements of medical schools, though other analyses identified a broader set of themes, such as developing leaders or primary care providers who will stay in the state [8, 9]. Ramsey and Miller suggest that there should be a single mission for academic medicine: improving health with research, education and medical care as activities that support the mission [10].

The tripartite mission of academic medicine is analogous to the tripartite mission of universities: higher education of its students, advancement of knowledge, and service to those beyond the walls of the university [11]. In fact, one of the defining

[1] Apparently, this proverb "You can't ride two horses at one time" dates to the 1800s and may have been southern in origin. However, it sounds so much better in Yiddish, to my ears at least.

[2] Terminology is a real problem here. CWRU owns the CWRU medical school university program, but none of the hospitals. The Cleveland Clinic Foundation (CCF) owns the Lerner College of Medicine. University Hospitals of Cleveland (UHC) and CCF are direct competitors. MetroHealth Medical Center is a public hospital, but also competes with UHC and CCF. The Veterans Hospital is the equivalent of Switzerland. All four hospitals contribute to the research and educational missions. How do you describe this agglomeration of institutions? I have chosen to use the words regional medical enterprise, for lack of something better.

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8_3

Table 3.1 Case Western Reserve University-Affiliated Academic Medical Institutions and their mission statements

Institution	Mission
School of Medicine	The School's mission is threefold: providing excellence in medical education through our unique curriculum, advancing discoveries from our laboratories to patients, and improving the health of our community [2]
Lerner College	The mission of the CCLCM is "to educate a limited number of highly qualified persons who seek to become physician investigators and scientists committed to the advancement of biomedical research and clinical practice" [3]
Cleveland Clinic	The mission of Cleveland Clinic is to provide better care of the sick, investigation into their problems, and further education of those who serve [4]
MetroHealth Medical Center	Leading the way to a healthier you and a healthier community through service, teaching, discovery and teamwork [5]
University Hospitals of Cleveland	To Heal. To Teach. To Discover [6]
VA Northeast Ohio Healthcare System/ Cleveland VA Medical Center	The mission of VA Northeast Ohio Healthcare System is to provide high quality, technologically current healthcare services in a compassionate, humanitarian and ethical manner within a multi-centered environment which promotes strong research and educational programs, in affiliation with our partners [7]

moments in the history of medical education in the United States was the decision in the late nineteenth and early twentieth centuries helped to assure that medical education would be graduate education rather than vocational training [12]. This was reinforced by the Flexner report which was published in 1910 [13]. Prior to this, most medical education took place in apprenticeships or in schools (and there were many of them) which were proprietary, i.e., for profit institutions. Each school had a few faculty members who were also the owners and the primary mission was financial. Consequently, both entrance requirements and curricula (primarily non-clinical) were minimal. The faculty were practitioners and did not conduct research [14]. There were some university-based programs which varied widely in quality. Flexner called for elimination of the proprietary schools and weaker programs and for medical schools to be part of universities. Johns Hopkins School of Medicine which was relatively new (founded in 1893) and based on the German model served as Flexner's model institution.[3] There were a few others that he thought were worth saving including Western Reserve (now CWRU).[4]

[3] Alexander von Humboldt played an important role in establishing a new model for universities. Östling J. Humboldt and the modern German university: An intellectual history. Lund University Press; 2018.

[4] This fact is pointed to with pride. The Dean mentioned it in the 2019 White Coat Ceremony for first year medical students.

Embedding medical schools in a university ensured that medical schools would adopt the institutional values of the twentieth century research university.[5] To quote Calhoun: "Knowledge is the business of the research university: creating knowledge through research, preserving and renewing knowledge through scholarship, transmitting knowledge through teaching and learning, and distributing and applying knowledge in public service ([15], p. 46). Academic medicine follows suit. A critical assumption is that the knowledge is scientific. Flexner was a proponent of science-based medicine and an enemy of naturopathy and other non-allopathic approaches. He also called for medical faculty to engage in research. The Flexnerian ideal for full-time medical faculty were individuals who were involved in teaching, research, and patient care delivery. This model for full-time faculty came to be referred to as the triple threat.[6] His view was very consistent with that of William Osler who also noted that faculty should be good at both investigation and teaching; being a good clinician was a given. Osler wrote:

> Teachers who teach current knowledge are not necessarily investigators; many have not had the needful training; others have not had the needful time. The very best instructor for students may have no conception of the higher lines of work in his branch, and contrariwise, how many brilliant investigators have been wretched teachers? In a school which has reached this stage and wishes to do thinking as well as teaching, men must be selected who are not only thoroughly *au courant* with the best work in their department and the world over, but who also have ideas, with ambition and energy to put them into force—men who can add, each one in his sphere, to the store of the world's knowledge. Men of this stamp alone confer greatness upon a university. They should be sought far and wide…. [16]

As laboratory science and clinical practice have moved towards being full time occupations, the sustainability of that model was called into question [17]. Nevertheless, all three are combined in an academic medical institution and when there are multiple missions, they can be valued differently. How they can fit in the overall picture can be seen in a balanced scorecard [18]. However, these scorecards

[5] Universities have a long history, dating back to the twelfth century in Bologna, Paris, Montpellier, and Oxford. In the thirteenth century a university was chartered at Salerno and it had a medical faculty. https://www.medievalists.net/2008/10/the-shift-of-medical-education-into-the-universities/ The current American university follows the nineteenth century German Humboldt model that combined research and teaching and freedom of inquiry. Muller ST. Wilhelm von Humboldt and the University in the United States. Johns Hopkins APL Technical Digest. 1985;6(3):253–6.

[6] See page 3. If the academic triple threat was ever really possible it was during the Oslerian age of medicine when the number of faculty was small, research was based primarily on observation of patients rather than experiment, and most importantly, effective clinical therapeutics was extremely limited. (I have trouble keeping up in my specialty of endocrinology, much less internal medicine as a whole.) Often, the most astute clinician was a diagnostician. I remember when my father called internists diagnosticians.

tend to be focused on the financial aspects and the scorecard itself doesn't determine how tradeoffs are made. Yet, tradeoffs are inevitable. Missions compete for prestige and resources. When it comes to prestige, research is first by a wide margin. For example, in 1895, first president of the University of Chicago, William Rainey Harper, asked each new faculty member to agree in writing that advancements in rank and salary would be governed chiefly by research productivity [19]. Although this antedated the founding of the University of Chicago Medical School by more than 30 years, research is the most highly valued there as well. Research = Success. Similarly, Muller wrote: "Despite frequent assertions that the general professional education of medical students is the basic mission of medical schools it often occupies last place in the competition for faculty time and attention. Graduate students, residents, research, and patient care are accorded higher priorities" [20].

And yet, research does not pay for itself. Both education and research are financial losers.[7] Tuition does not cover the cost of medical education. Even when research is funded, the indirect costs that come with a grant do not provide enough money for the institution's supporting infrastructure.[8] Because neither education nor research pays for themselves, the money needs to come from somewhere else. Sometimes money comes from the institution's endowment. Both research and education may appeal to the interests of philanthropists.[9] For example, the Lerner College of Medicine was started with a $100 million donation from the Lerner family. Hospitals appeal for donations as well. However, that somewhere else is the clinical operation. Clinicians are the money generators, and the trend shows increasing dependence on clinical income (Fig. 3.1). The value placed on research can lead to feelings of second class citizenship, not to mention exploitation of clinicians. I

[7] Many researchers I know have not been willing to accept this fact which leads to behavior that can only be described as resulting from feelings of entitlement.

[8] Grants from agencies such as the National Institutes of Health or the Veterans Health Administration come with funds that pay for two types of costs: direct and indirect. Direct costs include those which can be readily specified, e.g., materials and supplies as well as salaries for faculty and others such as research assistants, but not secretaries. Indirect costs (Facilities and Admistrative Costs) are those which are incurred for common or joint objectives and cannot be easily and specifically identified with a particular sponsored project. These are often referred to as administrative costs or overhead and include money that support the library, building, and equipment depreciation and use, etc. Universities negotiate an indirect cost rate with the government. There is considerable variation. For example, in 2017–2018, Harvard and Johns Hopkins had indirect cost rates of 69.5% and 63.5%, respectively while UCLA had a rate of 55.0%. The rates vary by grantor and grantee. Foundations tend to cover less in the way of indirect costs.

[9] In general, philanthropic support for research has far exceeded that for education. One need only look at the number of new research buildings as compared to buildings where medical student education takes place.

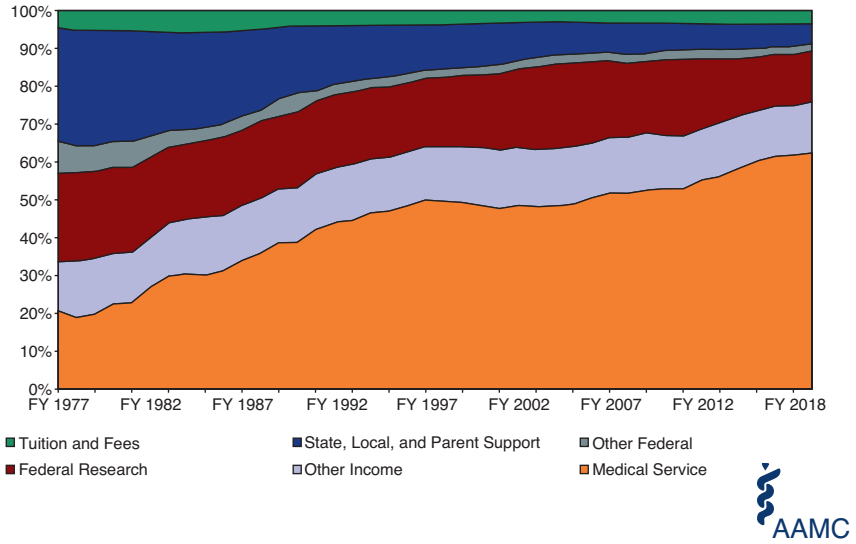


Fig. 3.1 Revenue by source as a percentage of total revenue for medical schools with full accreditation, FY1977 through FY2018 https://www.aamc.org/data-reports/faculty-institutions/report/us-medical-school-revenues. (Source: LCME I-A Annual Financial Questionnaire © Association of American Medical Colleges 2019. All rights reserved)

have heard clinicians being referred to as "worker bees."[10] One of the problems is that in research, it is a sellers' market in which schools have to compete for good researchers (as defined by ability to bring in research funding). In contrast, for teaching it is a buyers' market. In fact, one could argue that there is no market at all. As one chair of medicine said to me when I interviewed for a job, 'clinical teachers are a dime a dozen, what I want is people who can get NIH grants.'

Of course, nothing is straightforward when it comes to revenue other than there is inflow and outflow. Schools differ widely depending upon the relationships between the school, the hospital, and practice plan and there are many different types of relationships [21]. The idea of combining research and teaching (and

[10] I find this expression to be particularly distasteful and indicative of a high level of disrespect. It implies that there are people who are just drones and don't think for themselves. How can you build a collaborative enterprise unless everyone is valued as an individual? Despite all the hoopla around the need for employee engagement, the expression is still being used. In a 2021 grant application to establish a patient safety center of inquiry, one of the reviewers criticized the lack of worker bees to implement the proposed interventions. This view is so contrary to the principles of patient safety as reflected in the concept of a high reliability organization (the current VA focus) as to raise questions about the qualifications of that reviewer. But I digress, as is my wont.

patient care which is necessary for the education of physicians) is based on the assumption that teaching and research are synergistic [22], although symbiosis might be a better descriptor [23].[11] When research and teaching are said to be synergistic, it is meant that doing research makes you a better teacher and teaching makes you a better researcher or at least an environment of research fosters better teaching and a teaching environment fosters better research. This sounds more to me like mutualistic symbiosis [24]. Mutualistic symbiosis refers to a close and long-term interaction between two biologic organisms that is beneficial to both organisms. Other forms of symbiosis (living together) are commensal, parasitic, and competitive. The environment of academic medicine includes all three.

The research-teaching nexus has been subject to considerable study at the undergraduate level and in many disciplines, but not at the medical school level. There are relationships between research and teaching, but the correlation between the two is small, dependent upon the methods used, though probably on the whole it is positive [25, 26]. As a teacher I have benefited from being in a research environment. As a researcher, I have benefited from good teachers. Ideas are generated from these interactions. Learning in a research environment exposes students to the spirit of inquiry, with its requirement for critical analysis, both of which are essential to the scientific practice of medicine. Teaching, research, and patient care interact and reinforce each other. To separate the three missions completely risks harming the system overall. Yet, despite the substantial interconnections between teaching and research, the feeling that teaching and research are in conflict is prevalent in research-intensive universities [27]. When I was a junior faculty member, I was told that I spent too much time teaching and not enough time in the lab. That was one of the reasons that I was told that I would not get tenure. Nevertheless, the fact of multiple missions is also an opportunity for those considering a career in academic medicine. There is room for those interested in any of the missions, as long as you can keep yourself funded. In general, it is easier to keep yourself funded if you are

[11] I thought that the concept of synergy was straightforward. If the effect of A alone = 1 and the effect of B alone = 1 and the effect of A and B combined is >2, then the interaction between A and B is said to be synergistic. However, once you start looking it up, it is not so simple. In an entire book devoted to synergy in the context of movement, Latash stated that for a group of elements to be considered a synergy, three conditions had to be met: (1) the elements should all contribute to a particular task; (2) if one element produces more or less than its expected share, other elements should show changes in their contributions such that the task is performed properly or at least better, compared to what could be expected if all elements acted independently; and (3) task-dependence or the ability of a synergy to change its functioning in a task-specific way or, in other words, to form a different synergy for a different purpose based on the same set of elements. (Latash ML. Synergy. Oxford University Press; 2008 Mar 18.) (The following is stated in the text too) When research and teaching are said to be synergistic, it is meant that doing research makes you a better teacher and teaching makes you a better researcher or at least an environment of research fosters better teaching, and a teaching environment fosters better research. This sounds more to me like mutualistic symbiosis. Mutualistic symbiosis refers to a close and long-term interaction between two biologic organisms that is beneficial to both organisms. Other forms of symbiosis (living together) are communalistic, parasitic, and competitive. The environment of academic medicine includes all three.

limited primarily to one area—research or clinical practice, but not both. When it comes to funding, you have three basic alternatives: (1) the soft money world of research grants; (2) the RVU world of clinical practice; and (3) arrange to inherit or marry money.[12] If you do research, you will be competing for funding with those who do research 80–99% of the time. When you are in clinical practice, you will be competing with those who practice 80–99% of the time. It is possible, but not easy. This is particularly true at the beginning and middle of a career. Perhaps you noticed that I didn't mention getting paid for teaching. That was not a careless omission. The business model of medical schools depends on clinical faculty teaching without getting paid specifically for teaching. CWRU School of Medicine does not pay for teaching except, where there are major needs for which people don't volunteer to do for nothing. Physical diagnosis comes to mind. It was not always so. When I was a medical student in the mid 1970s, one of my physical diagnosis preceptors was a cardiologist in private practice. He did this because he felt it was a physician's obligation. I had attending physicians at the VA Medical Center who were in private practice; there was no way for them to bill for services in the VA even if they wanted to. They also did it because they felt it was a physician's obligation. The school does pay faculty who are involved in administration of education programs, but not for teaching itself. A friend of mine at the business school asked me to co-teach a class with him on complex systems [28]. I agreed and ended up doing it myself after he decided to focus on his research. That was OK with me because I thought the experience would be fun. Only after I agreed was I informed by the program director that I would be paid. The thought had never entered my mind. However, the model in the business school is completely different. And, in the 7 years I have taught, I have received two raises. Of course, things are a bit more complicated, and things have changed over my 40 plus year career in academic medicine. However, the bottom line is quite simple: *You have to demonstrate your value to thems that are payin' you and thems that are payin' you decide what constitutes value.*

References

1. https://www.barrypopik.com/index.php/new_york_city/entry/you_cant_ride_two_horses/. Accessed 14 Dec 2019.
2. https://case.edu/medicine/about.
3. https://portals.clevelandclinic.org/lcm2/About-the-College/Mission. Accessed 16 Dec 2019.
4. https://my.clevelandclinic.org/about/overview/who-we-are/mission-vision-values. Accessed 16 Dec 2019.

[12] In earlier times, finding a patron was the approach if you were not independently wealthy. Patrons still play a major role by their philanthropic contributions, often connected to having a room, building, or even medical school named for them. Laster L. Where have all the patrons gone?. Hospital Practice. 1996 Jul 15;31(7):90–5. DeMaria, Anthony N. "Philanthropy and medicine." Journal of the American College of Cardiology. 2006;48:1725–1726. Other sources of funding of the medical school include state funding and tuition.

5. https://www.metrohealth.org/about-us/mission. Accessed 16 Dec 2019.
6. https://www.uhhospitals.org/about-uh/mission-vision-values. Accessed 16 Dec 2019.
7. https://www.cleveland.va.gov/about/. Accessed 16 Dec 2019.
8. Lewkonia RM. The missions of medical schools: the pursuit of health in the service of society. BMC Med Educ. 2001;1(1):4.
9. Grbic D, Hafferty FW, Hafferty PK. Medical school mission statements as reflections of institutional identity and educational purpose: a network text analysis. Acad Med. 2013;88(6):852–60.
10. Ramsey PG, Miller ED. A single mission for academic medicine: improving health. JAMA. 2009;301(14):1475–6.
11. Bourner T, Rospigliosi A, Heath L. The fully-functioning university and its contribution to the advancement of knowledge. High Educ Rev. 2016;48:51–70.
12. Ludmerer KM. Time to heal: American medical education from the turn of the century to the era of managed care. Oxford: Oxford University Press; 1999.
13. Flexner A. Medical education in the United States and Canada: a report to the Carnegie Foundation for the advancement of teaching. Bulletin No. 4. Boston, MA: Updyke; 1910.
14. Ludmerer K. Learning to heal: the development of American medical education. New York, NY: Basic Books; 1985.
15. Calhoun C. The public mission of the research university. In: Rhoten D, Calhoun C, editors. Knowledge matters: the public mission of the Research University. A Columbia/SSRC book. New York: Columbia University Press; 2011. p. 1–33.
16. Osler W. Teaching and thinking. Aequanimitas, with other addresses to medical students, nurses and practitioners of medicine. New York: McGraw-Hill Book Company; 1906. p. 117–29.
17. Alpert JS, Coles R. Careers in academic medicine: triple threat or double fake. Arch Intern Med. 1988;148(9):1906–7.
18. Rimar S, Garstka SJ. The "balanced scorecard": development and implementation in an academic clinical department. Acad Med. 1999;74(2):114–22.
19. Kenny SS. The Boyer Commission on Educating Undergraduates in the Research University. In: Reinventing undergraduate education: a blueprint for America's research universities. New York: State University of New York; 1998
20. Muller S. Physicians for the 21st century: the GPEP report (report of the Project Panel on the General Professional Education of Physicians and College Preparation for Medicine). Washington, DC: Association of American Medical Colleges; 1984.
21. Jay K. Levine and ECG Management Consultants to the Association of American Medical Colleges in August 2001. Updated May 2008.
22. Kerschner JE, Hedges JR, Antman K, Abraham E, Negrón EC, Jameson JL. Recommendations to sustain the academic mission ecosystem at US Medical Schools. Acad Med. 2018;93(7):985–9.
23. Robertson J, Bond CH. Experiences of the relation between teaching and research: what do academic value? High Educ Res Dev. 2001;20(1):5–19.
24. Prideaux D, Worley P, Bligh J. Symbiosis: a new model for clinical education. Clin Teach. 2007;4(4):209–12.
25. Hattie J, Marsh HW. The relationship between research and teaching: a meta-analysis. Rev Educ Res. 1996;66(4):507–42.
26. Malcolm M. A critical evaluation of recent progress in understanding the role of the research-teaching link in higher education. High Educ. 2014;67(3):289–301.
27. Papp KK, Aucott JN, Aron DC. The problem of retaining clinical teachers in academic medicine. Perspect Biol Med. 2001;44(3):402–13.
28. Aron DC. Complex systems in medicine a Hedgehog's tale of complexity in clinical practice, research, education, and management. New York: Springer; 2020.

Chapter 4
The (Not So) Hidden Objective: The Pursuit of Prestige

Unfortunately, here as elsewhere on this touching planet, imitation is the watchword and prestige the highest ambition. (J.D. Salinger)[1]

The pursuit of social success, in the form of prestige or power or both, is the most important obstacle in a competitive society. (Bertrand Russell, Portraits From Memory and Other Essays)[2]

There are two kinds of goals—the explicit and the implicit. Medical school mission statements provide the explicit goals, but that is not the whole story. The implicit are there, but generally not voiced openly as a goal. That the CWRU School of Medicine is one of the top-25 medical schools in the country and number 1 in Ohio are two of the Quick Facts highlighted on the school's web site [1]. According to US News and World Report, CWRU School of Medicine is ranked 24 in the 2019 league table of Best Medical Schools [2]. Does this matter? It certainly seems to matter. You can find similar information on the web sites, in alumni magazines, and on fundraising letters. Moreover, rankings and league tables are omnipresent. In addition to medical schools, US News and World Report ranks universities, colleges, nursing schools, business schools, law schools, and other graduate programs, just to name a few.[3] In fact there are now more than 30 different ranking systems for universities alone.[4] There are also ranking systems specifically for medical schools [3]. It would be nice to say that everything we do in medicine as individuals and organizations is done for the benefit of humanity. And some, maybe much of what we as physicians

[1] From: Hapworth 16. 1924 https://www.goodreads.com/quotes/1386661-unfortunately-here-as-elsewhere-on-this-touching-planet-imitation-is. Accessed 7/4/22.

[2] From: Portraits From Memory and Other Essays, 1956 https://www.goodreads.com/quotes/8974664-the-pursuit-of-social-success-in-the-form-of-prestige. Accessed 7-4-22.

[3] US News and World Report ranks many other things—communities, hospitals, cars, mutual funds, etc.

[4] Every year I get a survey from the Financial Times Higher Education Supplement asking my opinion about universities around the world.

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8_4

do fits into that. However, academia and those who make it up pursue something else that while it has its benefits also has its shortcomings, especially when it is pursued at the expense of other things. That is prestige: reputation or influence arising from success, achievement, rank, or other favorable attributes, a distinction or reputation attaching to a person or thing and thus possessing a cachet for others or for the public [4]. In contrast to reputation which can be good or bad, prestige is always positive; the negative equivalent would be notoriety. Moreover, prestige is comparative. In order to have prestige, some have to lack it. By its very nature, prestige is elitist. Attaining elite status is a driver for both individuals and institutions. One need only view advertisements for the credit cards which are not for everyone, just the select few (million). It underlies conspicuous consumption (purchase of goods or services for the specific purpose of displaying one's wealth) as described by Thorstein Veblen [5].

Pursuit of prestige plays out at all levels of academia from the university as a whole to the schools or units within a university to the departments within schools and the individuals who constitute those departments.[5] The same is true for academic medical centers which have their own US News and World Report ranking and use their standing as the basis for advertising campaigns. For example, University Hospitals of Cleveland states: "University Hospitals: Nationally Ranked Care Close to Home" Navigation to the awards page of the website yields: "University Hospitals Cleveland Medical Center has been recognized as a Best Hospital for 2019–2020 by U.S. News & World Report. UH Cleveland Medical Center ranked in 8 of 12 adult specialties, 2 of them in the top 25. It is ranked second among all hospitals in Ohio" [6]. Not to be outdone, the Cleveland Clinic Foundation which is one mile down Euclid Ave has a website which states: "Cleveland Clinic was named a top U.S. hospital in U.S. News & World Report's '2019–2020 Best Hospitals.' Cleveland Clinic's heart program has ranked No. 1 in the nation since 1995. Five other Cleveland Clinic specialties are ranked in the Top 5. Cleveland Clinic earned the highest ranking of any Ohio hospital" [7]. It helpfully points out that it is rated #1 in Ohio for 14 of 15 specialties. I can't help but recall that many years ago (more than 25), I was asked to apply to be the chair of the endocrinology dept. at CCF. Although I didn't think that my personality fit that position, I figured that it wouldn't hurt to find out what it was all about. I was interviewed by a search committee in an oak-paneled board room. I was not really prepared for the first question. (To be truthful I hadn't prepared for anything. I knew everyone in the department and was a regular participant in their weekly conferences.) "What do you think of the endocrinology department?" I was asked. I sat back in my chair groping for something to say and came up with: "Well it is ranked #6 in US News

[5] It is not limited to universities but includes groups of universities—the Ivy League and Athletic Conferences like those in the so-called power five: The Atlantic Coast Conference (ACC), Big Ten Conference, Big 12 Conference, Pac-12 Conference, and Southeastern Conference (SEC). These are the elite especially in the money-generating spectator sports like basketball and football. The prestige of the being part of the power five brings with it negotiating power when it comes to securing contracts with TV networks.

and World Report and I haven't the faintest idea why." There was dead silence for what seemed like a very long time. Then one of the members of the search committee said: "Neither do I." It is not that I thought they were bad, but the well-known people who were endocrinologists were actually in another department (hypertension). After the defensiveness ended, we had a nice discussion. Needless to say, I was not invited for a second visit. But it does beg the question of what does a ranking mean. If I were referring a patient, I would refer them to individuals who I respected, not what a department's ranking was.

The pursuit of prestige by higher education institutions is hardly novel. One hundred years ago the economist Thorstein Veblen discussed their pursuit of prestige and its ill effects [8]. More controversially perhaps is the proposition in Howard Bowen's seminal work that the dominant goal of institutions is prestige, and in their quest to obtain it, institutions will raise all the money they can and spend all that they raise toward ever-increasing expenditures ([9], p. 20). Although he was writing about universities, it certainly applies to medical schools. Rankings reflect competition and the desire for institutional legitimatization based on numbers, number being at least seemingly objective. Note, seemingly is the operative word here. Two basic models are used for the USNWR rankings—a research model and a primary care model. For the 2019 report, the 152 medical schools fully accredited in 2018 by the Liaison Committee on Medical Education and the 33 schools of osteopathic medicine accredited in 2018 by the American Osteopathic Association were surveyed in fall 2018 and early 2019. Of those 185 schools, 120 responded and provided the data needed to calculate the rankings based on the indicators used in the medical school research model. Each of these models represents a weighted average of indicators which are a mixture of objective and subjective measures. Objective measures include indicators of student selectivity—average MCAT, average GPA, and acceptance rate. A fourth is the faculty-student ratio. (The primary care model adds a measure of the proportion of M.D. graduates entering primary care specialties.) There are also objective measures of research activity—NIH funding (total and per faculty member). Interestingly all other sources of research funding were dropped from the 2019 ranking. The quality assessment is entirely subjective and depends upon ratings by peers and residency program directors. Peers include medical and osteopathic school deans, deans of academic affairs and heads of internal medicine or directors of admissions who were asked to rate programs on a scale from 1 (marginal) to 5 (outstanding). This strictly reputational quality. The medical school research model is based on eight indicators, and the primary care model is based on seven indicators. Four of the data indicators are used in both the research and primary care ranking models. They are the student selectivity admissions statistics (MCAT, GPA and acceptance rate) and faculty-student ratio. The medical school research model factors in research activity; the medical school primary care model adds a measure of the proportion of M.D. graduates entering primary care specialties. There have been several critiques of the ratings based on methodological, conceptual, and ethical grounds. McGaghie and Thompson gave five reasons to criticize the U.S. News & World Report rankings on methodologic grounds: (1) narrow focus, (2) inadequacy of response rates, (3) measurement error, (4) unchanging

stability of results, and (5) confounding [10]. They suggested that the use of the particular small set of four attributes reflected a value system that emphasized institutional prestige driven by national visibility. There are other potential criteria such as the impact on students, public service, and financial health of the institution. Medical school mergers and closure of academic medical centers highlights the salience of this latter criterion [11, 12].[6] Other criteria have been suggested such as class diversity (with inclusion of underrepresented minorities), accomplishments in meeting the social mission, and tuition or lack thereof [13–15]. Even given the choices made by USNWR, there are problems. Response rates to the surveys were generally <50% which raises questions about selection bias. The stability of rankings from year to year could simply be a cumulative advantage effect.[7] The reputation of the medical school could reflect the reputation of the university (either for good or ill), confounding the results. Data to support the idea that high ranking schools produce better doctors is remarkably modest. Tsugawa et al. in a study using Medicare data found little or no relation was found between the USNWR ranking of the medical school from which a physician graduated and subsequent patient mortality or readmission rates [16]. Physicians who graduated from highly

[6] While most of the focus of Hahnemann Medical Center's closure has been on graduate medical education, there have also been effects on undergraduate medical education. About 30% of Drexel University's third- and fourth-year medical students were in clinical clerkships at the hospital. They have all been reassigned to other hospitals including some of Drexel's regional campus partners. https://drexel.edu/now/archive/2019/July/How-Hahnemann-Closing-Impacts-Drexel/ 2-5-20. The entire issue of Hahnemann and its fate raise important issues about finance and the healthcare systems, particularly the role of private equity. In fact, in this case, the hospital's owner treated the residency program as a commodity and tried to auction off the graduate medical education (GME) slots which come with considerable government support. D'Mello K. Hahnemann's Closure as a Lesson in Private Equity Healthcare. Journal of hospital medicine. 2020 Feb 11;15(2):e1–3. More broadly, there are important moral and ethical issues as well. Nasca TJ, Johnson PF, Weiss KB, Brigham TP. Elevating resident voices in health systems change: Lessons from the closure of Hahnemann University Hospital. Academic Medicine. 2020 Apr 1;95(4):506–8.

[7] McGaghie and Thompson suggest that this is an example of the Matthew effect. Named for a verse from the book of Matthew in the Bible, Chap. 25, v29 in which there is the parable of the talents (a talent was an amount of money): 'For unto every one that hath shall be given, and he shall have abundance: but from him that hath not shall be taken away even that which he hath.' Interestingly the same parable is told in Luke Chap. 19 and a similar statement is made in v26: 'For I say unto you, That unto every one which hath shall be given; and from him that hath not, even that he hath shall be taken away from him.' Nevertheless, the phenomenon is called the Matthew effect, a term coined by the sociologist Robert Merton. (Merton RK. The Matthew effect in science: The reward and communication systems of science are considered. Science. 1968 Jan 5;159(3810):56–63). In short, the rich get richer and the poor get poorer (not sure what the following means) of them that got get. The phenomenon works in reverse. Jin et al. noted that in team science, eminent team members garner credit for great works at the expense of less eminent team members. They studied how article retractions, i.e. embarrassing episodes, affected citations to authors' prior publications. Remarkably, they found that retractions imposed little citation penalty on eminent coauthors. By contrast, the less eminent coauthors faced substantial citation declines, and especially when teamed with an eminent author. (Jin GZ, Jones B, Lu SF, Uzzi B. The reverse Matthew effect: Consequences of retraction in scientific teams. Review of Economics and Statistics. 2019 Jul;101(3):492–506.) See also chapter on fraud.

ranked medical schools had slightly lower spending than graduates of lower ranked schools. Others have made similar observations [17, 18]. Another study found only a weak association between clinical competency and a resident's medical school of origin [19]. Methodological limitations notwithstanding, it might not matter were it not for the fact that attention to rankings by universities and medical schools can have ill effects. Resources may be diverted from core activities to things that might improve a school's reputation or other things entirely. This may take the form of fancy buildings or marked facility expansion.[8] This has been referred to as the 'edifice complex.' However, construction takes money and financing a new building and often involves incurring more debt [20]. Other unintended consequences from obsession with rankings could including gaming. Since selectivity is a criterion, be more selective. That may ensure that people with better grades get in, but that does not ensure (especially after reaching some threshold performance) that they will be better doctors. Students from groups which traditionally perform worse on those criteria would be put at a disadvantage [21]. It could also change applicant's behavior. Nevertheless, the rankings (and the pursuit of prestige which long predates these rankings) influence the strategic direction of the medical school. Research has the most prestige and schools pursue strategies that result in improvement in their NIH ranking. Superstar faculty, i.e., those with multiple R01's (the basic NIH grant to an individual principal investigator) are sought and to get them requires a substantial financial package. Individual departments are the same. Two of the department chairmen I have known had as their number one espoused goal to improve the NIH ranking of the department of medicine. The first wanted us to be in the top 20 and the second wanted us to be in the top 10.

Academic medical centers seem to be particularly affected by rankings and pursue prestige not only by constructing new buildings, but also by getting the very

[8] CWRU recently opened the Sheila and Eric Samson Pavilion, the centerpiece of the Health Education Campus located on the grounds of the Cleveland Clinic. It is a 477,000-square-foot building housing the schools of medicine, nursing, dentistry (in part), and physician assistants where "a stainless steel canopy appears to float over the pavilion's symmetrical volume, punctuated by recessed entries and winter gardens. Structural steel bays are clad in glass and modulated horizontally by white aluminum spandrels." Why did the CEO of the Cleveland Clinic choose the specific architects? He liked what they did with the British Museum. https://www.architecturalrecord.com/articles/14163-sheila-and-eric-samson-pavilion-at-case-western-reserve-university--and-cleveland-clinic-by-foster-partners It features a 27,000-square-foot central atrium that draws maximum light from a specially engineered roof and given Cleveland weather involve enormous heating bills in winter and air conditioning in summer. It was designed by world renowned architects at London's Foster + Partners and was funded in part by the Samsons who are among the largest donors to Cleveland Clinic. http://hec.case.edu/about-the-campus/sheila-and-eric-samson-pavilion/ It is certainly an attractive building and you know you are at the Cleveland Clinic and not in the old medical school campus. No question that the medical school facilities needed major upgrading, but what we got is pretty fancy. Did I mention that there are no signs indicating where the restrooms are located? They would destroy the aesthetics. They were added some weeks later. Also, the acoustics in the meeting rooms are appalling, but maybe that is just 'piling on.' Moving medical education to the Cleveland Clinic has also caused considerable consternation to faculty at University Hospitals of Cleveland which was once the primary affiliate. Time will tell how it all pans out.

latest in technology, especially if it is expensive, whether or not it has been proven to be superior. And if a competitor has it, then you have to have it too, whether or not a locality really needs two of them. This has been termed the medical arms race and has implications for health care system costs [22, 23]. It is in this context that the duties of an academic are carried out.

References

1. https://case.edu/medicine/about. Accessed 29 Jan 2020.
2. https://www.usnews.com/best-graduate-schools/top-medical-schools/research-rankings. Accessed 29 Jan 2020.
3. Goldstein MJ, Lunn MR, Peng L. What makes a top research medical school? A call for a new model to evaluate academic physicians and medical school performance. Acad Med. 2015;90(5):603–8.
4. https://dictionary.cambridge.org/us/dictionary/english/prestige. Accessed 28 Jan 2020.
5. Veblen T. Theory of the leisure class. New York: B. W. Huebsch; 1899.
6. https://www.uhhospitals.org/about-uh/awards-and-recognition/2019-awards/uh-cleveland-medical-center-among-nations-best-hospitals. Accessed 5 Feb 2020.
7. https://my.clevelandclinic.org/about/us-news-rankings. Accessed 5 Feb 2020.
8. Veblen T. The higher learning in America: a memorandum on the conduct of universities by business men, 1918. New York: Cosimo; 2007.
9. Bowen HR. The costs of higher education: how much do colleges and universities spend per student and how much should they spend? San Francisco, CA: Jossey-Bass Inc.; 1980.
10. McGaghie WC, Thompson JA. America's best medical schools: a critique of the US News & World Report rankings. Acad Med. 2001;76(10):985–92.
11. Berns JS, Coull S, Paskin D, Spevetz A, Boyer WC. Reflections on a crisis in graduate medical education: the closure of Hahnemann University Hospital. Acad Med. 2020;95(4):499–502.
12. Lexa FJ. Hahnemann—the fast death of an Academic Medical Center and its implications for US Radiology. J Am Coll Radiol. 2020;17(1):82–5.
13. Sklar DP. What would excellence in health professions education mean if it addressed our most pressing health problems? Acad Med. 2019;94(1):1–3.
14. Mullan F, Chen C, Petterson S, Kolsky G, Spagnola M. The social mission of medical education: ranking the schools. Ann Intern Med. 2010;152(12):804–11.
15. McGaghie WC. America's Best Medical Schools: a renewed critique of the: US News & World Report: rankings. Acad Med. 2019;94(9):1264–6.
16. Tsugawa Y, Blumenthal DM, Jha AK, Orav EJ, Jena AB. Association between physician US News & World Report medical school ranking and patient outcomes and costs of care: observational study. BMJ. 2018;362:k3640.
17. Rao AR, Clarke D. Exploring relationships between medical college rankings and performance with big data. Big Data Analytics. 2019;4(1):3.
18. Ly DP. Association between US News & World Report Medical School ranking and physician opioid prescribing for new low back pain, 2011–2014. J Gen Intern Med. 2019;19:1–4.
19. Gollehon NS, Stansfield RB, Gruppen LD, Colletti L, Haftel H, Woolliscroft JO, Lypson ML. Assessing residents' competency at baseline: how much does the medical school matter? J Grad Med Educ. 2017;9(5):616–21.
20. Martin A. Building a showcase campus, using an I.O.U. New York Times, December 14, 2012, p. A1.

21. Elks ML, Herbert-Carter J, Smith M, Klement B, Knight BB, Anachebe NF. Shifting the curve: fostering academic success in a diverse student body. Acad Med. 2018;93(1):66.
22. Richards M, Lasater K, McHugh M. A race to the top?: competitive pressure and magnet adoption among US hospitals 1997–2012. Med Care. 2017;55(4):384.
23. Trinh HQ, Begun JW, Luke RD. Hospital service duplication: evidence on the medical arms race. Health Care Manag Rev. 2008;33(3):192–202.

Part II
Academic Duties

Chapter 5
Prelude and Introduction to the Section

How I have experienced academic medicine was contingent on a variety of factors, some quite idiosyncratic. I was not a typical pre-med. In fact, I was not a pre-med at all. When I began college in 1967, although pre-med was not a major, those who planned to go to medical school had a clear set of courses to take: in freshman year these included chemistry, physics and biology and as a sophomore, one took the make or break course—organic chemistry. Interestingly, negative experiences with chemistry classes seem to account for decreasing interest in a career in medicine, a phenomenon that disproportionately affects women and underrepresented minorities [1]. Notwithstanding, the grade in 'orgo' was thought to be a major determinant of whether or not you got into medical school and which one you got into. (Organic chemistry continues to be a key requirement, although there have been calls to eliminate it [1]. Perhaps it is being used as a winnowing procedure.) Pre-meds tended to major in biology or biochemistry.[1] I avoided that. In fact, I met my 1-year science requirement by taking psychology 101.[2] I wasn't thinking about becoming a physician. In fact, I was planning to become a college professor of history. I majored in Chinese Studies and

[1] There is a well-known pre-med syndrome and pre-meds were thought to be excessively hard-working, grade conscious and competitive to the point of being cutthroat with stories of students purposely ruining the lab exercises of other students. Personally, I did not experience this apart from the sobriquet of pre-med grubs, i.e., students who studied all the time; none of the nastiness. Sade RM, Fleming GA, Ross GR. A survey on the 'premedical syndrome'. Journal of medical education. 1984 May;59(5):386–91.

Hackman JDL-B, John R; Wugmeister, Susi; Wilhelm, Robert C; Rosenbaum, James E. The Premed Stereotype. Journal of Medical Education 1979;March (3):54–6. This syndrome has been around for longer than the USNWR rankings, but then the pursuit of prestige has been with us since time immemorial. Blackmore P. Prestige in academic life: Excellence and exclusion. Routledge; 2015 Nov 19.

[2] I was surprised that there was nothing about Freud in this class. It was behaviorist in its approach and was known as rat psych. We each got our own rat and Skinner box so we could test learning, reinforcement, extinction, and so on.

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8_5

took Mandarin as a freshman. I wasn't all that good and when school was interrupted by the events of 1968 at Columbia, I began to forget what I had learned. I couldn't repeat the class as a sophomore on top of a full schedule, so I lost more time. Then as a junior, I went to University of Leeds and studied Chinese as well as history and political science. By the time I finished that year, I had given up on the idea of studying Chinese or even becoming a college professor. Before returning home, a British friend and I hitchhiked from Calais to Copenhagen. While riding on a bus in Copenhagen, I thought about going to medical school. I don't have a good idea why. I knew that it would be a profession in which I would never have to worry about being unemployed. My parents were children of the depression and when I was old enough to understand, I realized that my father went from job to job, always thinking about the next one, so that the idea of job security was important. My father had been a college teacher before he was driven out during the McCarthy era. He was also great at everything related to the humanities. He could speak four or five languages, was a historian, and a great teacher. Medicine was the only thing he hadn't done so I didn't have to worry about competition. I had been imbued with a social conscience and medicine certainly fit the bill. Finally, medical school would make me eligible for a draft deferment which in the middle of the war in Vietnam (which I strenuously opposed) was not a trivial benefit. It is not without irony that I look on my nearly 40 years working at a Veterans hospital. Like my classmates, my motives were mixed, though getting rich was not one of them.[3] However, there was always

[3] There are many different reasons that individuals choose to go to medical school and become physicians. For some, it is what they have wanted to do all their lives. They may come from a family of physicians where it is an expectation that he (or she) will follow in steps of those who preceded them. Some have been influenced by the kindly physician who made a house call when they were sick. I am old enough to have lived in an era when house calls were routine. I remember physicians coming to my house in Framingham, Mass. when I had an earache. I even remember undergoing surgery for an ear infection late at night. Anesthesia consisted of ether being dripped on a gauze mask. Thank goodness, some things have changed. Or perhaps it was one of the many TV shows and movies based on physicians like Dr. Kildare or Ben Casey. There was a dichotomy between those who liked Dr. Kildare, the naïve but optimistic medical intern, and those who preferred Ben Casey, the more realistic neurosurgeon. https://www.imdb.com/title/tt0054535/reviews Some are attracted to the drama of life and death decisions or just the struggle to preserve life in the face of death. Some like the intellectual challenge whether biological or psychological. A former President of Case Western Reserve University, Ed Hundert, was a psychiatrist. He related that he had chosen psychiatry because surgery wasn't invasive enough. Some think that it is a way to get rich or at least well off (although that was more common when I started medical school in 1971 and educational debt was not so onerous). Some like the respect with which physicians are held. This is true even today when many physicians in practice rue restrictions on their autonomy, bureaucracy, and malpractice suits, and yearn for the good old days. Every morning I stop at a gas station on the way to work to pick up a New York Times and a Diet Coke. As a regular, they know me as Dave. One Saturday in July 2019, I stopped on the way as I was going to the medical school's white coat ceremony and I was wearing my white coat. (This is a ceremonial entry to the profession for new medical students observed by presenting each of them with a white coat, a symbol of the medical profession.) It was the first time the employees had seen me in one. I got some stares and then "Are you a doctor?" Ever since that day I have been greeted as Doc. I have known our Medical Center Director for more than 25 years. I have called her by her first name for probably all those years, but even today she calls me Dr. Aron no matter how many times I tell her that she can call me Dave. Physicians remain the most respected profession worldwide.

something about academia that appealed to me. Was it the intellectual challenge of frequent interaction with very smart people? Was it the prestige of medicine in general and academic medicine in particular? Was it the attraction of the ivory tower and the university as a citadel of knowledge in a world gone crazy? I don't know. Maybe all of them to one degree or another. Anyway, I think that I knew pretty early on in medical school that I was headed towards an academic career, though my preparation for medical school was different from most of my classmates and that difference would color my experience of academia. I did miss out in taking more science courses or at least having the opportunity to take more science courses. However, instead, I took more history and political science along with Columbia's rigorous liberal arts core of philosophy, literature, art and music. Those courses would do much more for me than more science at that point. They fostered the core of my humanity which would be needed. This is not to say that more science is bad. Rather, what has served me well is knowing the basics so that as the science progressed, particularly in biochemistry and molecular biology, I was able to deal with it. The most appropriate course of premedical education is a contested area [2, 3]. Nevertheless, I see in too many medical students today an underlying assumption that all you need to know is science, especially molecular biology and genetics. The fact that biochemistry now constitutes a large portion of the dreaded Medical College Admission test (MCAT) and the fact that medical schools are ranked based on the MCAT scores of their students reinforces this assumption.[4] Nevertheless, I saw medical school as an integral part of the university and that doctors should be well read in the humanities, especially if they are to inhabit the groves of academe.[5]

[4] One of my friends expected that I would be down in the dumps after the exam organized a trip for a bunch of us to the Bronx Zoo. I ended up spending most of the day with one girl who was not in college but worked in the university library. It being 2021 when I write this, I wonder if I should have written young woman? In any event, we would be married 4 months later and have been together ever since.

[5] The importance of reading beyond the scientific aspects of medicine has been emphasized by Sir William Osler who wrote: "But by the neglect of the study of the humanities, which has been far too general, the profession loses a very precious quality." From British Medicine in Greater Britain in Aequanimitas, with Other Addresses to Medical Students, Nurses and Practitioners of Medicine third e. Philadelphia: P. Blakiston, 1932 p168. I also believe there is a strong argument for an education in the liberal arts in general and I was fortunate to attend a college that kept its core curriculum of "great books" long after it became unfashionable. See: Kass, Leon R. Leading A Worthy Life: finding meaning in modern times. Encounter Books, 2020; Menand L. The marketplace of ideas: Reform and resistance in the American university. WW Norton & Company; 2010 Dec 6; and Gay V. Progress and Values in the Humanities. Columbia University Press; 2009 Dec 1.

References

1. Barr DA, Gonzalez ME, Wanat SF. The leaky pipeline: factors associated with early decline in interest in premedical studies among underrepresented minority undergraduate students. Acad Med. 2008;83(5):503–11.
2. Borek D. Unchanging dilemmas in American medical education. Acad Med. 1989;64:240–4.
3. Muller D. Reforming premedical education—out with the old, in with the new. N Engl J Med. 2013;368:1567–9.

Chapter 6
To Teach

I am a teacher at heart, and there are moments in the classroom when I can hardly hold the joy. When my students and I discover uncharted territory to explore, when the pathway out of a thicket opens up before us, when our experience is illumined by the lightning-life of the mind—then teaching is the finest work I know. (Parker Palmer. The Heart of a teacher)[1]

SR: I am so grateful for my Case Western connection for medical school and residency. I have an inkling that it was hard but mostly I remember the "magic" of learning, discovery, and taking care of patients. Among the fondest memories are those of the VA and your teaching. It has served me well for my career development. I was inspired by teachers like you and every year—whether I was at Sinai, UConn or now, Penn… at the teaching awards ceremony, I would say this Osler quote: "No bubble is so iridescent or floats longer than that blown by the successful teacher."[2] *And I always pause to think of the many teachers,*

[1] Palmer PJ. The heart of a teacher identity and integrity in teaching. Change: The Magazine of Higher Learning. 1997 Nov 1;29(6):14–21.

[2] In an address published in the Glasgow Medical Journal, William Osler wrote: "In the hurly-burly of to-day, when the competition is so keen, and there are so many seeking the bubble reputation at the eye-piece and the test-tube, it is well for young men to remember that no bubble is so iridescent or floats longer than that blown by the successful teacher. A man who is not fond of students and who does not suffer their foibles gladly misses the greatest zest in life; and the teacher who wraps himself in the cloak of his researches, and lives apart from the bright spirits of the coming generation, is very apt to find his garment the shirt of Nessus." (p. 329) Osler W. The pathological institute of a general hospital. Glasgow Medical Journal. 1911 Nov;76(5):321–333. Among other things, what is interesting is that in an address to a group of physicians, Osler expected the audience to understand his reference to the 'shirt of Nessus.' That bespeaks a degree of familiarity with Greek mythology that I believe is far greater than the average physician of today. The story goes that Nessus, a centaur had attempted to rape Deianeira, the wife of Hercules. Hercules killed Nessus with a poisoned arrow. Deianeira, tricked by the dying Nessus into thinking that the shirt he had been wearing was a potion to prevent unfaithfulness, took the shirt. Later when she thought that Hercules had taken a new lover, she gave him the blood-stained shirt. It caused him such pain that he committed suicide. Metaphorically, it represents "a source of misfortune from which there is no escape; a fatal present; anything that wounds the susceptibilities." Shakespeare knew his mythology. In Act 4.12 of Shakespeare's play Antony and Cleopatra, Mark Antony is in a rage after losing the Battle of Actium and exclaims, "The shirt of Nessus is upon me." https://en.wikipedia.org/wiki/Shirt_of_Nessus 6-2-20.

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8_6

like you, who inspired me… I also remind the awardees that their teaching gifts would be passed forward to students and mentees and forward again and again. So, I have to say "your bubble" is soaring!

DCA: Thank you for your kind words. They mean a lot to an old teacher like me. My father always said: "do it for the grandchildren." Your students are my grandchildren. Thank you.

SR: Aw… thank you! You made my day! And yes, my students are truly your grandchildren! And you have many great grandchildren already as my many students over the years are now advancing in their careers! (Email exchange with Dr. Suzi Rose, 4-2020)

I am a teacher at heart. I love doing this more than any other aspect of my job. I also respected great teachers. It was interesting to find that the Hippocratic Oath included a statement about respecting your teachers and your students: "To consider dear to me as my parents him who taught me this art; to live in common with him and if necessary to share my goods with him; to look upon his children as my own brothers, to teach them this art if they so desire without fee or written promise; to impart to my sons and the sons of the master who taught me and to the disciples who have enrolled themselves and have agreed to the rules of the profession, but to these alone, the precepts and the instruction" [1]. When I chose electives in medical school, I tried to choose those with great teachers regardless of what the topic was.

One of the early eye openers for me as a junior faculty member was how little teaching counted for anything. I was working in the lab during my pre-tenure period, but apparently not enough. I had received a teaching award and was always ready at the drop of a hat to fill in at teaching conferences. The head of research at the hospital told me I should spend more time in the lab getting publications and less time teaching. If the goal was tenure, he was completely correct. However, I liked teaching much more than I liked the laboratory. And frankly I was much better at teaching than I ever was in the lab. When a few years later I was promoted but told I would not get tenure, I switched to the non-tenure track. Then I actually became productive in the lab, but it was too late. Tenure at my institution at the time was primarily a means of attaining prestige. It was not clear whether there was really any kind of job guarantee much less money attached to it.[3] So I may not have had the prestige of tenure, but I stayed anyway. Why? Because, in my heart I am a teacher and having tenure didn't affect my position at the VA.[4]

[3] About 10 years later, I did a study of teaching award winners, but more about that in Chap. 20 To publish.

[4] Go into any doctor's office and you will see a wall full of diplomas and certificates—college, medical school, residency, fellowship. I have never had my diplomas or certificates framed. They are all in an old x-ray folder in a closet in my house somewhere. The only things I have framed are my teaching awards, though I must admit that while they were displayed in my office at one time, now they are just in a box in my office. A year ago, I was awarded the Graduate Teaching and Mentoring Award from the Weatherhead School of Management. That probably makes me the only person at this university who has won top teaching awards from the business school and the medical school. My mother would be kvelling.

Several years ago, I found out that CWRU medical school had a teaching oath[5] created by members of the Teaching Academy[6] at the school's annual education retreat.[7] It constitutes a useful device to frame the rest of this chapter. There are ten sentiments[8] to which the oath-taker willingly pledges a commitment:

Find and Express Joy in Teaching

It is obvious when I teach that I am having fun. My style is conversational and I ad lib a great deal. I enjoy expressing my opinions so I begin with a powerpoint slide stating the lecture is rated R, restricted—under 17 requires accompanying parent or adult guardian—noting that opining and sarcasm may "inadvertently" seep in.[9] Viewer discretion is advised, but feel free to challenge everything I say. I throw in jokes. I have been asked if I was a stand-up comic. I like to include history of a subject when I teach about it. For example, I have given lectures on the adrenal gland to first year medical students. I begin by setting the stage, so to speak, of Act 1 scene of Shakespeare's Hamlet in which the ghost of the dead king appears before Hamlet, his son, describing his murder. The ghost says: "Sleeping within my orchard, My custom always of the afternoon, Upon my secure hour thy uncle stole With juice of cursed hebenon in a vial, And in the porches of my ears did pour The leperous distilment, whose effect Holds such an enmity with blood of man." By this time, I am starting to get quizzical looks from the students. I ask rhetorically how Shakespeare got the idea for this method of poisoning. I suggest that he may have come across or heard about a publication by one Bartolmeus Eustachii. It described what we now call the eustachian tubes [2]. Eustachii's name was immortalized, but I think that he was really important because he was the first the describe the adrenal glands and that is what we are going to talk about today—the adrenal glands. This is usually met with a mixture of guffaws and a few groans, but one thing for sure is that I have the class's attention. And it is so much fun. But there is another kind of fun: seeing a student 'get' a concept or think through a difficult diagnosis. I love that.

[5] I found out while doing some research for this book, that CWRU is not alone in having a medical education teaching oath. Cottrell S, Gill A, Crow S, Saizow R, Nelson EA, Shumway JM. A teaching oath: a commitment to medical students' learning and development. Teaching and learning in medicine. 2012 Apr 1;24(2):165–7.

[6] More about teaching academies later.

[7] Although I was a member of the academy, I out of town when this was done.

[8] I have changed the order of the sentiments and combined some.

[9] I started including this slide after I was criticized by one student for opining. I thought I was just giving my opinions.

Respect Learners as Partners in the Educational Experience

My early medical school experience consisted of lectures and labs 6 days a week. The lectures followed the bank deposit form of education. This is the tradition of teaching ex cathedra. Shorn of its religious implications,[10] it means teaching from the chair from the Greek word "kathedra" meaning a seat or bench, often translated as "a professor's chair" and it has an elevated position relative to the learners.[11] There have been objections to this model for many years. In an address to medical students in 1905, William Osler said: "The successful teacher is no longer on a height, pumping knowledge at high pressure into passive receptacles. The new methods have changed all this. He is no longer Sir Oracle, perhaps unconsciously by his very manner antagonizing minds to whose level he cannot possibly descend, but he is a senior student anxious to help his juniors" [3]. Unfortunately, many of my lecturers never learned that. There was only one class in medical school whose lectures I mostly cut—neuroanatomy. Aside from being like memorizing a telephone book, something that should be done on one's own (if at all) and just before the exam, there were two lecturers who couldn't have been more different. Each of them had written a neuroanatomy textbook, one an excruciatingly detailed tome and the other more of a review with illustrations of pathways. The lectures of the first one were not unlike his reading his textbook which he did from memory. I figured it was easier to read the book where at least I could use my yellow highlighter. The other one was all about pathways which he drew on the blackboard (yes, they were still black chalkboards) in such a way that I could make neither heads nor tails out of them. His drawing was also accompanied by much arm waving which didn't help my comprehension any. I vowed never to be like that, although I am not sure that I envisioned myself as a lecturer at that point. I had some decent lecturers too, but fundamentally the underlying principle was of the bank deposit method. The lecturer who got the teaching award from my class was not particularly scintillating, but he said everything twice, so you always got the message.

During a medical education retreat I had been introduced to the concept of learner-centered as opposed to teacher-centered approach.[12] This and the latter part

[10] The bishop's cathedra or chair was important and serves as the origin for "cathedral" or church in which that chair sits. It was applied to decisions made by Popes from their thrones. According to Roman Catholic doctrine, a Pope speaking ex cathedra on issues of faith or morals is infallible. https://www.thecompassnews.org/2018/03/the-professors-chair/. Accessed 6-4-20.

[11] When I was a fellow, my boss told me a story about a time when he was a visiting professor in Germany. He was doing bedside rounds. A student had interrupted and asked a question which he answered and then moved on. He noticed that the professor who had been speaking had sat down and was sweating. When rounding on that patient was done, he asked the professor if he was alright. The professor (with a capital P) responded that he would be ok. He was just so shocked by a student interrupting my boss that it unnerved him. In contrast, my boss encouraged questions.

[12] Ornt DB, Aron DC, King NB, Clementz LM, Frank S, Wolpaw T, Wilson-Delfosse A, Wolpaw D, Allan TM, Carroll M, Thompson-Shaheen K. Population medicine in a curricular revision at Case Western Reserve. Academic Medicine. 2008 Apr 1;83(4):327–31.

of Osler's message (*…he is a senior student anxious to help his juniors')* were brought home to me during a major curriculum revision in which I participated [4]. In this initiative, the number of lectures was greatly reduced and the primary learning method was student-directed small groups (called inquiry groups). In these groups, students were given cases and they had to come up with their own learning objectives. And the groups would have a faculty member who would serve as a facilitator and not as an expert on the topic. In fact, such expertise was not desired.[13] I was extremely skeptical. I was also skeptical of reducing the number of lectures. But I went with it and even ran the first block of the new curriculum. It has proved to be successful, and I am a believer. In addition, while I knew that teaching was a great way and an incentive for me to learn, when I started, the learning had to precede the teaching. I now find that I learn from students while I am teaching. I usually introduce myself at a PGY45, recognizing that I am in my 45th year of postgraduate training and we learn together. In the same address, Osler wrote: "When a simple, earnest spirit animates a college, there is no appreciable interval between the teacher and the taught—both are in the same class, the one a little more advanced than the other. So animated, the student feels that he has joined a family whose honor is his honor, whose welfare is his own, and whose interests should be his first consideration."

Demonstrate Humility Through a Continuous Quest to Improve My Teaching: Seek Feedback from Learners and Others

For some reason, these are separate statements, but I am not sure that it is possible to separate the two. How better to demonstrate humility than to ask for help in improving, i.e., feedback? At the beginning of the class, I state: It is not important what I teach; it is important what you learn. Several times students have told me later that no one had ever said anything like that to them. At the end of a talk, I ask for feedback so that I can do better next time. Sometimes, I ask for feedback at the beginning and at the end. However, asking for feedback is of little use unless you take it seriously, even when it has been quite harsh, perhaps especially when it is harsh. And I have gotten some pretty harsh feedback early in my career. Some of it has been about lectures. Mostly it has been about my talk's organization and the quality (or lack thereof) of my PowerPoints—too complicated, too many. One year, when there was more than the usual amount of negative feedback, I went back to the class and asked for volunteers to help me go through my slides and make them

[13] The IQ group leaders had to make a major time commitment—8–10 AM three times a week for a 6 or 12-week block. They have been difficult to recruit and now 4th year students are serving as leaders.

better. Two students contacted me, and we met one afternoon in the lecture hall and went through my talk slide by slide. Concepts that I thought were simple were not found to be simple by the students. Some examples I used required too much background knowledge or used too much time to explain. We went through every single slide, and I made major changes, reducing and simplifying the slides. The next year, the feedback about organization and slides identified no concerns. I should say that I got plenty of good feedback too and I tried to increase the behaviors that led to this. This was a relatively easy fix. Where it has been more difficult is in my teaching in the medical clerkship either on the wards or in small groups.

Remain Flexible to My Learner's Needs by Creating a Safe and Interactive Learning Environment

I wish that I could say that I have always been successful here. I can't. In fact, this was a major challenge for me early in my career. If the droning lecture is one side of the coin, the other side of the coin is the practice of continuous questioning in the clinical setting with the idea of demonstrating a student's ignorance and putting it on display for the rest of the students. In my preclinical year, I got plenty of the first. In my clinical experiences I got plenty of the latter. Rounds on medical wards at Columbia Presbyterian Hospital were a time of daily humiliation, which we accepted as the normal course of things. A ward team when I was a student consisted of one resident, three interns, six students, and two attendings—one in clinical practice and the other primarily a researcher. Two students were assigned to each intern, and we alternated admissions. In addition to performing a history and physical examination and reviewing the old chart, however many volumes there were, we did an EKG and since we had a one channel machine, it meant that we had to cut it up into the various segments for each lead and then tape it into the chart. We had to look at the chest x-ray and other plain films that had been done (CT scanning hadn't arrived yet) and look at the blood smear and if applicable, a gram stain of the sputum. The next morning, the "fun" really started. Rounds were conducted at the bedside and the whole team was arrayed around the patient. We handed the chart—new and all the volumes of the old chart—to the attending assigned to the case. We were expected to present the patient including initial laboratory results completely from memory. Notes were a 'no no.'[14] While you were presenting, the attending was leafing through the chart (new and old) and then seemingly at random asking the results of certain lab tests. In fact, it was not random, and you were only asked about things that should have been included in your presentation. Until you figured that out, preparation to present was hell. Once you figured it out, preparation was merely purgatory. The assessment was expected to include the differential diagnosis and plenty of questions followed until your limits of knowledge were identified. Other

[14] I practiced these presentations and occasionally I would put my wife to sleep.

students were similarly quizzed, although I never saw an intern or resident treated in the same way. Some attendings were more brutal than others, but rounds were not pleasant. Still, we got through them [5].[15] This practice of a continuous oral examination has sometimes been referred to as "pimping." Brancati popularized the term in a paper in JAMA in 1989, defining pimping as occurring whenever an attending poses a series of difficult questions to an intern or student ([6], p. 89). He cites no less of a luminary as William Osler as someone who taught this way.[16] Brancati and others cite ground rules and typical practices, but there is usually an implicit if not out outright explicit element of humiliation.[17] I think that there is a difference between asking a lot of questions and doing so with the idea of inducing shame or expressing domination [7–9]. I think there is role for the former, especially if it is done to help the student's critical thinking. However, what I didn't appreciate when I started out as an attending was the potential disconnect between my intentions and how it was received. It was painful to read some of my feedback from students, but I did change. Improving one's teaching requires a degree of reflexivity that takes practice [10]. It is important that one's teaching practice never cross the border into mistreatment[18] and the teacher must always be mindful of the feeling of our learners [11, 12]. I began stating my goals up front and saying my goal was not to humiliate and that if a student felt that way, they should speak up because my behavior was counterproductive to my goal of helping people learn. I don't mind having a reputation as being challenging, but I don't want a reputation as being intimidating.

[15] There was a rumor that a few years before a student had committed suicide leaving a note blaming the attending. I don't know if it was true. I am not sure I wanted to know at that point. In reading literature about the topic of pimping, I came upon a story of Samuel Thier who was chair of medicine at Yale. Apparently, a resident once fainted from anxiety prior to a case presentation. Thier earned the sobriquet of "Syncope Sam." (Detsky AS. The art of pimping. JAMA. 2009 Apr 1;301(13):1379–81 and Ausiello DA. Introduction of Samuel O. Thier, MD: 2008 Association of American Physicians George M. Kober Medal. The Journal of clinical investigation. 2008 Nov 3;118(11):3805–11).

[16] Brancati cites unpublished notes of Abraham Flexner made during a visit to Johns Hopkins: "Rounded with Osler today. Riddles house officers with questions. Like a Gatling gun. Welch says students call it pimping. Delightful." P89.

[17] When I was looking around at hospitals for internship, I was told a story about Peter Bent Brigham Hospital (now Brigham and Women's) which was known as a pressure cooker. A typical question at the interview was said to be something along the lines of: tell me about the significance molybdenum metabolism. I didn't know then and still don't know (or care) about molybdenum except its use in certain kinds of steel. The idea was not that the student could answer it, but rather to see how the student responded under stress. I didn't even bother to apply.

[18] Unfortunately, mistreatment including bullying, racism and misogyny are all too common. (Mavis B, Sousa A, Lipscomb W, Rappley MD. Learning about medical student mistreatment from responses to the medical school graduation questionnaire. Academic Medicine. 2014 May 1;89(5):705–11 and Sklar DP. Mistreatment of students and residents: why can't we just be nice? Academic Medicine. 2014 May 1;89(5):693–5.) In the last year, I have learned about the prevalence of microaggressions. Nadal KL, King R, Sissoko DG, Floyd N, Hines D. The legacies of systemic and internalized oppression: Experiences of microaggressions, imposter phenomenon, and stereotype threat on historically marginalized groups. New Ideas in Psychology. 2021 Dec 1;63:100895.

Instill Curiosity and Passion for the Topics I Teach

It was not until I became a member of a curriculum committee that I finally became convinced of the importance of explicit learning objectives. However, setting out the learning objectives at the beginning is definitely not where the process stops. When I am giving a talk or during a conference, a question might come up to which I don't know the answer. If a student has asked the question, sometimes I say that they have established a learning objective for themselves, and I ask them to report to the class after they have addressed it. What better way to show the importance of doing this than doing it myself? Sometimes I come up with a question as I am teaching but more often a student asks the question and I say that this establishes a learning objective for me, and I commit to reporting my findings to the class and I do it. Why do I do this? It is not only because I want to demonstrate the importance to the class of a commitment to lifelong learning. It is also because I am curious and when I don't know something I like finding out. In addition, in the course of trying to address a learning objective, I frequently come up with something else, only marginally related, but my curiosity impels me to purse these tangents. And besides, it is fun.

Acknowledge Both the Teachers and Learners Who Contributed to My Ability to Be a Teacher[19]

Taking on learning objectives based on students' questions is an acknowledgement of the importance of students to improving my teaching. This is one reason why I am skeptical of some of the approaches to online teaching. I like to see how my students are reacting as I am teaching so that I can modify my approach if I see that I am not reaching them. When I get feedback from students, I acknowledge their help, but also mention it to the next similar class that I teach. The student grapevine is pretty effective and when I show up to give a lecture, students have generally learned from students in previous years whether they can or should just skip it. Letting students know what I have changed shows that I am taking them seriously.

I didn't become a good teacher on my own. I had plenty of teachers from whom I learned, starting with my father.[20] In addition to the many great role models I have had, there are two individuals from whom I learned what some might call technique, but it was much more than that. It is said that technique is what you use until the real teacher shows up. Among the most important have been Richard P. Landow and John Lindenbaum. Interestingly, only one of these is a physician. I have tried to make a

[19] I have tried to make a practice of letting those teachers know what their impact has been. One of them was my instructor in Freshman English Composition at Columbia—Richard P. Landow. This class probably had more impact on me than any other course. Many years later, I tracked Prof. Landow down and sent a thank you email. He wrote back that he was quite gratified to receive it.

[20] My father was an amazing teacher. He had a great reputation when he taught in college and later in graduate school.

practice of letting those teachers know what their impact has been. One of them was my instructor in Freshman English Composition at Columbia—(Asst.) Prof. Landow. This class probably had more impact on me than any other course. This included what he taught, but also how he did it and the manner in which he provided feedback. I still remember that we had to type up our assignments leaving a 3-in. margin on the right so that he could write in his comments. Now that I can insert comments using Microsoft Word, it is not necessary for my students to use these unusual margins. Many years later, I tracked Prof. Landow down, now a full professor, and sent a thank you email. He wrote back that he was quite gratified to receive it. Another great teacher was John Lindenbaum, MD. He had given a couple of good lectures, but he had a great reputation as a clinical attending. I tried to take my electives in medical school based on the teachers, as well as the subject so I took a hematology elective at Harlem Hospital in order to have him as an attending. He only served as an attending in January and July and only at Harlem. He was tough and continuous oral examination was his style. He would keep going until you didn't know an answer, but he always did it with a twinkle in his eye and was never nasty. I ran into him at a scientific meeting many years later, walked to him and thanked him for being such a great teacher. I don't think he recognized me but seemed quite pleased for me to say something about him. I have also been on the receiving end. I have had people come up to me in the locker room and say what a great lecture I gave when they were medical students years previously. That is part of a teacher's privilege, and it is one of the main rewards, along with being student at the same time.[21]

Remain Mindful of the Privilege of My Position as a Teacher

I wasn't present when this sentiment was formulated, so I want to be very careful about how I use the term privilege.[22] Privilege is a coin of at least two-sides. The English word *privilege* is derived from Latin *privilegium*, meaning a law for just one person. On the one hand privilege is defined by the Cambridge English Dictionary as "an advantage that only one person or group of people has, usually because of their position or because they are rich."[23] One might add that privilege could be derived from one's race, class, gender or any of a number of factors that contribute to or underlie social stratification [13]. The position could be derived from authority or expertise. Physicians are privileged to be able to do many things that are not permitted for persons who lack a license to practice medicine. To be a teacher is a privilege. I have the power (within limits) to decide what goes into the curriculum and set criteria for students to pass. Privilege in this sense comes with the responsibility to do a good job, recognizing that privilege can be abused, pimping being just one example. However, this dictionary, unlike some others, includes another definition: "an

[21] The issue of academic rewards for teaching will be addressed in Chap. 10 on promotion.

[22] As I write this (June 2020), the country is convulsed in response to an outrageous example of police brutality that reflects both police- and white-privilege.

[23] https://dictionary.cambridge.org/us/dictionary/english/privilege. Accessed 6-8-2020.

opportunity to do something special or enjoyable." These two definitions can be combined. For example, Carola Eisenberg wrote a commentary written in response to her experience as a dean for student affairs hearing comments from students about attending rounds in which the faculty complained about all the problems they faced, and that medicine wasn't fun anymore and maybe they would encourage choosing another profession. She wrote: "It stands the world on its head to suggest that the liabilities of a career in medicine outweigh the assets. Of course, there are major problems in the delivery of medical care, and we ought to be in the vanguard of those seeking solutions to them. But to lose sight of just how lucky we are to have a profession in which we do well for ourselves by doing well for others reflects a puzzling loss of perspective. The satisfaction of being able to relieve pain and restore function, the intellectual challenge of solving clinical problems, and the variety of human issues we confront in daily clinical practice will remain the essence of doctoring, whatever the changes in the organizational and economic structure of medicine" ([14], p. 1113). Much the same can be said of being a teacher. True, teaching may not be compensated monetarily in the research-intensive university, our opportunity to teach depends on our position as faculty wherever the money comes from. In addition, we have the satisfaction of being able to reduce ignorance and help students learn what they need to know to be good physicians. To see a concept finally click in a student's face is wonderful. In addition, figuring out how to best help students is indeed an intellectual challenge and solutions bring immense feelings of accomplishment.[24] Not everyone gets to do this on a regular basis. I am very lucky to be able to do this.

[24] Perhaps my most difficult teaching challenge involved a project that I was doing at another VA medical center. I was asked to run a quality improvement collaborative to help in the implementation of a particular clinical and administrative initiative. No problem, I thought. I have done this before and have taught about quality improvement to many different types of audiences. Not. When I arrived, I was met with a group of teams who had no interest whatsoever in the project. Morale was in the toilet. There was little trust in the administration by staff of all types. For the most part, I was met with blank stares. Teams weren't even talking with each other. I tried approach after approach to get their interest, but no success. Finally, I came upon an idea. An unusually high proportion of the staff were veterans. I chose to appeal to something that I thought would appeal specifically to veterans. Since there were concerns about the medical center's leadership, I talked about the importance of leadership at lower levels of the organization regardless of what was going on at the top. I used the example of Joshua Chamberlain, Colonel of the 20th Maine Regiment in the Union Army who just before the Battle of Gettysburg began, he was able to convince a large group of mutineering soldiers from another regimen to pick up their muskets and join the fight. I showed a clip from the movie Gettysburg with Jeff Daniels playing the part of Chamberlain. It was an incredibly moving speech, admittedly made more moving by the musical score. Anyway, I did notice that the audience was paying attention. After this 6-min clip was done, there was complete silence. Then conversations broke out at every table. When people got back after a break, they were ready to work. It was wonderful and the rest of this meeting and subsequent ones over 18 months, things went well. I still reflect on this and how good I felt at the time.

Parenthetically, I learned about this story from a book. I was in the Dallas-Fort Worth Airport waiting for a flight home and I needed some reading material. There was no bookstore, just a newsstand with snacks and a few books—thrillers, pot boilers, self-help books, none of which was in the least bit appealing. I did come across something called "The leadership moment: Nine true stories of triumph and disaster and their lessons for us all" by Michael Useem. It was the best of a bad lot or so I thought. I started reading it in the plane and just couldn't stop. It is one of the best books on leadership I have every read.

Actively Engage to Support the ~~learning organization~~ Enterprise

My problem with the original statement is not that I disagree with the idea of using teaching as a means for helping my organization learn from its experience and improve. I would be fine if the sentiment were something like 'commit to improving the organizations and systems in which I teach.' My problem is with the term "learning organization" or its healthcare version "learning healthcare system" [15, 16]. To me, it is just more management jargon. Peter Senge popularized the term saying that a learning organization is a place "where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to see the whole (reality) together" ([17], p. 1). It sounds wonderful, but though many organizations claim they are learning organizations, my own included, they are so far from being learning organizations that the use of the term is just non-sensical. The term has spawned thousands of academic and lay publications, a journal of that name, and an Institute of Medicine Panel. Some of the characteristics are so far from where we are that they are laughable. For example, "In a learning health care system, incentives are actively aligned to encourage continuous improvement, identify and reduce waste, and reward high-value care" [18]. The disconnect between the volume of literature and actual work on the ground makes me suspicious that the term is used as a branding device and a distraction. This is not the first such term nor will it be the last.[25] In addition, much of the focus in on technology [19] and I think when all is said and done, we had best create an environment that fosters our humanity.

Maintain Humanism in Teaching as in the Rest of My Professional Life

Nothing could be more important. Our students and patients are humans with all the foibles associated with being human; they are not machines. Similarly, we are human beings. Humans have value and they need to be respected. Humanism "emphasizes the value and agency of human beings, individually and collectively" [20]. What applies to patients applies to students. They have agency [21]. That means respect for our students and respect for our colleagues. This means being willing to demonstrate vulnerability and that we teachers are not fundamentally different from our students or patients. I bring in examples from my own life. The following is a story I tell: Several years ago, my wife had a stroke. She was

[25] The VA and many other institutions are in the midst of official initiatives to become high reliability organizations. This has supplanted the learning organization initiative. Who knows what will come next.

hospitalized and for a couple of days, things were going fine. She recovered her function. However, when she was undergoing a follow-up CT scan, she had a seizure and a respiratory arrest. I was blissfully unaware of this as I was driving to visit her. I got a call from the ICU nurse who told me what happened and that she had been resuscitated quickly and was doing OK, but they had decided that she should be transferred to a tertiary hospital—the (world famous) Cleveland Clinic—and they were going to do so via air ambulance, and I should go there to see her in the neurosurgery ICU. I managed to reverse direction without crashing the car and headed to the Clinic. When I arrived in a daze and not having a clue where the ICU was, I tried to read the signs, but the Clinic is a huge place and I was wandering around and then I saw a familiar face, that of the only neurologist at the Clinic that I know. She saw me and said: Oh Dave, I heard about your wife, and I will be part of the team taking care of her. Let me take you to her. The feeling of relief was incredible. I felt that I could breathe for the first time since learning of the situation. It was the *human* connection that did it. I got more the next day when on the way to visit, I ran into an endocrinologist I know. He wasn't involved in her care, but somehow seeing someone I knew and respected made me think that everything would turn out OK. I tell this to students so they understand what they can do for patients, and we should always practice that way. This year I experienced the basis for what will be another story, this time about a patient. One day, I got a phone call from this person. He told me that I had taken care of him 3 years previously for a tumor that seemed to be benign, although it was impossible to be certain. He had just been told that it was malignant and had spread. He said I was so good to him that he wondered if I would be willing to take care of him now. I said of course and I saw him the following day. He told me that any time he talks to me he leaves feeling better and feeling that come what may, things will work out. The thing is, I had no recollection of seeing him 3 years before.

Although respect for a person's value and agency is important in acute situations,[26] when the professional is the expert, it is even more important when dealing with chronic disease where the patients have to be experts on their condition [22]. It is in this subjective experience that the humanity of medicine lies. Just as the subjective experience contributes to the individuality of every person, it contributes to the individual of every student and every teacher. If we are to find that humanity, we must start by recognizing the humanity of our students.

[26] The behavior of physicians and other health care professionals in the face of COVID19, providing emotional support when patients were not allowed to have visitors has been remarkable.

References

1. The oath of Hippocrates of Kos, 5th century BC. https://www.aapsonline.org/ethics/oaths.htm. Accessed 4 Jun 2020.
2. Eden AR, Opland J. Bartolommeo Eustachio's De Auditus Organis and the unique murder plot in Shakespeare's Hamlet. N Engl J Med. 1982;307(4):259–61.
3. Osler W. The student life. Valedictory address to students at McGill University, April 1905. Selected Writings by Sir William Osler. Oxford: Oxford University Press; 1951.
4. Ornt DB, Aron DC, King NB, Clementz LM, Frank S, Wolpaw T, Wilson-Delfosse A, Wolpaw D, Allan TM, Carroll M, Thompson-Shaheen K. Population medicine in a curricular revision at Case Western Reserve. Acad Med. 2008;83(4):327–31.
5. Meza JP, Provenzano A. Understanding pimping as a rite of passage: an enduring cultural practice in medical education. MedEdPublish. 2015;4:9.
6. Brancati FL. The art of pimping. JAMA. 1989;262(1):89–90.
7. Kost A, Chen FM. Socrates was not a pimp: changing the paradigm of questioning in medical education. Acad Med. 2015;90(1):20–4.
8. Reifler DR. The pedagogy of pimping: educational rigor or mistreatment? JAMA. 2015;314(22):2355–6.
9. McCarthy CP, McEvoy JW. Pimping in medical education: lacking evidence and under threat. JAMA. 2015;314(22):2347–8.
10. Brookfield SD. Becoming a critically reflective teacher. New York: John Wiley & Sons; 2017.
11. Wright S. Pimping in bedside clinical education: questioning style of attending physicians and associations with learners' evaluations. Med Res Arch. 2019;7(11).
12. Wear D, Kokinova M, Keck-McNulty C, Aultman J. RESEARCH BASIC TO MEDICAL EDUCATION: pimping: perspectives of 4th year medical students. Teach Learn Med. 2005;17(2):184–91.
13. Lenski GE. Power and privilege: a theory of social stratification. Chapel Hill: UNC Press Books; 2013.
14. Eisenberg C. It is still a privilege to be a doctor. N Engl J Med. 1986;314(17):1113.
15. Garvin D, Building A. Learning organization. Harv Bus Rev. 1993;71(4):75–85.
16. Olsen LA, Aisner D, McGinnis JM, editors. Institute of Medicine (US) roundtable on evidence-based medicine, the learning healthcare system: workshop summary. Washington, DC: National Academies Press; 2007. http://www.ncbi.nlm.nih.gov/books/NBK53494/. Accessed 8 Jun 2020.
17. Peter M. Senge, the fifth discipline. New York: Doubleday; 1990. p. 1.
18. McGinnis JM, Stuckhardt L, Saunders R, Smith M, editors. Best care at lower cost: the path to continuously learning health care in America. Washington, DC: National Academies Press; 2013.
19. Budrionis A, Bellika JG. The learning healthcare system: where are we now? A systematic review. J Biomed Inform. 2016;64:87–92.
20. https://en.wikipedia.org/wiki/Humanism#:~:text=Humanism%20is%20a%20philosophical%20stance,human%20beings%2C%20individually%20and%20collectively.&text=It%20views%20humans%20as%20solely,in%20relation%20to%20the%20world. Accessed 8 Jun 2020.
21. Sullivan M. The patient as agent of health and health care: autonomy in patient-centered care for chronic conditions. Oxford: Oxford University Press; 2016.
22. Lorig K. Self-management of chronic illness: a model for the future. Generations. 1993;17(3):11–4.

Chapter 7
To Mentor

The delicate balance of mentoring someone is not creating them in your own image, but giving them the opportunity to create themselves. (Steven Spielberg)[1]

Mentor himself was not a mentor. Even though I had read the Odyssey, albeit more than 50 years ago, this came as something of a surprise. Mentor was "Odysseus' friend-in-arms to whom the king, sailing off to Troy, committed his household, ordering one and all to obey the old man and he would keep things steadfast and secure."[2] The advisor of Odysseus' son Telemachus was actually the goddess Athena who appeared to him in many guises, one of which was as Mentor. According to A. Roberts, the idea for Mentor as advisor came from a sixteenth Century book, Les Adventures de Telemaque by Francois de Salignac de La Mothe-Fenelon, a French mystic, religious writer and educator [1]. Now Mentor is synonymous with an experienced and trusted advisor able to provide wise counsel. People remember their mentors who constitute a major influence on their careers. For example, 43% of the Kober Medal recipients of the Association of American Physicians (an award for high achievement in research in medicine) referred to their mentors, by name [2]. Many studies have shown that those in academic medicine at all levels from student to senior faculty cite the importance and influence of their mentors; mentorship has been cited as an important influence on personal development, career guidance, career choice, and research productivity, including publication and grant success [3]. Mentors seem to be particularly important for women and underrepresented minorities [4, 5].

[1] https://www.brainyquote.com/quotes/steven_spielberg_584069#:~:text=Steven%20Spielberg%20Quotes&text=The%20delicate%20balance%20of%20mentoring%20someone%20is%20not%20creating%20them,the%20opportunity%20to%20create%20themselves. Accessed 6-10-20.

[2] Homer. The Odyssey. Robert Fagles translation.

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8_7

Mentors do many things for those to whom they provide mentoring.[3] Chopra et al. suggested that there are four archetypes—the traditional mentor defined by a "formal, dynamic and reciprocal relationship in a work environment between themselves and a novice aimed at promoting the career growth of both;" coach[4] who teaches people how to improve a particular skill or subject; sponsor who is committed to the development of an individual; and connector [6]. Tobin identified seven roles of a mentor: teacher, sponsor, advisor, agent, role model, coach, and confidante [7]. Others have emphasized different combinations or changes in the proportions over time [8]. The only things that people seem to agree on are that mentoring is important and that there is a shortage of them [9, 10]. This shortage derives from competing demands, resources, training, and interest [11].

I have benefited greatly from having mentors to whom I could go to for advice, counsel, reassurance, and sometimes emotional support. My mentors have provided different proportions of Tobin's seven roles and I have needed different roles at different times. Most of the time these mentoring relationships have lasted for years; sometimes they didn't work out when a fundamental conflict arose. It would be easy to say it was always the mentor's fault in the case of conflict, but that is not true.[5] Sometimes, I just lived longer. There is a huge literature on traditional mentoring in both in academic medicine and academia at large, so there are many examples readily available [12]. Most of my mentors have been in the traditional dyadic mode with older and more academically senior faculty.[6] There are, however, other systems of mentoring. In peer or near-peer mentoring, the participants are at the same (or very close to the same) career stage or age, but where one has more experience than the other in a particular area and can fulfill some of Tobin's roles. This can be dyadic or there can be peer mentoring groups with faculty at the same stage supporting each other [13, 14]. These groups can be facilitated by a more senior individual [15]. Peer mentoring can occur at any career stage and sometimes it evolves into a true partnership. One of my mentors was the same age as me,[7] though he was at a more

[3] I dislike the term mentee, though I find myself using it. According to Merrill Perlman, the term goes back at least to 1916 when a report by a Dartmouth professor said that the University of Michigan's School of Engineering had a system: "Each instructor (called a 'mentor') has ten students (called 'mentees') and retains the same ones throughout the course." Older terms such as protégés have fallen out of favor. She wrote: "A 'protégé' by any other name may not smell as sweet, but please don't call yourself a 'manatee' (as has been done), gentle beast though it is." Perlman M. Columbia Journalism Review April 2011. https://archives.cjr.org/language_corner/mentee_fresh.php. Accessed 6-10-20.

[4] A great deal of print has been devoted to the differences between a mentor and a coach. The increase seems to be associated with the degree to which executive and personal coaching have become commercially viable.

[5] There is a large literature on the problems that can develop in a mentoring relationship.

[6] One of them was Dr. Murray Altose was Chief of Staff. He is among the wisest people I know. That is not to say that we always agree. Hardly. However, I have learned much from him about leadership. He is one of the few people to whom I gave a copy of my first book—Complex Systems in Medicine.

[7] I think I was a few months or maybe 1 year older.

advanced stage of his career both academically and administratively. Jonathan Ravdin became Chief of Medicine at the Cleveland VA Medical Center while I was a staff physician and researcher. Soon thereafter, I became his Associate Chief of Medicine. He became a mentor, especially as a sponsor, advisor, and agent. He made sure that when he, as Chief, was invited to a national meeting of the Medical Service Chiefs, he had me come along. This connected me both directly and indirectly to people around the country; my name became known. I learned a great deal from him and worked together to make major improvements in quality of care and education. When he left to take a position as Chairman of Medicine, I was left to be Acting Chief of Medicine and I was ready. When he left, he gave me a textbook with an inscription that described what the relationship had become—a partnership (Fig. 7.1).

I have been a mentor to many students, medical residents, and faculty. Being a mentor is one of the most fulfilling parts of my job. In fact, I don't like to consider it part of my job; it is part of who I am [16].[8] There are few things better that to see someone you mentored succeed and exceed what you yourself have done. I went to the ceremony where one of my former fellows and still someone I mentor was awarded an endowed chair. Sure, it was nice to hear her speech when she talked about me and my impact on her career. It was nice to be placed at her table in the reception. It was also nice when I walked past the Dean who had been assigned to another table when she said: "Dave, you train 'em good." But mostly it was wonderful to see her recognized for her achievements.[9] At the wedding reception of another person for whom I was a mentor, her new husband who I barely knew escorted me to different tables, introducing me to her parents and other relatives as Dr. Aron, his wife's mentor.[10] How can you beat that?

My approach to mentoring has always been one to one. I have been on mentoring teams, but when the team met together, it was usually about a specific research project. I save the real mentoring for individual conversations. The mentoring relationship did not begin de novo. I first worked or interacted with those who I have mentored in some other capacity, such as teaching, being a ward or clinic attending,

[8] In 2020, I received the award for Graduate Student Teaching and Mentoring from the business school and 2021, I received the School of Medicine's Award for Mentoring. Cool!

[9] When I was considering the job for Associate Chief of Medicine, I called my uncle who had been an oceanography researcher and gave up the lab (and boat) to become an administrator of a large government laboratory. I asked him how he was able to make that change. He gave me some of the best advice I ever received. He said if you can take pleasure in the success of those who work for you as much or more than your personal success, then take the job. If not, then not. I did take that job and never regretted it.

[10] I had known Anne since she was a medical student and had been a mentor at least since residency. She became a fellow in the second class of the VA Quality Scholars program. Some years later, after she had moved, the program was opened to new sites. She was the director of that site. It happened to be my birthday on the day of one of our national teleconferences with all the sites participating on Zoom. My fellows had thrown a party and the place was decorated accordingly. During the conference, numerous birthday wishes appeared in the chat box. Then one came from her site, saying: "Happy birthday from your grandchildren."

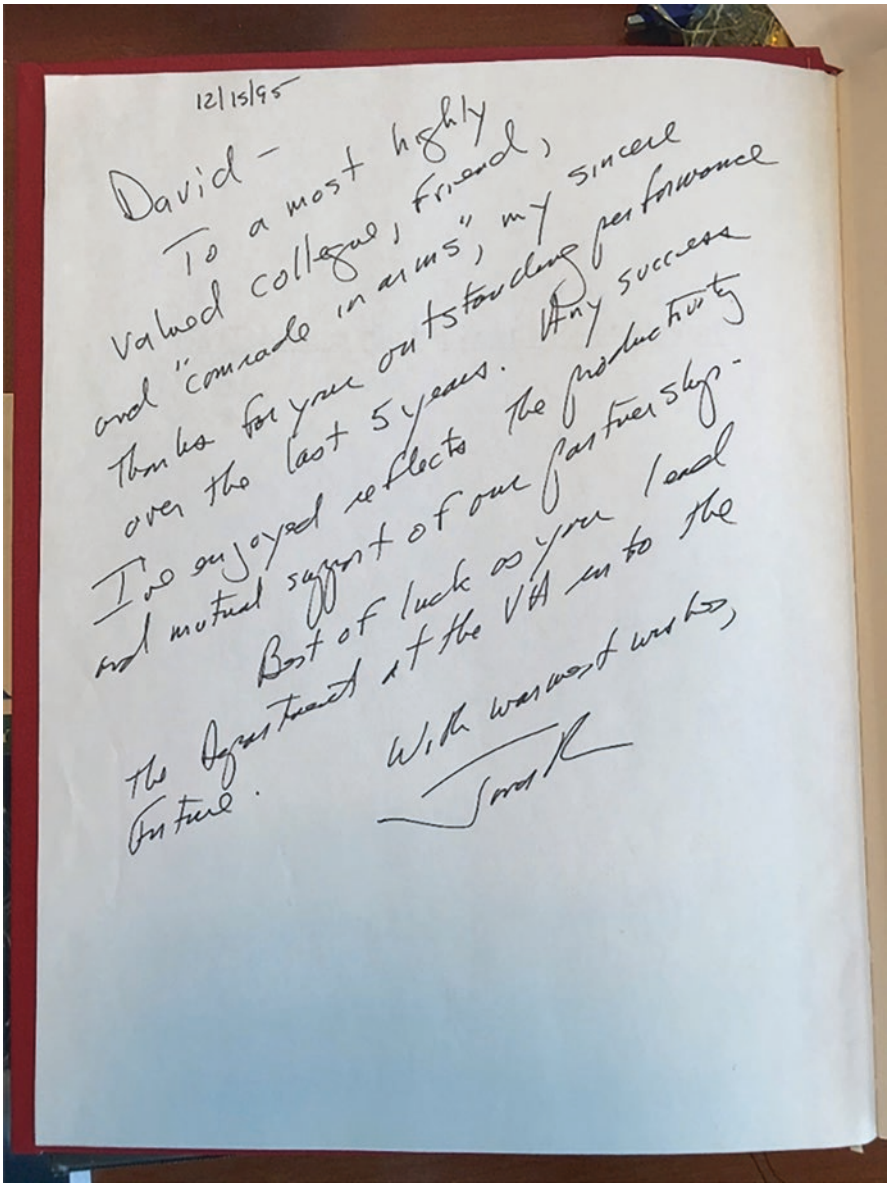


Fig. 7.1 Inscription written on the inside of a book

or fellowship program director. The idea of being assigned as a mentor to someone I never met strikes me as odd, something like arranged marriage. It can work, but it is not really my cup of tea [17]. The idea of speed mentoring which is akin to speed dating doesn't appeal to me either [18]. Nor does e-mentoring, though I certainly make use of email and other digital technologies in established relationships.

The importance of mentoring is reflected in the extent of the literature on the topic; a search on Google Scholar for the term "mentoring" yielded more than one million references. There are systematic reviews and lists of factors which facilitate mentoring and factors which are barriers to or result in dysfunctional mentoring and reviews of the ethical issues in mentoring [3, 19]. The importance of mentoring is also reflected in the development of formal mentoring programs. I have had experience with one of these. An NIH initiative in the form of Clinical and Translational Science Awards (CTSA) to train new researchers began in 2006. Part of the program involved mentored research grants (KL2) and to obtain an award, applicants were required to demonstrate how mentors would be trained and evaluated [20, 21]. In the CTSA program at Case Western Reserve University, each KL2 fellow is assigned two mentors—a research mentor and a career mentor. I have been a career mentor for several of them. There is also a mentoring committee which reviews the career development plans and progress of the fellows. I have been assigned as a career mentor for several fellows. I was supposed to meet with them on a regular basis and review their career development plans and progress and serve in whatever mentoring roles were required. Frankly, some of these relationships never really developed and I rarely met with or even talked to the fellow. In some, especially those in which I had known the fellow previously, e.g., when she was an internal medicine resident, it was a real mentoring relationship which has continued long after she became a faculty member (and continues today). The relationship developed when I was able to meet a real need of the fellow for advice, especially by providing a more objective view than could be done by the fellow's research mentor. As a member to the program's mentoring committee which is responsible for reviewing all of the fellows (and mentors), my experience is similar to that of others. The relationship depends upon the interactions; that relationship emerges and cannot be predicted with any accuracy from knowledge of each of the dyad alone. It is non-linear. This is characteristic of a complex system.

Although I view mentorship as an emergent phenomenon that develops from the non-linear interactions of adaptive agents (individuals)—a complex adaptive system [22, 23]—academic science seems to have real difficulty with this. Most research is focused on the individual level—the mentors or those they mentor [24]. There are great efforts to provide step-wise guides to the process, make expectations explicit, and develop quantitative measures. We now have tools to assess mentoring, contracts between the two parties specifying the expectations for all involved, and formal development programs [25–27]. There is probably something to be said for all of these, but what is at the core of a mentoring relationship is humanity, individual and shared, and this is not something that can or, perhaps, even should be quantified.[11] In fact, if you need a contract when establishing a mentoring

[11] It is said that if you can't measure it, you can't manage it, but there are many things that are important that cannot be measured, yet still have to be managed. Moreover, it may be a misquotation of W. Edwards Deming who in The New Economics actually wrote: "It is wrong to suppose that if you can't measure it, you can't manage it—a costly myth." It would seem that Deming actually meant the opposite of what the shortened version maintains. https://blog.deming.org/2015/08/myth-if-you-cant-measure-it-you-cant-manage-it/. Accessed 6-12-20.

relationship, I wouldn't be optimistic about the future of that relationship.[12] All of that said, mentors have been critical to my career and I have tried to have a positive impact on those I mentor. If there are any lessons that I have drawn from my experience they are to seek out a mentor whether you think you need one or not; it is easier to take advice after a relationship is established, and to recognize your own limitations as a mentor: you can't put in what God's left out[13] and you should be willing to refer someone to another person if you find yourself on shaky ground and are not at least somewhat confident about the advice you are giving. As I approach retirement, the proportion of my day that involves mentoring has steadily increased. And that is a good thing, a very good thing.

References

1. Roberts A. Homer's mentor. Duties fulfilled misconstrued. 1999. https://nickols.us/homers_mentor.pdf. Accessed 10 Jun 2020.
2. Barondess JA. A brief history of mentoring. Trans Am Clin Climatol Assoc. 1995;106:1–24.
3. Sambunjak D, Straus SE, Marušić A. Mentoring in academic medicine: a systematic review. JAMA. 2006;296(9):1103–15.
4. Ortega G, Pichardo MS. The significance of mentorship. In: Sanchez N, editor. Succeeding in academic medicine. Cham: Springer; 2020. p. 79–87.
5. Chapman D, Wilkerson A, editors. From student to scholar: mentoring underrepresented scholars in the academy. London: Springer Nature; 2020.
6. Chopra V, Arora VM, Saint S. Will you be my mentor?—Four archetypes to help mentees succeed in academic medicine. JAMA Intern Med. 2018;178(2):175–6. Citing: Roch GR. Much ado about mentors. Harv Bus Rev. 1979;5(1):14–20.
7. Tobin MJ. Mentoring: seven roles and some specifics. Am J Respir Crit Care Med. 2004;170(2):114–7.
8. Krishna LK, Renganathan Y, Tay KT, Tan BJ, Chong JY, Ching AH, Prakash K, Quek NW, Peh RH, Chin AM, Taylor DC. Educational roles as a continuum of mentoring's role in medicine—a systematic review and thematic analysis of educational studies from 2000 to 2018. BMC Med Educ. 2019;19(1):439.
9. Pololi LH, Evans AT, Civian JT, Vasiliou V, Coplit LD, Gillum LH, Gibbs BK, Brennan RT. Mentoring faculty: a US national survey of its adequacy and linkage to culture in academic health centers. J Contin Educ Health Prof. 2015;35(3):176–84.

[12] This reminds me of the scene in the musical Jersey Boys about Frankie Valli and the Four Seasons when Frankie Valli and Bob Gaudio come to an agreement about how they will share revenues derived from the songs they write and performances. Gaudio said that he would have a contract drawn up. Valli sticks out his hand to shake Gaudio's hand, saying 'where I come from, this is all you need.' And they continue to stick to that agreement long after they went their separate ways. It also reminds me of one of Simone's Maxims: "The longer and more detailed the written offer to a new faculty recruit, the more likely both sides will be unhappy." Simone JV. Simone's Maxims Updated and Expanded: Understanding Today's Academic Medical Centers, Editorial Rx Press, N. Fort Myers FL, 2012, p81. Although not completely on point, it does support the idea that more detail implies an underlying distrust. In addition, this gave me an excuse to cite Simone's book which has a wealth of pithy and colorful sayings and is not only practical, but also great fun to read.

[13] I wish I had made this up, but it comes from the movie Chariots of Fire and is uttered by the athletics coach Sam Mussabini.

10. Kashiwagi DT, Varkey P, Cook DA. Mentoring programs for physicians in academic medicine: a systematic review. Acad Med. 2013;88(7):1029–37.
11. Chong JY, Ching AH, Renganathan Y, Lim WQ, Toh YP, Mason S, Krishna LK. Enhancing mentoring experiences through e-mentoring: a systematic scoping review of e-mentoring programs between 2000 and 2017. Adv Health Sci Educ. 2020;25(1):195–226.
12. Johnson WB. On being a mentor: a guide for higher education faculty. Milton Park: Routledge; 2015.
13. Bland CJ, Taylor AL, Shollen LS, Weber-Main AM, Mulcahy PA. Faculty success through mentoring. Lanham, MD: Rowman & Littlefield Education; 2009.
14. DeCastro R, Sambuco D, Ubel PA, Stewart A, Jagsi R. Mentor networks in academic medicine: moving beyond a dyadic conception of mentoring for junior faculty researchers. Acad Med. 2013;88(4):488–96.
15. Bussey-Jones J, Bernstein L, Higgins S, Malebranche D, Paranjape A, Genao I, Lee B, Branch W. Repaving the road to academic success: the IMeRGE approach to peer mentoring. Acad Med. 2006;81(7):674–9.
16. Janssen S, van Vuuren M, de Jong MD. Motives to mentor: self-focused, protégé-focused, relationship-focused, organization-focused, and unfocused motives. J Vocat Behav. 2014;85(3):266–75.
17. Jackson VA, Palepu A, Szalacha L, Caswell C, Carr PL, Inui T. "Having the right chemistry": a qualitative study of mentoring in academic medicine. Acad Med. 2003;78:328–34.
18. Ramani S, Thampy H, McKimm J, Rogers GD, Hays R, Kusurkar RA, Schumacher DJ, Kachur EK, Fornari A, Chisolm MS, P. Filipe H. Twelve tips for organising speed mentoring events for healthcare professionals at small or large-scale venues. Med Teach. 2020;42:1322–9.
19. Cheong CW, Chia EW, Tay KT, Chua WJ, Lee FQ, Koh EY, Chin AM, Toh YP, Mason S, Krishna LK. A systematic scoping review of ethical issues in mentoring in internal medicine, family medicine and academic medicine. Adv Health Sci Educ Theory Pract. 2020;25(2):415–39.
20. Blixen CE, Papp KK, Hull AL, Rudick RA, Bramstedt KA. Developing a mentorship program for clinical researchers. J Contin Educ Health Prof. 2007;27(2):86–93.
21. Feldman MD, Huang L, Guglielmo BJ, Jordan R, Kahn J, Creasman JM, Wiener-Kronish JP, Lee KA, Tehrani A, Yaffe K, Brown JS. Training the next generation of research mentors: the University of California, San Francisco, clinical & translational science institute mentor development program. Clin Transl Sci. 2009;2(3):216–21.
22. Jones R, Brown D. The mentoring relationship as a complex adaptive system: finding a model for our experience. Mentor Tutor. 2011;19(4):401–18.
23. Jones R, Corner J. Seeing the forest and the trees: a complex adaptive systems lens for mentoring. Hum Relat. 2012;65(3):391–411.
24. Eby LT, Allen TD. Moving toward interdisciplinary dialogue in mentoring scholarship: an introduction to the special issue. J Vocat Behav. 2008;72(2):159–67.
25. Ng YX, Koh ZY, Yap HW, Tay KT, Tan XH, Ong YT, Tan LH, Chin AM, Toh YP, Shivananda S, Compton S. Assessing mentoring: a scoping review of mentoring assessment tools in internal medicine between 1990 and 2019. PLoS One. 2020;15(5):e0232511.
26. Huskins WC, Silet K, Weber-Main AM, Begg MD, Fowler VG Jr, Hamilton J, Fleming M. Identifying and aligning expectations in a mentoring relationship. Clin Transl Sci. 2011;4(6):439–47.
27. Anderson L, Silet K, Fleming M. Evaluating and giving feedback to mentors: new evidence-based approaches. Clin Transl Sci. 2012;5(1):71–7.

Chapter 8
To Serve

Academic Politics Are So Vicious Because the Stakes Are So Small[1]

Like many faculty members in clinical departments, my salary comes from the healthcare system in which I work and not the medical school. Though I am a professor of medicine and teach in the medical school, I don't get any salary from the medical school. Nevertheless, that still means that I serve two masters—my healthcare system (the Veterans Healthcare Administration) and the university. Sometimes their goals are aligned and sometimes they are not. Nevertheless, I perform service

[1] This famous phrase or one of its variants has been attributed to different people such as Henry Kissinger and Laurence J. Peter. It has sometimes been referred to as Sayre's Law after a Columbia University professor. The history of the sentiment goes back much further, perhaps to Samuel Johnson referring to an academic commentator or 'scholiast' in his preface to a 1765 edition of Shakespeare's plays. He wrote: "It is not easy to discover from what cause the acrimony of a scholiast can naturally proceed. The subjects to be discussed by him are of very small importance; they involve neither property nor liberty; nor favour the interest of sect or party. The various readings of copies, and different interpretations of a passage, seem to be questions that might exercise the wit, without engaging the passions… But whether it be, that small things make mean men proud, and vanity catches small occasions; or that all contrariety of opinion, even in those that can defend it no longer, makes proud men angry; there is often found in commentaries a spontaneous strain of invective and contempt, more eager and venomous than is vented by the most furious controvertist in politicks against those whom he is hired to defame." Quoted from Mr. Johnson's Preface to His Edition of Shakespeare's Plays by Samuel Johnson, Page lvii, Printed for J. and R. Tonson, H. Woodfall, J. Rivington, etc., London. 1765, (Google Books) and Richard B. Schwartz After the Death of Literature by, Quote Page 12 and 13, Published by Southern Illinois University Press, Carbondale, Illinois. (Questia: Gale, Cengage Learning) 1997 https://quoteinvestigator.com/2013/08/18/acad-politics/. Accessed 6-16-20.

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8_8

to both and deal with conflicts the best I can.[2] Service has many dimensions for medical school faculty. Some consider service to be anything other than one's own research. Being a ward or clinic attending is considered clinical 'service.' However, there is a great deal that faculty do which is necessary for the institutional work of the university and which does not fall into the categories of research, teaching, or clinical practice [1]. Some of this work takes place within the university—internal service—and some beyond the walls—external service.[3] This chapter focuses on internal service which has been defined as "service to the institution as a means to conduct institutional business and service to the discipline as a means to maintain disciplinary associations and their work. Internal service supports the internal functioning of the academic profession and higher education as a whole and is tied to the premise of shared governance" [1, p. iv].

Internal service is one dimension of organizational citizenship: "individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and in the aggregate promotes the efficient and effective functioning of the organization"[2, p. 4]. Much of which is manifest in committee work and universities and medical schools have plenty of committees [3]. The Case Western Reserve University Faculty Handbook which is considered to the 'constitution' of the university list a number of committees of the faculty senate: Executive Committee, Nominating Committee, Finance Committee, Committee on Graduate Studies, and Committee on Undergraduate Education, as well as ad hoc committees. This list doesn't include what for faculty is probably the most important committee, the Committee on Academic Promotions and Tenure. The medical school has another set of committees including the Committee on Medical Education and its own promotions committee, as well as a faculty council. Without faculty service, the work of this committees would not occur. I have served on a couple of them and have attending the meetings of some others. I have been struck by how seriously faculty take their jobs, seriously to the point of absurdity.

The medical school consists of a number of academic departments. Each department has representatives on the faculty council. So far so good. There are currently three departments of medicine, each one housed in one of the affiliated medical

[2] Ultimately, I always choose the side of VHA; you dance with the one who "brung ya" as my Medical Center Director used to say. The principle is that someone should pay proper fealty to those who have gone out of their way to look after them. Jill: Hey, did you see that hot guy who just walked in? Jane: Easy, Jill. Your boyfriend is over there by the bar. You've gotta dance with the one that brought you. I will describe an example of conflict in the chapter on faculty promotion. https://www.urbandictionary.com/define.php?term=dance%20with%20the%20one%20that%20brought%20you There are also many variations of the saying, although the principle is the same. https://en.wiktionary.org/wiki/dance_with_the_one_that_brought_you. Accessed 6-16-20.

[3] External service will be described in the chapter on reaching beyond the walls.

centers.[4] However, one of those medical centers, the Cleveland VA Medical Center, was not organized by departments, but rather by 'services.' Staff at the VA could have faculty appointments, but these were routed through the relevant department at University Hospitals of Cleveland (UHC). For many years, this made sense. Residents from UHC rotated through the VA, while residents at CCF and MetroHealth were separate. Many of the VA staff were part-time VA and part-time UHC. However, over time, things changed for a variety of reasons[5] and those at the VA (including me) felt increasingly marginalized. Since VA faculty made major contributions to the medical school, we wanted our own members of the Faculty Council.[6] The issue was brought up to the Faculty Council, where it, i.e., the concept, was approved to increase the VA's representation on Faculty Council by adding six representatives to represent the School of Medicine faculty based primarily at the VA. Of course, the devil is in the details, so it was referred to the Bylaws Committee. About six months later, a specific proposal was presented to the entire Faculty Council for a vote. The proposal stated: "In the absence of departments, full-time faculty members based at the Louis Stokes Cleveland VA Medical Center shall democratically elect six representatives as voting members of Faculty Council." The VA would group its faculty by services: Medicine/Primary Care, Surgery/Anesthesia, Research, Neuropsychiatry (Neurology, Psychiatry, Psychology), and Diagnostic Services (Pathology and Laboratory Medicine, Radiology). The VA would elect one person to represent each of the six service areas. And then the fun began, at least if you find vehement disagreement about trivial issues to be entertaining.

You would think that this was an attempt to amend the U.S. Constitution. In the discussion, it was noted that it might cause confusion to refer to VAMC representatives as department representatives, as they are not, strictly speaking, departmental representatives. Heavens to Murgatroyd! Confusion? Faculty, the vast majority of whom have doctoral degrees, would be confused? Another comment was that the six "service areas" are not currently defined as organizational units and the number is arbitrary. Since there are 14 services at VAMC, six representatives could actually be too few. If instead they created academic departments, it would remove the

[4] There are a variety of structuring medical schools and their related hospitals. Sometimes the school owns the hospital; sometimes the hospital owns the medical school; and sometimes they are independent but collaborate based on an affiliation agreement. In this latter case, there may be multiple affiliated hospitals and they may have equal status, or one may be considered the primary affiliate. For many years University Hospitals of Cleveland served as the primary affiliate for CWRU. Other affiliated hospitals included MetroHealth Medical Center (formerly Cleveland Metropolitan General Hospital), St. Luke's Hospital and Mt. Sinai Hospital (now both closed), the Cleveland Clinic Foundation, and the VA Medical Center.

[5] These changes reflected increasing estrangement between VA faculty and the medicine department chair at UHC. In addition, an increasing proportion of VA faculty were full time VA. This resulted not only from that estrangement, but also from clinical demands and other factors.

[6] Each hospital had a representative and departments had representatives so that UHC had a hospital representative plus members from the departments of medicine, surgery, obstetrics & gynecology, radiology, etc.

subjectivity, should, down the road, six prove to be too few and eight are warranted. Since establishing academic departments is a major undertaking and involves actions such as creating a department promotions committee and since some of these services have few CWRU faculty, this criticism seemed more designed so that the VA would have no representation. You could say I am too cynical, but another Council member commented that for the number of faculty at the VA, six representatives would be an overreach and perhaps two would be more appropriate. Another argued that creating VAMC representatives provided an additional avenue of Faculty Council service not available to full time faculty at other affiliates. This is true as far as it goes, but would it be so terrible? If other affiliates wanted to do this, they could follow the same process. It seemed that the most vociferous opposition came from representatives from basic science departments. I can only speculate that they were concerned about being outvoted by those in clinical departments. There were various motions made, seconded, and discussed related to specific wording with a few points of order tossed in for good measure. After the wording changes were approved, the question was posed as to why can't the faculty at the VA decide how the six representatives for the VA are chosen? There was concern that because medical service was by far the largest, it would get too many representatives unless it was restrained. Eventually, the whole thing came up for a vote and the motion passed by 26 in favor, 8 opposed, and 1 abstention. The next step involved going to the full faculty for a vote.

There are the usual complaints about committees: the time commitment, the inefficiency of meetings, the (conflicting) egos and agendas of the members, having one's opinions challenged, the variable degree to which committee members actually do committee work where the Pareto Principle applies,[7] and others.[8] Notwithstanding these complaints, university and medical school committees provide faculty with opportunities to be good organizational citizens. While organizational citizenship has often been viewed from an individual perspective[9] of burden, it can also contribute to meaningfulness of work, especially when you are working on an issue that is important to you [5]. It can also serve as a means to achieve a higher position in the organization. This of course can be self-serving, but it can also provide a platform from which one can promote a worthwhile agenda. For example, one of my younger colleagues has been a member of the Faculty Senate Committee on Women joined the medical school's committee on faculty development and

[7] Also referred to as "the law of the vital few," it is an observation that 20% of the inputs account for 80% of the outputs. In other words, on any committee about 20% of the members will do 80% of the work. You can figure out for yourself what the 80% of members are doing. https://www.juran.com/blog/a-guide-to-the-pareto-principle-80-20-rule-pareto-analysis/#:~:text=The%20Pareto%20Principle%2C%20also%20known,%25%20of%20your%20results%2Foutcomes. Accessed 6-16-20.

[8] One of Simone's Maxims states: Members of most institutional committees consist of about 30% who will work at it despite the pressures and 20% who are idiots, status seekers, or troublemakers (Simone JV. Simone's maxims updated and expanded: Understanding today's academic medical centers. Editorial Rx Press. 2015, p. 11).

[9] It has also been viewed from an organizational perspective. See: Bolino et al. [4].

diversity. She eventually became interim dean for the school's office of faculty development and diversity.[10] Some of my most meaningful work has occurred in committees, especially in the committee dealing with the revision of the medical school curriculum. I got to work with interesting people, some of whom I didn't know previously. Even those whom I knew, I got to know better. In addition, the changes in the curriculum were enormous and this presented some very interesting problems for which we had to provide solutions. In addition, as a result of this committee, I became the co-chair for the committee planning the first six-week block of the curriculum. This block focused on the social and behavioral context of healthcare, something that couldn't be more different from the old curriculum which started with biochemistry [6]. In addition, new methods of education were used that required that I learned many new topics [7].

References

1. Ward K. Faculty service roles and the scholarship of engagement. ASHE-ERIC Higher Education Report. Jossey-Bass Higher and Adult Education Series. San Francisco, CA: Jossey-Bass; 2003.
2. Organ DW. Organizational citizenship behavior: the good soldier syndrome. Lexington Books/DC Heath and Com. 1988;
3. Farris D. Organisational citizenship behaviour in university administrative committees. J High Educ Policy Manag. 2018;40(3):224–38.
4. Bolino MC, Klotz AC, Turnley WH, Harvey J. Exploring the dark side of organizational citizenship behavior. J Organ Behav. 2013;34(4):542–59.
5. Spector PE. Introduction: The dark and light sides of organizational citizenship behavior. J Organ Behav. 2013;34(4):540–1.
6. Ornt DB, Aron DC, King NB, Clementz LM, Frank S, Wolpaw T, Wilson-Delfosse A, Wolpaw D, Allan TM, Carroll M, Thompson-Shaheen K. Population medicine in a curricular revision at Case Western Reserve. Acad Med. 2008;83(4):327–31.
7. Wolpaw TM, Hull AL, Wilson-Delfosse AL, Dannefer EF, Wolpaw DR, Isaacson JH, Papp KK, Bierer SB, Ornt DB. Case Western Reserve University School of Medicine and Cleveland Clinic. Acad Med. 2010;85(9):S439–45.

[10] Dr. Usah Stiefel's linked in profile reads as follows: Stiefel also has a longstanding interest in career advancement for women faculty. Since 2008, she has been a member of the Steering Committee of the Women Faculty of the School of Medicine (WFSOM) at Case Western and served as the President of this organization from 2012 to 2014. In this capacity she has planned and executed multiple professional development workshops for both women and men faculty colleagues. She is also a longstanding member of the Faculty Senate Committee on Women. Dr. Stiefel is a 2010 recipient of the WFSOM Junior Faculty Professional Development Award, a 2015 recipient of the Toyoko S. Yamashita Award for outstanding service to the women faculty, and in 2015, was also recognized with an appointment as the Vice-Chair for Diversity and Faculty Development for the Department of Medicine at Case Western Reserve University. https://www.linkedin.com/in/usha-stiefel-32a850104. Accessed 6-16-20.

Chapter 9
To Discover

If I have seen further, it is by standing upon the shoulders of giants. (Isaac Newton)[1]

The real voyage of discovery consists not in seeking new landscapes, but in having new eyes. (Marcel Proust)[2]

If there is one activity that defines the modern university it is scholarship. Scholarship has been defined in different ways, but generally, it refers to the creation, organization, dissemination, and application of knowledge [1]. At least in the universities with which I have been affiliated (Columbia, UCSD, USCF, University of Michigan, and CWRU), scholarly activity has tended to be defined in terms of research. This is also true of Stanford as described in Donald Kennedy's book Academic Duty [2]. Since these are all "research universities," that is not surprising. Nevertheless, I think that this is also true for academic medicine at large. In his groundbreaking book, Scholarship Reconsidered: Priorities of the Professoriate, Ernest Boyer noted that university reward structures did not match the full range of academic functions and proposed a more inclusive view of what it meant to be a scholar. He argued that knowledge is acquired through research, through synthesis, through practice and through teaching [3]. He proposed four domains of scholarship: discovery, integration, application, and teaching, and that each receive academic recognition. Others have parsed things differently.[3] [5, 6], My take on this is that in the end, they all

[1] https://www.bbc.co.uk/worldservice/learningenglish/movingwords/shortlist/newton.shtml. Accessed 6-16-20.

[2] 'La Prisonnière', the fifth volume of 'Remembrance of Things Past'.

[3] For example, Weiser wrote of Oregon State University that "four forms of scholarship are described: discovery of new knowledge; development of new technologies, materials, and uses; integration of knowledge leading to new understanding; and artistry that creates new insights and interpretations." What is particularly interesting to me is the statement that the University "recognizes that teaching, research, and extension are vital university activities-that are not scholarship in themselves, but that can each involve creative, communicated, peer-validated scholarship in any of its several forms (discovery, development, integration, artistry)." What kind of research would not be scholarly and still deserve the title of research? [4].

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8_9

involve creation of new knowledge, albeit of different types. The scholarship of discovery is most aligned with the traditional view of research as the creation of new knowledge. The scholarship of integration involves synthesis of information, especially across disciplines and which in so doing creates knowledge. This is seen today, in the focus of the NIH on interdisciplinary research.[4] The scholarship of application, which has also been termed the scholarship of engagement involves using disciplinary expertise to address problems, especially, though not exclusively, beyond the walls of the university. Here, identifying how problems can be solved in one particular venue constitutes a new finding. Similarly, the scholarship of teaching and learning involves systematic evaluation of teaching and learning such that findings can be shared. Among the characteristics of scholarship is it can be documented, peer reviewed, and replicated or elaborated [4, 8].

One thing is very clear: although there is a lot of talk about different kinds of scholarly activity, what counts when it comes to faculty reward systems is not research, but funded research, especially funded by the NIH. (It would be fairer to say research published in high ranking journals and funded by NIH. Toss in that the research is patentable and commercializable and you have a trifecta.[5] National Science Foundation was OK too. When I was a junior faculty member, I had research funding as a principal investigator, but it was from the VA. When it came to promotion, this was not considered to be sufficient evidence of being an independent investigator. It was not considered to be "national" funding. I assumed that this term was meant to downgrade funding from local organizations.[6] That the VA was a national organization didn't seem to impress anyone. It is true that a higher percentage of VA grants than NIH grants got funded, but it was never a slam dunk. Still, what the medical school valued was NIH funding.[7] In fact, an issue of the alumni magazine had an article entitled "Million dollar professors feted" which described a dinner at the Ritz Carlton Hotel for the thirty three faculty members who brought in $1 million or more in the 1998–1999 academic year.[8] This is not to say that these

[4] https://commonfund.nih.gov/Interdisciplinary/overview. Accessed 7-22-21 and Mabry et al. [7]. Parenthetically, the distinction between multidisciplinary, interdisciplinary, and transdisciplinary is the subject of a large growing literature.

[5] Horse-racing bet in which the first, second, and third place finishers are chosen in the correct order, but now applied more generally.

[6] I also had funding from the local Diabetes Association of Greater Cleveland.

[7] Part of the motivation is prestige; part and most of it is the fact that NIH grants come with substantial funds to cover indirect costs, i.e., costs of research not covered in the grant's direct costs, e.g., cost of the facility, library, etc.; and it would be churlish of me not to admit that getting the NIH's imprimatur is a statement that the research is worthwhile.

[8] There were guest speakers from the offices of the governor and one of Ohio's senators. All honored faculty members received etched ice buckets (Medical Bulletin of Case Western Reserve University School of Medicine 5(4): 1999/2000). I remember when i saw this. I recalled the year that I received the schools top teaching award—the Kaiser-Permanente Award for Excellence in Teaching. I was taken out to dinner to a very nice and expensive restaurant, but I was taken out by two leaders from Kaiser-Permanente Healthcare System, not the Dean or anyone from the medical school.

professors didn't do good or important research. Their peers on the study sections thought they did. Rather, it was just an unusually blatant example of $ = prestige. Where does this leave those who are most interested in clinical teaching, i.e., teaching of medical students and physician trainees (and other health care professionals)? First, let us consider what are discovery and research. Merriam-Webster defined research as "studious inquiry or examination, especially: investigation or experimentation aimed at the discovery and interpretation of facts, revision of accepted theories or laws in the light of new facts, or practical application of such new or revised theories or laws."[9] Research is defined by federal regulations as "a systematic investigation, including development, testing, and evaluation, designed to develop or contribute to generalizable knowledge"[10] The term generalizable is not defined in the regulation,[11] though presumably it means that the intended use of the research findings can be applied to populations or situations beyond that studied. For me, this is not a limiting definition, since I always try to be systematic and learn things that can be applied in other situations.[12] This is no less true in the classroom when I teach, than it is when I see patients.

Discovery is the act of detecting something new, or something previously unrecognized as meaningful. The word discover is derived from the Old French descovrir meaning uncover, unroof, unveil, reveal, betray, which is in turn derived from Latin roots for "opposite of" (dis) and cover (cooperire).[13] Thus discovery is "the act of becoming aware of something previously existing but unknown" [10, p. 31]. With reference to sciences and academic disciplines, discovery is the observation of new phenomena, new actions, or new events and providing new reasoning to explain the knowledge gathered through such observations with previously acquired knowledge from abstract thought and everyday experiences.[14] A discovery may sometimes be based on earlier discoveries, collaborations, or ideas. Some discoveries represent a radical breakthrough in knowledge or technology.[15] Clinical teachers no less than basic scientists should always be on the alert for discovery. I did my endocrinology fellowship in San Francisco from 1978–1980. I remember that we were consulted on some patients with abnormal thyroid function tests, though that was the least of their problems. They were young gay men who were just wasting away. It was their cachexia that accounted for the abnormal thyroid tests. We had nothing to offer them and other than noting that these cases were unusual, we didn't make much of it. In retrospect, it is obvious what they had—AIDS. However, AIDS wasn't "discovered"

[9] https://www.merriam-webster.com/dictionary/research. Accessed 6-17-20.

[10] 45CFR46.102.

[11] I have contacted the Office of Human Research Protections a couple of times requesting a definition, but I never got a response, much less an answer.

[12] I think that this ambiguous definition contributes to the problem of whether some project or activity constitutes human subjects research, but more about institutional review boards in a later chapter. See: Kirsh et al. [9].

[13] https://www.etymonline.com/word/discover. Accessed 6-17-20.

[14] The philosophy of scientific discovery is an entire field in itself.

[15] https://en.wikipedia.org/wiki/Discovery_(observation).

until 1981 when two reports appeared. One described a series of cases of an opportunistic infection—pneumocystis carinii pneumonia—in five young, white, previously healthy gay men in Los Angeles.[16] Another came from New York describing a cluster of a rare and unusually aggressive cancer—Kaposi's sarcoma—among gay men.[17] Like many of us in San Francisco, we saw but did not observe.[18] The truth was veiled by something of which we were unaware. Some people don't have the perspicacity to lift the cover while others do not want the cover lifted or don't believe there is a cover.[19] [11, 12], Keep an open mind about the possibility of veils.[20]

References

1. Halpern DF, Smothergill DW, Allen M, Baker S, Baum C, Best D, Ferrari J, Geisinger KF, Gilden ER, Hester M, Keith-Spiegel P. Scholarship in psychology: a paradigm for the twenty-first century. Am Psychol. 1998;53(12):1292.
2. Kennedy D. Academic duty. Harvard University Press; 1997.
3. Boyer EL. Scholarship reconsidered: priorities of the professoriate. Lawrenceville, NJ: Princeton University Press; 1990.
4. Weiser CJ. Faculty scholarship and productivity expectations—an administrator's perspective. HortScience. 1997;32(1):37–9.
5. Johnston R. The university of the future: Boyer revisited. High Educ. 1998;36(3):253–72.
6. Hyman D, Gurgevich E, Alter T, Ayers J, Cash E, Fahnline D, Gold D, Herrmann R, Jurs P, Roth D, Swisher J. Beyond Boyer: The UniSCOPE model of scholarship for the 21st century. J High Educ Outreach Engagem. 2010;11:41–65.
7. Mabry PL, Olster DH, Morgan GD, Abrams DB. Interdisciplinarity and systems science to improve population health: a view from the NIH Office of Behavioral and Social Sciences Research. Am J Prev Med. 2008;35(2):S211–24.
8. Diamond RM, Adam BE, editors. Recognizing faculty work: reward systems for the year 2000. New Directions for Higher Education, No. 81, p. 5–23.
9. Kirsh S, Wu WC, Edelman D, Aron DC. Research versus quality improvement: distinct or a distinction without a difference? A case study comparison of two studies. Jt Comm J Qual Patient Saf. 2014;40(8):365–75.
10. Noé K. The structure of scientific discovery: from a philosophical point of view. In: Progress in discovery science. Berlin, Heidelberg: Springer; 2002. p. 31–9.

[16] As a medical resident had seen cases of pneumocystis carinii pneumonia in patients with lymphoma or who had been treated with high doses of glucocorticoids, both conditions of immunocompromise.

[17] Amazingly these reports were made the same day—June 5, 1981. https://www.hiv.gov/hiv-basics/overview/history/hiv-and-aids-timeline. Accessed 6-17-20.

[18] In "A Scandal in Bohemia," by Arthur Conan Doyle, Watson tells Sherlock Holmes: "When I hear you give your reasons," I remarked, "the thing always appears to me to be so ridiculously simple that I could easily do it myself, though at each successive instance of your reasoning, I am baffled until you explain your process. And yet I believe that my eyes are as good as yours." "Quite so," responded Holmes. "You see, but you do not observe. The distinction is clear…".

[19] Consider the resistance to the concept of the heliocentric solar system.

[20] Another topic that is related to discovery is creativity. McLeish makes the argument that creativity in science is very similar to the creativity in music and poetry [13].

11. Kuhn TS. The structure of scientific revolutions, vol. 2. The University of Chicago Press; 1962. p. 90.
12. Barber B. Resistance by scientists to scientific discovery. Science. 1961;134(3479):596–602.
13. McLeish T. The poetry and music of science: comparing creativity in science and art. Oxford University Press; 2019.

Chapter 10
To Publish

The secret is comprised in three words— Work, Finish, Publish. (Michael Faraday)[1]

My first experience with a scientific publication was decidedly unpleasant. I had written a case report and review article and it was fun to pore through the library doing the necessary background reading.[2] My first "real" scientific paper was based on the work that I had done in my first year in the laboratory: Aron DC, Muszynski M, Birnbaum RS, Sabo SW, Roos BA. Somatostatin elaboration by monolayer cell cultures derived from transplantable rat medullary thyroid carcinoma: Synergistic stimulatory effects of glucagon and calcium. Endocrinology. 1981 Dec 1;109(6):1830–4. It was not exactly a page turner, but it was solid work. Dr. Bernard Roos was my mentor and head of the lab. Dr. Birnbaum was a lead scientist who taught me the practical aspects of working in the lab. Ms. Muszynski and Mr. Sabo were laboratory technicians who taught me a tremendous amount as well.[3] I wrote up a first draft and Bernie ripped it to shreds, appropriately, I think. He wrote all manner of comments on the draft. This was in the days when we used actual typewriters, so every revision required a new draft. That was fine so I made revisions and he wrote all manner of comments on that one. This process went on for a total of 23 drafts. (I was so frustrated that I was counting them.) By the end of the process, I didn't care if I ever wrote another paper. Anyway, the paper got accepted after some

[1] Advice to the young William Crookes, who had asked him the secret of his success as a scientific investigator, as quoted in Michael Faraday (1874) by John Hall Gladstone, Section IV: His Method of Working, p. 123.

[2] This was in the late 70s well before libraries had become mostly digital. It was before PubMed and Google Scholar, so research involved using the Index Medicus, a bibliographic database started in 1879 primarily of scientific journal articles. By the seventies, it had many volumes and articles were indexed by subject (author too if I remember correctly). For the year 1968 the cumulation required five thick volumes totaling 8924 pages. (An Abbreviated Index Medicus. JAMA. 1969;210 (12):2272–2273.) It took a lot of effort to find things.

[3] From early on, I have taken an expansive view of what constitutes authorship. (see Chap. 11).

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8_10

changes required by the journal reviewers and I was on my way to an academic career. However, it took me a while to get over the experience. So why publish at all? It certainly wasn't because it was fun at the beginning.

To publish is to make public and it originally meant "the act of making publicly known," from Old French publicacion (14c.). Meaning "the issuing of a written or printed work" is first recorded 1570s; as the word for the thing so issued, from 1650s [1]. The invention of a printing press that incorporated moveable type in ~1450 led to an explosion in written publications. Two hundred years later, the first academic journals were established. Priority is usually given to the *Journal des sçavans* (later spelled *Journal des savants*) which first appeared on January 5, 1665. Two months later on March 6, the British Philosophical Transactions of the Royal Society appeared. However, peer review was not part of their process and only came into use in the eighteenth century when it was introduced to scholarly publication in 1731 by the Royal Society of Edinburgh [2, 3]. For many years, scientific inquiry was mainly a leisure activity in the purview of those who had independent means. Few scientists had academic appointments.[4] Publication might establish priority, but it also might serve a social function [4, 5]. The idea of using publications as a criterion for academic appointments dates to the late Eighteenth Century Prussian universities [6]. Today, publications are the coin of the realm in academic life and a major determinant of success; the phrase "publish or perish" goes back at least 100 years [7].

The coin of the academic realm is made of all manner of currency from the 24K gold publication in a top journal like Nature or Science to the 18K publications in well-respected journals like JAMA or New England Journal of Medicine to 14K publications or reputable society-sponsored journals (like the official publications of the Endocrine Society) to the 10K publications from lower ranked journals to the debased coinage of "throwaway journals" [9],[5] and the counterfeit predatory journals [11].[6] My university's template for CVs separates peer-reviewed articles from others; scholarship is validated by peer review. When I look at my CV, I have a mix

[4] In fact, the term scientist was only invented after a challenge from the poet Samuel Taylor Coleridge attending the third meeting of the British Association for the Advancement of Science in Cambridge. Those who pursued science were usually called (and called themselves) natural philosophers. Coleridge objected since these individuals were empirical men, experimentalists who were digging, observing, mixing or electrifying. They were not philosophers of ideas. Rev. William Whewell, the English polymath and Master of Trinity College, Cambridge suggested that in "analogy with artist we form scientist" [8].

[5] I am sure that the journals rated as <24K would object to their ratings. Also, there is a seemingly large gap between 24K and 18K. I don't think the gap is that large, but I used the typical gold content of wedding rings for my scale. Throwaway" journals in general contain no original investigations, are provided free of charge, have a high advertisement-to-text ratio, are not peer reviewed, and though not cited in peer-reviewed literature, they are widely read, perhaps more widely read than some peer-reviewed journals in the same subject areas [10].

[6] Predatory journals take large fees without providing robust editorial or publishing services. They may advertise peer review, but that generally is not real. I get several emails every single day asking me to send an article to this or that journal which I had never heard of. Often the solicitation begins with a plea: 'We are about to publish next month's issue and find we are short of one article. Please send us an article in any form – editorial, review, case report, etc.'

of 10K, 14K, and 18K publications—nothing to be ashamed of. I have also written book chapters and one book and various odds and ends. So why?

In addition to its being attached to the academic reward system, there are many reasons to publish. There is the satisfaction that comes with accomplishment. I like seeing my name in print. You find out how good you are too. You can build professional networks as others read your work and contact you. You contribute to the world's knowledge on which others can build. It is true as Isaac Newton said: "If I have seen further it is by standing on the shoulders of giants," but some of the giants also had to stand on the shoulders of some of us midgets. You learn a lot in the process (at least I do) both about your own area and the work of others. For me, the learning part is really fun. Being more knowledgeable has enabled me to be a better teacher by being better prepared to answer questions. Sometimes a project will start with writing to sharpen my thinking. Sometimes I am not even sure what will develop in the process, but it is usually an interesting journey.[7] It is often fun to deal with challenges. Although my initial experience with writing a scientific paper was painful, it got better over time, and I now rather enjoy it. That is not to say that is always easy and there are still opportunities for pain, mainly from the peer reviewers and rejections. You do learn from the reviewers' comments on your submission, but rejection is not fun [12].

One of my papers was rejected by six different journals before it was accepted by the seventh journal within 48 h and with no revisions required.[8] This paper described what happened to winners of teaching awards in my department. This all started when I was about to give a presentation to the house staff. In the room was a plaque with the names of the clinical teachers of the year. This was about 15 years after I had gotten the award and about 10 years since I had been told that I would not get tenure. I saw my name on the plaque and the names of many people I knew and was taken about by how few of them were still around. Moreover, the names stopped three years before even though the awards had been given. The old saw about teaching being bad for your career [14] seemed to be real, but I had to be sure and as an academic, that meant doing a study. And it had to be as rigorous as possible. I looked at award winners over a 21-year period compared with contemporaneously non-winning controls. What was remarkable was that at three years, 58% of the award winners had left the department, as compared with 27% of the non-winners ($p = 0.02$, chi square test). So, I wrote up a paper and submitted it to JAMA. I went out for review (only one reviewer I think) but was rejected, though the reviewer's comments were forwarded to me as "constructive criticism." I admit being put off by the reviewer's first comment: "I am not familiar with the idea that a teaching award predicts academic failure." I had to wonder what planet this reviewer was inhabiting, but the rest of the comments which were methodological in nature were

[7] I have always been taken by a quotation of the photographer Garry Winogrand who said: "I photograph to find out what something will look like photographed." He also said: I have a burning desire to see what things look like photographed by me." https://www.photoquotes.com/showquotes.aspx?id=22. Accessed 6-23-20.

[8] One of the papers I am most proud of was rejected by nine different journals [13].

quite reasonable and led me to do another analysis: a Kaplan-Meier survival analysis,[9] which confirmed the finds. I also found that if a winner 'survived' for 8 years they never left. I am in that group so I guess you could say they were 'cured.' Having addressed the reviewer's comments, I decided to send the paper back to JAMA even though it had been rejected—not rejected in its present form (which meant that I could revise and resubmit)—just rejected. Based on my experience with another paper some years earlier (see below), I didn't take no for an answer. However, JAMA meant no and it was rejected immediately. I put the paper in the format for a different well-regarded journal and it was rejected without going out for peer review. This happened three more times. The associate editor of another journal who was an education researcher happened to come to town to give a talk. I knew him by reputation, so I went up at the end of his talk and told him about the study. I gave him a copy of the manuscript which he read and then said. This is terrific. Submit it to the journal. I did and it was rejected without being sent out for review. By now, I just wanted to see it in print. I happened to be going to Chicago for a meeting, so I made the required number of copies and left them in the office of the editor of the journal *Perspectives in Biology and Medicine*. This is a journal I read regularly though it published essays rather than empirical studies.[10] I figured that at least it would get the readership I was looking for and would be cited in Medline. The paper was accepted without revision [16]. I started looking in Medline, but it wasn't listed. I contacted the National Library of Medicine and was able to convince them that it really was a scientific study related to biomedicine and it was listed.[11] However, it has rarely been cited by others, even those who have written about the same general issue. Oh well. However, it did teach me one thing. Success is a matter of persistence: You have to outlast the bastards.[12] This has been my strategy for both papers and grant applications.

[9] Ironic I think. Kaplan Meier survival analysis is typically used in the evaluation of treatment for cancer.

[10] A couple of years ago, I went to a wonderful talk by the brilliant Robert Sapolsky of "A Primate's Memoir fame." He was talking about complexity and paper that he and a graduate student had done. The paper was a brilliant study of the nature of variation. They were unable to get it accepted for publication in traditional scientific journals and got it published by a journal he disparagingly referred to as a kind of a philosophy journal in which as best as he could tell he was the first person under the age of 80 to publish a paper in it. He said it was for somewhat senile demented elderly emeritus professors who were now writing their philosophical pieces because they were not generating data anymore. (https://www.youtube.com/watch?v=_njf8jwEGRo. Accessed 6-30-20.) The paper is: Sapolsky and Balt [15].

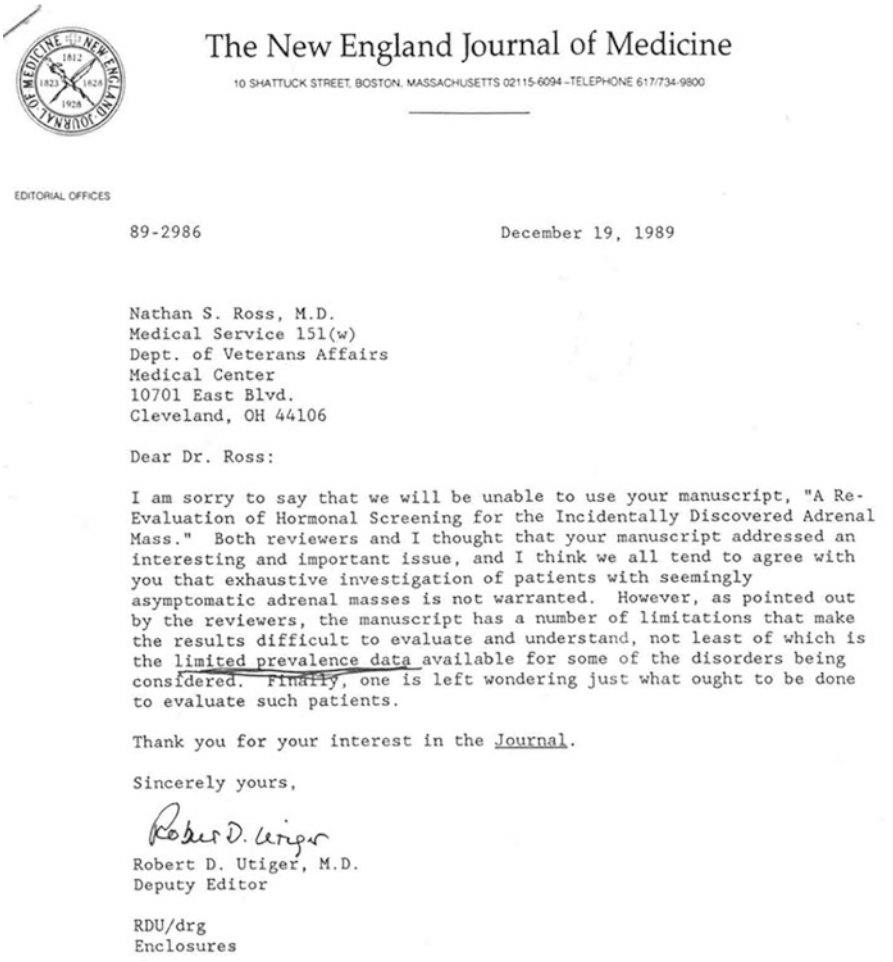
[11] PMID: 10532872 Incidentally, a major reason why winners left was that they felt that the school and department valued research far more than teaching and these values were not aligned with their own. See: Aron et al. [17].

[12] This is really a takeoff of a comment by the physicist Max Planck who said change occurs funeral by funeral. That was the gist of what he said anyway. What he actually said was: "A scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die and a new generation grows up that is familiar with it." https://www.brainyquote.com/quotes/max_planck_101765. Accessed 6-23-20. I like the paraphrased version better.

An example of an unwillingness to accept rejection and persistence turned out to be a sentinel event in my career. I wrote about it in my first book, but since this book will likely have a different audience, I think it is reasonable to repeat it. It began while I was still trying to pursue a laboratory research-based career. A gastroenterology fellow had curb sided a friend of mine who was doing endocrine consults that month. The fellow said that one of his patients had gotten a CT scan and was found incidentally to have an adrenal mass. He asked what he should do about it. The patient had no symptoms related to hormone overproduction. My friend said that recommendations in the literature suggested that the patient be screened for overproduction of all hormones made in the adrenal, but this didn't really make sense; the patient had no symptoms at all and since the diseases resulting from overproduction of these hormones were pretty rare, positive tests were likely to be false positives. He asked me what I thought, and I agreed. However, being academics presented with an interesting question (far more interesting than anything that was going on in either of laboratories), we decided to pursue it. We taught ourselves some clinical epidemiology since neither of us had any training in that discipline. We searched the literature, did some analyses, and wrote up a manuscript which we sent to the New England Journal of Medicine. Not surprisingly, it was rejected. (Fig. 10.1) I have no idea what we were thinking, but we decided not to take no for an answer. Despite the rejection, we revised the manuscript and sent it back. It went back and forth a total of four times before it was accepted. I am better known for that than everything that came out of my lab put together. I ended up being invited to an NIH State of the Science Conference where I met someone from Europe interested in the topic. We became both collaborators and friends. Just as important and perhaps more so, I found that I liked doing this kind of research much more than the laboratory; this started a major change in my career trajectory which has had all kinds of positive effects.

The reviewer is always right; even when they are wrong [18].

I have gotten my share of reviews that were nasty or just plain stupid (more about this in the chapter on rejection.). For example, I did a study to determine the prevalence of a particular pituitary-related side effect of a drug. Up until that time there, had been four case reports published and one study done in rats. I submitted the paper to the Journal of General Internal Medicine. The paper was rejected. No big deal. I believe that if you are successful with the first journal you pick, you haven't aimed high enough. However, one comment really struck me: "This paper describes a known side effect of a drug. It does provide information about the prevalence and severity, but the importance of these should not be exaggerated." I couldn't believe what I was reading. I showed it to a friend who was one of the associate editors of the journal and she just turned away in embarrassment. It certainly raised a question about the adage. This is something that I have had to learn. If a reviewer doesn't get it and thinks something is unclear, it doesn't matter even if you know in your heart that it is crystal clear. It was not clear to that reviewer and if you want your paper published, you have to make it clear to the reviewer. That said, since I gave talks about the pituitary gland around the country, I made a slide of that comment and



The New England Journal of Medicine

10 SHATTUCK STREET, BOSTON, MASSACHUSETTS 02115-6094 – TELEPHONE 617/734-9800

EDITORIAL OFFICES

89-2986 December 19, 1989

Nathan S. Ross, M.D.
Medical Service 151(w)
Dept. of Veterans Affairs
Medical Center
10701 East Blvd.
Cleveland, OH 44106

Dear Dr. Ross:

I am sorry to say that we will be unable to use your manuscript, "A Re-Evaluation of Hormonal Screening for the Incidentally Discovered Adrenal Mass." Both reviewers and I thought that your manuscript addressed an interesting and important issue, and I think we all tend to agree with you that exhaustive investigation of patients with seemingly asymptomatic adrenal masses is not warranted. However, as pointed out by the reviewers, the manuscript has a number of limitations that make the results difficult to evaluate and understand, not least of which is the limited prevalence data available for some of the disorders being considered. Finally, one is left wondering just what ought to be done to evaluate such patients.

Thank you for your interest in the Journal.

Sincerely yours,

Robert D. Utiger

Robert D. Utiger, M.D.
Deputy Editor

RDU/drg
Enclosures

Fig. 10.1 NEJM rejection letter

included it in my talking, stating that this was the dumbest reviewer's comment that I ever received.[13] I figured that someday, that SOB would be in the audience. I should point out that I am a reviewer too. I try not to be nasty, but I am sure that some of the authors think I am a moron [19, 20].

You will never write because you have no Sitzfleisch. (Grace Paley)[14]

[13] The paper was accepted at the next journal I went to. Unfortunately, since then, I have gotten others that rival that one in stupidity.

[14] Grace Paley quoting her father. From Bach and Hall [21] and https://www.bbc.com/worklife/article/20180903-to-have-sitzfleisch%2D%2D-its-a-professional-compliment. Accessed 6-19-20.

I have worked with many students, fellows, and junior faculty, helping them to write papers for publication and grant applications. It is rarely a smooth process for them or me. There are the heavy planners who need everything worked out in advance and that mental work is often prevented by competing demands, so they never put pen to paper [22]. There are also procrastinators who can always find an excuse not to get started. One problem I run into is that junior faculty are under the mistaken impression that publishing is part of their job. It is both part of their job and not part of their job. There is almost always something else going on during the "standard" workday. Most of the successful faculty I know don't write during the day. Writing is for nights and weekends. One of my friends gets up at 4 AM every day to write for three hours before the workday. There are data that faculty members do many of their journal (and peer review) submissions during 'out of work hours'. [23] This is something I just assumed was the way things were and that I would have to sacrifice some family time to make it in academia, probably a generational attitude. I get a lot of push back from junior faculty about this. Imagine! Wanting a family life and personal time.[15]

One essential attribute of those who publish is sitzfleisch. "Literally translated, sitzfleisch means 'sitting meat' or 'sitting flesh'—in other words, a term for one's behind or bottom. But this German word has strong connotations in the working world, where it implies a great deal more than just the physical part of the body you sit on. To have sitzfleisch means the ability to sit still for the long periods of time required to be truly productive; it means the stamina to work through a difficult situation and see a project through to the end." [26] Writing is not always fun, even for me. There are plenty of times I have been stuck and just have to work through it. In addition to feeling stuck, novice writers can experience anxiety, confusion, lack of control, fear and other negative feelings [27]. As a teacher, it is part of my job to help them through it. One of the strategies I regularly use, both in my own writing and with my junior colleagues is the SFD or 'shitty first draft'. Ernest Hemingway said: "All first drafts are shit."[16] That may or may not be true, but it helps to explain to them that it is more important to get something, anything, down on paper (or in a Word document), than to wait until you are ready to write a perfect version. A SFD gives you a starting point so you can get some concrete feedback. After all, "anything not worth doing is worth not doing well."[17] If your idea is lousy, better not to waste your time on it. There are other methods to address scriptural inertia such as peer writing groups with or without a more senior mentor, but I have never used them [28, 29]. Related to this problem is the unwillingness to submit for publication until the manuscript is perfect. I can think of a couple of colleagues who were afflicted by this problem. They revised and revised through more than a dozen

[15] Times have definitely changed. Work-life balance is given far more priority among those in the current generation than we did fifty years ago. See: Bresman [24] and Mercer [25]. This is not a bad thing.

[16] https://annerallen.com/2018/11/authors-give-thanks-with-inspiring-writing-quotes/. Accessed 6-19-20.

[17] Robert Fulghum, All I Really Need to Know I Learned in Kindergarten.

drafts. This didn't help their productivity, nor did it help them when it came to promotion. The fact is that manuscripts are never perfect. I have never reviewed a paper in which I couldn't identify something that could be improved.

> *You need two kinds of publications on your CV. One for the members of the promotions committee who can read and one for those who can count.*[18]

What to publish? One answer to this relates to instrumental goals, i.e., promotion and tenure. The answer to this question depends upon your goals. If you want to get tenure, then at a minimum, you need to be able to demonstrate that you are a nationally recognized independent investigator. This typically involves some number of peer reviewed scientific papers in reputable journals in which you are the first or senior author and your mentor is not one of the authors. (See Chap. 17 on promotions and tracks.) A related issue is the topic on which you are writing. Some things are viewed more favorably than others. Although there is considerable variation about this, I have found that what is most highly valued by promotions committee members, deans, and department chairs are scientific papers that describe mechanisms as opposed to phenomenology [30]. Quantitative studies are valued more than qualitative studies. Those are the publications for members of the promotions committee who read. Invited chapters in well regarded textbooks and reviewed articles are useful for the counters. If you not in the tenure track, then peer-reviewed publications in general are helpful, but all kinds of papers in reputable journals are good, along with a textbook chapters, review articles, and even case reports. Not surprisingly, in a survey of academics, older and tenured respondents were less likely to value journal prestige and metrics such as total number of publications or publications per year than their more junior colleagues [31]. How things will change with the proliferation of other means of dissemination and communication, e.g., podcasts, I don't know, but I think that peer review will still be key.

Another consideration to consider, and perhaps the most important one, is writing on something that you consider important for others to know, something that will make a difference. Unfortunately, the "best way to build an academic reputation is through high theory and sophisticated quantitative analysis, not the difficult and time consuming process of actually changing something" [32 p. 42]. This was written about academia in general. I am not sure that it applies to biomedicine, although in a sense, mechanism is explanatory theory. However, it sure does apply in the business school where I have an adjunct appointment. There the top journals are published by the Academy of Management. I have to say that in all the years that I was an administrator and manager, it never occurred to me to look at that literature. I said something very similar about the health services research literature [33]. Now that I have read some of the papers, I know that they wouldn't have helped. That is not to say that there aren't interesting papers in those journals. There are. However,

[18] I wish I could take credit for this, but I think someone told me. It does remind me of a joke about a student at the ten items or less express line in a supermarket in Cambridge, Massachusetts. He had fifteen items and the cashier remarked: well, either you are from MIT and you can't read, or you are from Harvard and you can't count.

there is a great deal of material that seems to be written only for a very limited group of cognoscente. I am not alone in this view [34, 35]. Underlying the problem is the well-known mismatch between the research priorities of academics and the needs of practitioners. There is also a great deal of research that can be considered wasteful based on inappropriate designs, unrepresentative or small samples, incorrect methods of analysis, and faulty interpretation [36, 37].Nevertheless, I do try to be provocative, aiming at practitioners and policy makers rather than other researchers [38]. In fact, once I have written about a topic, I tend to get bored and move on to something else. I readily admit that it is much easier for me, occupying a secure vantage point, to do this. That is one of the satisfactions of being an *old* academic.

References

1. https://www.etymonline.com/word/publish.
2. Burnham JC. The evolution of editorial peer review. JAMA. 1990;263(10):1323–9.
3. Spier R. The history of the peer-review process. Trends Biotechnol. 2002;20(8):357–8.
4. David DP. Banks, The Birth of the Academic Article: Le Journal des Sçavans and the Philosophical Transactions, 1665-1700. Sheffield: Equinox, 2017. ASp la revue du GERAS. 2017;1(72):131–3.
5. Gross AG, Harmon JE, Reidy M, Reidy MS. Communicating science: the scientific article from the 17th century to the present. Oxford University Press on Demand; 2002.
6. Clark W. Academic charisma and the origins of the research university. University of Chicago Press; 2008.
7. Hansson SO. Why publish at all? Theoria. 2018;84(1):1–3.
8. Snyder LJ. The philosophical breakfast club: four remarkable friends who transformed science and changed the world. Broadway Books; 2011.
9. Rennie D, Bero LA. Throw it away, Sam: the controlled circulation journals. AJR Am J Roentgenol. 1990;155(4):889–92.
10. Rochon PA, Bero LA, Bay AM, Gold JL, Dergal JM, Binns MA, Streiner DL, Gurwitz JH. Comparison of review articles published in peer-reviewed and throwaway journals. JAMA. 2002;287(21):2853–6.
11. Clark J, Smith R. Firm action needed on predatory journals. BMJ. 2015;350:h210.
12. Wang Y. Blind dates in sciences: dealing with rejection in peer review. Circ Res. 2014;114(6):944–6.
13. Pukk K, Aron DC. The DNA damage response and patient safety: engaging our molecular biology-oriented colleagues. Int J Qual Health Care. 2005;17(4):363–7.
14. Stossel TP. Volume: papers and academic promotion. Ann Intern Med. 1987;106(1):146–9.
15. Sapolsky R, Balt S. Reductionism and variability in data: a meta-analysis. Perspect Biol Med. 1996;39(2):193–203.
16. Aucott JN, Como J, Aron DC. Teaching awards and departmental longevity: is award-winning teaching the “kiss of death” in an academic department of medicine? Perspect Biol Med. 1999;42(2):280–7.
17. Aron DC, Aucott JN, Papp KK. Teaching awards and reduced departmental longevity: kiss of death or kiss goodbye. What happens to excellent clinical teachers in a research intensive medical school? Med Educ. 2000;5(1):4313.
18. Eva KW. The reviewer is always right: peer review of research in Medical Education. Med Educ. 2009;43(1):2–4.
19. Durning SJ, Sklar DP, Driessen EW, Maggio LA. “This manuscript was a complete waste of time”: reviewer etiquette matters. Acad Med. 2019;94(6):744–5.

20. Yarris LM, Gottlieb M, Scott K, Sampson C, Rose E, Chan TM, Ilgen J. Academic primer series: key papers about peer review. West J Emerg Med. 2017;18(4):721.
21. Bach G, Hall BH, editors. Conversations with Grace Paley. Jackson, MS: University Press of Mississippi; 1997. p. 236.
22. Richards JC, Miller SK. Doing academic writing in education: connecting the personal and the professional. Routledge; 2006.
23. Barnett A, Mewburn I, Schroter S. Working 9 to 5, not the way to make an academic living: observational analysis of manuscript and peer review submissions over time. BMJ. 2019:367, 16460.
24. Bresman H. What millennials want from work, charted across the world. Harvard Bus Rev. 2015;2.
25. Mercer C. How millennials are disrupting medicine. Can Med Assoc J. 2018;190(22):E696–7.
26. https://www.bbc.com/worklife/article/20180903-to-have-sitzfleisch%2D%2D-its-a-professional-compliment. Accessed 19 June 2020.
27. Jalongo MR, Saracho ON. From aspiring author to published scholar. In: Writing for publication. Cham: Springer; 2016. p. 3–26.
28. Prendergast HM, Heinert SW, Erickson TB, Thompson TM, Hoek TL. Evaluation of an enhanced peer mentoring program on scholarly productivity and promotion in academic emergency medicine: a five-year review. J Natl Med Assoc. 2019;111(6):600–5.
29. Brandon C, Jamadar D, Girish G, Dong Q, Morag Y, Mullan P. Peer support of a faculty "writers' circle" increases confidence and productivity in generating scholarship. Acad Radiol. 2015;22(4):534–8.
30. Craver CF, Darden L. In search of mechanisms: discoveries across the life sciences. University of Chicago Press; 2013.
31. Niles MT, Schimanski LA, McKiernan EC, Alperin JP. Why we publish where we do: faculty publishing values and their relationship to review, promotion and tenure expectations. PLoS One. 2020;15(3):e0228914.
32. Rhode D. In pursuit of knowledge: scholars, status, and academic culture. Stanford University Press; 2006.
33. Aron DC. Complex systems in medicine: a hedgehog's tale of complexity in clinical practice, research, education, and management. Springer; 2019.
34. Tourish D. Management studies in crisis: fraud, deception and meaningless research. Cambridge University Press; 2019.
35. Tourish D. The triumph of nonsense in management studies. Acad Manag Learn Edu. 2020;19(1):99–109.
36. Altman DG. The scandal of poor medical research. BMJ. 1994;308:308.
37. Glasziou P, Chalmers I. Research waste is still a scandal—an essay by Paul Glasziou and Iain Chalmers. BMJ. 2018;12(363):k4645.
38. Aron DC. No "black swan": unintended but not unanticipated consequences of diabetes performance measurement. Jt Comm J Qual Patient Saf. 2013;39(3):106–8.

Chapter 11
To Tell the Truth

> *In the acquisition of knowledge, scientists are not guided by logic and objectivity alone, but also by such nonrational factors as rhetoric, propaganda, and personal prejudice. Scientists do not depend solely on rational thought, and have no monopoly on it*. (William Broad and Nicholas Wade [1])
>
> *Science is pure, but scientists are human*. (Jim Woodgett)[1]

I didn't meet Vijay Soman when I went to Yale in 1977 to interview for a fellowship in Endocrinology. However, I was familiar with his work on insulin receptors. It had been reported in top journals such as Nature, The New England Journal of Medicine, and The Journal of Clinical Investigation. It was a hot topic in endocrinology at the time and something in which I was very interested. I thank my lucky stars that I was not accepted to Yale's fellowship program, which had been my top choice. I am thankful not only because I ended up at UCSF and met some great people, but also because of what subsequently became public. Had I gone to Yale, it is possible that I would have ended up working with Soman. The long and short of it was that Vijay Soman had fabricated data. It was a major scandal that was covered in the New York Times, as well as scientific journals [2]. It led me to read an excellent book: Betrayers of the Truth, about the topic of scientific fraud [3]. Up until then, I didn't know much about the topic. I thought it was something that was just not done except by evil people and done only rarely.[2] Little did I know how many individuals I would know personally would be involved in serious misconduct, scientific and otherwise.

[1] https://www.theglobeandmail.com/opinion/article-science-is-pure-but-scientists-are-human/. Accessed 6-18-20. I am not sure that science is pure, but scientists are definitely human.

[2] Merton *In 1942, in a now-classic analysis of the ethos of science ("The Normative Structure of Science") the eminent sociologist Robert K. Merton listed among the moral norms by which scientists live "disinterestedness" (the willingness to work to extend knowledge, apart from personal benefit) and "communality" (the free sharing of one's discoveries with others). What makes such altruism possible is the "reward system of science," as Merton later called it: Honor, position, power and money go to those who make discoveries first—and who claim priority by promptly publishing their findings.*

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8_11

Robert Slutsky was one year ahead of me during residency. We were not close, but I remember we played racquetball once or twice. I remember him being a nice guy and very smart. Somehow, he had developed an interest in diabetes and renal disease and had arranged a combined Endocrinology/Nephrology fellowship at Yale, which would start in July 1977. Several weeks before he was to leave for New Haven, he related to several of us fellow house officers a nightmare that he had. He had woken up in the middle of the night in a cold sweat. He had dreamt that he had been trapped in a laundromat. He interpreted this as meaning that he should not go into nephrology. He thought those laundry machines were symbolic of dialysis machines. He let Yale know that would not be coming but gave them little notice. I imagine the program directors were quite annoyed especially because combining two fellowships requires effort and it would be difficult to find others to take those positions.[3] I have no idea if his action affected my chance of getting a fellowship at Yale, but what happened to him was an amazing tale. He was able to arrange for some type of fellowship in nuclear medicine/cardiology at UCSD where we were residents. After that, I moved to San Francisco and lost touch with him and heard nothing until his case hit the press. After fellowship, Slutsky had become a full-time faculty member and by 1985 he was being considered for promotion. He had been having a spectacular career based on the coin of the realm—peer reviewed papers. He had published more than 135 papers, but alas, many of them fraudulent.[4] Much of the story was related in an article published in the New England Journal of Medicine [4].

This would not be my last experience with scientific fraud. Alas, far from it. As a new junior faculty member learning how to do bench research,[5] I learned that a post-doctoral fellow had raised questions about the work of his supervisor, another faculty member in my section. Eventually the university became involved, and an investigation was conducted whose transcript was leaked to the local newspaper (Cleveland Plain Dealer), providing fodder for several days of very misleading headlines and stories. No one was left unaccused or unscathed including the endocrinology section chief, my own mentor, who had not been involved in the research at all. Eventually (in response to the press coverage), the NIH conducted an investigation and exonerated the whistleblower (who had received notice that his faculty position would be terminated) and my mentor. It is a cautionary tale of what happens to whistleblowers. One would have expected better of a university dedicated to truth, but such stories are not uncommon. The details of this sordid story have been published and in addition to those details, the report touches on the emotional cost. The last two sentences of the report state: “Although I am embarrassed to say this, I cannot recommend that junior scientists who discover scientific misconduct blow the whistle. That is, unless they

[3] Hospitals were (and still are) extremely dependent upon residents and fellows to provide care.

[4] By comparison, I have published about 170 peer reviewed papers in my 40-year career.

[5] Among many other things, this involved a great deal of pipetting. It is not surprising that any time you see a report on the news about some research finding there is a background image of someone pipetting.

want to experience immense personal suffering and a possible end to their scientific careers" [5]. I also saw that he was not the only one affected. Fortunately for me, I was not part of the process except as an observer. Years later, I became an unwilling participant.

I was doing some research on attitudes of physicians about osteoporosis and one of the endocrine fellows who had moved back to Spain was interested in collaboration. I designed the survey and administered in the U.S., while he administered it in Spain. The results were not surprising, but they made for what seemed to be a good abstract for presentation at a scientific meeting. It was accepted for a poster presentation at the Endocrine Society, but before the meeting, I received a message from my Spanish collaborator. Apparently, some questions arose in his department, and he was forced to admit that he had fabricated the data. My heart sank. Fortunately, I guess, it was "only" an abstract and it had not been published in an academic journal and it had not been funded by any agency, so I didn't have to worry about fraudulent use of grant money.[6] However, I was appalled by my collaborator's failure (and my naïvete, my willingness to accept on faith what he had sent me). Regardless, I couldn't let it stand. I immediately went to the Chief of Staff at the VA, my direct supervisor and mentor. I told him what had happened. He agreed that I had to be completely up front about this, so I asked him who in addition to officials at the Endocrine Society I needed to notify. That day, I notified my department chair, the dean and the president of the Endocrine Society. Fortunately, there were no repercussions for me, although I had many sleepless nights. That was many years ago, but it seems that now hardly a day goes by when cases of fabrication or suspected fabrication of data are not reported.[7]

Academic misconduct usually refers to research-related activities[8] and covers a very broad area of activity including research misconduct (as defined by federal statute), inappropriate authorship (inclusion or exclusion), plagiarism, use without appropriate permission and attribution of data or materials that belong to others, and failure to disclose conflicts of interest. Research misconduct is defined in the federal code: 42 CFR § 93.103 and means: fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results (Table 11.1).

There are now many books devoted to scientific fraud and research integrity and reams of journal publications [6–10]. There is even a typology of what has been termed "data torturing," i.e., manipulating data until it proves whatever you want it to prove [11]. Universities have responded with codes of ethics, requirements for

[6] In another case, a friend and colleague had submitted a grant application to NIH that included a histological image that purported to be from a rat but was noticed by a reviewer on the study section to be of human origin. There was a big investigation, and he lost his job and was banned from applying to the NIH for funding.

[7] https://www.sciencemag.org/news/2020/06/two-elite-medical-journals-retract-coronavirus-papers-over-data-integrity-questions.

[8] Donald Kennedy makes this point in Academic Duty. There is plenty of non-research-related misconduct in the groves of academe and in medicine in general.

Table 11.1 Research Misconduct 42 CFR § 93.103

(a) Fabrication is making up data or results and recording or reporting them
(b) Falsification is manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record
(c) Plagiarism is the appropriation of another person's ideas, processes, results, or words without giving appropriate credit
(d) Research misconduct does not include honest error or differences of opinion

annual declarations of potential conflicts of interest, and other measures.[9] There have been calls for criminalization of scientific misconduct [12]. However, ultimately, it goes back to the individual faculty member and how s/he behaves. Unfortunately, academics are just people. My experience with scientific fraud may be unusual, but alas, I am not alone [13]. In systematic review and meta-analysis, about an average 2% of scientists admitted having falsified research at least once and up to 34% admitted other questionable research practices, suggesting that this could be a conservative estimate [14]. In fact, scientific fraud whether fabrication, falsification or plagiarism has a very long history. For example, Westfall described "the fudge factor, manipulated with unparalleled skill by the unsmiling Newton" [15, p. 8]. And Newton was not the only one [16].

Why do researchers do it? Probably for the same reasons that other people do it [17–19]. The reasons have been described in the fraud triangle—opportunity, pressure (incentive or motivation), and rationalization [20]. Some have conceptualized this as a diamond in which the fourth corner is capability consisting or the required traits (e.g., greed, weakness of character, excessive pride, dishonesty, etc.) and abilities (e.g., knowledge of processes and controls) [21]. However you parse it, it happens [22]. In research misconduct, most commentators have cited pressure—the publish or perish environment, the pressure to get grant funding, the imperative to be first and, of course, internal pressure and greed [23, 24]. Probably more common, however, are issues related to authorship [25].

When I was an internal medicine resident (1976–1978), I knew that I was headed for a career in endocrinology. I spent a large proportion of my elective time doing endocrinology consults and clinic. Over a relatively short period of time, I evaluated several extremely unusual patients with a bizarre collection of findings that they shared. These included plasma cell dyscrasia (what we would now call MGUS—monoclonal gammopathy of undetermined significance) with polyneuropathy, organomegaly, endocrinopathy, M protein, skin changes and osteosclerotic bone

[9] I think that much of this is pretty useless. It might make administrators happy that a box has been checked off, but I find it had to believe that they will change the prevailing levels of integrity or lack thereof. I give a course in the business school, and I provide a syllabus. The school's format for a syllabus includes the code of ethics. Not mine: "Code of Ethics: Frankly, if you can't tell right from wrong at this point in your life, providing you with the WSOM Statement of Academic Integrity is not going to help much." Last year I was told that I had to include the official statement. Oh well.

lesions. It had been described as "the POEMS syndrome." I wrote up case descriptions, did an extensive literature review finding that this constellation of findings had been reported from Japan. I found a series of cases and made up a large chart comparing the patients I had seen to what had been reported. I presented this to my attending. I thought it formed the basis of a nice publication, which would have been my first. I was busy with work and a new son, and I left for fellowship in June 1978, hearing no more about it. Soon after I arrived as a new faculty member in Cleveland in 1980, I was reviewing tables of contents from the journals that I followed regularly and found a citation: Bardwick et al. [26]. I thought it was based on the work that I had done as a resident. I didn't rate as much as an acknowledgement.[10] I don't think that I was consciously excluded from authorship. I suspect that the authors, three of whom I knew, had just forgotten me—out of sight (and off site), out of mind. I don't think that there was any negative impact on my career but, I was peeved (a very polite way to phrase it). One lesson that I learned is that I try to be very inclusive when it comes to authorship. I have probably gone overboard as well. I routinely included my lab technicians as authors. Many researchers would exclude them, making the argument that their intellectual contribution was not sufficient. (I guess that they hired the wrong technicians.) Later journals came up with specific criteria for authorship. For example, the International Committee of Medical Journal Editors (ICMJE) recommended that "authorship be based 4 criteria: (1) Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND (2) Drafting the work or revising it critically for important intellectual content; AND (3) Final approval of the version to be published; AND (4) Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved." They also suggested that anyone who met the first and fourth criteria should be given the opportunity to contribute to the second and fourth. Those who do not meet all four criteria should be acknowledged.[11] Early in my career I was listed as an author when my contribution didn't meet the criteria. I think my mentor was trying to support my career. Now as a senior investigator I carefully negotiate between the Scylla of inappropriate exclusion and the Charybdis of inappropriate inclusion. I just try to be fair and honest.

References

1. Broad W, Wade N. Betrayers of the truth: fraud and deceit in the halls of science. London: Century Publishing; 1983. p. 8–9.
2. Hunt M. New York Times. November 1, 1981.
3. Broad W, Wade N. Betrayers of the truth. New York: Simon and Schuster; 1982.

[10] When I was writing this chapter, I came across another paper: Resnick et al. [27].

[11] http://www.icmje.org/recommendations/browse/roles-and-responsibilities/defining-the-role-of-authors-and-contributors.html. Accessed 6-18-20.

4. Engler RL, Covell JW, Friedman PJ, Kitcher PS, Peters RM. Misrepresentation and responsibility in medical research. N Engl J Med. 1987;317(22):1383–9.
5. Hollis BW. I turned in my mentor. The Scientist. 1987;1(27):14.
6. Judson HF. The great betrayal: fraud in science. Orlando, FL: Harcourt; 2004.
7. Chevassus-au-Louis N. Fraud in the lab: The high stakes of scientific research. Harvard University Press; 2019.
8. Kohn A. False prophets: fraud and error in science and medicine, rev. ed. New York: Barnes and Noble; 1988.
9. Ferris L. Scientific fraud and other types of scientific misconduct. In: Reporting and publishing research in the biomedical sciences. Singapore: Springer; 2018. p. 241–54.
10. Stewart WW, Feder N. The integrity of the scientific literature. Nature. 1987;325:207–14.
11. Mills JL. Data torturing. N Engl J Med. 1993;329(16):1196–9.
12. Bülow W, Helgesson G. Criminalization of scientific misconduct. Med Health Care Philos. 2019;22(2):245–52.
13. Swazey JP, Anderson MS, Louis KS. Ethical problems in academic research. Am Sci. 1993;1993(81):542–53.
14. Fanelli D. How many scientists fabricate and falsify research? A systematic review and meta-analysis of survey data. PLoS One. 2009;4(5):e5738.
15. Westfall RS. Newton and the fudge factor. Science. 1973;179(4075):751–8.
16. Gross C. Scientific misconduct. Annu Rev Psychol. 2016;67:693–711.
17. Szilagyi DE. The elusive target: Truth in scientific reporting: Comments on error, self-delusion, deceit, and fraud. J Vasc Surg. 1984;1(2):243–53.
18. Ramamoorti S. The psychology and sociology of fraud: Integrating the behavioral sciences component into fraud and forensic accounting curricula. Issues Account Educ. 2008;23(4):521–33.
19. Kupferschmidt K. Researcher at the center of an epic fraud remains an enigma to those who exposed him. Science. 2018:1–45.
20. Cressey DR. Other people's money. Montclair, NJ: Patterson Smith; 1953. p. 1–300.
21. Wolfe DT, Hermanson DR. The fraud diamond: considering the four elements of fraud. CPA J. 2004;74(12):38–42.
22. Mansor N. Fraud triangle theory and fraud diamond theory. Understanding the convergent and divergent for future research. International Journal of Academic Research in Accounting, Finance and Management. Science. 2015;1:38–45.
23. Carafoli E. Scientific misconduct: the dark side of science. Rendiconti Lincei. 2015;26(3):369–82.
24. Maggio L, Dong T, Driessen E, Artino A Jr. Factors associated with scientific misconduct and questionable research practices in health professions education. Perspect Med Educ. 2019;8(2):74–82.
25. Bozeman B, Youtie J. Trouble in paradise: Problems in academic research co-authoring. Sci Eng Ethics. 2016;22(6):1717–43.
26. Bardwick PA, Zvaifler NJ, Gill GN, Newman D, Greenway GD, Resnick DL. Plasma cell dyscrasia with polyneuropathy, organomegaly, endocrinopathy, M protein, and skin changes: the POEMS syndrome. Report on two cases and a review of the literature. Medicine. 1980;59(4):311–22.
27. Resnick D, Greenway GD, Bardwick PA, Zvaifler NJ, Gill GN, Newman DR. Plasma-cell dyscrasia with polyneuropathy, organomegaly, endocrinopathy, M-protein, and skin changes: the POEMS syndrome. Distinctive radiographic abnormalities. Radiology. 1981;140(1):17–22.

Chapter 12
To Reach Beyond the Walls

Required disclosure slide for presentations at CWRU School of Medicine

Required Disclosures

"Interactions with industry are essential to bringing the researchers' discoveries to the public, but can present the potential for conflicts of interest related to their research activities."

☐ I have no financial relationships with commercial entities that produce health-care related products.

☒ The commercial entities with which I have financial relationships do not produce health-care related products or services relevant to the content of this lecture.

☐ I disclose the following financial relationships with commercial entities that produce health-care related products or services relevant to the content of this lecture: e.g., -Consulting relationship with *Company X* on *Topic Y*, discussed in this talk. -Advisory board for *Company A*, that produces *B device*, used as treatment for *Topic Y*.

To some degree, medical schools and their universities have lived in a world separate from the communities in which they reside. Early universities were physically separate from their communities as much for the protection of the community as for the students. Universities have also been viewed as "ivory towers," citadels of

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8_12

great value, but separate from with their inhabitants looking down on their communities.[1] This was reflected in the attitudes of academic clinicians who referred to community physicians with the disparaging term LMD (local medical doctor). Though the physical walls have largely been eliminated, metaphorical walls still separate the university from its environs.[2] The metaphor of "town and gown" has been used as shorthand to describe this separation [3]. Economic rivalry between university and community physicians contributed to the ill feeling. The former were perceived as taking cases away from community physicians while the latter, even when they made referrals, were dissatisfied with the communication from the former [4, 5]. This conflict notwithstanding, community physicians in private practice played a large part in my clinical education during medical school and residency. I learned physical diagnosis from Dr. Harry Roselle,[3] a cardiologist who practiced in New Jersey. He would leave his practice every two weeks and come to St. Luke's Hospital in Manhattan to teach a small group of us. He was one of many voluntary faculty who donated their time out of a feeling of personal obligation—the duty to pass on his medical knowledge. Several of my attending physicians during residency were in full-time private practice. When I first got to CWRU, the medical school had annual medical education retreats attended by hundreds of faculty members both from the school and the community. Community practitioner involvement diminished over time as the pressures of practice increased.[4] As academic clinicians, we have a responsibility to share our knowledge with the community. I have done many continuing education talks, sometimes getting a fee, but usually not.

[1] The use of the figure of speech "ivory tower" has evolved from its origins as a religious figure. Shapin contends that the "cultural geography of Ivory Tower usages tracks changes in the recognized social value of different intellectuals practices… the attachment of the Ivory Tower to universities in the middle of the twentieth century seems to acknowledge the rise of the research university as modern society's all-purpose storehouse of real and potential value" [1, p. 25].

[2] As an undergraduate student at Columbia College, I learned early that Morningside Park which separated the university in Morningside Heights from the ghetto of Harlem down in the valley, was an important means for keeping the two separate. This became very clear during the 1968 student uprising in which one of the major issues was the proposed building of a gymnasium in the park; the university community would have an entrance at the top of the heights and the Harlem community to the extent that they had access at all could enter a separate door below. Topographically, different doors made sense, but the symbolism was clear. See: Kunen [2]. And Fact-Finding Commission on Columbia Disturbances. Crisis at Columbia: report of the Fact-Finding Commission appointed to investigate the disturbances at Columbia University in April and May 1968. Vintage Books; 1968. I was there. For anyone interested there is an article in the October 6 New York Times Magazine section by Irving Howe. The first photo is very famous, showing a bloody demonstrator who had been beaten by the police holding his fingers up in a peace sign (V). The next photograph which spans the bottom of two pages shows students at demonstration. At the far left of the photo (but not politically), you will see me.

[3] The fact that I remember his name nearly fifty years later is an indication of how good he was.

[4] One of my most painful tasks when I was in charge of ambulatory care at the VA was to get faculty to agree to teach physical diagnosis. It was like pulling teeth without Novocain. It is hard even now, though preceptors get a token payment.

While this is reaching beyond the walls, I don't think that it is much of a reach. There are two areas where the reach is much greater.

In Academic Duty, Donald Kennedy makes the argument that technology transfer is a new academic duty. He writes: "In a time when basic knowledge is seen as an important driving force behind product development, and therefore behind growth, the public has come to expect that the university, as knowledge producer, will share what it discovers. Indeed, there is a deepening conviction on the part of society that basic knowledge should be put into human service whenever it can be, and as soon as possible" [6, p. 241]. His focus on biotechnology may reflect the amount of dollars involved, as well as their potential immediate effects. In October 1980, several months after I finished my endocrinology fellowship at UCSF, a company called Genentech had its initial public offering of stock. "Gene" as it was listed then opened at $35 per share and within an hour was trading at $88 per share, closing at $71.25. It was called one of the most spectacular market debuts according to The Wall Street Journal [7]. Genentech had been founded in 1976 by Herbert Boyer, a UCSF biochemistry professor and a pioneer in recombinant DNA, and Robert Swanson, a venture capitalist. I remember that biotech was in the air. John Baxter, another molecular biologist, was the head of the endocrinology research unit when I was in the neighboring metabolic research unit.[5] I remember that there was scuttlebutt about his (and Dr. Boyer's) work and the time that they spent away from UCSF. Baxter went on to found several biotech companies himself. The history of biotechnology companies and their interactions with universities and medical schools (collaborations? Partnerships? Servants?) is an interesting tale that is still going on [8, 9]. In fact, the story of Genentech is the subject of a book [10]. They are part of a broader story of entrepreneurship in academia in the service of knowledge transfer from the ivory tower to the broader society. They are also part of a broader story of academic capitalism and commodification of academic research [11–13].

Although potentially profitable to universities, these relationships are not without problems. First, there are differences between the norms of science and entrepreneurial norms. The norms of science especially communism and disinterestedness as outlined by the sociologist Robert Merton, though often 'honoured in the breech than the observance'[6] are completely at odds with the norms of the entrepreneur.[7] Communism in this context means that scientific goods, i.e., intellectual property, are held in common and not secret. Scientific institutions act in a disinterested manner for the benefit of a common scientific enterprise and not for the personal gain of the institution or the individuals in that institution. The contrast with the

[5] The two units eventually merged with Dr. Baxter becoming the director.

[6] William Shakespeare. Hamlet, Act I. Scene 4.

[7] The other two are universalism and organized skepticism. The former means that scientific validity is independent of the scientists; sociopolitical status and personal attributes don't contribute (or detract from) validity. Organized skepticism means that scientific claims should be examined critically before being accepted. This means that there are certain methods and codes of conduct which must be followed. These also conflict with entrepreneurial norms.

entrepreneur for whom intellectual property is a private good that can be monetized for personal profit couldn't be starker [14, 15]. Not surprisingly, conflicts of interest arise. For example, UCSF sued Genentech over patent infringement leading to a settlement of $200 million [16]. Although I have done laboratory work, my research for the past twenty years has been related to health care delivery. I have seen the medical school and the affiliated hospitals take a greater interest in licensing technology and individuals who have been involved in start-up companies. However, seeing myself primarily as a teacher, I have never had any direct (financial) interests in biotechnology companies until recently. I agreed to be on the board of directors of a startup which focuses on biosensors in the home. I agreed to do this, not because I have any entrepreneurial interest (all of my equity and $2.50 would get me a ride on Cleveland Rapid Transit), but rather because the company founder was one of my business school students and he asked me. I never would have gone out of my way to do such a thing. It is just not me. Nevertheless, academic entrepreneurship is here to stay for both good and ill. Research fellowship programs now include coursework on entrepreneurship.[8]

Underlying academic entrepreneurship is the idea of knowledge transfer. The format for health services research grants in the VA include a required section on dissemination of findings. It used to be the case that presentation at scientific meetings and publication in scientific journals was enough. However, those are recognized to be remarkably inefficient, if not ineffective.[9] There are many different channels of knowledge transfer ranging from the most informal (networking) to the most formal (spin-outs and start-ups) with many different modes of engagement in between.[10] Miller et al. used this framework to distinguish entrepreneurial academics who used the softer, more informal, relational, partnering-style of engagement from academic entrepreneurs who used a harder, more formal, transactional, contracting-style [18]. To the extent that I am entrepreneurial at all, I am an entrepreneurial academic.[11] I do want to engage in order to facilitate dissemination of my research findings. For example, in a recent grant application related to food insecurity and the effectiveness of food banks, I went to great lengths to include all kinds of methods (Fig. 12.1).

[8] https://clic-ctsa.org/education/academic-entrepreneurship-medical-and-health-scientists. Accessed 6–29-30.

[9] The time between the discovery of a scientific finding and its application in practice has been said to average 17 years. See: Morris et al. [17].

[10] These include: networking- joint industry conference-joint journal publication-joint supervision-Grad./student projects-secondment-executive education-collaborative research-contract research & consultancy-shared facilities-joint venture-patient & licenses- spin-outs & start-ups [18].

[11] Lam distinguished three types of motivations for scientists to commercialize their results: 'gold' (financial rewards), 'ribbon' (reputational/career rewards), and 'puzzle' (intrinsic motivation) [19]. I am quite happy getting a salary for doing what I love to do, but the fact remains that I love what I do.

The dissemination plan is illustrated in Table 1. Although this is a research project, a key customer for the results is the Office of Nutrition and Food Services. We have a schedule of key deliverables in addition to executive briefs to keep this office (and other offices as appropriate) informed during the project. These deliverables include: A. inventory of VA food pantries (six months); B. Maps of VA food pantries in relation to community food banks and Veteran who use VHA care (12 months); C. VA pantry Survey results (12 months); D Veteran survey preliminary results (21 months). In addition to the usual suspects for dissemination such as presentations at national meetings and I am being optimistic here (e.g., VA HSR&D Service meetings, Academy Health, American Association of Diabetes Educators, American Diabetes Association) and submission of results to peer-reviewed journals, we will leverage the connections of members of the steering committee for dissemination. Our steering committee includes representative from different offices in VACO including the Office of the Deputy Undersecretary of Health for Operations, Office of Specialty Care, Office of Nutrition and Food Services and Office of Nursing Service. In addition to their advisory role, these committee members will provide input for effectively and efficiently disseminating relevant findings as well as presenting those findings to their respective offices. The (former) food pantry manager on the committee will be the primary contact with non-governmental organizations such as FeedingAmerica.org. The Veteran on our committee will be the primary contact for Veteran Service Organizations. We will also utilize social media. As part of the VA Choosing Wisely/Hypoglycemia Safety Initiative, with the assistance of VA Employee Education Service (EES), we have created podcasts for practitioners; DCA and _____ created one that involved food and hypoglycemia. These are posted in VA's Virtual Medical Center. We have also utilized other social media; we have created a blog in support of this initiative.

End users	Needs	Means
Veterans	Information on availability of food resources	Veteran Service Organizations
Policy — Office of Nutrition and Food Services; Offices of Primary Care, Specialty Care	Scientific and Operations-relevant findings	Executive briefs/ specific Deliverables — A, B, C, D
Non-governmental orgs., e.g., Feeding America Organization	Information on availability of food resources	Executive briefs/ specific Deliverables A, B
Researchers	Scientific findings	Publications, scientific meetings
Clinical Operations — Service/Section Chiefs	Scientific and Operations-relevant findings	Presentations
Managers — CMOs, VISN Directors and facility equivalents	Operations-relevant findings	Executive briefs
Clinicians (Primary Care Providers), Endocrinologists, Dieticians, Certified Diabetes Educators, Social Workers	Clinically relevant findings	Social media and presentations to Endocrine/Diabetes Field Advisory; Primary Care, ONS Work Group

Fig. 12.1 Dissemination section from a VA Health Services Research & Development Grant Application

This is not exactly what Donald Kennedy is referring to in his book. Moreover, this research project would be funded by a health care system which has a vested interest in taking advantage of the findings.[12] Reaching beyond the walls is or at least should be more than an opportunity to market technology and make money. Universities are part of communities. They may be economic anchor institutions. Most medical schools are in cities. Often, they are in areas that are economically disadvantaged. Reaching beyond the walls should involve university/medical school involvement in improving the community and reducing disparities in the social determinants of health and well-being.

As I write this (June 2020), the coronavirus (COVID-19 or coronavirus 2 or SARS CoV-2) epidemic is raging. This epidemic has exposed some of the long-standing disparities in health and healthcare. Poverty, physical environment, smoking and smoke exposure, homelessness, and race or ethnicity can have major impacts on COVID-19 outcomes [20]. In a large survey, the rate of infection in predominantly Black counties was 137.5/100000 (three times that of predominantly white counties) and the death rate was 6.3/100000 (sixfold high than in predominantly white counties) [21]. A June 10, 2020 news release from CWRU School of Medicine is titled: "We assert that racism is a health pandemic." [22] In this piece, the contributions of the school are touted, though in fairness, the shortcomings are also noted. "For many years, the Case Western Reserve University School of Medicine has worked to reduce health disparities and advance the health and inclusion of all races in our school, university, our city, and around the world. Although some of these efforts have been incrementally successful, they have not brought the sweeping improvements that we desire. We must redouble our efforts, better coordinate our work, and devote time and resources to attacking the problem at all levels."[13] The items listed include a potpourri of efforts. Some are very research focused.[14] Others require leaving the wall-enclosed environs and going into the community. This is where I think that the university should reach beyond the walls, and this is exactly where scholarly clinicians can play an important part. I have been involved in some of these including two state-wide initiatives to improve management of hypertension and diabetes and reduce disparities of care.[15]

---

[12] Or so I thought. I submitted the grant application and the three reviewers hated it. It didn't even get a good enough score to be discussed by the whole committee. One of the reviewers wrote that the topic was not important to the VA. Makes you wonder what they would have liked to disseminate.

[13] https://case.edu/medicine/about/newsroom/our-latest-news/racism-health-pandemic. Accessed 6-29-20.

[14] E.g., hosting an NIH Center for Reducing Health Disparities which explores the racial difference in kidney diseases and their treatments Although research seems to be the main focus, there are also some community partnerships and education efforts. https://reducedisparity.org/. Accessed 6-29-20.

[15] https://www.cardi-oh.org/. Accessed 6-29-20.

References

1. Shapin S. The Ivory Tower: the history of a figure of speech and its cultural uses. Br J Hist Sci. 2012 Mar;45(1):1–27.
2. Kunen JS. The strawberry statement: notes of a college revolutionary. Viet Generat. 1990;3(1):6.
3. Brockliss L. Gown and town: The university and the city in Europe, 1200–2000. Minerva. 2000;38(2):147–70.
4. Petersdorf RG. The town-gown syndrome. JAMA. 1987;257(18):2478–9.
5. Baker RJ. The Town-Gown syndrome: an ancient disease, as yet uncured. Arch Surg. 1991;126(3):285–7.
6. Kennedy D. Academic duty. Harvard University Press; 1997.
7. https://www.encyclopedia.com/social-sciences-and-law/economics-business-and-labor/businesses-and-occupations/genentech-inc. Accessed 29 June 2020.
8. Kenney M. Biotechnology: the university-industrial complex. Yale University Press; 1988.
9. Teitelman R. Gene dreams: wall street, academia and the rise of biotechnology. Basic Books; 1989.
10. Hughes SS. Genentech: the beginnings of biotech. University of Chicago Press; 2011.
11. Slaughter S, Leslie LL. Academic capitalism: Politics, policies, and the entrepreneurial university. Baltimore: Johns Hopkins University Press; 1997.
12. Radder H. The commodification of academic research. Science and the Modern University. Pittsburgh: University of Pittsburgh Press; 2010.
13. Slaughter S, Slaughter SA, Rhoades G. Academic capitalism and the new economy: markets, state, and higher education. JHU Press; 2004.
14. Merton RK. The sociology of science: theoretical and empirical investigations. University of Chicago press; 1973.
15. Jain S, George G, Maltarich M. Academics or entrepreneurs? Investigating role identity modification of university scientists involved in commercialization activity. Res Policy. 2009;38(6):922–35.
16. Dalton R, Schiermeier Q. Genentech pays $200m over growth hormone ‘theft’. Nature. 1999;402:335.
17. Morris ZS, Wooding S, Grant J. The answer is 17 years, what is the question: understanding time lags in translational research. J R Soc Med. 2011;104(12):510–20.
18. Miller K, Alexander A, Cunningham JA, Albats E. Entrepreneurial academics and academic entrepreneurs: A systematic literature review. Int J Technol Manag. 2018;77(1–3):9–37.
19. Lam A. What motivates academic scientists to engage in research commercialization: ‘Gold’, ‘ribbon’ or ‘puzzle’? Res Policy. 2011;40(10):1354–68.
20. Abrams EM, Szefler SJ. COVID-19 and the impact of social determinants of health. Lancet Respir Med. 2020;8(7):659–61.
21. Yancy CW. COVID-19 and African Americans. JAMA. 2020;323(19):1891–2.
22. https://case.edu/medicine/about/newsroom/our-latest-news/racism-health-pandemic. Accessed 29 June 2020.

Chapter 13
To Change

No man ever steps in the same river twice, for it's not the same river and he's not the same man. (Heraclitus)[1]

Gad, sir, reforms are all right as long as they don't change anything. (Colonel Blimp)[2]

If you stick around long enough things will change. This has been true for me. I have seen major changes in both undergraduate and graduate medical education, as well as in the VA health care system where I have worked for forty years. These changes have occurred despite the fact that institutions such as VA, universities, and medical schools, are extraordinarily resistant to change. Universities and medical schools are at once conservative and (potentially) radical. They reflect society at large. They also nurture, sometimes despite themselves, the seeds of change. The conservative nature of medical schools and graduate medical education is reflected in the difficulties encountered when trying to change the curriculum to meet society's changing needs. For example, there have been calls for more primary care physicians for decades. They have been remarkably ineffective [1]. When I was in medical school, the ideal at Columbia was the general internist. He (usually it was a he), was the compleat diagnostician.[3] The best medical students were expected to go into internal medicine and most of the inductees into Alpha Omega Alpha, the medical honor society, were going into medicine. Some would then pursue specialty

[1] https://www.brainyquote.com/quotes/heraclitus_107157. Accessed 6-30-20.

[2] Colonel Blimp is a cartoon character created by David Low in 1934. Colonel Blimp is portrayed as a pompous, jingoistic, stereotypically British twit. https://en.wikipedia.org/wiki/Colonel_Blimp accessed 7-1-20; The cartoon is shown on the following web site http://markmeed.blogspot.com/2009/08/moderate-conservatives-and-colonel.html. Accessed 7-1-20.

[3] I don't recall learning much about William Osler in medical school, but his enduring influence indicates that this ideal is not completely dead.

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8_13

training (like me), but it was no accident that each of the three medicine wards at Columbia Presbyterian had a general internist as the Chief.[4]

At UCSD where I was an intern and resident, it was the specialists, mainly those who did NIH-funded research who ruled the roost. Nevertheless, UCSD established an ambulatory care track in the residency. CWRU was a mixed bag, but by and large specialists were valued more than generalists and the value gap has increased over the years. This was most evident when we submitted an application to VA for a Center of Excellence (COE) in Primary Care Education in 2010. Since this involved the internal medicine residency program, which was sponsored and owned by University Hospitals of Cleveland (UHC), we planned application with UHC, our primary academic affiliate.[5] The negotiations with the residency program director dragged on for months, but at the very last minute, the department chair refused to support the $5 million application. A molecular cardiologist, he said he was concerned that having a primary care program would make the residency program (seem?) less academic.[6] That put us in a major bind, since we couldn't submit the application without a residency program. Nevertheless, arrangements were quickly made to collaborate with the Cleveland Clinic (the bitter rival of UHC).[7] To the chagrin of the Dean and UH, we were funded. Eventually, residents from the UHC

[4] The chief of my ward was Dr. Edgar Leifer. His obituary in the New York Times reads as follows: "Dr. Leifer was the kind of knowledgeable, exacting and consummately humane physician that makes an enormous imprint on all patients, physicians and hospitals. An exceptional scientist and one of the nation's first radiobiologists, he pioneered the use of labeled carbon compounds in the study of metabolism and contributed landmark research on hepatitis and lassa fever. A widely respected internist, his grateful patients established a professorship in his honor." New York Times July 7, 2010. His research shows that he was truly a scholar and also that he could be an internist and still be scholarly. I didn't know when I did my clerkship on his ward that he had a PhD in physical chemistry and worked in the later stages of the Manhattan project. What I did know is that you better be on your toes when he was around. He could be quite intimidating. In addition to holding rounds once a week (this was in addition to our regular attending physicians), he would come around and review charts regularly. One day I came across him in our work room, he noticed that I had missed a loop with my belt and said to me that my wife should never let me out of the house looking like that. Nevertheless, he was highly respected as a clinician. His standards for us as clinicians in training were as high as those for my appearance.

[5] I chose to use the word 'owned' because following the closure of Hahnemann University Hospital, its CMS-funded GME slots were "sold" through a bankruptcy court auction for $55 million [2].

[6] Remarkably, the Dean backed up his decision. Perhaps the fact that the school was dependent for funding on University Hospitals had something to do with it. Call me cynical.

[7] The situation was a little more complicated than this. When the deadline came, we submitted the application without a partner, but said we were working on it. For some reason, this was completely missed by those screening the applications at the Office of Academic Affiliations (OAA). They soon discovered their error, and a call was arranged by OAA. By this time, CCF had agreed to be our partner, and after a long discussion OAA decided the let the application proceed. The decision could just as easily have gone the other way. I suppose that it is possible that because I had such a long history of working with OAA on various projects, that my reputation helped carry the day. I don't know. In fact, I had been designated the director of the program on the application despite the fact that it was the brainchild of others, and they were the ones who did all of the work. After the COE was funded, the person who should have been the director rapidly rectified the situation.

program heard about the COE. After a few did electives in the COE, more of them wanted to spend more time with us. Eventually having the Center of Excellence became a good recruiting tool for the UHC residency program and we get residents from UHC and CCF. (It is an interprofessional program and we also have nurse practitioner trainees from the School of Nursing.)

Resistance to curriculum change, a process has been compared to trying to move a graveyard, has made reform challenging [3]. In fact, changing almost anything in a medical school has been similarly compared [4]. There is an extraordinary degree of inertia [5]. At the same time, there are efforts, that do lead to change and these efforts are the efforts of individuals and not magical forces. The academic duty to change means two things to me: First, as faculty members we have a responsibility to support change in the institutions in which we work. Some of us will be leaders. Most of us will be supportive followers. I have been involved in several of these efforts, e.g., a major curriculum revision and the establishment of a fellowship in quality [6, 7]. In addition to benefiting the enterprise, I learned a great deal in the process. Change need not occur on such a grand scale. It could be as narrow as making incremental improvements. To put it simply, improving your job is part of your job. It is a matter of applying the Accreditation Council for Graduate Medical Education (ACGME) competency of practice-based learning and improvement to your own roles as a member of the faculty whether it be in your capacity as clinician, teacher or researcher.[8] Second, and somewhat related, we have a responsibility to improve ourselves. Here I am not thinking about improving one's practice or learning more in one's specialty. I am also not thinking about reading well beyond one's specialty, though that is very important, and it is something I do routinely.[9] I am thinking more broadly, recognizing that when the situation changes, you have to change. If you can't hit a major league curve ball, you will never make it in the show.

I have changed many times in my career. One of my bosses wrote a recommendation letter for me that included a statement about how I had reinvented myself several times (as described in other chapters). That is a charitable way of putting it. Another way of saying it is that I failed at a lot of things or if not failed, then at least got bored with them. More of the latter than the former, I think. In any case, I

[8] All the competencies (with some modification) apply to clinical and clinical research faculty. See next Part.

[9] I am a believer in the relevance of general knowledge and knowledge of the humanities in particular to my life as a physician and faculty member. William Osler wrote an entire essay on the topic. One of my pet peeves as a ward attending was the tendency of students and residents to refer to patients as "poor historians" when they were unable to obtain a good history of present illness. If I was really peeved, I would point out that the patients were the sources and students were the historians. Then I would ask them to name good historians. They never could. I would name some, going back to Thucydides and Herodotus and through more contemporary historians like Henry Steele Commager who I read in high school to Doris Kearns Goodwin. I can't imagine what kind of education they received in college. The fact is that you can't have too many books. Osler said: "for the general practitioner a well-used library is one of the few correctives of the premature senility which is so apt to overtake him" [8, p. 211]. I think the same applies to specialists just as it does to generalists, maybe more so.

changed and became good at the next thing that I decided to do. That requires recognition of the need and then the willingness and persistence to address it. However, I think that is an academic duty lest you become stale and beyond one's sell by date.

References

1. Chen C, Xierali I, Piwnica-Worms K, Phillips R. The redistribution of graduate medical education positions in 2005 failed to boost primary care or rural training. Health Aff. 2013;32(1):102–10.
2. Berns JS, Coull S, Paskin D, Spevetz A, Boyer WC. Reflections on a crisis in graduate medical education: the closure of Hahnemann University Hospital. Acad Med. 2020;95(4):499–502.
3. Watson RT, Suter E, Romrell LJ, Harman EM, Rooks LG, Neims AH. Moving a graveyard: how one school prepared the way for continuous curriculum renewal. Acad Med. 1998;73(9):948–55.
4. Watson RT, Romrell LJ. Mission-based budgeting: removing a graveyard. Acad Med. 2006;81:6–17.
5. Robins LS, White CB, Fantone JC. The difficulty of sustaining curricular reforms: a study of "drift" at one school. Acad Med. 2000;75(8):801–5.
6. Ornt DB, Aron DC, King NB, Clementz LM, Frank S, Wolpaw T, Wilson-Delfosse A, Wolpaw D, Allan TM, Carroll M, Thompson-Shaheen K. Population medicine in a curricular revision at Case Western Reserve. Acad Med. 2008;83(4):327–31.
7. Splaine ME, Ogrinc G, Gilman SC, Aron DC, Estrada C, Rosenthal GE, Lee S, Dittus RS, Batalden PB. The department of veterans affairs national quality scholars fellowship program: experience from 10 years of training quality scholars. Acad Med. 2009;84(12):1741.
8. Osler W. Books and men. In: Aequanimitas; with other addresses. Blakiston; 1932.

Part III
Facets of Academic Life

Chapter 14
Introduction to the Section

There are books about skills for management and leadership in academia in general and academic medicine in particular [1–4]. A cursory glance at their tables of contents finds the usual suspects and these topics are all important to one degree or another (Table 14.1). Rather than write my own chapter on each of these, I have decided to focus on a few facets of academic life. It is an idiosyncratic choice, I admit, but they all had salient lessons for me. I figure you can read about the others.

Table 14.1 From the table of contents of Viera AJ, Kramer R, editors. Management and leadership skills for medical faculty: a practical handbook. Springer; 2016 Mar 18

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8_14

References

1. Bolman LG, Gallos JV. Reframing academic leadership. Wiley; 2010.
2. Gmelch WH, Buller JL. Building academic leadership capacity: a guide to best practices. Wiley; 2015.
3. Houpt JL, Gilkey RW, Ehringhaus SH. Learning to lead in the academic medical center: a practical guide. Springer; 2015.
4. Viera AJ, Kramer R, editors. Management and leadership skills for medical faculty: a practical handbook. Springer; 2016.

Chapter 15
Academic Systems-Based Practice: The Knack and How to Get It

Formal organizational charts - the skeletons of an organization - often turn out to be of little use in diagnosing organizational dysfunction. They are well-ordered diagrams of reporting structures and lines of formal responsibility, yet often they have little to do how work really gets done. What is really important are the informal relations - the nervous system of an organization - coordinating actions and transmitting information to and from different parts of the organization. (Ciarán Daly)[1]

When people talk about academic competence, they are usually talking about student competence. For example, the model of DiPerna and Elliot of academic competence for college students consists of academic skills (reading and writing; mathematics and science; and critical thinking) and academic enablers (interpersonal skills; motivation; engagement; and study skills) [1]. Similar models have been developed for learners at all ages from kindergarten to preprofessional students. Various models have been developed for faculty. For example, Milner et al. based a three-part model on an existing framework in the human resources literature [2]. The three overarching competencies are: (1) Cognitive competency which includes knowledge and skills for faculty practice in research, education, and clinical practice; (2) social competency which includes communication skills, emotional and social intelligence, negotiation and conflict management, and professionalism; and (3) Meta competency which includes reflective practice, self-regulation, purposeful planning and ethics. Again, all very reasonable and I don't want to downgrade the importance of any of these. However, I think about all of this a little differently.

[1] https://aibusiness.com/document.asp?doc_id=760560&site=aibusiness. Accessed 7-23-20.

The Knack …and How to Get It is a 1965 British comedy film directed by Richard Lester and based on the play by Ann Jellicoe. It won the Palme d'Or at the 1965 Cannes Film Festival and the Grand Prix of the Belgian Film Critics Association. Although the knack in the movie was related to sex-related skills, the word knack can refer to any skill. https://en.wikipedia.org/wiki/The_Knack_...and_How_to_Get_It#:~:text=The%20Knack%20%E2%80%A6and%20How%20to%20Get%20It%20is%20a%201965,the%20Belgian%20Film%20Critics%20Association. Accessed 8-26-20.

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8_15

Table 15.1 ACGME competencies from https://www.acgme.org/Portals/0/PFAssets/ProgramRequirements/CPRResidency2020.pdf

• Patient care	• Interpersonal and communication skills
• Medical knowledge	• Professionalism
• Practice-based learning and improvement	• Systems-based practice

In the late 1990s, competencies developed by the Accreditation Council for Graduate Medical Education (ACGME) for residency and fellowship training programs are also relevant to faculty (Table 15.1).[2] Four of the six competencies—patient care, medical knowledge, communication skills, and professionalism - are quite straightforward. Even practice-based learning and improvement was reasonably straightforward though it required some major changes in residency training [4, 5]. However, systems-based practice was a different kettle of fish.

The ACGME competency of 'Systems-Based Practice': requires residents/fellows to demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care [6–8].[3] I think that there is an analogous competency for academic faculty. However, I am thinking about a different system, not the system of patient care, but rather the system of the academic institution and departments. For lack of a better term, I have called this new faculty competency Academic Systems-Based Practice which is the awareness of and responsiveness to the larger context and system of academic medicine, as well as the ability to call effectively on other resources in the system to facilitate a faculty member's

[2] The ACGME competencies were introduced in 1999, but the vision of David Leach, President of the ACGME was that the framework could apply throughout the period of medical education from medical school through graduate medical education to post-graduate and continuing medical education. See: Leach [3]. In fact, the AAMC has been working on developing materials for all levels from recent medical school graduate to experienced faculty physician. See: AAMC New and Emerging Areas in Medicine Series. https://www.aamc.org/what-we-do/mission-areas/medical-education/cbme/qips#:~:text=The%20AAMC%20New%20and%20Emerging,or%20continuing%20their%20professional%20development. Accessed 8-6-20

[3] Systems-Based Practice and Advanced Clinic Access Systems-Based Practice from ACGME website http://www.acgme.org/outcome/comp/compFull.asp: "Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value. Residents are expected to: understand how their patient care and other professional practices affect other health care professionals, the health care organization, and the larger society and how these elements of the system affect their own practice know how types of medical practice and delivery systems differ from one another, including methods of controlling health care costs and allocating resources practice cost-effective health care and resource allocation that does not compromise quality of care advocate for quality patient care and assist patients in dealing with system complexities know how to partner with health care managers and health care providers to assess, coordinate, and improve health care and know how these activities can affect system performance." System-based practice competency description (ACGME): http://www.acgme.org/outcome/comp/compFull.asp#6 System-based practice references (ACGME).

development. Some have called this ability organizational or political savvy [9]. However, competence is not sufficient. What is needed is more than *competence*, but both competence and *capability*. The former can include a combination of knowledge, skills and attitudes that constitute basic requirements; competence reflects satisfactory performance, but most importantly refers to current needs [10]. In contrast, capability focuses on future needs and is particularly critical in the dynamic complexity that constitutes an academic department [11, 12].

> *I am increasingly convinced that people who have power are not necessarily smarter than others. Beyond a certain level of intelligence and level in the hierarchy, everyone is smart. What differentiates people is their political skill and savvy.* (Jeffrey Pfeffer)[4]

When I began my first faculty appointment, I had a research career development award and spent most of my time in the laboratory. Among the things that I had to do was to learn how to operate a high-pressure liquid chromatography (HPLC) machine. This is a device for separating peptides based on their affinity for a specific solid adsorbent material. My laboratory advisor told me I should do some practice runs and "get a feel" for the system before running my actual samples. I couldn't understand what he meant. It was a machine. Once I knew how to set the dials, attach bottles of solvents to their input ports and so forth, it should be easy. All I had to do was follow the steps in the manual. WRONG! It was something like learning how to drive a stick shift from a manual. You had to develop your own feel for the clutch. No one can feel the clutch for you. Practical knowledge was required, knowledge that doesn't appear in a manual. In fact, much of it couldn't appear in a manual because it was tacit and not explicit.[5] Some would emerge only with experience. Organizations are not machines, metaphors notwithstanding,[6] and reading the faculty manual or hospital bylaws doesn't really get very far. To thrive in an organization requires having an understanding about how things work in that organization. It is the difference between the organization chart showing who is in charge on paper and the reality of who is the person who is really in charge or gets things done, the organizational politics. It is about the organizational culture and all the unwritten rules, the "how we do things around here." In this, every organization is different, and this is no less true for an outpatient clinical practice site, a medical center, a medical school or a university [14–16]. A critical task early on is to get a feel for that organization, something beyond learning the ropes.[7] This is the task of becoming organizationally savvy [18].

---

[4] https://quotestats.com/topic/political-savvy-quotes/. Accessed 7-20-20. Jeffrey Pfeffer is a professor at the Stanford University Business School. https://en.wikipedia.org/wiki/Jeffrey_Pfeffer. Accessed 7-20-20.

[5] Tacit knowledge is knowledge for which we don't have words.

[6] Think metaphors such as: works like a well-oiled machine; gums up the works; toss a wrench into the gears, etc. The machine is just one image of organizations. See: Morgan [13].

[7] The idiom of "learning the ropes" means to learn the basic details of how do perform a task and refers to the need for a sailor learning the different ropes for the sails of a ship. https://idioms.thefreedictionary.com/learn+the+ropes. Accessed 9-1-20. See also: Cramer [17].

Organizational savvy[8] is practical understanding with shrewdness about using that understanding to make decisions about acting (or not acting) in the organization. For example, Stevens stated that political savvy involves accounting for differences in power, status, and interests of stakeholders within and without an organization [9]. That certainly involves getting a feel for the organization. Organizational savviness is a form of context-savviness, an understanding of the landscape, sometimes referred to as organizational awareness [19] or even more broadly as situational awareness.[9] The academic medicine context includes all of the players (faculty, staff, administrators, trainees, etc.), their interactions (static and dynamic),[10] and the forces (internal and external) which govern those interactions.[11] Among those forces are the formal rules and the informal or unwritten rules. The latter constitute part of the organization's culture. Complicating matters is the fact that as a faculty member new to an institution there will be (at least) two different organizations for which savviness is needed—the medical school and the healthcare system. There are overlaps between the two, but there will also be aspects which differ greatly. After describing what organizational savvy looks like, Bickel made a number of suggestions such as developing a political compass, building relationships inside and outside the hierarchy, learning to handle sensitive topics as they arise, getting specific training, e.g., leadership training, reflecting on experience and others [18]. These are all quite reasonable and I think that I have done all of them. Over a multi-decade experience in one place, I think that I have developed a pretty good knack, admitting that I have stubbed my toe many times along the way,[12] but learning from the experience. However, being an academic at heart, I felt the need to develop a model in order to help organize my thinking. Serendipity being what it is, while I was writing this chapter, I participated in the tenth Conference on

[8] In the academic literature, a wide variety of terms has been used to describe this and its elements, but I have chosen savvy, following an excellent paper by Janet Bickel [18].

[9] Situational awareness is defined as "the perception of the elements in the environment within a volume of time and space, the comprehension of their meaning, and the projection of their status in the near future" [20]. It is a level of awareness that an individual has of a situation; a dynamic understanding of 'what's going on.' As part of information processing, situational awareness follows perception of the situation and leads to decision making and action execution [21]. 'Organizational awareness' focuses on the people and has been defined as 'an understanding of the activities of others, which provides a context for your own activity' and this context is used to 'ensure that individual contributions are relevant to the group's activity as a whole' [22 p. 107].

[10] These actions are governed by such factors as organizational culture, organizational hierarchy, and organizational politics. "Organizational politics is the management of influence to obtain ends not sanctioned by the organization or to obtain sanctioned ends through non-sanctioned influence means" [23].

[11] Systems savvy is a new construct consisting of the capacity to see the interdependence of technological and social/organizational systems and to construct synergies between them [24].

[12] Often that toe stubbing related to fundamental differences between the way I saw academia and the way others did, especially when I prioritized teacher over research.

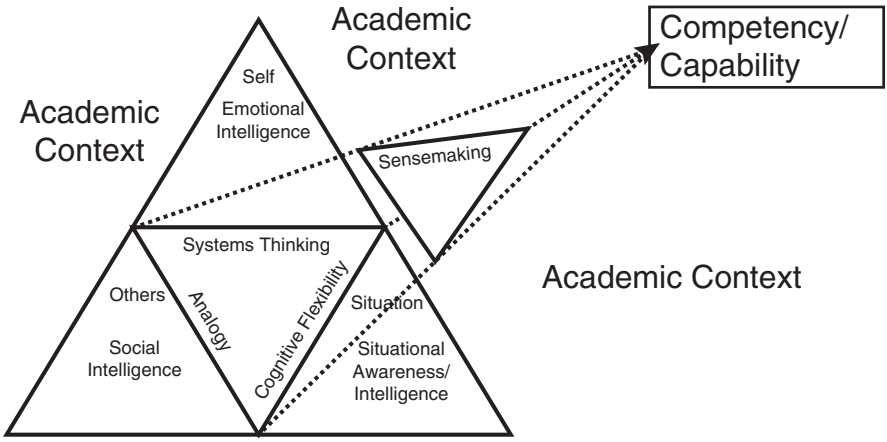


Fig. 15.1 Academic systems-based practice competency for New Clinical Faculty in Medical School (adapted from TL Henderson SOS Model [25])

Complex Systems Science, all conducted on Zoom because of the Covid19 pandemic. Among the speakers that I happened upon (and there were several sessions being conducted simultaneously) was that of Dr. Tonya Lynn Henderson and the model I have developed is based on her work, though it does represent a significant expansion [25].

The model is shown in Fig. 15.1. Her systems of systems model was a (planar) triangle with self (Emotional Intelligence or EI), others (Social Intelligence) and situation (Situational Awareness) in the corners. In the center was 'success.' I have broadened this a bit, adding observational skills to emotional intelligence, explicitly adding sensitivity to power relationships to social intelligence and identifying others as colleagues and staff; and calling out organizational culture as a critical aspect of the situation (i.e., Department, School, Hospital). Then I added a layer of sensemaking which integrates all the types of intelligence at the base. Both systems thinking and cognitive flexibility contribute to sensemaking, and all of this results in the development of organizational savvy which for me, is shorthand for systems-based practice. Some of these terms require elaboration.

Emotional intelligence (EI)—The concept of EI has been around for a while [26]. Though somewhat controversial, emotional intelligence is considered to be important in medical education [27–30]. I came to learn about EI from one of my friends at the business school—Richard Boyatzis. We shared an interest in complex systems and he told me about his work, particularly in leadership development.[13] I applied for a grant and with the money arranged for him (and his team) to conduct

[13] His book "Primal Leadership" has been translated into many languages and they took up a section in his book shelved [31].

a leadership training program based on his model for intentional change[14] for some junior clinical faculty (and me too) [34].

Other types of intelligence have been suggested [24, 35, 36]. For example, Howard Gardner's theory of multiple intelligences differentiates different modalities such as musical-rhythmic and harmonic, visual-spatial, verbal-linguistic and others [37]. Gardner felt that interpersonal intelligence (sensitivity to others' moods, feelings, temperaments, and motivations) was equivalent to Goleman's emotional intelligence [38]. His idea remains contested and frankly, I find the literature on intelligence quite confusing with similar ideas called different things. Social intelligence has been defined as the capacity to know oneself and to know others (which I guess makes it a combination of inter and intra-personal intelligence in Gardner's terminology). However, it has also been referred to as street sense or common sense [39, 40]. Goleman in a later book separated two of the emotional-intelligence competencies—social-awareness and relationship-management—into a the concept of social intelligence to produce ESI—emotional and social intelligence [41, 42].[15] Confused? Welcome to academia. And then there is situational intelligence/awareness, a term popular when safety is a concern, e.g., flying, combat, surgical procedures [43, 44]. This term sees to combine different modalities of intelligence. So back to my model. The triangular structure of self, others and situation is Henderson's. She also had 'success' in the middle triangle. I felt that these were equivalent to different aspects of intelligence—emotional, social, and

[14] Self-directed change is an intentional change in an aspect of who you are (i.e., the Real) or who you want to be (i.e., the Ideal), or both. Self-directed learning is self-directed change in which you are aware of the change and understand the process of change. See: Boyatzis [32]. To be an effective manager or leader, a person needs the ability to use their knowledge and to make things happen. These can be called competencies, which Boyatzis defined as, "the underlying characteristics of a person that lead to or cause effective and outstanding performance." See: Boyatzis [33]. These competencies cluster in three areas: (1) Cognitive or intellectual ability, such as systems thinking; (2) Self-management or intrapersonal abilities, such as adaptability; and (3) Relationship Management or interpersonal abilities, such as networking. The latter two clusters make up what we call emotional intelligence competencies. See: Goleman et al. [31].

Beyond knowledge and competencies, the additional ingredient necessary for outstanding performance appears to be the desire to use one's talent. This seems driven by a person's values, philosophy, sense of calling or mission, unconscious motives and traits. These three domains of capability (i.e., knowledge, competencies, and motivational drivers) help us to understand "what a person needs to do" (i.e., knowledge), "how a person needs to do it" (i.e., competencies), and "why a person will do it" (i.e., values, motives, and unconscious dispositions). Learning is a sustained change in one's actions, perceptions, emotions, or thoughts. Intentional learning is a sustained change in one's actions, perceptions, emotions, or thoughts toward or away from a specified state or condition that is desired or anticipated. We will examine what people might want to learn, how they would learn "it," and why they would learn "it" and show how it is necessary to use concepts from complexity theory to understand each of these phenomena. Intentional change model implies need to have a range of options for improvement.

[15] https://www.socialigence.net/blog/difference-between-iq-eq-and-sq-the-social-intelligence-and-why-sq-is-the-future/#:~:text=According%20to%20him%2C%20interpersonal%20intelligence,as%20part%20of%20a%20group.&text=Thus%2C%20social%20intelligence%20is%20extension,broader%20concept%20than%20emotional%20intelligence. Accessed 8-25-20.

situation—but that there was a critical next step, that of integration. The term that fit this process, at least in my head, was sensemaking [45].

People alone or in groups have been making sense of things (or not) since time immemorial, certainly longer than academics have used the term sensemaking[16] and exhaustively parsed its meanings in different academic disciplines [46–49]. I was introduced to the topic when I heard a talk by Don Berwick at the annual meeting of the Institute for Healthcare Improvement entitled "Escape Fire." [50] It was the story of a firefighting disaster at Mann Gulch, Montana [51]. As the firefighters who had parachuted in were running from the out of control fire, the foreman set a fire in front of him which cleared the brush and grass and walked into the middle of it. He beckoned others to join him, but none did and most of the firefighters, an elite group of "Smokejumpers" from the US Forest Service were killed. On the spot, he had "invented" the so-called escape fire. It required a very different way of thinking than had been provided in training—a different mental model. None of the other firefighters could make sense of what the foreman had done and didn't join him in that relatively safe zone. They maintained their old mental models.[17] Karl Weick had written an analysis of this entitled: The collapse of sensemaking in organizations: The Mann Gulch disaster [52]. The concept has been applied to individuals, groups and organizations; it has been applied in healthcare [53]. At its core, sensemaking is the process by which people give meaning to an experience that is somehow at odds with expectations so as to enable action. It is about giving structure to the unknown [54].

Sensemaking is a dynamic process which involves identification of salient cues, making connections between them, creating a rational account and then acting upon it. The cues (people, things, events) are found in the context, which has been defined as "the circumstances that form the setting for an event, statement, or idea, and in terms of which it can be fully understood and assessed." [55] Things are experienced in a context, i.e., the circumstances, conditions, surroundings, factors, state of affairs, frame of reference, situation, environment, or milieu. In implementation practice, context is critical and effective implementation of an intervention can be said to reflect the intervention by context interaction.[18] When aspects of the context are at odds with expectations, one's mental model no longer fits, a new mental model needs to be created that better accounts for the observed reality. Effective sensemaking is built on a foundation of several abilities. When faced with a mass of

[16] https://en.wikipedia.org/wiki/Sensemaking. Accessed 8-25-20.

[17] Another example of this was in that some of the firefighters never dropped their heavy packs and tools despite the fact that the heavy weight only impeded their ability to run faster. They had been trained that one never dropped one's equipment. That training had informed their mental model.

[18] In contrast to implementation practice, implementation science recognizes the importance of context (see: Nilsen and Bernhardsson [56]) However, it tends to try to eliminate the effects of context by randomization, hoping that 'important' differences in context will balance out. With the sample sizes that are studied, I find this unlikely. Alternatively, postulated important determinants of contexts are specified using one of the many conceptual frameworks. The CFIR model was developed in part to list the various determinants of context (see: Damschroder et al. [57]). In practice, you ignore context at your peril.

sensory experience, we have to pick out the important things, i.e., pick out the right or salient dots and connect them. How we connect them is the structure that gives meaning to them. Cognitive flexibility defined as "the readiness with which the person's concept system changes selectively in response to appropriate environmental stimuli" [58] enables us to identify particular aspects as dots whether they appear in one dimension of concepts or another. Analogical reasoning provides a means to identify the dots by application of knowledge of a similarly acting system to the problem at hand. Systems thinking provides a way of connecting the dots, but with creativity, it also provides a means for identifying where dots should be even if you can't see them. Sensemaking reflects the information by context interaction [59] and how they are woven together.[19] However, it is not only a matter of weaving a tapestry, but rather visualizing and revisualizing it as the tapestry is made and modifying it along the way. Sensemaking is dynamic and in its iterations uses different types or reasoning, fast and slow, heuristic and algorithmic. Just as heuristics are subject to cognitive biases, algorithms tend to break down in the non-linear world of people. Although when Earnest Rutherford said: "The only possible conclusion that social sciences can draw is some do, some don't," [60] it was probably not meant as a compliment. Yet, it is that world of people in which change has to be made. From a weaver's perspective, the cues make up the threads and the combination of systems thinking, analogical thinking and cognitive flexibility make up the loom from which a pattern emerges from seeming chaos (in its popular usage) making it possible for us to act upon it. I am sure there are other things, but these three habits of mind have been the most helpful to me when combined with observation.[20]

You can observe a lot by just watching. (Yogi Berra)[21]

One of the major challenges for a new faculty member is the necessity to know the rules of the game and how the game is played and to accomplish this while playing the game [62, 63]. Figuring out how things work and how to navigate the organization is a career-long process. Some things are very easy to discern—the dean, department chair, division chief and so on. Some things, not so much, unless you are looking for them. Many processes are not clear. Paul Batalden stated that "…health care lacks the "catwalks" that make processes visible, and therefore analyzable, in manufacturing. It is very hard to manage and improve what one cannot see or understand, and "process illiteracy" confounds health care redesign often."[22] The organizational dynamics, interactions between people, may take place in full view or

[19] The word context derives from the Latin contextus, from con- 'together' + texere 'to weave'.

[20] This begs the question of how one develops the different types of intelligences along with systems thinking, cognitive flexibility, and analogical thinking. I have always felt that my undergraduate education in the humanities gave me a leg up on those who pursued a more conventional pre-med route, heavy on biological science. Confirmation of this view comes from a book I recently came across: Madsbjerg [61]. Maybe I shouldn't have buried this observation here, but as a junior faculty member, your undergraduate years are behind you.

[21] https://www.brainyquote.com/quotes/yogi_berra_125285. Accessed 7-23-20.

[22] Cited in Institute of Medicine [64].

behind closed doors. I am not suggesting spying as a strategy. Rather, keep an open mind, remember that one's observations may not provide a complete story. Dealing with these dynamics requires political skill. Ferris et al. described this construct as consisting of four critical underlying dimensions: social astuteness, interpersonal influence, networking ability, and apparent sincerity [65].[23] Politics in organizations involves going outside the usual, formally sanctioned channels. Organizational culture is another major part of the context.[24] I wouldn't look at mission statements. They all end up looking pretty much the same. More important is how espoused values align with values in practice?[25] Are the corridors filled with vacuous posters of beautiful mountains and eagles soaring designed to push you to excel, while the administration only values the number of beans it counts?

I prefer to use the term academic systems-based practice capability rather than competence because academic medicine is dynamic. In my career at the same institutions, I have lived through at least five medical school deans, five chiefs of staff and even more medical center directors. The rules, while fundamentally the same, vary a little from administration to administration, but the environment does change requiring major adjustments in how the administration responds and how you respond. Nevertheless, the bottom line remains the same: You have to be able to demonstrate your value to those who are paying you, noting that those who are paying you define what constitutes value. Thriving in this dynamic world requires systems-based practice capability.

References

1. DiPerna JC, Elliott SN. The academic competence evaluation scales college manual. San Antonio, TX: Pearson; 2001.
2. Milner RJ, Gusic ME, Thorndyke LE. Perspective: toward a competency framework for faculty. Acad Med. 2011;86(10):1204–10.
3. Leach DC. Changing education to improve patient care. BMJ Qual Saf. 2001;10(suppl 2):ii54–8.
4. Ogrinc G, Headrick LA, Mutha S, Coleman MT, O'Donnell J, Miles PV. A framework for teaching medical students and residents about practice-based learning and improvement, synthesized from a literature review. Acad Med. 2003;78(7):748–56.
5. Wong BM, Levinson W, Shojania KG. Quality improvement in medical education: current state and future directions. Med Educ. 2012;46(1):107–19.

[23] I particularly like the concept of apparent sincerity. It reminds me of the adage "always be sincere whether you mean it or not." I don't know who made that up, but I heard it from a British musical comedy team—Flanders and Swann.

[24] There is a huge literature on organizational culture in general and organizational culture in healthcare in particular. Glynn et al. [66] and Braithwaite et al. [67], just to name two of the dozens and probably hundreds of books.

[25] This is analogous to the explicit medical school curriculum and the hidden curriculum. See: Hafferty and Castellani [68] and Yazdani et al. [69].

6. Dyne PL, et al. Systems-based practice: the sixth core competency. Acad Emer Med. 2002;9:1270–7.
7. Moskowitz EJ, Nash DB. ACGME competencies: practice-based learning and systems-based practice. Am J Med Qual. 2007;22:351–82.
8. Tomolo A, et al. The outcomes card. Development of a systems-based practice educational tool. J Gen Intern Med. 2005;20:769–71.
9. Stevens T. Political savvy. In: Management and leadership skills for medical faculty. Springer, Cham; 2016. p. 171–81.
10. Nagarajan R, Prabhu R. Competence and capability: a new look. Int J Manag. 2015;6(6):7–11.
11. Fraser SW, Greenhalgh T. Coping with complexity: educating for capability. BMJ. 2001;323(7316):799–803.
12. Hartviksen TA, Aspfors J, Uhrenfeldt L. Healthcare middle managers' experiences of developing capacity and capability: a systematic review and meta-synthesis. BMC Health Serv Res. 2019;19(1):546.
13. Morgan G. Images of organization: the executive edition. Thousand Oaks, CA: Sage; 1998.
14. McIlvain H, Crabtree B, Medder J, Stange KC, Miller WL. Using practice genograms to understand and describe practice configurations. Fam Med. 1998;30(7):490.
15. Martinson BC, Nelson D, Hagel-Campbell E, Mohr D, Charns MP, Bangerter A, Thrush CR, Ghilardi JR, Bloomfield H, Owen R, Wells JA. Initial results from the Survey of Organizational Research Climates (SOuRCe) in the US department of veterans affairs healthcare system. PLoS One. 2016;11(3):e0151571.
16. Pololi LH, Krupat E, Civian JT, Ash AS, Brennan RT. Why are a quarter of faculty considering leaving academic medicine? A study of their perceptions of institutional culture and intentions to leave at 26 representative US medical schools. Acad Med. 2012;87(7):859–69.
17. Cramer SF. Learning the ropes: how department chairs can help new faculty develop productive scholarship habits. Reflective Pract. 2006;7(4):525–39.
18. Bickel J. Organizational savvy: critical to career development in academic medicine. J Women's Health. 2019;28(3):297–301.
19. Spitzer W, Silverman E, Allen K. From organizational awareness to organizational competency in health care social work: the importance of formulating a "profession-in-environment" fit. Soc Work Health Care. 2015;54(3):193–211.
20. Endsley MR, Jones DG. Designing for situation awareness: an approach to user-centered design. Boca Raton, FL and London, CRC Press; 2011.
21. Endsley MR. Measurement of situation awareness in dynamic systems. Hum Factors. 1995;37(1):65–84.
22. Dourish P, Bellotti V. Awareness and coordination in shared workspaces. In Proceedings of the 1992 ACM conference on Computer-supported cooperative work. 1992. p. 107–14.
23. Mayes BT, Allen RW. Toward a definition of organizational politics. Acad Manag Rev. 1977;2(4):672–8.
24. Griffith TL, Sawyer JE, Poole MS. Systems savvy: practical intelligence for transformation of sociotechnical systems. Group Decis Negot. 2019;28(3):475–99.
25. Henderson T, Boje DM. Organizational development and change theory: managing fractal organizing processes. Routledge; 2015.
26. Salovey P, Mayer JD. Emotional intelligence. Imagin Cogn Pers. 1990;9(3):185–211.
27. Cherry MG, Fletcher I, O'Sullivan H, Dornan T. Emotional intelligence in medical education: a critical review. Med Educ. 2014;48(5):468–78.
28. Arora S, Ashrafian H, Davis R, Athanasiou T, Darzi A, Sevdalis N. Emotional intelligence in medicine: a systematic review through the context of the ACGME competencies. Med Educ. 2010;44(8):749–64.
29. Mintz LJ, Stoller JK. A systematic review of physician leadership and emotional intelligence. J Grad Med Educ. 2014;6(1):21–31.
30. Tiffin PA, Paton LW. When I say… emotional intelligence. Med Educ. 2020;54(7):598–9.

31. Goleman D, Boyatzis RE, McKee A. Primal leadership: unleashing the power of emotional intelligence. Harvard Business Press; 2002.
32. Boyatzis RE. Self-directed change and learning as a necessary meta-competency for success and effectiveness in the 21st century. In: Sims R, Veres JG, editors. Keys to employee success in the coming decades. Westport, CT: Greenwood Publishing; 1999. p. 15–32.
33. Boyatzis RE. The competent manager: a model for effective performance. Wiley; 1982.
34. Boyatzis R, Boyatzis RE. An overview of intentional change from a complexity perspective. J Manag Dev. 2006;25(7):607–23.
35. Sternberg RJ. A theory of adaptive intelligence and its relation to general intelligence. J Intelligence. 2019;7(4):23.
36. Sternberg RJ. The theory of successful intelligence. Rev Gen Psychol. 1999;3(4):292–316.
37. Gardner H. Frames of mind.- the theory of multiple intelligences. New York: Basic Books; 1983.
38. https://en.wikipedia.org/wiki/Theory_of_multiple_intelligences#Interpersonal. Accessed 24 Aug 2020.
39. Riggio RE. What is social intelligence? Why does it matter. Psychol Today. 2014.
40. Riggio RE, Reichard RJ. The emotional and social intelligences of effective leadership. J Manag Psychol. 2008;23(2):169–85.
41. Goleman D. Social intelligence. Random House; 2007.
42. Crowne KA. The relationships among social intelligence, emotional intelligence and cultural intelligence. Organ Manage J. 2009;6(3):148–63.
43. Endsley MR. Situation awareness: progress and directions. In: A cognitive approach to situation awareness: theory, measurement and application. S. Banbury, and S. Tremblay ed. Aldershot: Ashgate Publishing; 2004. p. 317–41.
44. Danielsen BE, Johnsen SO. Sensemaking in critical situations and in relation to resilience—a review. ASCE-ASME J Risk Uncert Eng Syst B Mech Eng. 2019;6:010801-1–010801-10.
45. Urquhart C, Lam LMC, Cheuk B, Dervin BL. Sense-making/sensemaking. https://www.oxfordbibliographies.com/view/document/obo-9780199756841/obo-9780199756841-0112.xml# Accessed 1 Sep 2020.
46. Weick KE. Sensemaking in organizations. Sage; 1995.
47. Maitlis S, Christianson M. Sensemaking in organizations: taking stock and moving forward. Acad Manag Ann. 2014;8(1):57–125.
48. Klein G, Moon B, Hoffman RR. Making sense of sensemaking 1: alternative perspectives. IEEE Intell Syst. 2006;21(4):70–3.
49. Kolko J. Sensemaking and framing: a theoretical reflection on perspective in design synthesis. In: 2010 design research society conference. 2010.
50. Berwick DM. Escape fire. Plenary address. In Eleventh annual national forum on quality improvement in health care. New Orleans, LA; 1999.
51. Maclean N. Young men and fire. University of Chicago Press; 1992.
52. Weick KE. The collapse of sensemaking in organizations: the Mann Gulch disaster. Adm Sci Q. 1993;1:628–52.
53. Penney LS, Leykum LK, Noël P, Finley EP, Lanham HJ, Pugh J. Protocol for a mixed methods study of hospital readmissions: sensemaking in Veterans Health Administration healthcare system in the USA. BMJ Open. 2018;8(4):e020169.
54. Ancona D. Sensemaking: framing and acting in the unknown. In: Snook S, Nohria N, Khurana R, editors. The handbook for teaching leadership. Thousand Oaks, CA: Sage; 2012. p. 3–19.
55. https://www.lexico.com/en/definition/context. Accessed 25 Aug 2020.
56. Nilsen P, Bernhardsson S. Context matters in implementation science: a scoping review of determinant frameworks that describe contextual determinants for implementation outcomes. BMC Health Serv Res. 2019;19(1):1–21.
57. Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. Implement Sci. 2009 Dec;4(1):1–5.
58. Scott WA. Cognitive complexity and cognitive flexibility. Sociometry. 1962;25:405–14.

59. Naumer C, Fisher K, Dervin B. Sense-making: a methodological perspective. In Sense-making workshop, CHI, vol. 8. 2008.
60. https://www.quotes.net/quote/17208#:~:text=Ernest%20Rutherford%3A%20The%20only%20possible,do%2C%20some%20don't. Accessed 28 Sep 2020.
61. Madsbjerg C. Sensemaking: the power of the humanities in the age of the algorithm. Hachette Books; 2017.
62. Arthur WB. Increasing returns and the new world of business. Harv Bus Rev. 1996;69:100–9.
63. Jaworski J, Scharmer CO. Leadership in the new economy: sensing and actualizing emerging futures. Beverly: Generon Consult; 2000.
64. Institute of Medicine. The future of nursing: leading change, advancing health. Washington, DC: The National Academies Press; 2011. p. 497.
65. Ferris GR, Treadway DC, Perrewé PL, Brouer RL, Douglas C, Lux S. Political skill in organizations. J Manag. 2007;33:290–320.
66. Glynn MA, Giorgi S, Lockwood C. Organization culture. https://www.oxfordbibliographies.com/view/document/obo-9780199846740/obo-9780199846740-0059.xml?rskey=FAnTBc&result=1&q=organisational+culture#firstMatch.
67. Braithwaite J, Hyde P, Pope C, editors. Culture and climate in health care organizations. Springer; 2009.
68. Hafferty FW, Castellani B. The hidden curriculum. A theory of medical education. In: Brosnan C, Turner BS, editors. Handbook of the sociology of medical education. London, New York: Rutledge; 2009. p. 15–35.
69. Yazdani S, Momeni S, Afshar L, Abdolmaleki M. A comprehensive model of hidden curriculum management in medical education. J Adv Med Educ Prof. 2019;7(3):123.

Chapter 16
Reputation and Connections

The young physician should be careful what and how he writes. Let him take heed to his education, and his reputation will take care of itself. William Osler[1]

If you take care of your character, your reputation will take care of itself. American Proverb[2]

Strive for excellence, not for reputation. Laura B. Dunn, Alana Iglewicz, and Sidney Zisook[3]

More than 10 years ago, I attended a strategic planning meeting for one of the VA HSR&D's (Health Services Research & Development Service) big programs. There were about 70 or 80 of us, mainly researchers, but also representatives from various offices in the VA. We were all seated at tables of eight. Seating was not assigned so we all distributed ourselves around the room. I think I sat at the table closest to the door. Of the others at the table, I knew about half of them. One individual stood up and said, "Most of us know each other, but I think it would be a good idea for everyone to introduce themselves. She pointed to the first person who gave her introduction and then to the second person and he did the same. She then pointed to me and said: "Everyone knows Dave" and moved on to the next person without giving me a chance to say anything. The irony is that I had no idea who she was! I found out when she introduced herself, but I still had no recollection of ever meeting her before. It is nice to be known, so it was clear that I had a reputation in the health

[1] Osler W. Internal medicine as a vocation. An address to the New York Academy of Medicine. In: Osler SW. Aequanimitas; with other addresses. Blakiston, Philadelphia; 1932. p. 139.

[2] American proverb (also attributed to D.L. Moody, a 19th century evangelist). http://www.quotationspage.com/quote/37557.html. Accessed 7-15-20.

[3] Dunn LB, Iglewicz A, Zisook S. How to build a national reputation for academic promotion. In: Roberts Academic Medicine handbook. Springer, Cham, 2020, pp. 515–523.

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8_16

services researcher community. I knew that I had a clinical reputation and a teaching reputation, but I was quite surprised by the incident.[4]

Everyone in academic medicine develops a reputation.[5] The reputation of a faculty member is an opinion about that individual, typically as a result of social evaluation on a set of criteria.[6] These criteria relate to academic roles as well as personal characteristics and different groups value individual domains differently. In the case of academic promotion, the domains of research (sometimes specified as scholarly activity) and to a lesser degree teaching are most important. There are some specific things that can be done to foster your reputation in terms that department chairs and the promotions committee understands and lists of them have been proposed [1, 2]. These are ok as far as they go, and I will address some of them more specifically in the chapter on tracks and promotion. The reach of that reputation can be very limited or extensive. In fact, the extent of that reach is a major criterion for determination of faculty rank and promotion. Ranks can be divided into those that require only a local reputation (instructor and assistant professor). To become an associate professor, a national reputation is required while for professor, an international reputation is required.[7] Reputations travel and they travel through networks. "Reputational information courses through certain network bridges that link together and expand a person's potential network through relatively isolated ties to others, generating the capacity for rapid, widespread, and often untraceable reputational information flow."[8] Thus, in addition to thinking about your actions as they relate to the individual domains of reputation, it is also important to think about developing your network. However, one's network has impacts far beyond one's reputation [3]. I have rarely thought specifically about developing a reputation, but I have given great thought to my network.

A network is any interconnected group of entities. These entities can consist of a wide variety of things such as ports, organisms, or people. These entities are referred

[4] I found out about my clinical reputation when I received a letter nearly 20 years ago informing me that I had been included in a list of Best Doctors in America. Another indication of reputation was my listing starting many years ago as one of the "Top Doctors" in Castle Connolly's ranking system. It came to me as a surprise. I was a doctor at the VA and had a very limited clinical practice so there was no particular reason why I would become known. But I did. Unlike some other lists, you can't pay to be included. Someone on the list has to nominate you and then if certain criteria are met (professional qualifications, education, hospital and faculty appointments, research leadership, professional reputation and disciplinary history), then doctors in the survey are asked to rate you considering not only the training and clinical skills of the physicians they nominate, but also interpersonal skills such as listening and communicating effectively, demonstrating empathy, and instilling trust and confidence." In the end it was peer recognition (https://www.castleconnolly.com/about-us/how-castle-connolly-selects-top-doctors. Accessed 7-15-20). Similarly, I knew about my teaching reputation because of feedback from students and receipt of several awards for teaching excellence.

[5] In fact, everyone develops a reputation.

[6] https://en.wikipedia.org/wiki/Reputation.

[7] More about this in Chapter x on tracks and promotions.

[8] Craik KH. Reputation: a network interpretation. Oxford University Press, Oxford; 2008.

to as nodes in a network analysis and the connections are termed links [4–7]. Links (termed edges) may be directed or undirected and it is through these links that communication or "contagion" occur. These can be shipping routes (through which germs might travel), genetic relationships ('phylogenetic tree of life'), or information (e.g., reputation, knowledge, or publication references). Links may be binary or weighted. These nodes and links make up the structure of the network which can be characterized by number of nodes, density of links, and position (centrality, i.e., which is the best-connected node). The links vary in strength, information capacity, rates and probabilities of communication, and distance between nodes; spread occurs from person to person and from person to person to person, etc. This is what is happening when something on the internet goes "viral." My academic social network consists of different types of people: (1) those who I know who also know me; (2) those who I know (e.g., by reputation) who don't know me; and (3) those who know me but who I don't know (unseen audience). Then there is everyone else [8]. My network also consists different kinds of people, some local (hospital-based or school-based) and some geographically distanced. We tend to associate with people who resemble ourselves (homophily), so it is not surprising that there are many such people in my network. We share interests, whether they be clinical, research, teaching, among others. For example I have a fairly large network of people interested in complex systems and they come from a wide variety of disciplines outside medicine) [9].

I switched my research focus from the lab to health services research as a mid-career faculty member. It took about five years before I got a grant funded by VA HSR&D. I wrote a respectable number of papers over the years but only one of them has been widely cited and I was neither the first nor the senior author on that one.[9] Nevertheless, I did become known. Part of this probably related to my position as Chief of Medical Service and then Associate Chief of Staff for Education which connected me with others who were doing research. I volunteered to serve on the VA HSR&D Scientific Merit Review Board (SMRB). After the first meeting, when I had an idea how things worked, I became quite outspoken, and I am sure I made both friends and enemies among the many researchers that I met. I suspect that I also developed a reputation as a "character." I started to play music in between reviews and at breaks during the study section. I am talking rock and roll here. I was lucky to have a tolerant study section chair and portfolio manager in charge of the meeting. Sometimes I would choose a piece of music that related somehow to the review that we had just completed. For example, if we had just triaged a grant (i.e., the preliminary scores were so low that the grant wasn't discussed at all) or really savaged a grant, I would play something like "First Cut is the Deepest" by Cat Stevens or "Take Another Piece of My Heart" by Janis Joplin. I got a laugh once when I played the Surfaris' "Wipeout." Of course, we also liked some grants and when one was scored extremely well, I would play something like "Walking on

[9] Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. Implement Sci 2009;4(1):1–5.

Sunshine" by Katrina and the Waves. In a meeting of the SMRB, there are eight study sections that meet simultaneously. They often don't break for lunch at exactly the same time. One day members of a section that broke for lunch before we did were walking past my section. I happened to be playing music and I overheard people in the hall saying, "I want to be on that section!" In all the years that I did this, I have only gotten pushback a couple of times. One section chair asked that I play something more soothing, so I played Vivaldi's Four Seasons. At another meeting, a study section for the Patient Centered Outcomes Research Institute where I knew almost nobody, the person next to me got really annoyed. I think she said that she couldn't concentrate. This was during a break, and I think she was looking at her email or revising something. It wasn't as if I was playing something by Jimi Hendrix, though I have no difficulty working with his music in the background. However, I stopped the music. At another meeting of that section a year or two later, the chair (whom I knew) asked where was the music? Go figure. I don't think that I would have gotten away with this if it had not been for the fact that I took my reviewing very seriously. I tried to read all the grants and not only the ones for which I had to write a review. Many people make do reading the abstracts of the others. I tried to make my reviews very clear and concise so that the committee listened. I didn't drone on.[10] It got to the point where people were waiting to see what my opinion was.

I made all kinds of connections at the SMRB, not only other reviewers, but also among the researchers who wrote the grants that I reviewed. If I found a grant really interesting, I would look at the publications of that principal investigator (PI) and send her an email saying I was interested in her work. Sometimes a collaboration would develop. Perhaps the oddest time something like this happened occurred when I was the primary reviewer of a grant on a topic where I had a lot of personal experience (and publications). It was a randomized controlled trial of an intervention. It was an extremely good grant, but it had one glaring weakness. There was little attention to how the intervention would actually be implemented. I wrote a pretty tough review and didn't give it a great score. The other two reviewers agreed. At the end of a review, we have to construct a summary statement that synthesizes the views of the panel as a whole. As this process was going on, I said what this principal investigator needs is a collaborator who is an expert in implementation

[10] Perhaps the craziest thing I ever did was when I was asked to serve as the acting chair of my section because the chair was unable to attend. The portfolio manager and I were friends, and I already had a reputation I guess. She gave me a Swiss cow bell that I could ring if one of the reviewers kept repeating himself. I also wore a Viking helmet-like hat given to me by a Swedish graduate student. I wore it and kept that meeting moving. We were extremely efficient, getting out earlier than any other section, but I made sure that every grant got a fair review and that every member had a chance to give his/her opinion without repeating themselves. I actually had to use the bell only once. Lest you think that I was very senior to the committee members, that was not the case at all. One of the members was the retired director of VA HSR&D. Another was a director of one of the largest VA HSR&D Centers of Excellence. Both of them and others complimented me on how well I ran the meeting.

science. At the time, this field was just getting started (at least under that title) and I was one of the few. I also had a small VA funded center for implementation research. In the summary, we included a statement that the PI should seek such a person and might consider contacting someone at the center in Cleveland.[11] A few weeks later, I got a call from the PI. We did not know each other. He told me about his grant and the reviewers and especially about that SOB reviewer number 1 (which was me, though he didn't know it). I listened to him complain, sympathizing about the unjustness of reviewers and said that I would be willing to collaborate, but he should send me the reviews (all of which I had of course seen) and I would see if it was possible to respond to the reviewers. Of course, it was. I made my suggestions and helped with the writing, and he put me on as co-investigator. The grant was resubmitted. I recused myself and found out later that the grant had been funded. I never told the PI directly, but about two years later he figured out what had happened. Was this all kosher? I think so. What did I get out of it? I helped a good researcher get funded for a good project (and he went on to do other good things). I didn't get any funding for that project and my name is not on the paper that came out of that study and that is fine. However, after his publication, we and others collaborated on a couple projects. Mostly, I just helped someone and made a connection.

Sometimes I have contacted people based on what they published; sometimes I have chosen to publish in specific journals based on my desire to reach a specific audience and generate contacts. Similarly, I have taken advantage of scientific meetings to "network," seeking out specific people or giving talks in order to get my name and work out there. However, it was never just about making a name for myself.

There are different ways to become known beyond your institution and other than by publishing papers, getting funding and serving on scientific review panels. Giving talks is a very good way, though I am very careful about not taking money from drug companies or device manufacturers to speak. Too many physicians take money, and it just can't help but taint not only what you say, but also your views. Although it can be extremely lucrative, in my book, it gives you a bad reputation. If you take academic duties seriously, you shouldn't become a shill for BigPharma.[12] Some of my talks are directed towards clinicians and some are directed to researchers, e.g., at national scientific meetings. People hear you. I was invited to be a

[11] Considering that I have been told many times that the role of the reviewer is to review and not to help the investigator. I don't know how that summary statement passed muster, but nobody complained to me. I think that VA HSR&D was trying to encourage implementation research.

[12] Propublica has a project entitled Dollars for Docs which lists doctors and hospitals by name, how much money they get and from whom. One neurosurgeon received $29 million in 2018 which is considerably more than I will make in my lifetime. https://projects.propublica.org/docdollars/. Accessed 7-15-20. See also: Van Zee A. The promotion and marketing of oxycontin: commercial triumph, public health tragedy. Am J Publ Health 2009;99(2):221–7 and De Shazo RD, Johnson M, Eriator I, Rodenmeyer K. Backstories on the US opioid epidemic. Good intentions gone bad, an industry gone rogue, and watch dogs gone to sleep. Am J Med 2018;131(6):595–601.

visiting professor and speak at an International Congress of Endocrinology meeting in Switzerland based on a talk I had given at U.S. meeting of the Endocrine Society. More important, I meet people on those occasions. I was asked to speak at a meeting at the NIH (probably because of a paper I had written) and I happened to sit next to someone from Europe whose work I had heard of, but never met. We started talking. I suggested another analysis he could do. The next day he showed me the results. We ended up collaborating and became friends. This was neither the first nor the last time such a thing has happened to me.

I had a reputation, but did I have a brand?

I have never paid any attention to personal branding. I had never even heard the term until a year ago and I remember being unimpressed (or being impressed unfavorably) and thinking that it was just a fancy term for reputation. I have learned more about it since then and though I don't think that had I known this at the beginning of my career, I doubt that I would have ever engaged in personal branding. The main reason is that branding has a connotation that I don't care for, specifically marketing oneself as a commodity. Kintz said: "It's not who you know that matters—it's who knows you that's important. Personal branding builds up your reputation to the point where you have a presence even in your absence."[13] This is true only if you see others as a means to help yourself and see yourself a commodity in the marketplace. I try not to do either. Nevertheless, the concept of branding has made it to academic literature [10, 11]. The topic of personal branding was the subject was in the curriculum for the VA Quality Scholars Program, so you should at least know something about it.

Branding refers to a means of taking ownership of property though it has extended far beyond cattle to all kinds of other property. A brand indicates ownership—a link between the one who brands and the property. It has also extended to include other concepts such as a company's products and values. A trademark, such as a company logo, is also a brand, now constituting a communication strategy to make a link, preferably indelible or as long-lasting as the symbol burned into a cow's hide between the logo owner of the brand and that corporation's products or services or the corporation itself. The Nike "swoosh" brings the company to mind, but not any specific product. However, it is still all about marketing, and which brings me to personal branding.

"A personal brand is a widely-recognized and largely-uniform perception or impression of an individual based on their experience, expertise, competencies, actions and/or achievements within a community, industry, or the marketplace at large." In contrast, personal branding is "the conscious and intentional effort to create and influence public perception of an individual by positioning them as an authority in their industry, elevating their credibility, and differentiating themselves from the competition, to ultimately advance their career, increase their circle of influence, and have a larger impact."[14] There are many promoters of the concept and consultants

[13] Kintz J. This book is not for sale. Amazon Digital Services. 2011.

[14] https://personalbrand.com/definition/. Accessed 7-10-20.

who will help you create a personal brand [12–15]. This is about marketing and personal commoditization.[15] Maybe it is more relevant in the gig economy and in the digital age, but the concept does make me uncomfortable.[16] Lair et al. described personal branding as representing "the ultimate marriage of marketing culture with the mythos of the American individual: In a world of change and opportunity, you can create and recreate yourself so as to be the master of your own destiny"[17] (p. 314). However, to me personal branding elevates image over substance.[18]

Personal branding may be considered a form of networking, trying to establish connections, but it is a most limited and mainly egocentric view. My network includes friends, acquaintances, collaborators, and colleagues. One thing that I value in this network is illustrated in the first paragraph. I am connected to people with expertise in a wide variety of areas, a diversity of views that helps me be productive. It is the strength of weak ties. In expanding my network, I am not worried about my reputation, much less my brand. Rather, I make connections in order to learn more and to put myself in a better position to help others. When someone asks me a question related to research or clinical activity to which I don't have a ready answer, I almost always know someone whom I can ask or to whom I can refer. And I emphasize the word "know" and I use that word rather than the phrase "know of." They are very different. The former indicates that I have been in direct communication with that individual. Of course, there are also many whom I know of; I have a very large network, but I am not connected directly with everyone individually. This is the strength of weak ties.[19]

---

[15] It is something I have seen private consultants do. This is one of the factors that results in a basically singular approach to improving quality goes by different names, i.e., brands. They may differ a little bit on the margins, but they are basically the same. A similar process occurs in academia in which a single phenomenon is "rediscovered" every 20 years or so and called something different. See Starbuck WH. The production of knowledge: the challenge of social science research. Oxford University Press, Oxford; 2006.

[16] That is easy for me to say in my current position near retirement.

[17] Lair DJ, Sullivan K, Cheney G. Marketization and the recasting of the professional self: the rhetoric and ethics of personal branding. Manage Commun Q 2005;18(3):307–43.

[18] Lair et al. Go further in describing how the process goes beyond elevating image over substance to become one held up as the only reasonable way to succeed in the marketplace.

[19] Granovetter MS. The strength of weak ties. In: Social networks 1977 (pp. 347–367). Academic Press. Networks have even served as status symbols. Consider the Erdos number. This number represents the degrees of separation between two authors, the author of interest and the mathematician Paul Erdős. "The Erdős number measures the "collaborative distance" between an author and Erdős. Thus, his direct co-authors have Erdős number one, theirs have number two, and so forth. Erdős himself has Erdős number zero." https://en.wikipedia.org/wiki/List_of_people_by_Erd%C5%91s_number. Lower is apparently better. I don't know how the practice arose, but I have seen an Erdos number listed on a CV and there are faculty in the business school who are not mathematicians who have mentioned their numbers. The equivalent in the movie industry is the Kevin Bacon number. I use an online version of this game in my business school class. I ask students to find an actor with a number <4. It is not easy. https://oracleofbacon.org/. Accessed Accessed 7-13-20.

One area to which I have paid no attention is my online presence. I don't use Facebook, Twitter or most social media. Although I am on Linked-In, I don't really pay much attention to it and regularly forget my password.[20] This is very different from my junior colleagues [16]. It is also different from some faculty, especially my colleagues in the business school and from some of my clinical colleagues [17, 18]. Things are also changing; Scientists are tweeting out and promoting not only publications, but also preprints [19–21].

That said, I do have a reputation and it helps in expanding my network. There is even some overlap between the reputation I have and the one I would like to have.[21] You will develop a reputation too. It might as well be the one you want.

References

1. Dunn LB, Iglewicz A, Zisook S. How to build a national reputation for academic promotion. In: Roberts academic medicine handbook. Cham: Springer; 2020. p. 515–23.
2. Gore-Felton C. How to understand criteria for academic promotion on "traditional" and "research" tracks. In: Roberts academic medicine handbook. Cham: Springer; 2020. p. 479–85.
3. Niehaus E, O'Meara K. Invisible but essential: the role of professional networks in promoting faculty agency in career advancement. Innov High Educ. 2015;40(2):159–71.
4. Christakis NA, Fowler JH. Connected: the amazing power of social networks and how they shape our lives. London: Harper Collins; 2010.
5. Barabási AL, Frangos J. Linked: the new science of networks science of networks. New York: Basic Books; 2002.
6. Watts D. Six degrees: the new science of networks. New York: Random House; 2014.
7. Scott J, Carrington PJ. The SAGE handbook of social network analysis. London: SAGE Publications; 2011.
8. Craik KH. Reputation: a network interpretation. Oxford: Oxford University Press; 2008.
9. Warner ET, Carapinha R, Weber GM, Hill EV, Reede JY. Faculty promotion and attrition: the importance of coauthor network reach at an academic medical center. J Gen Intern Med. 2016;31(1):60–7.
10. Kalia V, Patel AK, Moriarity AK, Canon CL. Personal branding: a primer for radiology trainees and radiologists. J Am Coll Radiol. 2017;14(7):971–5.
11. Borman-Shoap E, Li ST, St Clair NE, Rosenbluth G, Pitt S, Pitt MB. Knowing your personal brand: what academics can learn from marketing 101. Acad Med. 2019;94(9):1293–8.
12. Cijo M. You branding: reinventing your personal identity as a successful brand. 1st ed. New York: Mark Cijo; 2014.
13. Chritton S. Personal branding for dummies. Hoboken: Wiley; 2014.

[20] Some academic networks are being created online based on scientific publications, e.g., ResearchGate and Academic.edu. See: Jordan K. Separating and merging professional and personal selves online: the structure and processes that shape academics' ego-networks on academic social networking sites and Twitter. J Assoc Inf Sci Technol 2019;70(8):830–42 and Jordan K. Imagined audiences, acceptable identity fragments and merging the personal and professional: how academic online identity is expressed through different social media platforms. Learn Media Technol 2020;45(2):165–78.

[21] In addition to my reputation as a teacher, mentor, and scholar, some people think I am a too cynical, sometimes intimidating, and often a general pain in the butt.

14. Waller T. Personal brand reputation management. In: Personal brand management. Cham: Springer; 2020. p. 123–39.
15. Grzesiak M. Personal brand creation in the digital age theory, research and practice. London: Palgrave; 2018.
16. Newmark C, Zhang YC, Dellarocas C, Farmer FR, Clippinger JH, Whitfield J, Goldman E, Strahilevitz LJ, Lampe C, Steffen A, Maxson M. The reputation society: how online opinions are reshaping the offline world. Cambridge: MIT Press; 2012.
17. Chandrasekar T, Goldberg H, Klaassen Z, Wallis CJ, Leong JY, Liem S, Teplitsky S, Noorani R, Loeb S. Twitter and academic urology in the United States and Canada: a comprehensive assessment of the Twitterverse in 2019. BJU Int. 2020;125(1):173–81.
18. Sedrak MS, Attai DJ, George K, Katz MS, Markham MJ. Integrating social media in modern oncology practice and research. Am Soc Clin Oncol Educ Book. 2018;38:894–902.
19. Cawcutt K. Twitter me this—can social media revolutionize academic medicine? Infect Control Hosp Epidemiol. 2017;38(12):1501–2.
20. Soragni A, Maitra A. Of scientists and tweets. Nat Rev Cancer. 2019;19(9):479–80.
21. Chan TM, Stukus D, Leppink J, Duque L, Bigham BL, Mehta N, Thoma B. Social media and the 21st-century scholar: how you can harness social media to amplify your career. J Am Coll Radiol. 2018;15(1):142–8.

Chapter 17
Promotion and Tenure (or not)

Work hard. I got tenure a year early. Junior faculty members used to say to me: 'Wow, what's your secret?' I said: 'It's pretty simple. Call me any Friday night in my office at 10 o'clock, and I'll tell you.' Randy Pausch [1]

University departments wanted to hire sober, rational researchers and teachers. You were allowed revelatory, apocalyptic experiences only after you had tenure. Richard Tillotson [2]

When you join an academic institution, you enter a hierarchical system. Hierarchies are a common means of organization in the animal kingdom. Animal hierarchies allocate a relatively fixed amount of resources [3]. They have been referred to as dominance hierarchies.[1] Another type of hierarchy common in modern organizations is the production hierarchy where they coordinate specialization and division of labor for complex tasks. Some organizations have both features, e.g., government. Academic institutions such as universities and graduate schools have two somewhat separate hierarchies—the academic hierarchyreflected in the ranking system for faculty appointments and titles and an administrative hierarchy reflected in managerial titles. Martin pointed out that legal, medical, and academic careers all developed as professions …, but only the academic world embellished itself with a highly articulated hierarchy of ranks and titles; practitioners were never granted special titles. They were simply "doctors" or "attorneys at law" [4]. Thus, the academic hierarchy is primarily a means to rank status, although some power and privileges are associated with the rank. However, most faculty regardless of rank do pretty much the same things—research, teaching, and service (in clinical departments, clinical work may be considered service as in the expression of attending physicians: "I am on service"). Full professors generally have no direct power over assistant professors unless the former also occupy an administrative position such as department chair. In contrast, the academic administrative hierarchy is primarily functional and those

[1] This form of hierarchical organization is evolutionarily old and predates humanness. Rubin PH. Hierarchy. Human Nat 2000;11(3):259–79.

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8_17

at the top direct those at lower levels as in the military, although their power is more limited, deans direct department chairs and so on. Higher ranks typically have certain rewards and privileges, e.g., a parking place or an executive washroom. High ranked faculty may direct lower ranked faculty as mentors, but their power is limited. A mentee doesn't need to listen [5]. In the U.S., though not necessarily in other countries, the hierarchy is not strictly pyramidal.[2] Rank is based on standards met. There is no theoretical limit to the number of professors, though the number may be limited by the available resources.[3] Of course, it would be naïve to think that rank and promotion are based on merit alone and that other factors such as religion, race/ethnicity, gender, money and others play no role, but more about that later.

The full-time faculty model in medical education was adopted at the Johns Hopkins Medical School early in the twentieth century and its architects were interested in stimulating research; teaching played second fiddle, although a more apt metaphor would be second violin in an excellent orchestra. The research environment was felt to be the best one for medical education [6–8].[4] Nevertheless, teaching was considered an important aspect of faculty work and great teachers were revered; William Osler is the paradigmatic example and his teachings survive, particularly in the numerous quotations cited in collections of medical quotations [9]. The Johns Hopkins model was a major influence on the Flexner report which led to the transformation of medical education [10, 11]. Gone would be proprietary medical schools and the apprentice model. Replacing them would be medical schools with full-time faculty incorporated within universities along with major curricular changes, e.g., a four-year curriculum for college graduates, laboratory teaching, clinical clerkships, and research incorporated into the teaching program (rather than limited to research institutes). When medical schools were part of universities, they adopted the values of the university, specifically, the paramount importance of creation of new knowledge [12].

At the start, faculty were expected to be clinicians, teachers, and researchers. This so-called 'triple threat' model persisted for many years.[5] However, as research

[2] I spent some time as a medical student and junior faculty member at St. Bartholomew's Hospital in London, U.K. I was in the Metabolic Research Unit which was a "medical professorial unit," i.e., it was led by a professor who was also responsible for one of the general medicine units along with his subspecialty. There were no other professors in the Medical Research Unit, but there were professors who oversaw each of the general medicine units and their specialties. (I think that there were four others.) The other faculty held the rank of Consultant.

[3] With the massive expansion in research funding, the number of faculty, including full professors, expanded greatly. However, it would be naïve to think that rank and promotion are based on merit alone.

[4] The underlying model was that of the nineteenth century Humboldt model of the university in which there was a holistic combination of research and studies. See Östling J. Humboldt and the modern German university: an intellectual history. Lund University Press, Lund; 2018.

[5] A footnote in the preface to this book states: "The idea of a physician being a triple threat or in fact, any kind of threat, seems incongruous. The term is thought to derive from the early era of football where a triple threat was one who could run, pass, and kick. https://english.stackexchange.com/questions/305458/what-is-the-origin-of-the-phrase-triple-threat. Now, even kickers are specialized so that some do punts while others kick field goals, and few do both. The term has been applied to other sports as well as other fields, e.g., someone who can sing, dance, and act is a triple threat performer."

funding became more competitive, clinical demands for availability increased, and the increasing complexity of medical care with its provision by trainees requiring teaching and supervision, this model became increasingly untenable. I have seen this transformation in my lifetime. Physical diagnosis was taught to me in medical school by physicians in clinical practice.[6] On the wards at Columbia-Presbyterian, we had two attendings: a clinician in practice and a researcher. Each was at least a double threat, though some of the researchers were actually triple threats. When I was a resident at UCSD, I had both ward attendings and consult service attendings who were full-time faculty, a few of whom were triple threats and some who were full-time in private practice. The latter did this teaching because they felt obligated. I don't know if they even had official faculty appointments. The involvement of physicians in private practice was still happening when I came to CWRU in 1980, but by 1990 when it was my responsibility to sign up preceptors for physical diagnosis, it was almost impossible to get full-time clinicians in private practice to participate. Now, the school has been forced to pay faculty to do this. Similarly, private physicians serving as ward attendings has pretty much disappeared. One of my friends who was in private practice continued to be an attending for years, but finally had to give it up because it cost him too much in lost income and he could no longer afford it.[7]

However, having entered the academic hierarchy, an important question to answer for clinician-educator to answer is: why do you want to get promoted? I have asked several of my clinical colleagues if they wanted to get promoted and if so why.[8] Universally the answers were yes to the first question and either recognition or because it was expected were the answers to the second. I understand. When I came to CWRU, my mentor who had recruited me ensured that I came as an assistant professor. He didn't ask me, but knowing me well, he thought that I would want that rather than coming as an instructor. He was right; it was more prestigious and made me feel like I had accomplished something. Of course, it was expected that I would do what was necessary to get promoted. He expected it and I expected it. I was naïve. I really didn't know how things worked.

Having become integral parts of a university model, medical schools have also adopted the university's academic ranks and promotion system.[9] This system not

[6] I remember one in particular who was a cardiologist with a practice in New Jersey. He came to Columbia every 2 weeks to teach my physical diagnosis group. He considered it an obligation on his part. I have no idea if he had any faculty rank; I doubt it. He was extremely knowledgeable and seemed to have committed Harrison's Textbook of Medicine to memory. At the end of the course, he took my group of four students out to a steak dinner. I just looked him up and at the age of 91 he is still seeing patients. I also learned that he hadn't even gone to Columbia College of Physicians and Surgeons. I guess he just saw this as a physician's obligation to teach the next generation a la Hippocrates.

[7] Another reason was that the residents seemed mostly interested in discharging patients as soon as possible and not in learning medicine.

[8] Amazingly, I was unable to find a paper in the literature that directly addressed this issue.

[9] Although there are some free-standing medical schools not affiliated with a university, e.g., Medical College of Wisconsin, these have also adopted the university model.

only includes a hierarchy of faculty ranks, but also a system of tenure [13–16]. In general, award of tenure which usually comes the same time as achieving the rank of associate professor and brings with it a financial commitment on the part of the school. The idea is that financial security serves as a guarantor of free speech and the ability to do research on whatever you want [17, 18].[10] In contrast to the up or out tenure track, medical schools typically have a non-tenure track where there is no such financial commitment.[11] As medical schools have become dependent on clinical income, the need for doctors to generate that income became necessary. Providing a faculty appointment was a carrot, but there could never be any commitment to pay their salaries from other university funds. These positions are as critical to medical schools as adjunct faculty who may lack a traditional academic faculty rank are to colleges and graduate schools outside medicine. In any case, at CWRU, it is possible to switch from the tenure track to the non-tenure track which I did when I was told that I would not get tenure. I have been in the non-tenure track for 35 years. which I suspect is longer than many who actually have tenure. Many years ago, the two tracks had the same ranks but different titles. In the non-tenure track, the descriptor Clinical was added to the ranks, e.g., Clinical Professor. Some medical schools continue this practice or something similar. However, at CWRU, no one knows that I am a professor without tenure unless I tell them. I am just a professor. In fact, most people seem to assume that I have tenure and when I tell them

[10] Tenure has a long and interesting history, but its meaning is not a constant. The practice goes back to the early European universities of twelfth and thirteenth centuries. In general, tenure has meant that someone would not be discharged without adequate cause. In the US, faculty appointments were typically contractual until the nineteenth century when they became indefinite, though the board of trustees of a university could always fire someone. As academic disciplines differentiated, a view developed that only peers could assess other faculty. Things came to a head in 1900 when the sole university trustee who was the widow of Leland Stanford, the founder of the university ordered that a faculty member of the Stanford economics department (E.A. Ross) to be fired because of his politics and activism. This and other cases ultimately resulted in the establishment of the American Association of University Professors (AAUP). In various statements, it enunciated the principal justifications for tenure: preservation of academic freedom and provision of sufficient economic security to make the academic profession attractive to those of ability. Tenure review would be conducted by peers and university administrations would be neutral. There have been cases in which faculty who political views conflicted with those of the board of trustees or state legislatures have been protected. However, this is not to say that politics plays no role. (See the controversy surrounding the recruitment of Nikole Hannah-Jones to the University of North Carolina. (https://www.insidehighered.com/news/2021/05/20/unc-chapel-hill-board-doesnt--approve-tenure-noted-journalist). Moreover, during Senator Joseph McCarthy's anti-communism crusade, the university was often not a refuge (Schrecker EW. No ivory tower: McCarthyism and the universities. Oxford University Press, New York; 1986).

[11] The up or out practice was introduced in 1936 by James B. Conant, President of Harvard University when he changed existing procedures governing reappointment and promotion of junior members of Harvard's Faculty of Arts and Science. (Teichgraeber RF. The arrival of "up-or-out" tenure: James B. Conant and the "Tempest at Harvard," 1936–1939. In: The shaping American faculty. Routledge, London, 2017, pp. 79–112). Nowadays as a clinician educator, it is possible to be in a non-tenure track at an entry level for your entire career. It is different if you are a physician-scientist in the tenure track and you must either be promoted or leave the institution. This up or out process is the rule in the liberal arts and in universities, in general.

otherwise, they express surprise. I admit that I was quite peeved about being told I wouldn't get tenure and every now and again I think that I have not gotten the recognition I deserve. Nevertheless, that is my issue, and I don't think that not having tenure has made much, if any, difference in my career other that making me ineligible for certain university awards (which I doubt I would ever have gotten anyway) and a few other things. There are awards I have gotten for teaching and mentoring that I would not have gotten had I kept my nose to the grindstone in the lab and did what was necessary to get tenure. Moreover, I got promoted to professor as fast as those who were tenured.[12]

If you have decided that promotion is for you, there is plenty of general guidance out there. Tenure track promotions are based on excellence in research, teaching, and service (usually medical school committees or other administrative positions such as program director). Excellence in research is by far the most important. Here, one must be able to demonstrate that s/he is an independent investigator with a national reputation for associate professor and international reputation for full professor. For those in the non-tenure track, excellence in two of the three is assessed with service often including clinical activities, as well as other service. Regional reputation is usually enough for the associate professor level.[13] There are many books and articles about what it takes demonstrate that excellence and how to get it [19–23]. From the 30,000-foot view, these books and articles can be helpful, though nothing beats having a good mentor. Although these rules generally apply to all medical schools, there is considerable variation. For example, at the Cleveland Clinic Lerner College of Medicine, there is no tenure. As of 2014, 94% of medical schools offered tenure in one form or another [24]. There are also differences between how appointments are considered in basic science departments as compared with clinical departments. In a 2008 survey, 55% of schools who offered tenure to basic science faculty included a specific financial guarantee compared with 44% who offered such tenure to clinical faculty [25]. Moreover, the composition of faculty as a whole has changed markedly. The proportion of clinical faculty on tenure-eligible tracks has dropped from 59 to 26% in the time period 1984 to

[12] In retrospect, my mentor should have had me start as an instructor, so I had a couple of years progress in the lab before the tenure clock started, which it does when you get to the rank of assistant professor. Of course, since I have ended up doing just what I wanted, perhaps he did me a favor. Also, I found out later that my appointment to associate professor had been turned down, but in accordance with the rules, my chairman appealed the decision, and it was reversed.

[13] Because reputation is the key factor, especially reputation among one's peers and reputation can be quite subjective, I suggested a more objective measure of reputation based on Book 23 of Homer's Odyssey. The story goes like this: In the epic, Odysseus has angered the god Poseidon and when he makes it back to Ithaca, he is told to take an oar from his ship and to walk inland until he finds a "land that knows nothing of the sea", where the oar would be mistaken for a winnowing fan. At this point, he is to offer a sacrifice to Poseidon, and then at last his journeys would be over. (Homer. The Odyssey with an English Translation by A. T. Murray, Ph.D. in two volumes. Cambridge, MA, Harvard University Press; London, William Heinemann, Ltd. 1919. https://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A1999.01.0136%3Abook%3D23%3Acard%3D231). I suggested that all we need do is measure the extent of reputation base on mileage from Cleveland that someone is known. Needless to say, this was not adopted.

2014, while the number of clinical faculty has increased [15]. It is critically important to know the specifics for your own school. However, there is lot that goes on that doesn't appear in the schools' bylaws. It has been said that "Laws like sausages, cease to inspire respect in proportion as we know how they are made."[14] My experience on the departmental and school promotions committee confirms the adage.

I served on the promotions committees about 30 years ago and I know that things have changed. Nevertheless, two incidents struck me and have bothered me for years. The first one occurred on the department committee where promotions must be approved before moving up to the medical school committee. At that time, our department consisted of faculty from three hospitals—University Hospitals of Cleveland, the Cleveland VA Medical Center, and MetroHealth Medical Center. The chairman at UHC also was the academic chair for all three. There were many more faculty at UHC than the VA with MetroHealth in the middle, though it was located on the other side of town and had a separate residency program that competed with the UHC program. There was a prevailing opinion that faculty not at UHC were at a disadvantage. This was probably true for the simple reason that faculty at UHC contributed financially to the department while those at the other institutions did not; although, faculty at the latter two made major contributions to the department's teaching responsibilities. One day we were reviewing a potential new faculty member. He was a clinical practitioner with a large specialty practice, and he would be bringing other members of the group into the department with him. An appointment at a high level had been requested. Reviewing his CV showed little support for the academic rank. There was some discussion and resistance to approving the appointment at that level. [15] Then the chairman entered the room. He spoke about this individual's national reputation and that people had told him that we were lucky to recruit him. Then he left and the discussion resumed. One member of the committee in particular objected citing the lack of any documentation for said reputation. There were some who said they would vote in favor albeit reluctantly. I had great respect for the chairman, so I took his word for it. I think it was approved, but I don't know what happened at the medical school level. However, it became clear to me that this individual was recruited solely because of the clinical income that he would bring to the department. It probably should have been clear to me from the beginning, and I came to regret my decision (and told the major dissenter that I thought that he was right). Sausage.

Another incident occurred when I was on the school's committee. We were reviewing a candidate for tenure, something on which I could not vote because only tenured faculty at that level or higher could vote on tenure. The CV was reviewed, and this individual was clearly a very distinguished researcher with multiple NIH

[14] The quotation "If you like laws and sausages, you should never watch either one being made." Has been attributed to Otto von Bismarck. Robert Pear of the New York Times suggested that the quotation is offensive to sausages. https://www.nytimes.com/2010/12/05/weekinreview/05pear.html#:~:text=%E2%80%94%20In%20defending%20their%20work%2C%20members,can%20produce%20healthy%2C%20wholesome%20results. Accessed 3-9-2021.

[15] I think it was an appointment as professor, but I am not really sure. It definitely wasn't assistant professor because anyone who was board-certified or even board-eligible could get an appointment at that level.

grants. He also served on a sufficient number of committees. However, there was no support whatsoever for his excellence as a teacher, other than post-docs and graduate students had published papers on which he was the senior author (Those papers contributed to his national/international reputation.[16]). This was in the days before formal teaching portfolios became part of the requirements of the promotions packet. I made the argument that he didn't meet the criteria for excellence in teaching. However, that was trumped by his research credentials. Apparently, if you had NIH grants, it could be assumed that you were a great teacher. It wasn't true, but that is the way that the sausage was made. There were other times when appointments or promotions were used as a means to keep valued faculty who were looking at jobs elsewhere. Of course, faculty members know this and sometimes take advantage of it. Sausage. Sometimes, issues of gender and race/ethnicity are more weight [26]. Nevertheless, based on who I have seen promoted, I think that the system works much better now, though clinicians are still disadvantaged. The fundamental problem for the clinician is that excellence is demonstrated only by peer review, so that scholarly activity = publication.[17] One favorable trend in this regard, however, is a broadening of what is considered scholarship [27–35]. This has been reflected in the creation of new tracks for promotion, especially for those not eligible for tenure [36]. These include tracks for the clinical teacher, academic entrepreneurship, and quality improvement, as well as other local variations [22, 37–40]. For the individual faculty member, what is most important to understand the rules of the game in your own school.[18]

[16] I have suggested that when it comes to promotion, publications should count for establishing scientific excellence or teaching excellence but not both. That went over like a lead balloon.

[17] At CWRU, Dan Wolpaw came up with a great idea for this. He created the Scholarship in Teaching Award. "Teaching approaches considered scholarly are characterized by: Purposeful planning; Systematic implementation; and Reflection and assessment for improvement. The result should be an academic product that is actively shared and that will support the development of a community of teaching scholars." Completed applications are sent to external reviewers, much like a journal. Academic product doesn't necessarily mean a publication in a peer reviewed journal, but rather something that someone can use, e.g., a curriculum. https://case.edu/medicine/caml/programs-awards/scholarship-teaching-award. Accessed 3-9-2021. Another approach to fostering scholarship in teaching has been the MedEdPORTAL "a MEDLINE-indexed, open-access journal of teaching and learning resources in the health professions published by the Association of American Medical Colleges (AAMC), in partnership with the American Dental Education Association. MedEdPORTAL publications are stand-alone, complete teaching or learning modules that have been implemented and evaluated with medical or dental trainees or practitioners. Each submission is reviewed by editorial staff and external peer reviewers using a standardized review instrument grounded in the tenets of educational scholarship." https://www.mededportal.org/about/journalinformation. Accessed 3-9-2021. Among the reasons for establishing an Academy of Scholar Educators at CWRU was to provide a mechanism of peer review. Membership is based on peer review and is considered evidence of recognition of scholarship by our promotions committee. https://case.edu/medicine/faculty-staff/academy-scholar-educators. Accessed 3-9-2021.

[18] Unfortunately, this is not always easy; lack of clarity of promotions expectations for teaching, research, clinical activity, and institutional service is widely prevalent. Were that not enough, there is considerable disagreement of the reasonableness of promotions expectations. Bunton SA, Corrice A. Perceptions of the promotion process: an analysis of US medical school faculty. AAMC Analysis in Brief. 2011.

References

1. Randy Pauch. https://www.brainyquote.com/quotes/randy_pausch_564723#.
2. Acts of God While on Vacation. https://www.goodreads.com/author/quotes/5264159.Richard_Tillotson.
3. Rubin PH. Hierarchy. Hum Nat. 2000;11(3):259–79.
4. Martin JJ. Simplifying the academic hierarchy. Acad Bull AAUP. 2002;88(6):36–8.
5. Rubin PH. Op. cit.
6. Ludmerer KM. Learning to heal: the development of American medical education. New York: Basic Books; 1985.
7. Ludmerer KM. Time to heal: American Medical Education from the turn of the century to the era of managed care. New York: Oxford University Press; 1999.
8. Ludmerer KM. Let me heal: the opportunity to preserve excellence in American Medicine. New York: Oxford University Press; 2014.
9. Osler W. The quotable Osler. Minneapolis: ACP Press; 2008.
10. Flexner A. Medical education in the United States and Canada: a report to the Carnegie Foundation for the Advancement of Teaching. New York: Carnegie Foundation for the Advancement of Teaching; 1910.
11. Cooke M, Irby DM, Sullivan W, Ludmerer KM. American medical education 100 years after the Flexner report. N Engl J Med. 2006;355(13):1339–44.
12. Papp KK, Aucott JN, Aron DC. The problem of retaining clinical teachers in academic medicine. Perspect Biol Med. 2001;44(3):402–13.
13. White L. Academic tenure: its historical and legal meanings in the United States and its relationship to the compensation of Medical School Faculty Members. Saint Louis Univ Law J. 2000;44(1):5.
14. Teichgraeber RF. Tenure matters: a historian's perspective. AAUP J Acad Freedom. 2014;14:1–31.
15. Fishman JJ. Tenure and its discontents: the worst form of employment relationship save all of the others. Pace L Rev. 2000;21:159.
16. Asbill S, Moultry AM, Policastri A, Sincak CA, Smith LS, Ulbrich TR. Debating the effectiveness and necessity of tenure in pharmacy education. Am J Pharm Educ. 2016;80(6):94.
17. Bilgrami A, Cole JR, editors. Who's afraid of academic freedom? New York: Columbia University Press; 2015.
18. Hertzog MJ. Protections of tenure and academic freedom in the United States: evolution and interpretation. New York: Springer; 2017.
19. Walling A, Walling. Academic promotion for clinicians. New York: Springer; 2018.
20. Roberts LW, editor. Roberts Academic medicine handbook: a guide to achievement and fulfillment for academic faculty. Cham: Springer; 2019.
21. Sánchez JP, editor. Succeeding in academic medicine: a roadmap for diverse medical students and residents. Cham: Springer; 2020.
22. Chang A, Schwartz BS, Harleman E, Johnson M, Walter LC, Fernandez A. Guiding academic clinician educators at research-intensive institutions: a framework for chairs, chiefs, and mentors. J Gen Intern Med. 2021;2021:1–9.
23. Boyce M, Aguilera RJ. Preparing for tenure at a research-intensive university. BMC Proc. 2021;15(2):1–10.
24. https://www.aamc.org/system/files/reports/1/may2015redistributionofrenureracksusmedicalschoolfacultypart1.pdf. Accessed 3 September 2021.
25. Bunton SA. The relationship between tenure and guaranteed salary for US medical school faculty. AAMC Anal Brief. 2010;9(6):1–2.
26. Xierali IM, Nivet MA, Rayburn WF. Full-time faculty in clinical and basic science departments by sex and underrepresented in medicine status: a 40-year review. Acad Med. 2021;96(4):568–75.

27. Glassick CE. Boyer's expanded definitions of scholarship, the standards for assessing scholarship, and the elusiveness of the scholarship of teaching. Acad Med. 2000;75(9):877–80.
28. Fincher RM, Simpson DE, Mennin SP, Rosenfeld GC, Rothman A, McGrew MC, Hansen PA, Mazmanian PE, Turnbull JM. Scholarship in teaching: an imperative for the 21st century. Acad Med. 2000;75(9):887–94.
29. Shapiro ED, Coleman DL. The scholarship of application. Acad Med. 2000;75(9):895–8.
30. Grigsby RK, Thorndyke L. Perspective: recognizing and rewarding clinical scholarship. Acad Med. 2011;86(1):127–31.
31. Schimanski LA, Alperin JP. The evaluation of scholarship in academic promotion and tenure processes: past, present, and future. F1000Research. 2018;7:1605.
32. Sox HC, Schuster MA. Criteria for academic promotion in medicine. BMJ. 2020;25:369.
33. Geraci SA, Buranosky R, Babbott SF, Hollander H, Devine DR, Kovach RA, Berkowitz LR. AAIM report on master teachers and clinician educators, Part 5: academic documentation and tenure. Am J Med. 2010;123(12):1151–4.
34. Staiger TO, Mills LM, Wong BM, Levinson W, Bremner WJ, Schleyer AM. Recognizing quality improvement and patient safety activities in academic promotion in departments of medicine: innovative language in promotion criteria. Am J Med. 2016;129(5):540–6.
35. Coleman DL, Tannock LR, Pignone M, Amin AN, Finn PW. Developing faculty in emerging areas of interdisciplinary research. Am J Med. 2018;131(10):1257–62.
36. Coleman MM, Richard GV. Faculty career tracks at US medical schools. Acad Med. 2011;86(8):932–7.
37. Goldsmith M. How to understand promotion criteria for "clinician educator" and "teaching" tracks. In: Roberts, editor. Academic medicine handbook. Cham: Springer; 2020. p. 487–95.
38. Marquez AM, Winston F. The promotion process: academic entrepreneurship career tracks. Acad Entrep Med Health Sci. 2019;1(5):10.
39. Shojania KG, Levinson W. Clinicians in quality improvement: a new career pathway in academic medicine. JAMA. 2009;301(7):766–8.
40. Howell LP, Chen CY, Joad JP, Green R, Callahan EJ, Bonham AC. Issues and challenges of non-tenure-track research faculty: the UC Davis School of Medicine experience. Acad Med. 2010;85(6):1041–7.

Chapter 18
Rejection

Let me tell you something you already know. The world ain't all sunshine and rainbows. It is a very mean and nasty place and it will beat you to your knees and keep you there permanently if you let it. You, me, or nobody is gonna hit as hard as life. But it ain't how hard you hit; it's about how hard you can get hit, and keep moving forward. How much you can take, and keep moving forward. That's how winning is done. Now, if you know what you're worth, then go out and get what you're worth. But you gotta be willing to take the hit, and not pointing fingers saying you ain't where you are because of him, or her, or anybody. Cowards do that and that ain't you. You're better than that. Rocky Balboa[1]

Every rejection is incremental payment on your dues that in some way will be translated back into your work. James Lee Burke[2]

There's nothing like rejection to make you do an inventory of yourself. James Lee Burke[3]

The academic life is one of repeated rejection interrupted by occasional success.[4] Everyone I know in academia has experienced lots of rejection. Of all my peer reviewed publications, only one or two were accepted as submitted. All the others either required revision or submission to another journal. The two papers I am most proud of were rejected by 9 and 6 journals, respectively, if not respectfully.[5] I usually don't give up. As for my research grant applications, most never got funded. This means that if you want a life in academic medicine, you must be resilient in the

[1] From the movie Rocky (1976).

[2] https://www.brainyquote.com/quotes/james_lee_burke_194670. Accessed 9-28-2021.

[3] https://www.brainyquote.com/quotes/james_lee_burke_194663. Accessed 9-28-2021.

[4] The honey and the sting. It has also been said that "The only thing worse than not getting what you want, is getting it." (Sones Sonya. What My Girlfriend Doesn't Know. ed. Simon and Schuster, 2010).

[5] Pukk K, Aron DC. The DNA damage response and patient safety: engaging our molecular biology-oriented colleagues. International Journal for Quality in Health Care. 2005;17(4): 363-7 and Aucott JN, Como J, Aron DC. Teaching awards and departmental longevity: is award-winning teaching the "Kiss of Death" in an academic department of medicine? Perspectives in Biology and Medicine. 1999;42(2):280-7.

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8_18

face of rejection [1–3]. It does take some getting used to, but it no longer bothers me as much as it did earlier in my career.

It is not easy being rejected and yet rejection is part and parcel of academic life (as well as life in general). Maybe you didn't get into your first choice in college—I didn't. Maybe you didn't get your first choice in residency—I didn't. Maybe you didn't get your first choice in fellowship positions—I didn't. And yet, I don't think I am any worse for that (although there is really no way of knowing). When it comes to academia, the opportunities for rejection expand, e.g., manuscripts submitted for publication, applications for grant funding, failure to get a promotion (academic or administrative) and/or tenure, negative feedback from trainees and negative teaching evaluations (Some would include unsuccessful research outcomes, but I don't think that fit in the same category) [4].[6] I have experienced all of them. Yet, I am still here. Since the first two are inherent in the scholarship of discovery, the hallmark of academic medicine, I will focus on the first two—manuscripts and grant applications. I have also had more rejections here than anywhere else.[7]

Since academia is competitive and not everyone can reach the top, it is not surprising that rejection is part of academia. Rejection by academic journals is common. Journals such as Perspectives on Medical Education (PME), Academic Medicine, Medical Teacher, and Medical Education reject over 70% of incoming manuscripts [5]. In top tier medical journals such as the New England Journal of Medicine and Jama, acceptance rate is <10%. I have had papers rejected by these two journals and have had papers accepted, far more of the former than the latter. Journals have limited numbers of pages so cannot accept everything submitted. In fact, on-line journals which have essentially unlimited space do not accept everything, though their acceptance rates may be higher than average.[8] Scientists who

[6] Unfortunately, there is publication bias, favoring research with positive results. (Rosenthal R. The file drawer problem and tolerance for null results. Psychological bulletin. 1979;86(3):638). The high frequency of "negative outcomes" has given rise to the adage that the best study has publishable results whether the findings are positive or negative.

[7] There is an interesting practice of creating "failure CVs" which list all the failed manuscripts and grant applications. This apparently was first done by Johannes Haushofer, an assistant professor of psychology and public affairs at Princeton University, who tweeted a link to his CV of failures in 2016, a fact I learned from the article by Edwards and Ashkanasy [4]. The CV included sections entitled 'Research funding I did not get' and 'Academic positions and fellowships I did not get,' thereby giving visibility to the previous invisible rejects. https://www.theguardian.com/education/2016/apr/30/cv-of-failures-princeton-professor-publishes-resume-of-his-career-lows.

[8] I am not including so-called predatory journals. These journals seem to be willing to publishing anything as long as the authors pay the, usually substantial, article processing charges. (Beall J. Predatory publishers are corrupting open access. Nature 2012;489:179–9). There are, however, many open access journals, e.g., the BMC family of journals, which have rigorous peer review in which authors pay the processing charges only after the paper has been accepted for publication. I have had papers rejected by these journals. A so-called open access mega journal, PLoS one, conducts peer review and is committed to publishing all scientifically valid research, without trying to judge the importance of the research. Wakeling, Simon; Willett, Peter; Creaser, Claire; Fry, Jenny; Pinfield, Stephen; Spezi, Valérie (2016). "Open-access mega-journals: a bibliometric profile". PLoS one, n. 11, e0165359.

have later won the Nobel Prize had their initial work rejected by journals.[9] I first heard about an example when Dr. Roslyn Yalow addressed the Endocrine Society. She and Sol Berson had developed the technique of radioimmunoassay. She showed a slide of the rejection letter from the Journal of Clinical investigation.[10] When it comes to grant applications, the situation is as bad or worse.

The peer review system is not perfect. It is subject to conflicts of interest, politics, bias, and all the flaws to which human beings are prone. These have addressed in the academic literature and conferences [6, 7]. It has a reputation of protecting established opinions and not being open to genuinely new ideas or new approaches, e.g., interdisciplinary studies [8, 9]. That science has been rejected "before its time" is a well-known phenomenon with Ignasz Semmelweis and the importance of handwashing being a commonly cited example [10].[11] To cap it off, there is little actual evidence to support peer review, other than extensive anecdotal experience [11]. Nevertheless, it still has broad support.[12] Notwithstanding its limitations, I support it too. I should note that the vast majority of reviews I have received have been extremely helpful in making a paper or revised grant application better, even if I don't always agree with the reviewers.[13] There are, of course, always exceptions.

It has been said that reviewers are always right,[14] i.e., if they don't "get it," then the fault is the way you communicated. This has some truth to it, but there are reviewers who are just plain stupid. For example, the dumbest statement I have ever received concerned a paper that I wrote about verapamil-induced hyperprolactinemia. At the time I submitted the paper to a general medicine journal,[15] there

---

[9] MacDonald described eight such cases, but there are more. MacDonald F. https://www.sciencealert.com/these-8-papers-were-rejected-before-going-on-to-win-the-nobel-prize. 19 August 2016.

[10] I heard Dr. Yalow several times and she showed that slide at every talk.

[11] Max Planck said: "A scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die and a new generation grows up that is familiar with it."

https://www.brainyquote.com/authors/max-planck-quotes. We usually shorten that and say change occurs funeral by funeral.

[12] Are there good alternatives? Interestingly, there is now a curated research-sharing platform open to everyone—arXiv. "Registered users may submit articles to be announced by arXiv. There are no fees or costs for article submission. Submissions to arXiv are subject to a moderation process that classifies material as topical to the subject area and checks for scholarly value. Material is not peer-reviewed by arXiv—the contents of arXiv submissions are wholly the responsibility of the submitter and are presented "as is" without any warranty or guarantee. By hosting works and other materials on this site, arXiv, Cornell University, and their agents do not in any way convey implied approval of the assumptions, methods, results, or conclusions of the work." https://arxiv.org/about. Accessed 10-5-2021. In addition, the family of PLOS journals (PLOS is an acronym of Public Library of Science) publishes all research regardless of novelty or impact. All that counts is scientific validity. It is an open access journal and there are fees but is rigorously peer reviewed.

[13] I even published a grant application and all its submissions along with their reviews. Aron DC, Lowery J, Tseng CL, Conlin P, Kahwati L. De-implementation of inappropriately tight control (of hypoglycemia) for health: protocol with an example of a research grant application. Implementation Science. 2014;9(1):1-3.

[14] I have no idea who said this, but it has been told to me more than once.

[15] Journal of General Internal Medicine.

were a total of four single case reports in humans and one experimental study involving rats. I had obtained prolactin levels from >400 patients without known pituitary disease. It went out to review and one of the reviewers wrote: "This paper presents data on the prevalence and severity of a known side effect of a drug. The importance of this should not be overrated." It was obvious to me that this reviewer had no clue about what was needed to take care of patients. One of the associate editors, a friend of mine, worked down the hall so I showed her this review. She blanched, turned around and walked away without saying a ward. Without making any revisions, I sent the paper to an endocrinology journal and it was accepted with minimal revisions.[16] I thought that the comment was so stupid, that I made a slide out of it and showed it every time I gave a talk about pituitary disease.[17] I would say during the talk that this was the stupidest criticism I had ever received and that I hoped that someday that son of a bitch would be in the audience to hear me say that. I have gotten other stupid comments. For example, I submitted an application in 2009 to the VA for a small grant entitled: "Identifying potentially better practices for outpatient diabetes care." A reviewer giving it a poor score stated: "Significance of the study is questionable. Best practices for caring for diabetic patient (sic) is already available. Each year American Diabetes Assoc. and European Association for Study of Diabetes update their clinical guidelines and recommendations for best practices. These guidelines are based on empirical studies. Thus, the need for this study is not high." This reviewer obviously never read the guidelines he cited.[18] They give all kinds of recommendations, but little about how to carry them out in practice. Oh well. We did the project anyway without research funding and it was published in a reasonably good journal.[19] I have gotten other equally uninformed comments, e.g., for another small grant application about testing an established decision aid for patients to make decisions about therapy with a cholesterol-lowering agent (statins), one reviewer said that it should not be funded because we should not give patients an excuse not to take their medicine. This comment was not only stupid, but remarkably patronizing. I have also gotten some nasty comments. Not surprisingly, there is a prevailing sentiment that reviewers stress the limiting aspects of manuscripts [12].[20] In addition, time affects how we view the reviews of our

[16] Romeo JH, Dombrowski R, Kwak YS, Fuehrer S, Aron DC. Hyperprolactinaemia and verapamil: prevalence and potential association with hypogonadism in men. Clinical endocrinology. 1996;45(5):571-5.

[17] At this time, I was getting invited to speak at other hospitals and schools.

[18] I have been on the VA/DoD Diabetes Clinical Practice Guidelines Committee since 2000 and I am very familiar with other guidelines.

[19] Kirsh S, Hein M, Pogach L, Schectman G, Stevenson L, Watts S, Radhakrishnan A, Chardos J, Aron D. Improving outpatient diabetes care. American Journal of Medical Quality. 2012;27(3):233-40.

[20] My sense is that SLAM exists, but that helps editors make decisions and stressing the limitations can be done gently. My sense is that at study sections, the focus is primarily on limitations of the grant applications which enables us to get through a lot of applications quickly, though as our meeting starts, the administrator talks about reviewer etiquette and our responsibility to keep the feelings of the authors in mind.

manuscripts; when rereading them years later, the nasty ones don't seem so nasty. I have adopted the practice of *not* reading my reviews at the time I get the application's score so I can deal with rejection before reading the comments.

Rejection is a nearly universal experience in academia, but why does it hurt so much? [13] Think about the etymology of the word [14]. Rejection constitutes an "act of throwing off or away; refusal to accept or grant," 1550s, from French ejection (16c.) or directly from the Latin reictionem meaning the "act of throwing back" from the Latin *re* (back) and *jacere* (throw). It is a word of exclusion. A reject (noun) means "a person considered low-quality and worthless." In the nineteenth century, it also could mean "excrement." An earlier use was "setting aside of a wife, divorce" (mid-15c.). The idea of rejection is clear in the term transplant rejection in which the transplanted tissue is recognized as foreign and the immune system refuses to accept it and reacts to get rid of it [15]. And yet we freely use the word despite the evidence that negative language can negatively affect a person's mental health [12]. This may be derived from our high degrees of perfectionism, which is viewed as a virtue in academia in general and among physicians in particular [4, 16].[21] Consider how we often respond with feelings of shame and guilt when we commit errors in diagnosis or treatment [17, 18]. When we get a rejection, it is a challenge to our identify as academics [19]. After all, it is the judgment of our peers and the coin of the realm in academia is peer review. One's reputation is based on how s/he is viewed by peers. Non-peer reviewed articles are listed separately on one's CV and count little towards promotion, at least in the tenure track. Teaching tends to be valued less, at least in part, because it is not peer reviewed. Student evaluations are fine, but they are not peers. Science being what it is, peers, especially peer reviewers, are bred to be critical; the role of the peer reviewer is to review and, in the case of publications and grants, assess the science. Ensuring the validity of the science is how scientific knowledge progresses. When I review, I generally do not think of the authors' feelings except when I am phrasing my critique.[22] I always start of manuscript review with "This is an interesting manuscript which describes…" Is this based on the idea that a spoonful of sugar helps the

[21] Such perfectionism can be maladaptive with excessive self-criticism and negative emotions. Not only can this lead to negative outcomes such as rumination and lower self-esteem, but it can also affect ones academic work. (Sherry SB, Hewitt PL, Sherry DL, Flett GL, Graham AR. Perfectionism dimensions and research productivity in psychology professors: implications for understanding the (mal) adaptiveness of perfectionism. Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement. 2010;42(4):273).

[22] Sylvia Duckworth described the Iceberg illusion in which what people see is only 10% of what is going on. What people don't see is the hard work, discipline, sacrifice, dedication, failure, and persistence. https://sheridancollege.libguides.com/c.php?g=710992&p=5066408#:~:text=Another%20strategy%20related%20to%20changing,goes%20through%20to%20be%20successful. Accessed 9-28-2021. In addition, Comer and Schwartz make a good case that peer referees have a moral obligation not to humiliate the authors whose work they review. Comer DR, Schwartz M. The problem of humiliation in peer review. Ethics and Education. 2014;9(2):141-56.

medicine go down?[23] Perhaps. It is possible to be nice while being critical. In fact, constructive feedback can be beneficial in the way that negative feedback is not. Among the ten commandments of reviewing, Dutta listed the golden rule, being encouraging, putting aside your ego and viewing the whole process as a collaboration with the authors [20]. That said, I have gotten some reviews that were certainly not conducive to feeling good about myself, and I have gotten such reviews throughout my academic career, and I am still getting them, though it bothers me less now. Perhaps my professional rejection sensitivity has diminished over time [21, 22].

The first way to deal with rejection is to prevent it by submitting good papers and avoiding the common reasons for manuscript rejection such as the submission not being within the journal's scope, failure to follow format instructions, poor proofreading, and others [23].[24] If rejection does come, a variety of strategies have been advocated for dealing with rejection, such as allowing yourself to be upset, not taking it personally (how else is someone supposed to take it if not personally), setting the reviews aside for a while and working on something else, seeing rejection not as failure, but rather as a step on the road to success, etc. [2, 24] It has been suggested that the stages of rejection parallel those of grief: denial, anger, bargaining, depression, and acceptance [25]. I usually go directly to anger then pass through depression on the way to acceptance and then refusal to accept the results.[25] By the latter, I mean that I am very persistent and if I think that the paper should be published, I will keep submitting to one journal after another until it is.[26] I find now that getting

[23] From a song in the Walt Disney's 1964 film Mary Poppins, composed by Robert B. Sherman and Richard M. Sherman. https://en.wikipedia.org/wiki/A_Spoonful_of_Sugar. Accessed 6-29-22.

[24] That said, I usually submit first to a journal of highest reputation where the paper is very likely to be rejected. One nice thing is that journals like NEJM and JAMA reject very quickly so you don't lose much time and you never know, the paper might even get accepted. This has happened a couple of times to me, e.g., Aron DC, Harper DL, Shepardson LB, Rosenthal GE. Impact of risk-adjusting cesarean delivery rates when reporting hospital performance. Jama. 1998;279(24):1968-72. I often say to my trainees that if your article is accepted at the first journal to which you submit, you haven't aimed high enough.

[25] I have never needed to see a mental health professional, though I have certainly vented to my friends.

[26] There have been a number of studies on the possible fate of rejected manuscripts. It should not be a surprise that the majority (ranging from 50% to >90%) of rejected manuscripts find acceptance in one or the other journal. Of 1542 manuscript submissions to the journal in 2010 and 2011, 1052 papers were declined. Of these, 693 (65.9%) were subsequently published elsewhere, in a total of 229 journals. (Kanitkar M. Rejected but not dejected: Dealing with an unfavourable decision on a scientific manuscript. Medical Journal Armed Forces India. 2018;74(2):169-71 and Grant WD, Cone DC. If at first, you don't succeed: the fate of manuscripts rejected by academic emergency medicine. Academic emergency medicine. 2015;22(10):1213-7). A former editor of JAMA wrote: "There seems to be no study too fragmented, no hypothesis too trivial, no literature citation too biased or too egotistical, no design too warped, no methodology too bungled, no presentation of results too inaccurate, too obscure, and too contradictory, no analysis too self-serving, no argument too circular, no conclusions too trifling or too unjustified, and no grammar and syntax too offensive for a paper to end up in print." Rennie D. Guarding the guardians: a conference on editorial peer review. JAMA 1986;256(17):2391-2.

a rejection doesn't bother me too much unless a reviewer writes something really stupid or nasty.

Here is a review that is both gentle and extremely helpful (Fig. 18.1). The editor was quite nice about the rejection (though it was still a rejection). In fact, he didn't use the word. In addition, not only were the reviews very helpful, but it is also noteworthy on the reviewer forms, the title is "Suggestions" for transmittal to authors.

A letter by the deputy editor of the New England Journal of Medicine.

The New England Journal of Medicine

10 SHATTUCK STREET, BOSTON, MASSACHUSETTS 02115-6094 – TELEPHONE 617/734-9800

EDITORIAL OFFICES

89-2986 December 19, 1989

Nathan S. Ross, M.D.
Medical Service 151(w)
Dept. of Veterans Affairs
Medical Center
10701 East Blvd.
Cleveland, OH 44106

Dear Dr. Ross:

I am sorry to say that we will be unable to use your manuscript, "A Re-Evaluation of Hormonal Screening for the Incidentally Discovered Adrenal Mass." Both reviewers and I thought that your manuscript addressed an interesting and important issue, and I think we all tend to agree with you that exhaustive investigation of patients with seemingly asymptomatic adrenal masses is not warranted. However, as pointed out by the reviewers, the manuscript has a number of limitations that make the results difficult to evaluate and understand, not least of which is the limited prevalence data available for some of the disorders being considered. Finally, one is left wondering just what ought to be done to evaluate such patients.

Thank you for your interest in the Journal.

Sincerely yours,

Robert D. Utiger

Robert D. Utiger, M.D.
Deputy Editor

RDU/drg
Enclosures

Fig. 18.1 NEJM rejection letter with reviews

An extract from the letter by the deputy editor with suggestions for transmittal to the author. It comprises criticisms under the title re-evaluation.

SUGGESTIONS FOR TRANSMITTAL TO AUTHOR

89-2986A
Please do NOT comment here whether or not the manuscript should be accepted.

A Re-evaluation of Hormonal Screening for the Incidentally Discovered Adrenal Mass

This manuscript addresses the important and diagnostically troublesome issue of the Incidentally Discovered Adrenal Mass. The authors have evaluated the recommendations for screening of adrenal masses in light of the published epidemiologic data, and they have suggested a different approach to the problem. The authors should address the criticisms listed below:

(1) The hypothesis of this paper is not entirely clear. The authors state that general recommendations for the evaluation of adrenal mass are excessive, but they fail to convincingly make this point, also which alternative procedures should be used is not made clear.

(2) The title is a little misleading since the hormonal screening of the adrenal mass is not extensively covered in this paper. For example, urinary metprephrine,free cortisol and aldosterone are not mentioned.

(3) The definitions for the statistical terms should be given in the paper.

(4) The derivation of some of the numbers should be clarified. For example, page 4, paragraph 1, "spontaneous hypokalemia of 12.2%" it is not clear where this number comes from. Nor is it clear where the "100 fold range (0.1 to 10%) comes from. Page five, paragraph 1 quotes the absence of obesity reduces the probability ....(to) 1 in 10,000" and "absence of (hypertension)... (to) "1 in 5,000,000" the derivation of these numbers is not clear. On page 6 it is not clear how the numbers 51% and 98.2% or the numbers 75% and 25% in the first paragraph where they come from. On page 7, the 100 fold change (0.1 to 10%) is ambiguous. Also the author should explain (in paragraph 1) why a five centimeter cut-off would result in a greater negative predictive value. The frequency of aldosterone producing adenomas quoted by 83% is not accurate since it comes from a surgical series which is biased towards patient selected for operation. On page 10, the authors give a positive predictive value of 8.33% which is not explained. (paragraph 1).

(5) The authors conclude that the use of simple clinical screening procedures will minimize the necessity of biochemical screens. This is a valid point but it is not convincingly supported by the authors data.

(6) The data in table 1 is confusing since it is not clear why hypertension is listed twice and why the prevalence of some diseases is based on hypertensive patients and others on patients with adrenal masses, this would seem to be mixing apples and oranges.

And

An extract from the letter by the deputy editor with suggestions for transmittal to the author. It comprises the evaluation of the manuscript.

SUGGESTIONS FOR TRANSMITTAL TO AUTHOR

89-2986B

Please do NOT comment here whether or not the manuscript should be accepted.

The intent of this manuscript is to define the appropriate screening procedures for an incidentally discovered adrenal mass. In doing so, an analysis of the predictive value of screening tests is made. The diagnostic possibilities are considered separately: aldosterone-producing adenoma, pheochromocytoma, glucocorticoid-producing adenoma, and adrenal carcinoma. (1) The overlap in diagnostic testing between glucocorticoid-producing adenoma and adrenal carcinoma is not considered (i.e., a measure of non-suppressible glucocorticoid production would also serve to screen for some cases of adrenal carcinoma).

(2) Page 9. By your analysis, 0.5–1.4% of incidentally-discovered adrenal masses will be pheochromocytomas even in normotensive, asymptomatic patients. Yet, you do not advocate screening all patients. Do you wish to accept a 0.5–1.4% rate of a "disorder that is potentially lethal when unrecognized?" A positive screening test does not commit the patient to surgery.

(3) Page 9, para 3. A high dose dexamthasone suppression test would have a greater specificity. Since you are considering adrenal lesions (not pituitary-dependent hypercortisolism), there is no need for a low-dose test.

(4) Page 10, lines 6-9. Hypercortisolism would be expected to have long-term deleterious effects (e.g.,osteoporosis). Several cases of this "sub-clinical" hypercortisolism have been reported. How often does this occur in absence of obesity & HBP

(5) Page 11, para 2. You again make an assumption that a positive screening test (in this case, 17-ketosteroids) would necessarily dictate surgery. There are several means to enhance the diagnostic certainty of a positive screening test without compelling surgery. It is therefore difficult to see why biochemical screening would result in unnecessary "morbidity" as stated in the second paragraph on page 11.

be more prudent in use of language

2) give recommendation

3)- we are addressing published recommendation
new data re 8mg dex test. get J. Schmitt letter

4) this is speculation

These pages include our notes on the reviews. We thought that we could address all the issues raised by the reviewers. Despite the fact that the editor's letter was quite clear about rejection and there was no statement about revision and resubmission, we decided to resubmit anyway. It was a combination of chutzpah and our view that if the editor rejected it again, that it would be quick so we wouldn't lose much time in submitting to another journal. To our surprise and delight, it was not immediately rejected. It went out to the reviewers again and the paper went back and forth a few times and was ultimately accepted. Sometimes you shouldn't take no for an answer, though in truth, I never did this again. I guess I have not wanted to push my luck.

References

1. Jaremka LM, Ackerman JM, Gawronski B, Rule NO, Sweeny K, Tropp LR, Metz MA, Molina L, Ryan WS, Vick SB. Common academic experiences no one talks about: repeated rejection, impostor syndrome, and burnout. Perspect Psychol Sci. 2020;15(3):519–43.
2. DeCastro R, Sambuco D, Ubel PA, Stewart A, Jagsi R. Batting 300 is good: perspectives of faculty researchers and their mentors on rejection, resilience, and persistence in academic medical careers. Acad Med. 2013;88(4):497.
3. Sacchetti S. Motivational resilience in the university system. In: Leadership and cooperation in Academia. Cheltenham: Edward Elgar Publishing; 2013. Chapter 8.
4. Edwards MS, Ashkanasy NM. Emotions and failure in academic life: normalising the experience and building resilience. J Manag Organ. 2018;24(2):167–88.
5. Varpio L, Driessen E, Maggio L, Lingard L, Winston K, Kulasegaram K, Nagler A, et al. Advice for authors from the editors of perspectives on medical education. Persp Med Educ. 2018;2018:343–7.
6. Rennie D. Editorial peer review: its development and rationale. Peer Rev Health Sci. 2003;2(1):1–3.
7. Smith R. The trouble with medical journals. London: Royal Society of Medicine Press; 2006.
8. Tsang EW. Is this referee really my peer? A challenge to the peer-review process. J Manag Inq. 2013;22(2):166–71.
9. Wagner U. The publishing game: the dubious mission of evaluating research and measuring performance in a cross-disciplinary field. Scand Sport Stud Forum. 2016;7:63–88.
10. Best M, Neuhauser D. Ignaz Semmelweis and the birth of infection control. BMJ Qual Saf. 2004;13(3):233–4.
11. Jefferson T, Wager E, Davidoff F. Measuring the quality of editorial peer review. JAMA. 2002;287(21):2786–90.
12. Van Lange PA. Why authors believe that reviewers stress limiting aspects of manuscripts: the SLAM effect in peer review 1. J Appl Soc Psychol. 1999;29(12):2550–66.
13. Day NE. The silent majority: manuscript rejection and its impact on scholars. Acad Manag Learn Edu. 2011;10(4):704–18.
14. Allen KA, Donoghue GM, Pahlevansharif S, Jimerson SR, Hattie JA. Addressing academic rejection: recommendations for reform. J Univ Teach Learn Pract. 2020;17(5):19.
15. https://www.etymonline.com/word/rejection. Accessed 10 May 2021.
16. Thomas M, Bigatti S. Perfectionism, impostor phenomenon, and mental health in medicine: a literature review. Int J Med Educ. 2020;11:201.
17. Sirriyeh R, Lawton R, Gardner P, Armitage G. Coping with medical error: a systematic review of papers to assess the effects of involvement in medical errors on healthcare professionals' psychological well-being. Qual Saf Health Care. 2010;19(6):e43.
18. Lyons B, Gibson M, Dolezal L. Stories of shame. Lancet. 2018;391(10130):1568–9.
19. Horn SA. The social and psychological costs of peer review: stress and coping with manuscript rejection. J Manag Inq. 2016;25(1):11–26.
20. Dutta MJ. The ten commandments of reviewing: the promise of a kinder, gentler discipline! Health Commun. 2006;20(2):197–200.
21. Reyes DL. Moving up or giving up: how professional rejection sensitivity impacts career success. Diss. Rice University, 2021.
22. Jalongo MR. Professional wisdom and writing for publication: qualitative interviews with editors and authors in early childhood education. Early Childhood Educ J. 2013;41(1):65–79.
23. Jalongo MR, Saracho ON. Writing for publication. Cham: Springer; 2016.
24. Chan H, Mazzucchelli TG, Rees CS. The battle-hardened academic: an exploration of the resilience of university academics in the face of ongoing criticism and rejection of their research. High Educ Res Dev. 2021;40(3):446–60.
25. Halasyamani PS, Tolman WB. The five stages of rejection. Inorg Chem. 2018;57(9):4789–90.

Chapter 19
The Imposter Syndrome

You have weighed yourself in the balance and been found wanting.[1]

Well, you have made it to academia. Maybe you have been here for a while and yet, sometimes you get this disturbing feeling that you don't really belong here, that you are not good enough and that someday you will be found out and unmasked as the fraud that you are. I get these feelings. Many in academia get those feelings. One of the most wonderful things about working in academia is that you are surrounded by very smart accomplished people. It can be an extraordinarily stimulating environment. One of the most problematic things about working in academia is that you are surrounded by very smart accomplished people. It can be an extraordinarily humbling environment. Statistically, the likelihood that you are the smartest and most accomplished among them is vanishingly small. I know that I am not that one. Most of the time, this doesn't bother me. I see the environment as a bountiful opportunity to learn new things and sometimes even accomplish some good (if not great) things. However, those darker moments are no stranger and I wonder if I belong here. I don't have tenure; I don't have four R01s; I am not a member of any of the fancy societies like ASCI and AAP. This is not to say that I have not accomplished anything. I am a professor after all. I have more than 200 publications. Heck, I have written a book. I am probably the only person at this university who has received major teaching awards from both the medical school and the business school. Yet, still I find myself worrying that someday I will be found out—unmasked as a fraud.[2] William Buter Yates wrote: "The best lack all conviction, while the worst are full of

[1] Adapted from the incident of the handwriting on the wall. Daniel 5: 27 Tekel, Thou art weighed in the balances, and art found wanting. The Holy Scriptures According to the Masoretic Text. Jewish Publication Society 1917.

[2] I took the Clance Imposter Test and my score of 75 indicated that the respondent frequently has imposter feelings. (The scale goes from 20-100; the higher the score the more frequently and seriously the Imposter Phenomenon interferes in a person's life. https://paulineroseclance.com/pdf/IPTestandscoring.pdf. Accessed 10-14-2021.

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8_19

passionate intensity" [1]. The former would seem to suffer from the imposter syndrome, while the latter are something else entirely. The misalignment between objective reality and the subjective experience of that reality has been termed the imposter syndrome or imposter phenomenon. It is a feeling of intellectual self-doubt where people fear their unmasking as fraud in the face of objective evidence to the contrary.[3]

The imposter syndrome was first described in high achieving women by Clance and Imes in 1978 and was characterized an inability to internalize success and the tendency to attribute success to external causes such as luck, knowing the right people, or it's all a mistake and they will be exposed as a fraud. It is a feeling of unearned merit. They drew on their experience in "individual psychotherapy, theme-centered interactional groups, and college classes with over 150 highly successful women—women who have earned PhDs in various specialties, who are respected professionals in their fields, or who are students recognized for their academic excellence" [2, p. 241]. And yet, "despite their earned degrees, scholastic honors, high achievement on standardized tests, praise and professional recognition from colleagues and respected authorities, these women do not experience an internal sense of success. They consider themselves to be "impostors" [2, p. 241]. Moreover, this phenomenon was not benign and was associated with anxiety, depression, lack of self-confidence, and frustration related to inability to meet self-imposed standards of achievement. Although they suggested the phenomenon was less common in men and when it did occur was less severe, further research has shown otherwise; about half of the studies show no gender difference while the other half show female preponderance.[4] The phenomenon has been observed in many ethnic

[3] I would be remiss if I didn't mention the possibility, dear reader, that you actually are an imposter—not possessed of the phenomenon because your really are an imposter. Alas, there is no shortage of imposters in academia and everywhere else. First, we have the Peter Principle which posits that members of a hierarchy are promoted until they reach the level at which they are no longer competent. They are promoted based on success related to certain skills until they get to a position in which those skills do not apply. (Peter LJ, Hull R. The peter principle. London: Souvenir Press; 1969 and LaDonna KA, Ginsburg S, Watling C. "Rising to the level of your incompetence": what physicians' self-assessment of their performance reveals about the imposter syndrome in medicine. Academic Medicine 2018;93(5):763–8.) While it is true that those with imposter phenomenon may see their careers as rising to the level of incompetence, there are individuals who are unconsciously incompetent (Hays RB, Jolly BC, Caldon LJ, McCrorie P, McAvoy PA, McManus IC, Rethans JJ. Is insight important? Measuring capacity to change performance. Medical Education. 2002;36(10):965–71).

Consider the Dunning-Kruger phenomenon (Kruger, Justin; Dunning, David (1999). "Unskilled and unaware of it: how difficulties in recognizing one's own incompetence lead to inflated self-assessments". Journal of Personality and Social Psychology. 77(6): 1121–34). It is a cognitive bias in which people with low ability at a task overestimate their ability. It is related to the cognitive bias of illusory superiority. And of course, there are outright frauds—phony physicians (Adams D. Catching phony physicians: Those masquerading in medicine sometimes injure patients. American Medical News. 2004;47(32).

[4] It is important regardless of whether or not on the average imposter phenomenon is more common in women, not to use this as an excuse to pathologize the status of women and conclude that women are less suitable for executive or other high positions.

and racial groups, educational settings including elementary school, high school, undergraduate, and graduate students, and professional settings [3, 4]. In addition to academia, it seems to be particularly common in medicine [5, 6]. Estimates of prevalence among medical students ranges from about 20–60%. In the two studies of trainees using the Clance Imposter Phenomenon Score[5] found that 33–44% were affected to a clinically significant degree [7, 8]. Remarkably, there are few studies of attending physicians and most of the studies are qualitative [9]. Faculty in other professions and disciplines have definitely been affected and such experiences seem to be more prevalent for untenured faculty, especially those who are in the tenure track [10, 11]. In a fascinating qualitative study involving 16 interviews, Hutchins and Rainbolt identified four types of events that triggered feelings of being an imposter [12]. These included: (1) questioning expertise; (2) scholarly productivity; (3) comparisons with colleagues; and (4) successes. I have experienced all of these, and it has changed the way I mentor individuals, especially those who are early in their academic careers.

It is one thing to have one's grant application or research paper rejected. It has been said that the only investigators who have never had a grant triaged (i.e., not even considered for scoring), have never submitted an application. It is another thing to read the reviews. My first reaction, whether it's a grant or research paper, is to think that the reviewers are morons.[6] Now, when I get my score on a grant and see that it wasn't funded, I don't look at the reviews for 24 h.

That gives me a chance to get over my disappointment and take the edge off the anger. What is interesting is that I look at the reviews and take some time to digest them. Although I usually think that the reviewers are idiots, but over time I usually come to agree with criticisms—not always, but often. Then I start wondering what is wrong with me that the reviewers are so much smarter than I am. Rationally I know that is not true. I have been on enough study sections reviewing grants to see that I am at least equal to the others on the committee. Ditto for all of the papers that I have reviewed. I try, although not always successfully, to be kind in my reviews

[5] There are several instruments designed to assess the imposter phenomenon. These include the clance impostor phenomenon scale, the harvey imposter phenomenon scale, the perceived fraudulence scale and the Leary imposter scale. (Mak KK, Kleitman S, Abbott MJ. Impostor phenomenon measurement scales: a systematic review. Frontiers in Psychology. 2019;10.) I thought I would try one out, so I took the Clance Imposter Syndrome Self-Assessment Tool. This tool has 20 statements rated on a scale of 1 to 5 from Not at all true to Very true. Scores range from 20- I scored 75 which apparently means "You frequently have impostor syndrome experiences." I am not sure what I know now that I didn't know before I took the test, but I guess it puts a name on something. (Scores range from 20–100. If the total score is 40 or less, the respondent has few Impostor characteristics; if the score is between 41 and 60, the respondent has moderate IP experiences; a score between 61 and 80 means the respondent frequently has Impostor feelings; and a score higher than 80 means the respondent often has intense IP experiences. The higher the score, the more frequently and seriously the Impostor Phenomenon interferes in a person's life. The original tool—the clance imposter phenomenon scale has 20 items.) https://paulineroseclance.com/pdf/IPTestandscoring.pdf. Accessed 10-14-2021.

[6] See Chap. 18. Rejection.

and I reassure often not successfully those who I mentor that peer review is just part of the process.

There are all too many opportunities to compare oneself to others and find yourself wanting. I got this in spades early in my career. I had been working in the lab and publishing a modest amount, though always with my mentor's name on the papers. I had also won a teaching award. Then I got a note that unless I spent less time teaching and more time devoted to my research that I wouldn't get tenure and in fact I didn't. I knew others who were getting tenure. I guess I wasn't good enough. I was weighed in the balance and found wanting. Maybe I just didn't belong in academia. At that time, only research counted towards promotion and that research had to be NIH-funded. I had received funding from the VA from the day I arrived, but that didn't count either. Teaching if anything counted against you because it was time not spent on research. I should not have been surprised, but I did not read the handwriting on the wall.

Sometimes comparison is part of the job when you are serving on the promotions committee or a study section or just listening to presentations at a national meeting. Often it comes from academic leadership when they sent out emails extolling the accomplishments of one faculty member, almost always a researcher, whether it be getting an award, a large grant, or a publication in a prestigious journal.[7] This can lead to feelings of inadequacy on my part. I think I am getting better, but I have been a professor for almost 25 years and these feelings still arise. I also may temporarily question my own expertise and lead me to keep my counsel and not add my two cents to discussions of the topic even if it is one with which I know in my head, but not in my heart, that I am up on the topic and have something to say. That happened more frequently when I was younger.

By many criteria, I have been successful. But sometimes that success makes me wonder. Do I really deserve this? Am I really an expert? This has actually happened to me more in my clinical activities. I have been named in Best Doctors in America for about 15 years now. Really? Why? My clinical responsibilities have always been less than 50% of my time and usually less than 20%. Where does that reputation come from? I know that I am not as up to date on many clinical things as I used to be and, more importantly, as I should be. My way of coping with this has been to look honestly at myself and when I feel that I might be missing something ask for help which usually comes from someone much younger than I am but who is a full-time clinician. I have also won some awards, but when that is pointed out to me, I usually say that the award and $2.50 would get me on Cleveland Rapid Transit. Deprecatory comments R us.

These feelings are not without consequences. The imposter phenomenon has been associated with anxiety, depression, and burnout [13]. In addition, imposter

[7] One of my pet peeves occurs when such an email is sent to everyone in the department and many people respond with their congratulations. Sometimes I send mine. That in itself is fine, but so many people hit "reply all" and I find out about all the people who have sent congratulations. I don't care if the rest of faculty know that I sent congratulations and I couldn't care less about who else does the congratulating. All I see are the emails clogging my in-box.

phenomenon correlates with levels of emotional exhaustion, depersonalization, and cynicism. It can also be self-defeating by decreasing career planning and becoming a barrier to moving up in the hierarchy [14]. It also correlates, not only with job dissatisfaction, but also career dissatisfaction [15]. Energy spent coping with the feelings is not available to deal with or avoid psychological strain [16]. It is worth trying to combat these feeling. There are a variety of approaches that have been suggested, starting with recognizing the symptoms, remembering that you aren't alone, developing a positive mindset, and seeking help [17]. There are also things that the workplace should do, e.g., embracing success beyond the traditional research metrics [18]. Getting a reality check from someone you respect and who also cares about you such as a mentor, a colleague, and from former trainees can be very helpful. I have found the latter particularly helpful in getting me out of a vicious cycle of negativity.[8] When a former trainee tells me that she wouldn't be where she was in her career had it not been for me, it has high emotional salience. Of course, if your feelings of fraud are strong, it may require much more than that. Don't hesitate and deny yourself the opportunity to feel better about yourself.

Training to become a physician is stressful. There is competition to get into medical school. Once there, there is more to learn than you possibly can learn. I remember at the first event of the first day of medical school, we were told that the night before was the last time that we would be caught up. We would always be behind for the rest of our lives in medicine. There are time pressures, increasing responsibilities for other people's lives no less, and so forth. No surprise that stress is rife. Adding to this is the fact that many of us are characterized by perfectionism. It is one thing that accounts for our success and some degree of perfectionism is necessary if lives are to be in your hands, but perfectionism predisposes to the imposter phenomenon [19]. The culture of medicine reinforces this with its hierarchy and its values, such as not knowing the answer to a question being bad enough but asking for help is even worse.[9]

Seeing error as a personal failing rather than a system problem contributes to the pressure to be perfect [20]. Putting aside the characteristics of medicine, what is it about academia that fosters this phenomenon?

---

[8] One thing that I have learned from my friend Richard Boyatzis, author of Resonant Leadership and Coaching with Compassion, and the forward for my book on complexity, is about these cycles. He calls them negative emotional attractors (NEA). Much more fun and productive to be in a positive emotional attractor (PEA). The PEA and NEA constitute distinct psycho-physiological states comprised of distinct emotional, psychological, physiological, and neurological characteristics that create "a force around one's thinking, feeling, and behaviors." are self-regulating states; therefore, once a person is in either a PEA state or a NEA state, the person will remain in that state until a tipping point provokes a shift to the alternate state. Those triggers for feeling like an imposter are tipping points. To get out of the NEA, one needs a emotionally salient event or a high dosage of less salient events. (Boyatzis RE, Rochford K, Taylor SN. The role of the positive emotional attractor in vision and shared vision: toward effective leadership, relationships, and engagement. Frontiers in Psychology 2015;6:670).

[9] See Chap. 6 To teach for a discussion of pimping.

In a very provocative paper, Shanna Slank hypothesizes that environments that host a 'culture of genius' can alter our evidential landscape in a way that promotes the imposter phenomenon [21]. In a genius culture, intelligence is viewed as a fixed quantity that cannot be changed very much by effort and learning, whereas people who hold an incremental theory believe intelligence is malleable and expandable [22]. The former downgrades the effects of effort and upgrades brilliance.[10] "Noticing of yourself that the achievement of a particular success required a significant amount of effort on your part… forces you to revise your confidence in the causal contribution of your talent…" [14, p. 214]. It is a pretty small step from this to questioning the reality of your talent. Slank's argument is far more subtle and worth a read. She also suggests that the standard model of imposter phenomenon is one of a failure of rationality may be incorrect. If accounting for the non-talent causes of one's successes requires lowering of confidence in one's talents (or brilliance), then imposter beliefs are rational. She goes on to propose that our conception of self-worth should be more deeply tied to virtues like intellectual humility than to relative talent possession. Easier said than done, especially given the reward structure of academia. Imposter syndrome is an active area of scholarly study [23, 24].[11]

References

1. https://en.wikipedia.org/wiki/The_Second_Coming_(poem). Accessed 29 May 2020.
2. Clance PR, Imes SA. The imposter phenomenon in high achieving women: dynamics and therapeutic intervention. Psychother Theory Res Pract. 1978;15(3):241.
3. Bravata DM, Watts SA, Keefer AL, Madhusudhan DK, Taylor KT, Clark DM, Nelson RS, Cokley KO, Hagg HK. Prevalence, predictors, and treatment of impostor syndrome: a systematic review. J Gen Intern Med. 2019;17:1–24.
4. Nadal KL, King R, Sissoko DG, Floyd N, Hines D. The legacies of systemic and internalized oppression: experiences of microaggressions, imposter phenomenon, and stereotype threat on historically marginalized groups. New Ideas Psychol. 2021;63:100895.
5. Gottlieb M, Chung A, Battaglioli N, Sebok-Syer SS, Kalantari A. Impostor syndrome among physicians and physicians in training: a scoping review. Med Educ. 2020;54(2):116–24.

[10] The impact of this view of brilliance is remarkable. For example, see: Leslie SJ, Cimpian A, Meyer M, Freeland E. Expectations of brilliance underlie gender distributions across academic disciplines. Science. 2015;347(6219):262–5 and Storage D, Horne Z, Cimpian A, Leslie SJ. The frequency of "brilliant" and "genius" in teaching evaluations predicts the representation of women and African Americans across fields. PLoS One 2016;11(3).

[11] The philosopher Stephen Gadsby proposed an "account of imposter syndrome as an instance of self-deception, whereby biased evidence treatment is driven by the motivational of negative self-appraisal. (Gadsby S. Imposter syndrome and self-deception. Australasian Journal of Philosophy 2021:1-5, page 1.) Self-deception then raises other issues, e.g., what do self-deceivers want and what do they get. It is also an evolutionary puzzle. (Funkhouser E. Is self-deception an effective non-cooperative strategy? Biology Philosophy 2017;32(2):221-42. Funkhouser E. Do the self-deceived get what they want? Pacific Philosophical Quarterly 2005;86(3):295–312.)

6. Freeman J, Peisah C. Imposter syndrome in doctors beyond training: a narrative review. Australas Psychiatry. 2021;2021:10398562211036121.
7. Oriel K, Plane MB, Mundt M. Family medicine residents and the impostor phenomenon. Fam Med. 2004;36(4):248–52.
8. Legassie J, Zibrowski EM, Goldszmidt MA. Measuring resident well-being: impostorism and burnout syndrome in residency. J Gen Intern Med. 2008;23(7):1090–4.
9. Paladugu S, Wasser T, Donato A. Impostor syndrome in hospitalists-a cross-sectional study. J Commun Hosp Internal Med Perspect. 2021;11(2):212–5.
10. Hutchins HM. Outing the imposter: a study exploring imposter phenomenon among higher education faculty. New Horizons Adult Educ Hum Resour Dev. 2015;27(2):3–12.
11. Clark M, Vardeman K, Barba S. Perceived inadequacy: a study of the imposter phenomenon among college and research librarians. Coll Res Libr. 2014;75:3.
12. Hutchins HM, Rainbolt H. What triggers imposter phenomenon among academic faculty? A critical incident study exploring antecedents, coping, and development opportunities. Hum Resour Dev Int. 2017;20(3):194–214.
13. Parkman A. The imposter phenomenon in higher education: incidence and impact. J Higher Educ Theory Pract. 2016;16(1):51.
14. Neureiter M, Traut-Mattausch E. An inner barrier to career development: Preconditions of the impostor phenomenon and consequences for career development. Front Psychol. 2016;7:48.
15. Vergauwe J, Wille B, Feys M, De Fruyt F, Anseel F. Fear of being exposed: the trait-relatedness of the impostor phenomenon and its relevance in the work context. J Bus Psychol. 2015;30(3):565–81.
16. Hutchins HM, Penney LM, Sublett LW. What imposters risk at work: exploring imposter phenomenon, stress coping, and job outcomes. Hum Resour Dev Q. 2018;29(1):31–48.
17. Cader FA, Gupta A, Han JK, Ibrahim NE, Lundberg GP, Mohamed A, Singh T. How feeling like an imposter can impede your success. JACC. 2021;2021:347–9.
18. Jaremka LM, Ackerman JM, Gawronski B, Rule NO, Sweeny K, Tropp LR, Metz MA, Molina L, Ryan WS, Vick SB. Common academic experiences no one talks about: repeated rejection, impostor syndrome, and burnout. Perspect Psychol Sci. 2020;15(3):519–43.
19. Henning K, Ey S, Shaw D. Perfectionism, the impostor phenomenon and psychological adjustment in medical, dental, nursing and pharmacy students. Med Educ. 1998;32(5):456–64.
20. Shepherd L, LaDonna KA, Cristancho SM, Chahine S. How medical error shapes physicians' perceptions of learning: an exploratory study. Acad Med. 2019;94(8):1157–63.
21. Slank S. Rethinking the imposter phenomenon. Ethical Theory Moral Pract. 2019;22(1):205–18.
22. Murphy MC, Dweck CS. A culture of genius: how an organization's lay theory shapes people's cognition, affect, and behavior. Personal Soc Psychol Bull. 2010;36(3):283–96.
23. Ibrahim F, Münscher JC, Herzberg PY. Examining the impostor-profile–is there a general impostor characteristic? Front Psychol. 2021;9:3847.
24. Gómez-Morales A. Impostor phenomenon: a concept analysis. Nurs Sci Q. 2021;34(3):309–15.

Chapter 20
Burnout

> *Burnout is what happens when you try to avoid being human for too long*. Michael Gunger[1]
>
> *Burnout is nature's way of telling you, you've been going through the motions your soul has departed; you're a zombie, a member of the walking dead, a sleepwalker. False optimism is like administrating stimulants to an exhausted nervous system*. Sam Keen[2]
>
> *You will burn and you will burn out; you will be healed and come back again*. Fyodor Dostoevsky[3]

The third in the triumvirate of badness to which we are prone is burnout, which has been described as "an erosion of the soul caused by a deterioration of one's values, dignity, spirit, and will" [1]. This phenomenon has become an increasingly hot topic, including among those who seem to be responsible for fostering a system that promotes burnout.

Burnout is a phenomenon characterized by high emotional exhaustion—feelings of energy depletion, high depersonalization (i.e., cynicism) and detachment from the job, and loss of professional efficacy—sense of ineffectiveness and lack of accomplishment [2]. In fact, it has received a certain kind of official imprimatur by having its own ICD-10 code and now it is considered a "syndrome," although it is not classified as a medical condition. In the ICD-11 classification, burnout appears in the section on problems related to employment or unemployment. Burn-out is included in the 11th Revision of the International Classification of Diseases (ICD-11) as an occupational phenomenon. It is **not** classified as a medical condition.[4] It has to be related to the occupational context, but it's not just fatigue or even

[1] https://www.azquotes.com/quotes/topics/burnout.html. Accessed 11-1-21.

[2] https://www.azquotes.com/quotes/topics/burnout.html. Accessed 11-1-21.

[3] Fyodor Dostoevsky (2017). "The Brothers Karamazov (English Russian Edition illustrated): Братья Карамазовы (англо-русская редакция иллюстрированная)", p. 51, Clap Publishing, LLC. https://www.azquotes.com/quotes/topics/burnout.html. Accessed 11-1-21.

[4] https://www.who.int/news/item/28-05-2019-burn-out-an-occupational-phenomenon-international-classification-of-diseases. Accessed 11-1-21.

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8_20

emotional drain that follows a busy night on call, especially when you know all you need is a good night's sleep. It is also not depression [3]. In any case, if you have experienced burnout, you are in good company.

Although a systematic review found the prevalence ranged from 0–80.5%, presumably related to marked variation in burnout definitions, assessment methods, and study quality, most studies find about 35–60%, at least in the pre-COVID-19 era when clinical demands, particularly in intensive care units, have increased dramatically [4, 5]. A variety of factors have been associated with burnout, but in the end, every person is different, and every context is different and experienced differently. Some characterizations point to the feeling of loss of control whether it be from the tyranny of the EMR and the death by a thousand clicks, the pressure to generate RVUs (not only r for the purpose of billing, but also to demonstrate one's productivity where billing is a secondary concern (the VA), but where there seems to be a prevalent view that doctors don't work hard enough—this from administrators who can't be found after 4:30 PM), or from the administrative micromanagement seems baked into the system [6]. One interesting way to think about it a very simplified version of Wallace's model of physician wellness (Fig. 20.1) [7].

Workplace stressors include high levels of workload, long work hours, reduced autonomy, cognitive demands, and changes in practice such as EMRs, performance metrics, and practice guidelines. Some authors have pointed to the prominence of moral injury where physicians feel they are forced to provide care that meets the measurement, but not the patient's best interest [8, 9]. Contextual factors including the culture of litigation and the organizations' lack of interest in these factors, since up until recently they haven't been measured. (Yesterday, I looked up the burnout results for my facility and most prominently organizational culture [10, 11]. And finally, physicians can be our own worst enemy. Trying to live up to the idea that the patient always come first, perfectionism, being a workaholic, and a superhero in the bargain. When I was a trainee, you were expected to come to work; it did not matter

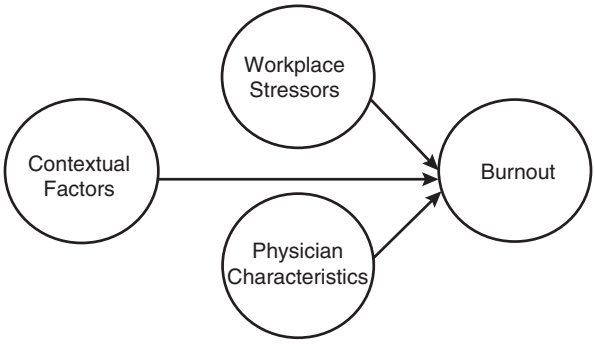


Fig. 20.1 Simplified model of physician burnout based on Wallace et al. [7] Physician wellness: A missing quality indicator. The Lancet. 374:1714–21. In fairness, the Wallace model includes outcomes for the physician other than burnout (e.g. depression, suicide, relationship issues and substance abuse) and also system outcomes that result from the physician outcomes. Definitely a paper worth reading

how sick you were or how tired you were. One day, when I was an intern, I could barely stand up, but was still trying to soldier on during rounds. My resident ordered me to go to the call room and take a nap. Facing up to all of this alone, since you don't really want to show weakness, is a challenge. Many of my fellow trainees managed with the "help" of substances—mostly alcohol, but not exclusively. Fortunately, this was done only after leaving the hospital. I dislike the taste of alcohol and am not inclined to take drugs and got through all of this because I was married to a wonderful woman. She did pay a big price for this.[5]

I have experienced periods of burnout several times but have recovered each time and stayed in academic medicine. I suspect I am prone to burnout. I am naturally quite cynical so the bar to reach the levels of cynicism seen in burnout doesn't constitute much of a challenge. I also tend to perfectionism and assume responsibility whenever something doesn't go my way; I don't take rejection very well. In addition, there are particular threats in academic medicine. For example, the misalignment between what is valued by the medical school (NIH-funded research) and what is valued by those who see themselves as clinical teachers (education). Lest one think that researchers are off the hook here, consider how frequently NIH grant applications do not receive fundable scores. With current funding levels of 10–15% or so, this is a tough road to take. Similarly, there is a misalignment between what clinicians think they should do for their patients and what the system allows them to do. For example, the pressure to increase RVU production by seeing more patients in a shorter period of time conflicts with the desire to spend adequate time with patients.[6] This has been termed moral injury [12]. Some go as far as to say that there isn't an epidemic of burnout, but rather moral injury [13]. I have experienced this when I was unable to obtain the drugs I wanted for a patient, because they weren't on the hospital formula and requests for a non-formulary drug were denied. Fortunately, that hasn't happened to me in a long time. I have learned how to argue. As I was writing this, the results of the VA's annual All Employee Survey came out. Included are questions on burnout:

The last year has been extra stressful for most of us, both personally and professionally, so we all need to be alert for signs of burnout. There are three main

[5] One day (actually it occurred more than one), I was completely overwhelmed as an intern. I would call my wife who would dutifully come to the hospital to be supportive. Unfortunately, we lived about 10 miles from the hospital in San Diego and my wife, being a New Yorker, did not know how to drive. This meant a one mile walk to a bus stop then two busses, finally arriving a couple of hours later, by which time I had managed to get myself under control and was quite calm. How she put up with me, I don't know.

[6] When I was a visiting professor at the College of Public Health, at National Taiwan University, I was told by several diabetes specialists that they had to see about 60 patients per half day in clinic. Apparently, this is the norm since ambulatory care visits last 2–5 min. According to OECD data, patients in Taiwan are among the least satisfied with the amount of time spent with a do tor. I don't know which is chicken and which is egg, but the number of doctor visits per year is among the highest in the world—around 12—15! This is hardly enough time to say hello, much less feel comfortable about having enough information to make a correct diagnosis and write the expected prescription. I can't imaging practicing like this, but when I was moonlighting in an urgent care clinic, I was expected to see 6 patients per hour.

symptoms of burnout: (1) Emotional exhaustion - feeling like you've given everything you have to give; (2) Depersonalization - feeling like you're becoming cynical or hardened; and (3) Reduced achievement—feeling like you're not doing useful work. The percentages of those in my work group which consists mainly of physicians (and VA average) who experience 0, 1, 2, or 3 of the symptoms of burnout at least once a week were 46% (VA = 52%), 28% (VA = 23%), 18% (VA = 19%), and 5% (VA = 5%), respectively. At this point in my career, I am in the 0 group (at least if you ignore my natural cynicism), but it was not always this way.

In the past I have always recovered, sometimes because my job changed and sometimes because I changed and always with the support of my wife and colleagues, and occasionally a counselor. However, I didn't participate in the kinds of activities and interventions to build resilience that are currently recommended and for which there is reasonable supportive evidence. Mindfulness seems to be very popular [14]. There are many sources now for these kinds of interventions though I don't remember so many from earlier in my career when I could have used them. Moreover, I am sure more books will be published by the time this book comes out [15–18]. However, as potentially useful as these are, they focus all the responsibility on the victims. In fact, the standard measure of burnout is the Maslach Burnout Inventory which is all about the individual [19]. And yet, burnout is classified as occupational. Focus on the those suffering from burnout lets of the hook those responsible for the system in which the occupation is plied. As one paper so aptly put it: "We're not suffering from a yoga deficiency" [20]. Finally, the importance of reducing burnout for the organization and system as a whole is prompting thought, at least, about addressing the issue. For example, an aim for health care—improving the work life of providers (often referred to as meaning in work or joy in practice) [21]—has been added to the Triple Aim [22] of improved population health, enhanced experience of care, and lower per capita cost, transforming the "triple aim" to the "quadruple aim." Many organizations, professional and otherwise, health care systems, and the government agencies have web sites with relevant material. Resources of various types are being provided by hospitals, academic medical centers, and many others. (However, I haven't discerned much attention to improving usability of EMR systems or reducing unnecessary, but 'mandatory,' training.[7] In addition, there have been major efforts at suicide prevention. Regardless of whether or not the organization responds, the bottom line is: you are not in this alone so don't hesitate to seek help.

[7] O'Donnell WJ. Reducing administrative harm in medicine - clinicians and administrators together. N Engl J Med. 2022; 386: 2429–2432. Alas, the rate of EMR adoption has far exceeded the rate at which wisdom in their design has been applied. (See: Christian B. The Alignment Problem - Machine Learning and Human Values. NY. WW Norton & Co., 2020).

References

1. Maslach C, Leiter MP. The truth about burnout: how organizations cause personal stress and what to do about it. San Francisco: Jossey-Bass; 1997.
2. National Academies of Sciences, Engineering, and Medicine. Taking action against clinician burnout: a systems approach to professional well-being. Washington: National Academies Press; 2020.
3. Epstein RM, Privitera MR. Doing something about physician burnout. Lancet. 2016;388:2216–7.
4. Rotenstein LS, Torre M, Ramos MA, Rosales RC, Guille C, Sen S, Mata DA. Prevalence of burnout among physicians: a systematic review. JAMA. 2018;320(11):1131–50.
5. Amanullah S, Ramesh SR. The impact of COVID-19 on physician burnout globally: a review. In: Healthcare, vol. 8. Basel: Multidisciplinary Digital Publishing Institute; 2020. p. 421.
6. Shanafelt TD, Hasan O, Dyrbye LN, Sinsky C, Satele D, Sloan J, West CP. Changes in burnout and satisfaction with work-life balance in physicians and the general US working population between 2011 and 2014. Mayo Clin Proc. 2015;90(12):1600–13.
7. Wallace JE, Lemaire JB, Ghali WA. Physician wellness: a missing quality indicator. Lancet. 2009;374(9702):1714–21.
8. Mantri S, Lawson JM, Wang Z, Koenig HG. Prevalence and predictors of moral injury symptoms in health care professionals. J Nerv Ment Dis. 2021;209(3):174–80.
9. Kopacz MS, Ames D, Koenig HG. It's time to talk about physician burnout and moral injury. Lancet Psychiatry. 2019;6(11):e28.
10. Burns KE, Pattani R, Lorens E, Straus SE, Hawker GA. The impact of organizational culture on professional fulfillment and burnout in an academic department of medicine. PLoS One. 2021;16(6):e0252778.
11. Edwards ST, Marino M, Solberg LI, Damschroder L, Stange KC, Kottke TE, Balasubramanian BA, Springer R, Perry CK, Cohen DJ. Cultural and structural features of zero-burnout primary care practices: study examines features of primary care practices where physician burnout was reported to be zero. Health Aff. 2021;40(6):928–36.
12. Dean W, Talbot SG, Caplan A. Clarifying the language of clinician distress. JAMA. 2020;323(10):923–4.
13. Talbot G, Dean W. Physicians aren't 'burning out'. They're suffering from moral injury. Tat. 2018;7(26):18.
14. Fendel JC, Bürkle JJ, Göritz AS. Mindfulness-based interventions to reduce burnout and stress in physicians: a systematic review and meta-analysis. Acad Med. 2020;96(5):751–64.
15. Roberts LW. Roberts academic medicine handbook: a guide to achievement and fulfillment for academic faculty. New York: Springer; 2019.
16. Stonnington CM, Files JA. Burnout in women physicians: prevention, treatment, and management. New York: Springer; 2020.
17. Kim E, Lindeman B. Wellbeing. New York: Springer; 2020.
18. Stephen Swensen MM, Shanafelt T. Mayo Clinic strategies to reduce burnout: 12 actions to create the ideal workplace. Oxford: Oxford University Press; 2020.
19. Maslach C, Jackson SE, Leiter MP. Maslach burnout inventory. Lanham: Scarecrow Education; 1997.
20. Mantri S, Jooste K, Lawson J, Quaranta B, Vaughn J. Reframing the conversation around physician burnout and moral injury: "we're not suffering from a yoga deficiency". Perm J. 2021;25:21.
21. Sikka R, Morath JM, Leape L. The quadruple aim: care, health, cost and meaning in work. BMJ Qual Saf. 2015;2015:608–10.
22. Berwick DM, Nolan TW, Whittington J. The triple aim: care, health, and cost. Health Aff. 2008;27(3):759–69.

Chapter 21
Interprofessional Practice and Education

> *In the current system, care is taken to protect professional prerogatives and separate roles. The current system shows too little cooperation and teamwork. Instead, each discipline and type of organization tends to defend its authority at the expense of the total system's function—a problem known as suboptimization*. Institute of Medicine, Committee on Quality of Health Care in America[1]

> *A team is not a group of people who work together. A team is a group of people who trust each other*. Simon Sinek[2]

Interprofessional is all the rage. In fact, according to google trends [1], searches for the term interprofessional have been increasing, particularly since 2010 when the WHO published framework for action on interprofessional education and collaborative practice [2]. It impacts the academic medical center in the areas of both medical education and clinical practice. Medical schools (and other schools in the health professions) have been struggling to incorporate interprofessional approaches [3, 4]. There are many barriers. For, example, professions and disciplines have been siloed from each other, school calendars are out of sync, and everyone is competing for limited resources, among many others. And then there is status. Physicians in particular, have had difficulty ceding their status to those in other professions, and suspicions are mutual [5]. The same is true for interprofessional collaboration in practice.

I learned early to respect the opinions of other health professionals. One of the first things I was told on my first clinical rotation (obstetrics and gynecology) was to read the nurses notes in the chart because they really knew what was going on. I have always done that. There wasn't much interprofessional collaboration in practice during residency or fellowship, although there were some hints in the latter

[1] Institute of Medicine. (2001). Crossing the quality chasm: a new health care system for the 21st century. Washington, DC: National Academy Press. P83.

[2] https://www.azquotes.com/author/13643-Simon_Sinek. Accessed 3-30-22.

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8_21

particularly when it came to taking care of patients with diabetes. The importance of educating patients in self-management was becoming more evident. As a faculty member, I had the good fortune to work with diabetes educators and a nurse on whom I came to rely. This began in the early 1990s [6]. I trained the latter in endocrinology. She attended the medical school's endocrinology curriculum (which I directed) and saw patients with me. Soon she was seeing patients on her own and not just those with diabetes. Eventually, she got certified as a nurse practitioner and was doing primary care, primarily for patients with endocrine problems. I don't know why, but it just seemed natural to me.

There is something about collaborating with someone from another profession or discipline. Just as interprofessional is all the rage, so is interdisciplinary and its cousins—multidisciplinary and transdisciplinary. In 2007, the NIH launched an interdisciplinary research initiative, funding a series of interdisciplinary research consortia with a goal of transforming how research was done [7]. "As opposed to multidisciplinary research, which involves teams of scientists approaching a problem from their own discipline, interdisciplinary research integrates elements of a wide range of disciplines, often including basic research, clinical research, behavioral biology, and social sciences so that all of the scientists approach the problem in a new way. The members of interdisciplinary teams learn from each other to produce new approaches to a problem that would not be possible through any of the single disciplines. Typically, this process begins with team members first learning the language of each other's discipline, as well as the assumptions, limits, and valid uses of those disciplines' theoretical and experimental approaches. Experiments are then designed in ways that cut across disciplines, with, for example, an experiment based in one discipline producing data that can be correlated—or otherwise connected to—data generated in experiments based in another discipline. The common understanding by the team of the disciplines involved assures that this tight linkage across the disciplines is valid" [7]. Does that make any sense to you? Choi came up with a description that is as good as any: "Multidisciplinarity draws on knowledge from different disciplines but stays within their boundaries. Interdisciplinarity analyzes, synthesizes and harmonizes links between disciplines into a coordinated and coherent whole. Transdisciplinarity integrates the natural, social and health sciences in a humanities context, and transcends their traditional boundaries. The objectives of multiple disciplinary approaches are to resolve real world or complex problems, to provide different perspectives on problems, to create guidelines, and to provide comprehensive health services" [8]. I have always struggled with the distinctions [9–11]. I suppose that multiprofessional, interprofessional, and transprofessional parallel the terms of disciplinarity [12]. As a member of an NIH training program designed to train interdisciplinary researchers, we struggled to come up with operational definitions, at least ones that made sense to me. I certainly appreciate that individuals from different professions and different disciplines have different perspectives, but I have always been troubled about how the mixing whether inter- or

trans-actually occurred.[3] The importance of different perspectives was brought home to me when we were faced with clinical performance measures showing that we didn't measure with a relatively large number of patients with chronic disease, especially diabetes. Such patients can be challenging since they often have multiple problems, both medical and (and in the population we take care of) social. In addition, the complexity of diabetes management challenges the acute care-oriented healthcare system that fosters a separate silos decision making model [13–15]. There is increasing recognition that quality chronic disease care is best provided in an inter-professional/interdisciplinary manner. Although I prefer to think about all of this multi-, inter-, and trans- as effective collaboration without making distinctions, interprofessional seemed to be the term of the day (early 2000s) so we adopted that term.

Interprofessional care involves healthcare professionals from two or more disciplines integrating their perspectives and working synergistically to promote high quality care and good patient outcomes. This care may include professionals from the disciplines of medicine, nursing, pharmacy, psychology, nutrition, and social work (all of whom have been trained in a unidisciplinary perspective) and it may involve formal or informal teams. However, we have limited understanding of the complexity of relationships between and among health care professionals, individuals who throughout their education have been socialized to adopt a unidisciplinary mental model of their patients and roles, a model that is typically reinforced by custom, practice, and law. However, interprofessional care requires collaboration which in turn requires making changes to this unidisciplinary mental model and implementing a model in which multiple disciplines contribute.

There have been a variety of models of collaboration and interprofessional interactions. For example, D'Amour and colleagues identified seven theoretical frameworks and others have been proposed [16]. Common to the descriptions of collaborative care are four characteristics: sharing, partnership, interdependency and power [17, 18]. There are many facets of sharing such as shared responsibilities, shared decision-making, shared values, shared data, and shared planning and intervention [19]. A good partnership is a collaborative undertaking, that is characterized by a collegiality with open communication and mutual trust and respect in pursuit of common goals. Each partner must not only be aware of the contributions and perspectives of the other; they must also value those contributions and perspectives. Collaboration requires that professionals relinquish some of their autonomy and depend upon one another for the good of the patient [20, 21]. This interdependency results in collective action that can maximize individual contributions resulting in

[3] I have a similar problem with the concept of "mixed methods" which involves using quantitative and qualitative methods in the same study. Since they have very different underlying epistemologies, I didn't see how they could be mixed. Used in the same study, sure, but mixing? Perhaps in some strange way this all goes back to the book of Genesis in which God makes distinctions, e.g., separating light from darkness, etc. (see Kass L. The beginning of wisdom: Reading Genesis. Simon and Schuster; 2003).

synergy. Relinquishment of some autonomy also implies that in a collaborative practice, power is shared among team members. Moreover, this power is based on knowledge and experience rather than on functions or titles, moving from deference to rank to deference to expertise. This collaboration is defined by the relationships and interactions between team members. These relationships and interactions evolve over time, making collaboration a dynamic process. Distinctions between terms aside, it is clear that there is a continuum so that focusing on the characteristics of the collaboration assumes the greatest importance in scientific understanding. In addition, these relationships occur within specific contexts. An illustration of this comes from my interactions with the diabetes nurse practitioner. I had been an endocrinologist for more than 15 years by the time I started working with our diabetes nurse practitioner, but I had to admit that she knew much more about the day-to-day management of diabetes than I did. If we had a patient with anti-insulin receptor antibodies or some other unusual form of diabetes, I would have been the expert. But for everything else, whenever I was unsure, I turned to her. She eventually became my go to person for help in the practical management of patients with diabetes as I focused mainly on patients with other endocrine disorders. When many years later, my wife was hospitalized with new onset diabetes at a world-famous medical institution in town, I felt I needed to check with Sharon to make sure that the endocrinologists there were doing the right thing.

To foster interprofessional interactions while taking care of the patients, we established Shared Medical Appointments, also called “group visits” or “chronic health care clinics” [22]. In our local setting, a multi-disciplinary team works collaboratively to see a group of patients (8–20) with diabetes for approximately 90 min. The team of healthcare professionals administering this appointment includes a general internist, a diabetes nurse practitioner, a health psychologist, a clinical pharmacist, a registered nurse, and a nutritionist. Although there were some didactics and time for individual consultation, most of the SMA was devoted to patients sharing experiences related to medications, laboratory goals, complications of diabetes and challenges in day-to-day self-management. Patients and family members/caregivers were encouraged to share experiences and solve problems with each other as well as members of the healthcare team. This type of appointment allowed patients to see differing perspectives in problem solving and productive interactions with other patients and healthcare professionals at one medical appointment. We collected the usual clinical process and outcome measures (A1C, blood pressure, cholesterol and process, measures of aspirin use, annual eye examination, foot examination). At the end of each session, a team debriefing occurs where patient issues and the clinic process were reviewed. The key to the success of this initiative lay in the individual clinicians who participated and the way they interacted both during and after the clinic. Everyone’s expertise and perspective were valued and that helped to make the clinic fun rather than being a chore. This made for great collaboration. Since medical students are taught in a very doctor-focused

manner, we thought it was important to show the students how we worked together in real practice [23]. We had students assigned to the SMAs. These students were in their third year, and I thought that students needed to be introduced to interprofessional collaboration as early as possible. When I was director of the first portion of the medical school curriculum, I arranged to have a mock SMA conducted in front of the whole class. There they were, wearing their white coats in front of patients for the first time. I got half a dozen of our patients (Veterans) who volunteered to participate, and one brought his spouse along. We had the whole interprofessional team as well as our clinic clerk who had the electronic medical record on screen (very briefly to maintain confidentiality of the patients). I had gotten a van from the VA and we all went to the medical school and set things up in front of the class. The students had rapt attention. No one was surfing the internet which often happens when a lecturer drones on. At the end of the session, the students asked questions of the patients. I still remember vividly when one student asked: what was the most difficult thing you had to do after getting diabetes? One grizzled Veteran stroked his chin and said: I was in Nam. I've been beaten, I've been stabbed, and I've been shot, but the idea of sticking myself with a needle every day scared the living shit out of me. All the other Veterans were nodding in agreement. At the end of the session, one student got up to thank the Veterans for coming and to thank them for their service. The class erupted in a standing ovation. It was extremely moving, and I had difficulty holding back my tears. After the patients went back to the VA I summarized what we were aiming to demonstrate – effective interprofessional collaboration with different professionals deferring to others when the latter had more expertise. I emphasized that even though I was a physician, I was fine with this. I even pointed to them (and to many audiences in lectures that I gave), that the nurse practitioner was my go to person for day-to-day management issues. We also fielded questions from the students. The most prominent question from them was: why can't we get more of this?

It didn't end here. We published several articles and even a how-to manual for those setting up diabetes SMAs [24–27].[4] We collaborated with others in the field [28]. We thought that since the SMAs could be used to demonstrate interprofessional practice and since for a brief moment VA HSR&D was interested in education research, I gathered another interprofessional team with a nurse researcher, education research scientist, social scientist and statistician, among others and submitted a grant application. Figure 21.1 shows the conceptual model. It was funded the first time around. Thus, this example of collaboration, interprofessionality, interdisciplinarity, whatever, was a three-for (the price of one): clinical practice improvement, education, and research. Academic medical centers include many people with different expertise. The opportunities for collaboration are endless and they have been a source of intellectual stimulation for my entire career.

[4] The list of publications also evidences a very productive long-term collaboration.

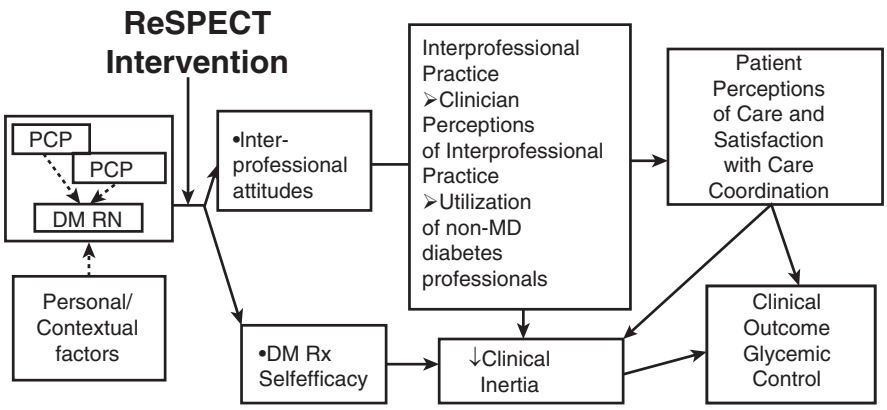


Fig. 21.1 Conceptual framework of the role modeling in shared medical appointments to Promote Establishing Collaborative Teams—ReSPECT Trial. The intervention was participation in an SMA conducted by the team at the clinicians' primary care clinic. *PCP* primary care provider

References

1. https://trends.google.com/trends/?geo=US. Accessed 30 March 2022.
2. https://www.who.int/publications/i/item/framework-for-action-on-interprofessional-education-collaborative-practice.
3. Dolansky MA, Luebbers E, Singh MK, Moore SM, Zomorodi M. Interprofessional approaches to quality and safety education. Qual Saf Nurs. 2021;15:385.
4. Luebbers E, Thomas N, Fennimore T, Demko C, Aron D, Dolansky M. Back to basics for curricular development: a proposed framework for thinking about how interprofessional learning occurs. J Interprof Care. 2021;5:10.
5. Whitehead C. The doctor dilemma in interprofessional education and care: how and why will physicians collaborate? Med Educ. 2007;41(10):1010–6.
6. Romeo JH, Aron DC. Endocrinology collaborative practice: shared responsibility for patient care among physicians and nurses. Endocrinologist. 1994;4:218–9.
7. https://www.nih.gov/news-events/news-releases/nih-launches-interdisciplinary-research-consortia. Accessed 31 March 2022.
8. Choi BC, Pak AW. Multidisciplinarity, interdisciplinarity, and transdisciplinarity in health research, services, education and policy: 2. Promotors, barriers, and strategies of enhancement. Clin Invest Med. 2007;2007:E224–32.
9. Toš I. Interdisciplinarity and transdisciplinarity–problems and guidelines. Coll Antropol. 2021;45(1):67–73.
10. Sethia S, Markandey T, Săvoiu G, Matei S, Sen M, Gowthaman T, Panda KB, Pradhan P, Mohanty A, Sinha B, Bhavsar VR. Transdisciplinarity: from a real educational essence to a normal future in scientific research. http://esmsj.upit.ro/ESMSJ%20vol%2010%20(2)%202021/ESMSJ%2010(2)%202021.pdf. Accessed 31 March 2022.
11. Lawrence MG, Williams S, Nanz P, Renn O. Characteristics, potentials, and challenges of transdisciplinary research. One Earth. 2022;5(1):44–61.
12. Chiocchio F, Richer MC. From multi-professional to trans-professional healthcare teams: the critical role of innovation projects. In: Challenges and opportunities in health care management. Cham: Springer; 2015. p. 161–9.
13. Bodenheimer T, Wagner E, Grumbach K. Improving primary care for patients with chronic illness: the chronic care model, part 2. JAMA. 2002;288:1909–14.

14. Singh D. Transforming chronic care: evidence for improving care for people with long-term conditions. Birmingham: Univ. Birmingham Health Services Mgt Ctr; 2005.
15. Geriatrics Interdisciplinary Advisory Group. Interdisciplinary care for older adults with complex needs: American Geriatrics Society position statement. J Am Geriatr Soc. 2006;54:849–52.
16. D'Amour D, Ferrada-Videla M, San Martin Rodriguez L, Beaulieu M. The conceptual basis for interprofessional collaboration: core concepts and theoretical frameworks. J Interprof Care. 2005;19(Suppl 1):132–47.
17. Butt G, Markle-Reid M, Browne G. Interprofessional partnerships in chronic illness care: a conceptual model for measuring partnership effectiveness. Int J Integr Care. 2008;8:1–14.
18. San Martin Rodriguez L, Beaulieu M, D'Amour D, Ferrada-Videla M. The determinants of successful collaboration: a review of theoretical and empirical studies. J Interprof Care. 2005;1:132–47.
19. D'Amour D, Oandasan I. Interprofessionality as the field of interprofessional practice and interprofessional education: an emerging concept. J Interprof Care. 2005;1:8–20.
20. Dickinson C, Carpenter J. 'Contact is not enough': an inter-group perspective on stereotypes and stereotype change. In: Interprofessional education. The theory-practice relationship i interprofessional education. London: HEA; 2005.
21. Hall J. Interprofessional teamwork professional cultures as barriers. J Interprof Care. 2005;19:188–96.
22. Kirsh SR, Watts SA, Pascuzzi K, O'Day ME, Davidson DJ, Strauss GJ, Kern EO, Aron DC. Shared medical appointments based on the chronic care model: a quality improvement project to address the challenges of diabetic patients with high cardiovascular risk. Qual Saf Health Care. 2007;16:349–53.
23. Kirsh SR, Aron D. Integrating the chronic care model and the ACGME competencies: using shared medical appointments to focus on system-based practice. Qual Saf Health Care. 2008;17:15–9.
24. Watts SA, Strauss GJ, Pascuzzi K, O'Day ME, Young K, Aron DC, Kirsh SR. Shared medical appointments for patients with diabetes: glycemic reduction in high-risk patients. J Am Assoc Nurse Pract. 2015;27(8):450–6.
25. Kirsh SR, Schaub K, Aron DC. Shared medical appointments: a potential venue for education in interprofessional care. Qual Manage Healthcare. 2009;18(3):217–24.
26. Kirsh SR, Lawrence RH, Aron DC. Tailoring an intervention to the context and system redesign related to the intervention: a case study of implementing shared medical appointments for diabetes. Implement Sci. 2008;3(1):1–5.
27. Kirsh S, Watts S, Schaub K, Strauss G, O'Day ME, Aron DC, Ober S. VA shared medical appointments for patients with diabetes: maximizing patient and provider expertise to strengthen care management. In: Guide and resources for starting and sustaining successful SMAs; training manual. Washington: U.S. Department of Veterans Affairs; 2008.
28. Tokuda L, Lorenzo L, Theriault A, Taveira TH, Marquis L, Head H, Edelman D, Kirsh SR, Aron DC, Wu WC. The utilization of video-conference shared medical appointments in rural diabetes care. Int J Med Inform. 2016;93:34–41.

Chapter 22
Collaboration: From Scholarly Collaboration to Peer Mentoring to Friendship

In the long history of humankind (and animal kind, too) those who learned to collaborate and improvise most effectively have prevailed. Charles Darwin[1]

Synergy is the highest activity of life; it creates new untapped alternatives; it values and exploits the mental, emotional, and psychological differences between people. Stephen Covey[2]

I first met Len Pogach at a conference of VA HSR&D in Washington, DC in ~2001. We bumped into each other at a refreshment table between sessions. Our meeting was not just happenstance. Apparently he had asked someone to point me out because he was looking for people who would work on VA/DoD Clinical Practice Guidelines for Diabetes. We each had name tags so one impediment to meeting was eliminated. In fact, I had heard of him and he had heard of me by way of our publications and some colleagues we knew in common. We were similar in many ways. We were both endocrinologists and had both had done a decade of laboratory research, albeit in quite different areas. By the time we met, had switched his research to diabetes care outcomes, using statistical analyses of large databases as his primary method. I was just transitioning out of lab research and interested in clinical epidemiology. We were both interested in quality of care. He had become VA National Program Director for Diabetes and I was in charge of Endocrinology Clinic at the Cleveland VA Medical Center and would soon become Associate Chief of Medical Service responsible for ambulatory care and quality. We even looked a bit like each other – not very tall, a bit overweight, and somewhat rumpled. The chemistry was right and we hit it off. That began a collaboration that has continued to the present day and we became the closest of friends.

[1] https://www.azquotes.com/quote/72309. Accessed 3-26-22 Charles Darwin (2015). "Darwin on evolution: words of wisdom from the father of evolution", p. 23, Skyhorse Publishing, Inc.

[2] https://www.azquotes.com/quotes/topics/teamwork-in-education.html. Accessed 3-26-22.

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8_22

I joined the VA/DoD diabetes guidelines working group which was an interprofessional who's who in diabetes in the VA and Dept. of Defense. Among them were Rod Hayward, MD who was the QUERI-DM Research Coordinator; Len was the Clinical Coordinator. I was asked to join QUERI-DM's Executive Committee. Len also asked me to join and lead the VA's Diabetes/Endocrinology Field Group which along with Field Groups in other specialties advised VA Central Office on important clinical issues. Len and I would get together often at one conference or another and developed a trust that allowed us to advise each other about issues far removed from diabetes. Thus, we became each other's mentors. We shared a passion for quality of care; Len had been one of the earliest proponents of measures [1] and I had a great interest in the topic as well [2]. We were concerned about the direction that performance measures were taking as the National Committee for Quality Assurance (NCQA) started talking about a measure for diabetes: A1c<7% for all patients with diabetes ages 18–74 [3–5]. In May 2006 we were invited to conference on the topic of quality assessment for diabetes whose first recommendation stated: "Performance measures should be constructed so that the credit for achieving the measure is commensurate with the likelihood of benefit to the patient, consistent with the Institute of Medicine definitions of quality. The most credit should be given for achieving goals or clinical actions with large potential benefits in downstream outcomes for the patient (e.g., based on life expectancy, comorbidity, etc.) [6]. We (among others) felt that the A1c<7% measure as then designed was inconsistent with that recommendation. In fact, VA/DoD diabetes guidelines since 2000 recommended targets for glycemic control that were stratified based on presence or absence of diabetic complications and on life expectancy. Our effort to combat the A1c<7% measure for all took on the trappings of a quest. We talked about it together in terms directly from Tolkien's Lord of the Rings [7]. The measure was the one ring and we were out to destroy it despite the black riders, the orcs, and Sauron himself—the measurement industry, non-clinical managers, and Big Pharma. Ultimately, for a variety of reasons, the ring was destroyed. The story even made the press [8]. To my surprise, I was identified as "The Resistance." The wording said that I (with a picture no less) and other diabetes specialists in the Veterans Affairs health system urged the VA not to adopt an A1c below 7% measure. The truth of the matter is that it was Len who led the resistance. I was also Samwise to his Frodo.

Although everyone's story is different, we should not lose sight of potential generalizability of case studies [9]. After all, that is one of the ways we learn in medicine. I have always wondered about the statement that I have heard from quality gurus and evidence-based medicine proselytizers: "The plural of anecdote is not data." That is true. The plural of anecdote is anecdotes, but that does not negate their potential value as data.[3] In any case, there are two main lessons to be drawn, I think. The first is the value of collaboration. This is as true for clinician educators as it is for researchers, especially since I believe that scholarship is essential for clinician

[3] It turns out that the statement may actually be a misquote. http://blog.danwin.com/don-t-forget-the-plural-of-anecdote-is-data/#:~:text=You%20may%20have%20heard%20the,not%20have%20a%20virgin%20birth. Accessed 3-28-22.

educators. Collaboration can lead to more publications; Len and I have published 32 papers together. Collaboration provides another perspective and if there is sufficient trust, provocative questions and criticism can be taken constructively and not as personal attacks [10]. Collaboration provides access to expertise you may not have as well as opportunities. I have served as a statistics consultant for several clinician educators who are trying to bring rigor to their studies of clinical practice. Collaboration may lead to a role as co-investigator on a research grant or participation in a clinical trial. In addition, clinicians bring another perspective to the researchers, so it is a two-way street. Collaboration depends on personal relationships and what has been referred to as dyadic interaction which is related to the duration of the relationship and the degree of similarity in the knowledge and status of the individuals involved [11]. Add to this the different experiences of the individuals and you have the chance for several collaborative activities. The similarities between Len and me were many but we brought very different experiences and knowledge. Len has an MBA along with his MD. I have an MS. He has experience as a bureaucratic infighter at headquarters while my career has all been in the field. However, most important has been trust to the degree that we have become each other's peer mentor. Since getting a senior mentor can be difficult, more attention is being paid to peer mentoring [12–14] Who knew? We didn't realize that we were at the cutting edge.

It is important to remember that not all collaborations go well. I have had collaborators who have taken credit for my work, and in one particular case of misplaced trust on my part, has taken part of my budget. His attitude could be summarized as what's mine is mine; what's yours in negotiable. In fact, he didn't negotiate. He just drastically changed the budget before submitting the grant. A second lesson is the importance or at least the benefit of having an issue about which you are passionate. Such an issue can provide a focus for intellectual activity as well as social good. Our interest in diabetes quality measures sustained us when grant applications were being turned and journals rejected our papers. I think that we also did some good.

References

1. Fleming BB, Greenfield S, Engelgau MM, Pogach LM, Clauser SB, Parrott MA, DQIP Group. The diabetes quality improvement project: moving science into health policy to gain an edge on the diabetes epidemic. Diabetes Care. 2001;24(10):1815–20.
2. Caron A, Jones P, Neuhauser D, Aron DC. Measuring performance improvement: total organizational commitment or clinical specialization. Qual Manage Healthcare. 2004;13(4):210–5.
3. Aron DC, Pogach LM. One size does not fit all: the need for a continuous measure for glycemic control in diabetes. Jt Comm J Qual Patient Saf. 2007;33(10):636–43.
4. Aron D, Pogach L. Transparency standards for diabetes performance measures. JAMA. 2009;301(2):210–2.
5. Pogach L, Aron DC. Sudden acceleration of diabetes quality measures. JAMA. 2011;305(7):709–10.

6. Kerr EA. Assessing quality of care for diabetes. Conference final report. (AHRQ Grant No. R13 HS01628). AHRQ Publication No. 08-0037-EF. Rockville: Agency for Healthcare Research and Quality; 2008.
7. Tolkien JR. The lord of the rings trilogy. London: Allen & Unwin; 1954.
8. https://www.reuters.com/investigates/special-report/usa-diabetes-overtreatment/. Accessed 28 March 2022.
9. Flyvbjerg B. Five misunderstandings about case-study research. Qual Inq. 2006;12(2):219–45.
10. Kallick B. Through the lens of a critical friend. Educ Leadersh. 1993;51(2):49–51.
11. Jha Y, Welch EW. Relational mechanisms governing multifaceted collaborative behavior of academic scientists in six fields of science and engineering. Res Policy. 2010;39(9):1174–84.
12. Abramson EL, Naifeh MM, Stevenson MD, Li ST. Scholarly collaboration, mentorship, and friendship: a new model for success in academic medicine. Acad Pediatr. 2019;19(8):860–4.
13. Moss J, Teshima J, Leszcz M. Peer group mentoring of junior faculty. Acad Psychiatry. 2008;32(3):230–5.
14. Pololi LH, Knight SM, Dennis K, Frankel RM. Helping medical school faculty realize their dreams: an innovative, collaborative mentoring program. Acad Med. 2002;77(5):377–84.

Chapter 23
Frustrations Part 1: Why Is It So Difficult to Improve Quality of Health Care?

If things were simple, word would have gotten around. Jacques Derrida[1]

It is one thing to say with the prophet Amos, "Let justice roll down like mighty waters," and quite another to work out the irrigation system. William Sloan Coffin[2]

Improving health care quality is part of every physician's job and perhaps even more so for academic clinicians who must teach the ACGME competency of practice based learning and improvement. Much of my academic career has involved improving quality. I was invited to give the 2022 Annual Duncan Neuhauser[3] Quality Improvement Lecture [1]. I wrote a description that was sent in the promotional materials. It read as follows: "Those of us who have toiled in the field of health care delivery and its improvement have had a tough road to hoe – rocky soil, tools not fit for purpose, pests, and a changing climate. Yet, we carry on, reveling in every harvest however meager.

Why is the soil so rocky and the tools so unfit? Who or what are the pests and how can we deal with a changing climate while improving the soil and tools and getting rid of the pests? I have spent my career doing what I could to address each of these, a journey I never expected to take when I started medical school, completed residency and fellowship, and began my first job as a faculty member learning to do basic science research. This journey depended on many contingent events and teachers, some from whom I learned and revered and some from whom I learned

[1] https://www.azquotes.com/author/3890-Jacques Derrida from Jacques Derrida (1977). "Limited Inc", p. 119, Northwestern University Press. Accessed 4-1-22.

[2] https://www.azquotes.com/quote/667968 from William Sloan Coffin. "A Passion for the Possible", Westminster John Knox Press. Accessed 4-5-22.

[3] Duncan Neuhauser was Emeritus Professor of Epidemiology and Biostatistics and was known for his interest in facilitating the careers of others – including mine. He passed away after I had been invited to give the lecture, but before I actually gave it. https://thedaily.case.edu/professor-emeritus-duncan-neuhauser-passes-away/.

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8_23

and rejected totally. I have been fortunate to learn a few things along the way and notwithstanding the frustrations, I have had quite a bit of fun. I offer some stories of successes and failures that may appeal and resonate and some that may send you screaming into the night—your choice, but it has been a heck of ride." This to be sure was a pretty grim teaser, especially since my audience would include not only people who had spent their careers in the field along with some who were just starting out.[4] Duncan was known for being irrepressibly optimistic, so I wanted to make sure that even this grim introduction did not discourage everyone. I often use analogies in my talks and in my thinking and I wanted to come up with one that involved some hope, while at the same time, illustrating the difficulties.[5] I came up with the idea of early agriculture.

The adoption of agriculture as the primary means for obtaining nutrition was a gradual process, occurring over several thousand years, simultaneously in many parts of the globe. The earliest agriculture actually involved more work than hunting and gathering but had the potential to provide many more calories per acre; the surplus supported the growth of civilizations [2]. Among the earliest civilizations were in Mesopotamia and Egypt around fertile river valleys. An Ancient Egyptian painting sets a scene in which a male farmer uses a yoked plow while a woman follows sowing seeds (Fig. 23.1) The scene has so much that is analogous to health care. There is division of labor and specialization and use of technology. There are performance incentives (or actually disincentives in the form of a whip) [3]. There are trees with low-hanging fruit (along with loftier fruit) [4, 5]. There are even "policies" or notes written in hieroglyphics [6]. Although not illustrated, there were pests and the soil quality depended on the annual deposition of silt from the Nile. So why is it so difficult to improve health care and made far less progress than we had hoped when we were starting out?

Our first problem is that we are conflicted about what the "crop" is in health care. On the one hand, there is enhancing the patients' quality of life, while on the other there is enhancing the providers' (providers in the broadest sense to include both clinicians and others such as administrators) quality of life [7]. Or as H.L. Mencken said: "When somebody says it's not about the money, it's about the money."[6] To put

[4] Among those looking a glass with liquid, my wife describes me as someone who does not see a glass half full, or even just a glass half empty, but rather one who sees a glass half empty and about to tip over.

[5] In reading a book about serendipity (Merton RK, Barber E. The travels and adventures of serendipity. Princeton University Press; 2011) I learned about Horace Walpole who coined the word in the eighteenth century. He was described by the nineteenth century British historian and politician as follows: "[his wit] consisted in an exquisite perception of points of analogy and points of contrast too subtile for common observation… Walpole perpetually startles us by the ease with which he yokes together ideas which there would seem at first sight to be no connection." I have always been taken by that.

[6] https://www.goodreads.com/quotes/532804-when-somebody-says-it-s-not-about-the-money-it-s-about.

Fig. 23.1 Sennedjem and Iinefertiti in the Fields of Iaru. A.D. 1922 Original circa 1295–1213 B.C. The Metropolitan Museum of Art, New York. metmuseum.org/art/collection/search/548354. Accessed 7 Dec. 2022

it another way, one person's cost is another person's revenue.[7] Even if we could agree on health care as the right crop (i.e., health care, since that underlies the reason why most of us physicians went into medicine in the first place), we are not sure how to do it. Should we emphasize primary care (most of the world) or specialists (United States). Even if we get the mix right, is our goal good care for all versus or quite as good for most, but great for a few. And then there is the environment; farming success depends on soil quality and that depends on its ecosystem. A view of Egypt from space shows a very narrow area of green (the banks of the Nile and its delta) flanked by huge deserts [8].

If you are a clinician in academic medicine, first, you must deal not only with the need to generate billing (or the equivalent) so that the system will survive.

[7] This or variations have been attributed to many people including Uwe Reinhardt (from whom I heard it), Paul Krugman, and others.

Sister Irene Kraus, a nun who became the first president of the Daughters of Charity National Health System is credited with the saying "No margin, no mission" [9]. If you can't pay the bills, you can't keep the hospital doors open to provide charity.[8] In addition, you must also deal with the ecosystem of academia and its ethos where discovery of new knowledge is valued over all else. Furthermore, as a clinician, even if you are a specialist, you deal with whole humans. When it comes to discovery, Alvin Feinstein, a founder of clinical epidemiology, wrote: "...Prestige was least for studies of therapeutic interventions in patient care, and rose as the research went to explication of organ-system pathophysiology, to physiology, and eventually to molecular mechanisms of biology. Being inversely proportional to the structural size of the object under investigation, prestige increased as the investigated material became smaller, from intact organism, to organ, and eventually to infracellular…" [10].

How we are organized—by department or discipline—hardly encourages the collaboration needed to improve a complex system. We have been given tools not fit for purpose. The plow used by the Egyptian farmer above was adequate for light soils, perhaps, but was not at all suited to the clay soils found in other geographic regions.

Moreover, the acreage that could be plowed by one farmer was limited. Fortunately, innovation had led to many technological improvements and innovation in health care will be critical. (In addition to improved tools, we will need process innovation [11, 12].) Health care has adopted tools directly from manufacturing and aviation without taking into account that healthcare is neither manufacturing nor aviation [13]. These include not only the standard PDSA cycle, but also six sigma, lean, and performance measures [14]. The way that using PDSA cycles is taught assumes a linearity of the process that is utterly lacking in health care [15]. Some of the tools don't fit into our clinical workflow with electronic medical records providing a great, and ongoing, example.[9]

There were different kinds of pests that consumed the crops (literally or figuratively) or inhibited their growth. There is a reason why the plagues wrought on Pharaoh included such pests as lice, flies, livestock pestilence, hail, and locusts [16]. For me, the three main pests have been administrators, outside consultants, and health services researchers. The first two are probably not particularly controversial. For example, between 1970 and 2015, the number of physicians has increased by <200% while the number of administrators has increased by >2500% [17]. The

[8] Unfortunately, some medical centers are concerned only with the margin. See: Pearson SD, Sabin J, Emanuel EJ. No margin, no mission: health care organizations and the quest for ethical excellence. Oxford University Press; 2003 Aug 21 and Woolhandler S, Himmelstein DU. When money is the mission—the high costs of investor-owned care. New England Journal of Medicine. 1999;341(6):444-6.

[9] One of the reasons I retired is that the VA was transitioning away from an excellent EMR to a commercial product. The VA's EMR was unlike all the commercial ones in that it was developed for clinical care and not for billing. Billing capabilities were added much later. Even so, computers don't really fit into a patient-centered workflow.

number of consultants has also greatly increased. My experience with them over 40 years has been they help little, cost a lot, and for some reason almost always show pie charts.[10] Perhaps more controversial and a view that has not won me many friends is health services researchers. More than 15 years ago at a meeting of VA health services researchers with a particular interest in improving quality, a plenary speaker, Brian Mittman, PhD, put up a slide which asked the question: 'Health Services Researchers, Why Have We Failed?' He noted that 'The health care "quality problem" is widely recognized, generally accepted and well- understood and the problem is also the focus of considerable effort. Yet effective "evidence-based" solutions (and success) remain elusive. He suggested that a common answer was that 'We lack sufficient evidence and knowledge regarding effective quality improvement (practice change) strategies (intervention/problem matching, effect modifiers, etc.)' and then offered alternative answers: 'We have the knowledge, but lack the will and/or ability to act on that knowledge; We fail to act on the evidence and advice we receive (and produce); we repeatedly initiate new efforts without attending to barriers, or including elements, previously found to be important; we discount evidence and advice that fail to have universal, total effectiveness; and finally, 'We continue to seek—and believe in—(non-existent) simple solutions ("the answer")).' I see the problem as the model of research that seeks to eliminate or control for context when context is absolutely critical as illustrated in Fig. 23.1. When context is not addressed, one is left with generalities, which while they may be true, are not particularly helpful [18, 19]. Or, they may be blindingly obvious.[11] I write all this knowing that I have written my share of health services research papers that were not all that helpful.

Finally, we must come back to the farmers. If you want to improve farming, the farmers will have to change. However, change does not come easily and it is no less true of physicians (and other health care personnel) than it is for farmers. It is probably not a coincidence that the author of Diffusion of Innovations, Everett Rogers grew up on a farm in Iowa. His father was resistant to using a new corn seed that promised greater yields and was resistant to drought. In the drought of 1936, his

[10] https://leffcommunications.com/2016/04/04/pie-chart-overused-misused-abused/. Accessed 4-7-22.

[11] The lead article of the April 2020 issue of Research Activities had the title: 'Patients admitted to the hospital on weekends wait for major procedures.' I know that physicians sometimes think they are gods, but even God rested on the seventh day (See: Genesis.) Other equally startling results related to improving quality have been published in 'high impact' health services research journals: It is important to have a vision (see Proverbs 29:18); Leadership is important (see Exodus); and Primary care/mental health integration is more likely to occur when there is 'spatial sufficiency.' (The etymology of the Hebrew word for Egypt, mitzraim, indicates that it indicates "narrow places." The general management literature is just as bad. "Organizational theory has amassed an impressive armory of theoretical constructs and mechanisms at many levels of analysis over the past half-century, and its has documented dozens of regularities. However, the nature of the subject matter makes it unlikely to either yield general or precise theories. A more realistic aspiration is for carefully done research that yields insights into particular processes at particular times…" Davis GF. Organizational Research Methods 2010; 13(4) 690-709.

crop failed while other farmers did ok. Rogers eventually did his PhD thesis on farmers' adoption of innovation—a new weed spray [20]. The number of reasons for resistance to change in healthcare is legion. Landaeta et al. came up with 24 of them [21]. Others have classified them differently or related them to specific interventions [22–24]. And, there are plenty of system barriers [25]. I think that I have faced most if not all of them at one time or another. And yet, I have carried on despite the frustrations.

The ability to carry on despite the frustrations, rejections, and other adversities, is critical to staying in academic medicine, especially if you are a clinician educator and will never be at the top of the totem pole. The ways I have coped, sometimes more successfully than other times, have included a few basic things. First, more me, is the moral imperative. It is part of who I am, not only as a physician, but also as a teacher. It applied to my administrative and research roles as well. Second, I have had my share of triumphs, at least enough to keep me going when things are working out well. Frustration tends to be temporary. One year, I submitted more than 10 grant applications, and all were rejected. I felt like I was banging my head against the wall, but when a different grant got funded, I forget about that frustrating year. Third, I sought the comfort and support of others and if that meant therapy, so be it.[12] In my case, that often meant my wife who has managed to put up with me for more than 50 years.[13] Fourth, although occasionally I got so frustrated that I looked for other positions, sober reflection led me to conclude that there would be frustrations of similar degree everywhere else. That doesn't mean one shouldn't look. I know many who have made moves and are far happier having done so. Just don't be fooled by "recruiting mode" when the site you are looking at shows only its best face. I know there is plenty of advice out there and plenty of pithy quotes about things like challenges making life interesting or that success is built on failure rather than on success, etc., etc., etc.[14] I will have some "pearls of wisdom" to offer in a later chapter. However, every frustration is context-dependent (for me at least) and that means that I have to come up with ways to deal with them. Sometimes all this other stuff helps, but in the end, while one has to face it, that doesn't mean you just have to suck it up and carry on. You must take care of yourself and your SELF. Finally, I have always found some solace in a sentence from the Jewish Talmud in which Rabbi Tarfon said nearly 2000 years ago: "*You are not obligated to complete the work, but neither are you free to abandon it*."[15]

---

[12] Currently, mindfulness exercises and meditation seem to be hot topics. See: Fendel JC, Bürkle JJ, Göritz AS. (2021). Mindfulness-based interventions to reduce burnout and stress in physicians: a systematic review and meta-analysis.Academic Medicine, 96(5), 751-764; and Angelopoulou P, Panagopoulou E. Resilience interventions in physicians: a systematic review and meta-analysis. Applied Psychology: Health and Well-Being. 2022;14(1):3-25.

[13] On our 51st Anniversary, my wife gave me mug which read: 'Husband, today is the fifty-first anniversary of the best decision you ever made. Your wife.' She was so right.

[14] https://www.happierhuman.com/frustration-quotes/. Accessed 4-7-22.

[15] Pirkei Avot 2:15.

References

1. https://www.metrohealth.org/population-health-research-institute/seminar-series. Accessed 1 April 2022.
2. https://www.foodsystemprimer.org/food-production/history-of-agriculture/. Accessed 5 April 2022.
3. Mannion R, Davies HT. Reporting health care performance: learning from the past, prospects for the future. J Eval Clin Pract. 2002;8(2):215–28.
4. Rydenfält C, Holgersson C, Östlund B, Arvidsson I, Johansson G, Persson R. Picking low hanging fruit–A scoping review of work environment related interventions in the home care sector. Home Health Care Serv Q. 2020;39(4):223–37.
5. Perry SJ, Wears RL, Patterson ES. High-hanging fruit: improving transitions in health care. Advances in patient safety: new directions and alternative approaches (Vol. 3: performance and Tools). 2008.
6. https://www.advocatemagazine.com/article/2006-may/deciphering-medical-hieroglyphics. Accessed 5 April 2022.
7. Reinhardt U. Divide et impera: protecting the growth of health care incomes (COSTS). Health Econ. 2012;21(1):41–54.
8. https://www.visibleearth.nasa.gov/images/64868/egypt. Accessed 5 April 2022.
9. https://www.teletracking.com/resources/no-margin-no-mission-flying-nuns-and-sister-irene-kraus.
10. Feinstein AR. Basic biomedical science and the destruction of the pathophysiologic bridge from bench to bedside. Am J Med. 1999;107(5):461–7.
11. Herzlinger RE. Why innovation in health care is so hard. Harv Bus Rev. 2006;84(5):58.
12. Herzlinger RE, Schleicher SM, Mullangi S. Health care delivery innovations that integrate care? Yes!: but integrating what? JAMA. 2016;315(11):1109–10.
13. Macrae C, Stewart K. Can we import improvements from industry to healthcare? BMJ. 2019;21:364.
14. Delli Fraine JL, Langabeer JR, Nembhard IM. Assessing the evidence of Six Sigma and Lean in the health care industry. Qual Manage Healthcare. 2010;19(3):211–25.
15. Aron DC. Complex systems in medicine: a Hedgehog's tale of complexity in clinical practice, research, education, and management. Cham: Springer; 2019.
16. Jewish Publication Society. Exodus. Tanakh: Jewish Publication Society of America; 1985.
17. Bureau of Labor Statistics data analyzed by D. Himmelstein and S. Woolhandler.
18. Aron DC. From evidence-based medicine to evidence-based management (and policy)? Med Care. 2015;53(6):477–9.
19. Rycroft-Malone J, Seers K, Crichton N, Chandler J, Hawkes CA, Allen C, Bullock I, Strunin L. A pragmatic cluster randomised trial evaluating three implementation interventions. Implement Sci. 2012;7(1):1–7.
20. Backer TE, Singhal A. Forum: the life and work of Everett Rogers—some personal reflections. J Health Commun. 2005;10(4):285–308. https://www.csun.edu/sites/default/files/H-131.pdf. Accessed 7 April 2022.
21. Landaeta RE, Mun JH, Rabadi G, Levin D. Identifying sources of resistance to change in healthcare. Int J Healthc Technol Manag. 2008;9(1):74–96.
22. Kumar M, Singh JB, Chandwani R, Gupta A. Locating resistance to healthcare information technology: a Bourdieusian analysis of doctors' symbolic capital conservation. Inf Syst J. 2022;32:377–413.
23. Baker NJ, Suchman A, Rawlins D. Hidden in plain view: barriers to quality improvement. Phys Leadersh J. 2016;3:54–7.
24. Cabana MD, Rand CS, Powe NR, Wu AW, Wilson MH, Abboud PA, Rubin HR. Why don't physicians follow clinical practice guidelines? A framework for improvement. JAMA. 1999;282(15):1458–65.
25. Amalberti R, Auroy Y, Berwick D, Barach P. Five system barriers to achieving ultrasafe health care. Ann Intern Med. 2005;142(9):756–64.

Chapter 24
Frustrations Part 2: Tales of Bureaucracy—Rule by Desks

> *Bureaucracy is the art of making the possible impossible.* (Javier Pascual Salcedo (or at least damn difficult—DCA))[1]
>
> *work expands so as to fill the time available for its completion.* (C. Northcote Parkinson)[2]
>
> *Just remember: if ever you feel weighed down by the bureaucracy and often mundanity of modern life, don't fight the frustration. Let it be the catalyst for whimsy.* (James Veitch (would that I could—DCA))[3]

Bureaucracy has a bad name and numerous ill effects are attributed to it—inflexibility, inefficiency, unresponsiveness, and stifling of innovation [1]. Shorn of its negative connotations, it is a means government administration characterized by specialization of functions, adherence to fixed rules, and a hierarchy of authority.[4] The word bureaucracy, first used in the eighteenth century by Marquis Jacques Claude Marie Vincent, and parenthetically used in a pejorative way (The term was popularized by the sociologist Max Weber in the late nineteenth century) [2]. Bureaucracy combined the French words for desk (bureau) and a suffix meaning form of governing (cratie), indicating an organization built around positions and rules rather than individual people. This mode of administration goes back to ancient times [3]. There is also a long history of negative connotations. For example, its formalization of rules has become known as 'red tape' (a term that goes back to the sixteenth century when important documents were bound with red tape) which implies an administrative burden, in short, excessive [4]. Bozeman cited a common definition of red tape: "Organizational rules, regulations, and procedures that serve no appreciable social or organizational function but that nonetheless remain in force

[1] https://www.barrypopik.com/index.php/new_york_city/entry/bureaucracy_is_the_art_of_making_the_possible_impossible. 2-4-2022.

[2] Northcote Parkinson C. Parkinson's Law or the Pursuit of Progress. London, John Murray, 1958.

[3] https://www.brainyquote.com/quotes/james_veitch_864544?src=t_bureaucracy. 1-26-2022.

[4] https://www.merriam-webster.com/dictionary/bureaucracy. 2-4-2022.

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8_24

and result in inefficiency, unnecessary delays, frustration, and vexation" ([5], p. 9). Bureaucracy with all of its rules seems to have an extraordinary capacity not only to perpetuate itself, but also expand [6]. David Graber, author of The Utopia of Rules proposed an Iron Law: "Any market reform, any government initiative intended to reduce red tape and promote market forces will have the ultimate effect of increasing the total number of regulations, the total amount of paperwork, and the total number of bureaucrats the government employs" ([7], p. 9).

If you inhabit the world of academic medicine, bureaucracy will affect you. That bureaucracy may be external to the university or hospital, e.g., accrediting agencies and government, or it may be internal, e.g. its HR departments or Institutional Review Boards, and there may be overlap. Every aspect of the academic medicine is affected—the teaching enterprise, clinical practice, and research. It is all a part of what Michael Power has termed the 'audit society' in which we use regulation and auditing of performance as a means of formal scrutiny that arises from demands for accountability and control [8, 9]. Think about something as "simple" as the regulation of our competence as physicians (In fact, this is not simple at all [10]). This was originally "insured" by the self-imposed standards of the medical profession, akin to the actions of medieval guilds. If truth be told, we as a profession have not done well in this regard and have tolerated physicians who should have been drummed out of the profession. I graduated from medical school which operates under the practice of Pass = MD, completed residency and fellowship, and passed my board exams. Each of these are governed by the rules of an accrediting agency with its associated bureaucracy—LCME, ACGME, and ABIM (Liaison Committee on Medical Education, Accreditation Council for Graduate Medical Education, and American Board of Internal Medicine, respectively). There is considerable paperwork involved with each of these. Now, even though I have been a physician for 40+ years, I have requirements for continuing medical education (CME) in order to keep my medical license and maintenance of certification activities if I want to keep my boards up to date [11].[5] There are many opportunities for me to continue my medical education. As an academic, it is part of who I am and I don't need any external motivation to carry it out—care about my patients, necessity to keep up with my students, and just plain curiosity have made me an inveterate learner. Nevertheless, there is now an entire industry around continuing medical education. There are companies that sell CME and the drug and device industry have been major funders of CME) which brings with it its own issues [12–14]. There is an agency that accredits it—ACCME (Accreditation Council for Continuing Medical Education)—with a long series of standards and the paperwork to go with it. Institutions that desire the ability to grant CME have to be accredited by the ACCME which is estimated to take 12–18 months.[6] Fees range from $5900 to 10,000 per year depending on the

[5] Fortunately, I have been spared the latter. Time-limited certificates in internal medicine began in 1990 and those who had passed earlier were "grandfathered" in, i.e., exempted from the requirement. I doubt that this was because we were particularly competent or less out of date, but we old timers had more political influence than the relative newcomers.

[6] https://www.accme.org/become-accredited. 2-5-2022.

number activities and learners, not including various other fees.[7] That is just for the institution. The individual institutions accredit individual activities. For example at CWRU, to obtain accreditation for an activity takes 3–9 months and involves not only fees, but also submission of a draft program agenda, planning committee member names and email addresses, faculty listing including academic and clinical appointments and email address, planning committee meeting minutes or other documentation of planning process, practice gap/needs assessment documentation from at least two sources, activity income and expense projection, and marketing and publicity samples, if available.[8] Learning objectives must be provided and written in a certain formation; a list of about 50 Action Verbs for Objectives is (helpfully?) provided.[9] Providing CME) is a draw for physician participation, but I have never had a budget that would cover the cost of getting accreditation. I understand the need for regulation, but it seems like this bureaucracy just grows and grows and consumes more and more resources [15, 16]. This disease has infected academia throughout, though it is hardly limited to academia [17–20]. One area that has been affected particularly is research which brings me to the IRB—the Institutional Review Board—and one of its enforcement arms—the Compliance Office.

The ethical review of human subjects research was an outgrowth of egregious experiments performed on humans without their consent. These included not only such outrages as experiments performed by Nazi doctors in concentration camps, which I suppose could have been dismissed as just war crimes, but also some experiments done in the good old USA—The Tuskeegee Syphilis Study [21]. Alas, there are many similar examples. In response, government regulation of human subjects research, focusing specifically on protection of research subjects from harm, coercion, and other potential effects of being involved as a subject in a research project, especially one in which informed consent was not present. As a clinician educator, it is very likely that you will conduct some activities which would meet the definition for human subjects research. That definition is found in the "Common Rule" in the Federal Code of Regulations as it relates to research involving human subjects was revised effective 2018 to take into account the developments of new kinds of research, e.g., biobanking, and address some of the criticisms of the manner in which the earlier version was interpreted; some forms of research, e.g., oral histories, would not require IRB review [22]. Where things remain quite contested is in an area which is or at least should be part of the routine activities of a clinical faculty member: quality improvement. Every IRB interprets for itself the rules for distinguishing between what constitutes human subjects research and what doesn't. That leads to considerable inconsistency [23]. These issues make dealing with the IRB difficult enough, but they pale in comparison to what happens if you cross the line.

[7] https://www.accme.org/sites/default/files/2021-10/110_20211014_2022_2023_Accreditation_Fees%20%28003%29.pdf. 2-5-2022.

[8] https://cwru.cloud-cme.com/about/resources?p=1200. 2-5-2022.

[9] https://cwru.cloud-cme.com/assets/cwru/PDF/Writing%20Learning%20Objectives%20Active%20Verbs.pdf. 2-5-2022.

We were a site for a VA HSR&D funded project: Implementation Trial Evaluating On-site In-person Versus Remote Video-Assisted Facilitation to Train Providers on the Implementation of Shared Medical Appointments (SMAs) in Heart Failure (HF) or HF-SMAs. The principal investigator (Wen-Chih (Hank) Wu MD) was someone I had mentored for years and was located at the VA Medical Center in Providence, RI. It had been approved by the IRB at Providence and had to be approved here in Cleveland.

And so, the saga began. Keep foremost in your mind that the purpose of the IRB is to protect human research subjects. In this case, the subjects were clinicians at various VA medical centers. The idea was to use Cleveland which had many years of experience with HF-SMAs to do the training. It would require site visits to the VA's involved.

The IRB process started with completing several forms through the VA's newly implemented electronic system in September 2019: (1) Request to Review Proposal, (2) abstract, (3) conflict of interest forms for the key personnel, and (4) data management and access plan (DMAP), along with the (5) protocol, (6–8) three interview scripts, (9, 10) waivers of informed consent and HIPAA, (11) email consent distribution wording, (12) information sheet, (13) recruitment scripts, (14) fidelity assessment, (15) research protocol safety survey exemption, and (16) coversheet. There were a few other forms, but this gives you the idea. Then, the packet was submitted to both the local IRB and the R&D committees.

The protocol was returned for revisions which were made as directed and then resubmitted in late November. The waivers for informed consent were denied. In turn the team submitted the revisions for (1) Informed Consent, (2) protocol, (3) data collection forms, and recruitment materials in early December and the project was approved January 2020—a total of 4 months.

The final agreed upon consent process was that clinician provider training was not the research portion of the project, only the interviews and observations of the trainees/training were considered research (IRB) . The qualitative team would consent and interview the trainees prior to the training (baseline), observe the training (in-person and virtual), interview the trainees subsequent to training, observe the process of instituting the HF-SMA, interview the trainees after HF-SMA implementation.

The final arrangements were made for the in-person clinical trainee team that would be traveling the last week of January 2020, only to have the site withdraw from travel due to arrangement difficulties and COVID-19. The change in training plans created many problems for the project; however, the second site that would be trained, said that they would arrange for the virtual training on the arranged 2 days the in-person training was to have taken place.

The qualitative team pivoted and contacted the new trainees with the approved email script, forwarded the consent to the participants, read the interview script, interviewed them, observed the training, interviewed the participants post-training (may have required consenting, if had not participated in the pretraining interviews), observed the HF-SMAs, and prepared for the post implementation interviews. Then the training site's state implemented a COVID-19 lockdown. During the research

pause, the team focused on analysis and revising the training to incorporate the findings from the interviews and observations and the team was preparing for the second training.

Apparent Serious Non-compliance

The training site's study coordinator (SC) was reviewing the study administration paperwork only to find that the signed consents were not in the subject files. This was on March 11, 2021.[10] The SC immediately contacted the interviewers to see if the signed consents were stored elsewhere, only to be told no. Also, the SC contacted the IRB Administrator to discuss the incident and asked for guidance on how to handle the situation. Each subject's interview was recorded, and the recording verifies that the subject willingly accepted to be interviewed. We had an audio record of them consenting, just not a written record as the approved protocol required.

The IRB Administrator worked closely with the SC to get the properly worded paperwork submitted as an unanticipated problem report and it was submitted on March 22, 2020. At the same time the SC and IRB Administrator were working on the paperwork, the SC contacted all the subjects and asked for his/her signature on the consents. At the time of filing the unanticipated problem report, three of the eight subjects had returned signed consents. The amount of staff time for two people was nearly 65 h over the course of 2 weeks. The SC also provided the principal investigator in Providence with the submitted information.

The process of providing copies of signed consents to the Compliance Office for review was accomplished within the required five business days. This is where the non-compliance problem began. The compliance office filed a serious non-compliance action with the IRB and the Director of the medical center. The VA had just refined their definitions of what is considered serious non-compliance and the IRB felt that even though this was an extremely minimal risk project, they had to issue an apparent serious non-compliance determination on April 14, 2021.

Apparent serious non-compliance suspended the project and required that it be reported to the sponsor (a VA central office), as well as the VA Office of Research Oversight. The IRB required remedial training of the IRB and Compliance process for the entire study team and a progress report of what has been accomplished to date. The progress report was due April 23, 2021 and the remedial training was required by June 30, 2021. Both requirements were completed as soon as possible on April 15, 2021 and April 28, 2021 respectively and before the established deadlines.

The ink signed informed consents were requested on April 29, 2021 as the electronically verified signatures were not compliant according to the Privacy Officer

[10] One year and two months from the initial consenting occurred.

after many consents were obtained; however, on May 10, 2021, Research Compliance Officer informed the SC that the subjects were not to be contacted by the research team.

Between June 1st and July 13th, the SC and/or PI responded to more than 20 emails and/or telephone calls from various offices within the medical center. The new process of obtaining the ink signed informed consent prevented the team from becoming compliant until July 10, 2021. What was the new process? Someone in administration decided that the Associate Chief of Staff for Research was the person to contact the eight subjects to obtain the ink signed informed consents.

Finally, on August 3, 2021 after filing an updated unanticipated problem report, the IRB approved the lifting of the April 14, 2021 suspension. A total of 4 months for which the research was not able to be conducted. In the unanticipated problem report update the following was reiterated as risks to the subjects:

> This is not a treatment study. This is a study regarding observation of clinical training techniques and the trainees perceptions prior to and after training.
>
> Additionally, after the site is trained, the trainees will be observed for fidelity and the research team and clinical trainers will provide feedback to assist the site with implementation.
>
> No PHI/PII was collected from the 8 subjects. The recordings do have consent from the participant prior to being recorded and then it is restated after the recording begins. The recording is labeled as the subject's id and provided to the transcription company.

Even though the IRB lifted the suspension and is outlined in the Appendix A, there were many emails after this. A total of 381 emails regarding the situation were sent for which the SC has a record and there were undoubted others that had been deleted.

Being that the training site is a sub-recipient on the grant from HSR&D, once the IRB suspension determination was received, the SC forwarded the determination to the lead site for their reporting to their IRB. On May 26, 2021, the Prime Principal Investigator received a determination from the Providence VA medical center's IRB as follows:

> One serious adverse event report dated 05/05/2021 03:23:14 PM EDT for your protocol entitled RDC-2019-042 "Implementation Trial Evaluating On-site In-person Versus Remote Video-Assisted Facilitation to Train Providers on the Implementation of CHF SMA", was reviewed by the IRB on 05/26/2021.
>
> The adverse event report was accepted, and it was determined that no modifications to protocol or informed consent forms are needed at this time. **The R&D considered the noncompliance to be non-serious, and non-continuing**. [Bolding and underline added for emphasis]
>
> The deviation report was accepted, and it was determined that no further modifications to the protocol or informed consent form are needed at this time.

This ran directly counter to what the Cleveland VA medical center's IRB had determined. The Veterans Health Administration's Office of Research Oversight (ORO)'s Directive 1058.01 issued on March 8, 2021, states in section 3:

> §3.o. Serious Noncompliance. Serious noncompliance is any failure to adhere to requirements for conducting human research that may reasonably be regarded as:

(1) Presenting a genuine risk of substantive harm to the safety, rights, or welfare of human research subjects, research personnel, or others, including their rights to privacy and confidentiality of identifiable private information;
(2) Presenting a genuine risk of substantive harm to the safety, rights, or welfare of research personnel who conduct research;
(3) Presenting a genuine risk of substantive harm to the health or welfare of animals used in research;
(4) Presenting a genuine risk of substantive reputational harm to VA; or
(5) Substantively compromising a VA medical facility's Animal Care and Use Program (ACUP), Human Research Protection Program (HRPP), Research Safety and Security Program (RSSP), or research information security processes.

It was never clear to us what made this event considered serious. Additionally, it was never clear to us what the potential substantive harm was inflicted on the research subjects, IRB, or institution, although one could make the argument that it would result in harming the reputation of the VA. That seemed to be a bit of a stretch, given all the adverse publicity VA usually gets mainly related to patient care issues.[11] However, there is a subsection of (4) which states that failure to obtain required documentation of informed consent constitutes a serious non-compliance. While this didn't exactly fit because informed consent was obtained and documented; it was documented on a recording rather than a signature. It would appear that this was the justification.

Although one could consider this just an administrative kerfuffle, the actual cost of what one IRB/Compliance determined serious (which contrasted with that of the Lead Site's IRB) was considerable. The IRB Administrator and the training site's Study Coordinator spent numerous hours/weeks dealing with the issue. The IRB Administrator spent a day just writing the suspension notification, after spending a substantial amount of meeting time with the multi-person IRB discussing the determination. Mounds of paperwork were generated.

Remember that the IRB is there to protect human subjects and Compliance Office to ensure that the research team is following the approved protocol. I guess that stopping research is one way to protect human subjects. The point of this tale is not to criticize the IRB or the Compliance Office. They have a job to do, and it is an important job. For it is quite possible for an investigator to lose sight of ethical issues involving his or her own research; therefore, an outside view is important. Our practice should always be ethical.

So why tell this tale at all? It sounds like whining, and I suppose it is,[12] however, it is also easy for those embedded in a system ruled by desks and rules for 'form to triumph over substance.' This is also true for quality improvement projects, whether distinguished from research or not. This has been a source of frustration. In the particular case, our administrative officer/IRB coordinator kept me relatively protected. I was not the one who had to deal with this directly. There are several lessons

[11] https://www.stripes.com/veterans/five-years-after-phoenix-scandal-va-still-doesn-t-keep-reliable-wait-time- data-1.591757. Accessed 4-7-22. This story was filed July 24, 2019, two months before our submission. You get the idea.

[12] Since it is my book, I get to decide what is in it.

here. First, is the obvious, that when 'form' is triumphant, dot every i and cross every t, remembering that this is not personal, but rather just business. Second, is less obvious and that is your role is protecting those you work with, and especially those who work for you, from these frustrations or at least supporting them in times of frustration. In addition to taking care of yourself, it is important to take care of others.

References

1. Perrow C. Complex organizations: a critical essay. 3rd ed. Brattleboro, VT: Echo Point Books; 2014/1972.
2. Cocco G. Bureaucracy and medicine, an unholy marriage. Cardiovasc Med. 2012;15:243–4.
3. Smith CC. The birth of bureaucracy. Biblical Archaeol. 1977;40(1):24–8.
4. Bozeman B. Bureaucracy and red tape. Upper Saddle River, NJ: Prentice Hall; 2000.
5. Bozeman B, Scott P. Bureaucratic red tape and formalization: untangling conceptual knots. Am Rev Public Adm. 1996;26(1):1–17.
6. Wears R, Sutcliffe K. Still not safe: patient safety and the middle-managing of American medicine. Oxford: Oxford University Press; 2019.
7. Graeber D. The utopia of rules: on technology, stupidity, and the secret joys of bureaucracy. Brooklyn, NY: Melville House; 2015.
8. Power M. The audit society: rituals of verification. Oxford: Oxford University Press; 1997.
9. Power M. Organized uncertainty: designing a world of risk management. Oxford: Oxford University Press; 2007.
10. Klass D. A performance-based conception of competence is changing the regulation of physicians' professional behavior. Acad Med. 2007;82(6):529–35.
11. Iglehart JK, Baron RB. Ensuring physicians' competence—is maintenance of certification the answer. N Engl J Med. 2012;367(26):2543–9.
12. Steinman MA, Landefeld CS, Baron RB. Industry support of CME--are we at the tipping point? N Engl J Med. 2012;366(12):1069.
13. Infeld M, Bell A, Marlin C, Waterhouse S, Uliassi N, Fugh-Berman A. Continuing medical education and the marketing of fentanyl for breakthrough pain: marketing messages in an industry-funded CME module on breakthrough pain. World Med Health Pol. 2019;11(1):43–58.
14. Kearney P, Simoons M, Ryden L, Kirchhof P, Pries A, O'Morain C, Bax JJ. The medical profession, industry, and continuing medical education: finding the balance that's right for patients. Am J Med. 2019;132(8):921–5.
15. Northcote Parkinson C. Parkinson's law or the pursuit of progress. London: John Murray; 1958.
16. Charlton BG. The cancer of bureaucracy: how it will destroy science, medicine, education; and eventually everything else. Med Hypotheses. 2010;74(6):961–5.
17. Siefert GF Jr. Bureaucratic accretion and administrative expansion in American colleges and universities. Buffalo, NY: State University of New York at Buffalo; 2000.
18. Ginsberg B. The fall of the faculty. Oxford: Oxford University Press; 2011.
19. Wear SRL, Sutcliffe KM. Still not safe: patient safety and the middle-managing of American Medicine. Oxford: Oxford University Press; 2020.
20. Dekker SWA. The Bureaucratization of Safety. Saf Sci. 2014;70:348–57.
21. Reverby SM. Tuskegee's truths: rethinking the Tuskegee syphilis study. Chapel Hill, NY: UNC Press; 2012.

22. Bierer BE, Barnes M, Lynch HF. Revised ‘Common Rule’ shapes protections for research participants. Health Aff (Millwood). 2017;36:784–8.
23. Kirsh S, Wu WC, Edelman D, Aron DC. Research versus quality improvement: distinct or a distinction without a difference? A case study comparison of two studies. Jt Comm J Qual Patient Saf. 2014;40(8):365–75.

Chapter 25
Moving (or at Least Thinking About It)

Don't pick a job with great vacation time. Pick one that doesn't need escaping from. (Anon)

Chances are that either you have, or you will think about moving to greener pastures. Intention to move is remarkably common. In an analysis of 2013–2016 survey data of faculty at 36 U.S. medical schools, approximately 30% responded "yes" or "I don't know" to the question "Do you plan to leave this medical school in the next 1–2 years?" [1]. These faculty were more likely to be women and more likely to be junior faculty, although the differences were small. That is just intent to leave. Leaving a particular faculty position is referred to as faculty attrition and there are a wide variety of reasons for it. For example, in a study of a single institution, Girod et al. found that professional and advancement opportunities, salary concerns, and personal/family reasons were the three most frequently cited issues leading to departure [2]. Faculty in clinical roles tended to leave earlier, express lower workplace satisfaction, and more likely to perceive incongruence and inaccuracy in institutional expectations for their success than those in non-clinical roles. Balancing competing demands and navigating institutional expectations for advancement were also cited as issues by clinical faculty. Other studies have cited poor departmental leadership, lack of institutional support for scholarly activity, lack of recognition of clinical activity, institutional culture, and unethical behavior of other faculty or staff [3–8].

Changing institutions is fairly common in academic medicine. There are other types of career transitions such as leaving academic medicine for full-time private practice, going into administration, or leaving medicine entirely. Although I never seriously thought of leaving academia for private practice, but I have looked at other academic positions with more clinical work than I had where I was. For one such position, I was interviewed by the department chair. I told him how much I loved clinical teaching and that was what I wanted to do. His response was: clinical teachers are a dime a dozen; what I need are people who can get NIH grants. I should have done my homework and not bothered to take the trip (which was at my

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8_25

expense). Many years ago, I was asked to interview to be chief of the department of endocrinology at the Cleveland Clinic (i.e., the "world famous" Cleveland Clinic). I knew and got along with all the endocrinologists there, though my interactions were limited primarily to participating in their educational conferences. I doubted that I would fit at the Clinic since I had never been interested in full-time clinical practice and I was most definitely not entrepreneurial. However, you never know so I went ahead with an interview. It was all very formal, meeting in a wood paneled room with at least a dozen members of the search committee all wearing white coats; all the men with ties and all the women wearing dresses. I did wear a jacket and tie for the occasion, though that was not my usual attire. The chair of the committee introduced the members (none of whom I recognized as being from the endocrinology department) and proceeded to ask the first question: What do you think of the department of endocrinology here at the clinic? I was not really expecting this question; I am not sure what I was expecting, but it was not this. Though perhaps they were seeing if I had done my homework. I thought for a few moments and then said. The department is ranked 6th in the country in US News and World Report and I haven't the faintest idea why. There was stunned silence. After a while, at least 10 or 15 s though it felt like much more, one of the committee members said: You know, neither do I. Then there were all sorts of defensive responses, naming some endocrinologists who were very well known. I pointed out that they were members of other departments such as hypertension. I was not trying to be flip or facetious. I knew some of them and they were excellent endocrinologists, some of whom I would not hesitate about referring a patient. Later questions probed what I thought made a department famous. I talked about the importance of publications, plenary talks at the Endocrine Society or American Diabetes Association and a couple of other things. I thought that bolstering this would be a major part of my job. The rest of the interview was polite, but I had no illusions about being invited for a second visit. And I wasn't.

That was one of the few jobs I have looked at without primarily being concerned about getting away from my current position.

Most of the time I have looked at other positions was when I was especially frustrated and unsatisfied with my current position. Sometimes escape is necessary, but it is worth asking yourself what would make your current position better and was it possible to achieve it. Also, would those same frustrations or others be present in a position elsewhere. In most of the positions I looked at, the pastures turned out on closer examination to be far from greener. Talking with people who hold the kind of position you are looking for was absolutely essential, especially when it was done in an informal setting where they can 'let their hair down' so to speak. Nevertheless, sometimes, a move is necessary for family or other reasons. Keep in mind that not only moving has high cost (besides money, e.g., emotional stress). Even looking at other positions can have emotional costs, especially if you become conflicted about the choice. This happened to me.

I was not happy with my current position when I saw an ad in the New England Journal of Medicine for a job in San Diego. I had been a resident in San Diego, and I still had friends there. I knew some of the endocrinology attendings and it was a

real powerhouse compared to where I was. And not trivially, the weather was much better than Cleveland. I was really attracted to the idea. The job was quite different from what I had. It was mainly a clinical position, though being involved in clinical research studies was a major part of the job. As a clinician, I would primary be responsible for care for patients with diabetes. Others dealt with conditions involving the other endocrine organs. So, it was really different. But the idea of San Diego where I fantasized that I had been happy (which was not really true especially when I was an intern) was really tempting. I flew out for a visit. The first thing that I noticed was how the area had changed. When my wife and I lived there in the mid-70s, we had an apartment in a housing complex 1 mile south of the VA Hospital in La Jolla. Between the hospital and us was mainly barren hills. When I went back (in the mid-80s), there was barely a square foot of open space left. It had been filled with housing complexes and shopping malls. In addition, there was much more traffic. Well, I could live with that. It was a good visit. I met with a bunch of folks, all enthusiastic about the possibility of my coming. On another visit, I came with my wife and a housing tour had been set up. We looked at houses that were quite nice, albeit more expensive than Cleveland, though still affordable for a physician. My wife was OK with moving but would have been just as happy if not more so to stay put. Then I met with some of the clinicians at a coffee shop, I think. They were not particularly happy or unhappy with their situation but made it clear that what was valued was NIH-funded research and not patient care except insofar as it generated money, but definitely not teaching. I suspected as much, since that was what it was like when I had been a resident. However, that was not really very different from where I was. I struggled with this decision for 6 horrible weeks changing my mind frequently. This actually triggered a serious depression and there were days I had trouble getting out of bed. Eventually, I decided that at the core, I was a teacher and that the academic environment in San Diego was just not right for me, especially since I still wanted to do some research. So, I stayed where I was. As it turns out, things eventually (after some years) worked out fine and I look back thinking that I made the right decision. Might things have worked out fine in San Diego too? Sure. I will never know, but I still do not regret my decision to stay.

References

1. Zimmermann EM, Mramba LK, Gregoire H, Dandar V, Limacher MC, Good ML. Characteristics of faculty at risk of leaving their medical schools: an analysis of the StandPoint™ faculty engagement survey. J Healthc Leader. 2020;12:1.
2. Girod SC, Fassiotto M, Menorca R, et al. Reasons for faculty departure from an academic medical center: a survey and comparison across faculty lines. BMC Med Educ. 2017;17:8.
3. Bucklin BA, Valley M, Welch C, Tran ZV, et al. Predictors of early faculty attrition at one Academic Medical Center. BMC Med Educ. 2014;14:27.
4. Schindler BA, Novack DH, Cohen DG, et al. The impact of the changing health care environment on the health and well-being of faculty at four medical schools. Acad Med. 2006;81:27–33.

5. Corrice AM, Fox S, Bunton SA. Retention of full-time clinical M.D. faculty at U.S. medical schools. AAMC Anal Brief. 2011;11:1–2.
6. Shanafelt TD, Sloan JA, Habermann TM. The well-being of physicians. Am J Med. 2003;114:513.
7. Alexander H, Liu CQ. The aging of full-time U.S. medical school faculty: 1967–2007. AAMC Anal Brief. 2009;9:1–2.
8. Pololi L, Krupat E, Civian J, et al. 2012, why are a quarter of faculty considering leaving academic medicine? A study of their perceptions of institutional culture and intentions to leave at 26 representative U.S. Medical Schools. Acad Med. 2012;87:859–69.

Chapter 26
Another Perspective by Mamta K. Singh with an Introduction by David C. Aron

Introduction

> *People have very different perspectives and very different life experiences based on their ethnicity. When you put them in close quarters in a situation designed to highlight cultural and racial differences, you realize they don't really understand each other very well at all.* (John Landgraf)[1]

We all have mental models and they have, by their very nature, to be incomplete. My mental models influence how I make sense of the world. The models are also influenced by the world in which I have inhabited. In terms of academic medicine, having entered medical school in 1971, that meant a world that was primarily male and primarily white, and my experiences have been those of a white man. I recall that my medical school class of 128 had 20 women which I think was a relatively high percentage for the time, although far lower than what it is today. During my residency, the chair of medical was a woman—Helen Ranney, and for some years as a junior faculty member, the endocrinology division chief was a woman, a Black woman in fact—Janice Douglas, and for several years as a senior faculty member, the medical school dean was a woman—Pam Davis. I knew they were unusual percentagewise in holding high academic positions, but I don't recall having any particular feelings about them related to their gender. The well-deserved increase in attention to the issues of women and underrepresented minorities among medical school faculty has occurred relatively late in my career. Thus, though on an intellectual level, I recognize that there are considerable systems barriers to their recruitment, advancement, and retention, I have experienced them only as an observer. This applies to the issue of microagressions as well. In addition, while I have been a mentor to many women and underrepresented minorities, my experience is that of

[1] http://www.quotehd.com/quotes/john-landgraf-quote-people-have-very-different-perspectives-and-very-different. Accessed 5-22-22.

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8_26

the mentor and not the mentee. Therefore, I decided that for this book, an additional, that is to say different, perspective would be useful. Most recently, I have been working closely with Dr. Mamta Singh; we share interests in quality improvement, among other things, publish together, and our offices are adjacent. She is a graduate of the VA Quality Scholars Fellowship Program which I ran. She did this as a junior faculty member. She has also taken over my job running the Fellowship. So, I asked her to write a chapter describing her experience.

Women in Academic Medicine by Mamta K. Singh, MD, MS

> I was taught that the way of progress was neither swift nor easy. (Marie Curie, physicist, chemist, and winner of the 1903 Nobel Prize in Physics and the 1911 Nobel Prize in Physics)[2]

The email dinged itself into my in basket and as it shot across, I read the subject line: "Dr. Singh would you pick medicine again?". It got my attention as most emails do when I am looking to procrastinate. Would I do it again? In a heartbeat. A career in academic medicine has its share of challenges, but what field does not? For women physicians, we have our work cut out for us but where else can you get paid to take care of people who are ill and help people get back to their lives. It is privilege to work with patients, they tell you their intimate secrets, share stories that they do not even share with their families, let you into their lives with immense trust. It is an honor to be part of their lives. I cannot imagine another profession where you are able to combine the science with the art of healing, gain the trust of fellow humans and build lasting relationships. Yes, I would do it again, even with the challenges.

At the individual level, you may get a lot of academic women physicians in medicine saying something similar or it is simply selection bias. However, when you look at the numbers of women in academic medicine it tells a different story. Academic medicine has this interesting ability to attract women in medicine but an inability to retain them.

Glass Ceilings and Leaky Pipes

If one followed the metaphors in the literature about women in academic medicine, you would think it impossible that anyone survived the academic journey. "Sticky floors, revolving doors, glass ceilings and leaky pipes". Our house needs repair. All these metaphors speak to the inability to retain or advance women at the same pace

[2] https://www.brainyquote.com/quotes/marie_curie_383419.

as our male counterparts. Specifically, the leaky pipes refer to the attrition of women faculty at the junior level. The gap was often attributed to a "cohort" effect—simply there are not enough women going into medicine. However, now with medical school classes over 50% women, the gap at the leadership level cannot be explained by lack of female physicians. The State of Women in Academic Medicine 2018–2019: Exploring Pathways to Equity Report states that medical schools consist of over 50% women (AAMC 2020) [1]. Despite that there is still a parity issue in academic medicine when it comes to upper ranks and leadership positions [2, 3]. The report is available for review on the AAMC website but key points that highlight the glacial pace of progress are below:

- Women and men have continued to apply, enter, and graduate from medical school in similar proportions since 2003.
- Women have constituted 58% or more of graduate students in biological, clinical, and health science doctoral programs (excluding MDs) since 1994; however, in 2018, women made up just 40% of full-time basic science, clinical science, and other health science MD-PhD and PhD faculty at U.S. medical schools.
- The overall proportion of full-time women faculty has continued to rise since 2009, now at 41%, with similar increases at each faculty rank; yet women make up a majority of faculty only at the instructor rank.
- Among full-time women faculty, the proportion of women from an underrepresented in medicine race or ethnicity (URiM) group was 12% in 2009 and 13% in 2018; the greatest proportions of URiM women faculty were at the assistant professor rank.
- While there has been a steady rise in the number of women department chairs over the past 10 years, women still make up only 18% of all department chairs.
- Women faculty leaders were more heavily represented in roles related to diversity, faculty, and student affairs and less represented in leadership roles within clinical affairs and research.
- Since 2009, the number of women deans increased by about one each year, on average.

Richter and colleagues found that over a 35-year period, women physicians in academic medical centers were less likely to be promoted to the rank of associate or full professor or to be appointed department chair [4]. There is also a gender gap in pay and many microinequities when it comes to women in medicine [5–7]. These numbers are even more troubling when it comes to minority faculty. The graphic below depicts this attrition (Fig. 26.1):

The COVID-19 pandemic underscored this gap as reports of female first authorships plummeted and women in all fields stepped away from work to take on the role of care takers to children and elderly. Prior to the pandemic, Jagsi and her team found that academic medicine was falling behind other STEM fields in eliminating the gender differences in promotion [5, 8].

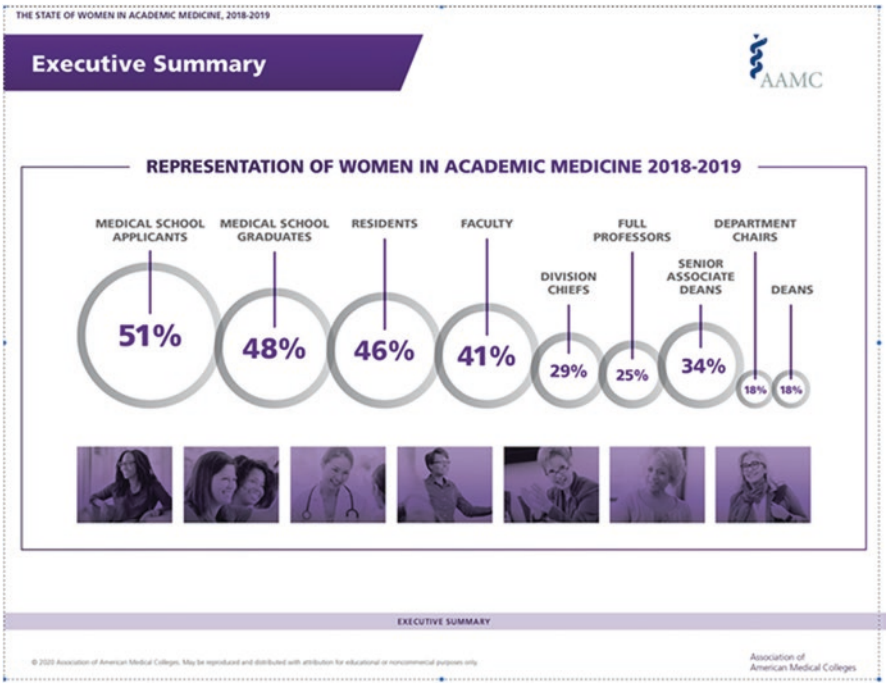


Fig. 26.1 Representation of Women in Academic Medicine 2018–2019. From: Lautenberger DM, Dandar VM. State of Women in Academic Medicine 2018–2019; Exploring Pathways to Equity. P. 3 of Executive Summary. https://store.aamc.org/downloadable/download/sample/sample_id/330/

There are many reasons for "the leaky pipe" and the persistent gap in academic medicine ranging from a "good old" boys' mentality, sexist climate, lack of compensation or lack of efforts to retain women and a disproportionate of traditional family burdens falling on the women leading to difficulties in achieving a work-life balance [9]. Many of these norms were upheld on the false pretense that women did not possess the attributes to pursue a career in medicine or that their sensibilities would be offended when engaging in such subjects such as anatomy. Dr. Elizabeth Blackwell, the first graduate of an American medical school in 1849, created quite a commotion when she was accepted to Geneva Medical School in 1847. After her arrival, she learned that the faculty opposed her admission to the school but since they could not reject a qualified student, asked the student body to vote. The students believed the request was a joke and voted unanimously to accept her. She wrote about her experience:

> *I had not the slightest idea of the commotion created by my appearance as a medical student in the little town. Very slowly I perceived that a doctor's wife at the table avoided any communication with me, and that as I walked backwards and forwards to college the ladies stopped to stare at me, as at a curious animal. I afterwards found that I had so shocked Geneva propriety that the theory was fully established either that I was a bad woman, whose designs would gradually become evident, or that, being insane, an outbreak of insanity would soon be apparent.* [10]

Convinced that her female sensibilities would not withstand some subjects, a few instructors requested that she sit out during a discussion of the male reproductive system. She refused and was allowed to stay. She went on to receive her MD in 1849 and started a clinic: "New York Dispensary for Poor Women and Children". She continued to train future female physicians and nurses in this clinic as many were not given access to these medical conditions in traditional clinical institutions for the same reasons she encountered. It is an interesting paradox that the cultural norms would have you believe that the people who must fight the most to get what they want or show immense resilience are the ones that are considered "weak or do not have what it takes" [11, 12]. As women in history have always been caretakers and healers, it would seem a natural extension for academic medicine to make room for them. Instead, there is fear that the feminization of medicine will take it away from its foundation of "hard science". As someone with a double major in Biology and Anthropology, I find myself reaching for my anthropology background just as much as my biology when it comes to taking care of patients. Making sense of culture, social context when engaging in clinical decision making does not make my interaction weak but in fact allows me a more comprehensive approach. This approach has helped me in my research and my work in quality improvement and systems redesign as I try to make sense of human behavior in the clinical context. Once while talking to my Chair of Medicine about getting more protected time for junior women faculty to establish their research portfolio and assist with grant writing, he said that he did not think structures were as important to do research, it was the personal drive that defined if someone was going to be successful at research. "It is all about the personal drive and you either have the fire in your belly or not". Another time, when my two children were very young, about 1.5 and 3 years old, I arranged for a babysitter on my day off to meet with a center director to express my interest in doing health equity research with his team. I recall arranging to meet on my day off as I could not do this during clinical duties, planning for childcare and rehearsing my talking points and why I would be a good candidate. He was very pleasant and at the end of conversation said that unless I had funding no one will give me protected time to do this. He made a similar "it is all about having the drive" to secure funding. I am not sure what else signifies drive than coming in on a non-workday, planning for childcare, prepping for a meeting and discussing interests? I often wonder how many women have been turned down because their perseverance was not recognized, or they did not communicate all they did to present themselves. A short few years later, the same chair and center director did congratulate me when I went on to secure millions of dollars in grant funding. However, I think they still believe it was just personal grit that got me there. I know for a fact that it was personal effort combined with mentorship, sponsors, and connections to people doing similar work that led to my success. It takes a village and academic medicine will need to recognize that as it wants to retain women faculty who have a lot to contribute to the field. Autonomous culture of academic medicine is shifting to more team-based care, team science and collaborative models. I do believe this shift has come

about due to women in medicine but its slow pace reflects that although we can bring women into the fold, we lack what it takes to keep them here.

We have come a long way since Dr. Blackwell's entrance in medical school 170 years ago and the recruitment of female medical students are on par with their male colleagues. However, the lack of retention argument often falls back into the dark ages with the tired personal effort argument. It is as though we recognize the pipes are leaky, but we still think one must do a better job and avoid the holes to begin with.

The Tenure Clock

If one wanted to take a systems approach to this retention problem, then we would start to identify some of the contributing active and latent factors. Let us start with the tenure clock and its role in academic medicine. I am not sure why we have it in academic medicine? It is an antiquated system put up in a time when most faculty came from homogeneous backgrounds. If we really want to usher in a new era of medicine with more diversity of persons and ultimately diversity of thought, we need to reconsider the purpose of the tenure track. Thankfully, most clinical faculty are not too impacted by the tenure track, however this does play a crucial role in the basic sciences in academic medicine. The tenure clock is in direct conflict with the biologic clock and women usually are starting their careers and their families at the same time. The first 5 years is the "make or break years", which means to say that if you can withstand the first 5 years in a lab or clinical academic medicine, you are likely to continue. However, this is the biggest hole in the system as many women leave for childbearing purposes and choose not to return given the overwhelming responsibilities and competing priorities. It does not help that we are one of the few industrialized nations that does not provide adequate childcare, yet another roadblock for women faculty to have to overcome. Culturally, the increase in family responsibilities still falls on the woman. Data shows that on average women in dual physician households still do about 8.5 h more house chores than their male counterpart [13]. Setting the tenure clock to reflect this time away for family purposes would be a great first step. Although there are academic centers that allow you to come "off the tenure clock", the phrase itself is culturally laden and makes women feel like they are getting away with something. I am not tenured, but I do not feel as though I have missed out on the academic journey. It is rarely, when we have our school of medicine committee meetings (mainly the Committe on Appointments, Promotions, and Tenure) and there is a discussion about the "tenured vs. non tenured" faculty members, that the distinction comes up at all. As I was finishing residency in the late 1990s, clinical education was recognized as a viable career path in academic medicine, but many clinical educators are not given the opportunity to join the tenure track as it is still primarily reserved for those who are doing traditional research. As someone who chose the clinical education and clinical improvement pathway, I think the development of such a track did allow many women to

find a niche in academic medicine, However, as many women physicians choose the field of clinical education, there is a tendency to have reduced salaries and less resources in the education departments [14]. In fact, statistics show that women have occupied more assistant and associate dean positions in the last decade from 2008 to 2018 and on average their salaries are much less than their male counterparts. Developing a tenure track that aligns with the faculty in the twenty-first century, less rigid and more inclusive would be a first step. Expanding the tenure track to include faculty portfolios of education and patient care responsibilities would help faculty see their work as meaningful and a true contribution to the academic mission.

Networking and Sponsorship

Another way to retain faculty is to connect them to the academic medicine landscape [15]. We often forget that many do not feel at home in this place and may have grown up far from such an environment, so assuming they know how to thrive in academia is not realistic. In medical school, we joked that learning anatomy was like learning a new language. If you had taken Latin in your high school or college, you had an advantage. But if anatomy was a new language, medicine is an entire culture with its social norms, behaviors, and hierarchy. Those who did not grow up in it may not be familiar with it. It has been said that male faculty will get more sponsorship while women junior faculty are more likely to get mentorship. Mentorship is the traditional model of the mentee and mentor getting together and discussing goals and objectives and largely driven by the mentor's ideas of what the mentee should do. Sponsorship is more connecting the mentee with others in the field, networking for them or helping them network [16]. As women are more likely to get mentored and less sponsored, this does not permit them to truly embed into the system. This also applies to our underrepresented faculty in medicine, as working to just recruit faculty is not enough, true inclusion requires the system to adapt with a goal of retention. I know that networking and sponsorship played a critical role in my academic story. When I was doing my VA Quality Scholars Fellowship, I made many connections through the program both locally and nationally. When I would present an idea, Dr. Aron would start with—"you know who you should meet …." These led to many connections and opportunities to truly embed in the learning environment.

Imposter vs. Invisible Syndrome

Many women faculty experience imposter syndrome. The syndrome is described as the feeling when one does not believe they belong and that when they are successful that it was just luck, so you do not truly internalize your successes [17]. I have

suffered this all my life and often find myself wondering when they are going to call my bluff. I graduated from one of the top medical schools in the country, went on to do my residency and chief residency while getting my masters in health services research. Moved swiftly through the promotions trajectory to become professor of medicine before age 50 in a two-physician household with two very active children. Every step of the way, I found myself second guessing myself and comparing myself to others. If it was not enough to be questioning your place, it does not help that at times women and minority faculty are treated as invisible which only feeds into the imposter feeling. As I rose to leadership positions, I recall many a times sitting in meetings sharing ideas and thoughts about the topic at hand. There was usually a silence and then a few minutes later a male colleague would present the exact same idea with a personal spin and then there would be a loud "Wow, what a great idea!" I often left these meetings confused and wondering if I was not speaking clearly or perhaps people did not hear me. It is when I came across an article in the last few years by Dr. Catherine DeAngelis, the former editor of Journal of American Medical Association (JAMA), in which she recounts that this happened multiple times to her. She even recorded a meeting so she could play it back to her colleagues when they denied they were overlooking her statements [18, 19]. It was comforting to know it was not just me, but it was depressing to think that even being an editor of a major journal does not get you out of this bind! The ability to make someone invisible does not mean just denying access to the room. Once women faculty or minority faculty are in, if we continue to remind them even inadvertently, they do not belong, that their contributions are not valued, we make them feel invisible. There are many examples of micro and macroaggressions which add to this invisibility syndrome. It can range from subtle gestures such as mispronunciation of peoples' names (you should hear how many people can mispronounce "S-I-N-G-H"), to interrupting them while they are talking to outwardly making sexist or racist comments. I had a patient in Ohio ask me when I was planning to go back to my home country (by which he meant India) and how long was the flight back home? As I grew up in Texas, I just broke out in a thick southern drawl and told him that going back to Texas was not in the cards as I was an intern, and the flights were quite convenient to Dallas but thank you for asking. All kidding aside, there are constant reminders both internally and externally that differences are not entirely embraced. There has been strong effort to mitigate micro and macro aggressions in recent years but much of it comes in the form of human resources (HR) mandated workshops. However, making each faculty member feel valued goes beyond didactic and skills-based workshops. It starts with being curious and learning about each other, what each one brings to the table. With such a push for standardization in industry and academia, the simple curiosity of "different" seems to be less prevalent. If we want to create an environment of belonging, we will have to start by embracing differences and being curious about each other. A simple trick I use is to ask people to check in before meetings and share their stories about themselves or their families. An ice breaker in which everyone has to find a picture on their smart

phone impromptu and share it and the story with everyone really creates connections. You learn much about your colleagues and you begin to recognize the value of each person beyond their professional roles. This creates a sense of belonging and ultimately leads to a more thriving work environment.

Calling All System Thinkers

For me the path to becoming a doctor was much more straightforward than the path to what type of doctor I wanted to be. I had known since second grade that I wanted to go into medicine. It was something my grandfather told me he would like to see for me. I was nonchalant about it. My grandfather was a visionary entrepreneur and the patriarch of a large extended family. I think we were accustomed to his vision shaping many things such as a successful business, comfortable lifestyle so why question that process? As the first born of Indian immigrants here in the US, going into medicine seemed like the natural thing to do.

The choice of medicine also aligned with my love for math and science and although I did not know it at the time, my habit of repetitive "whys" and curiosity although annoying did fit the field too. Once in medical school, then the real challenge was to decide what type of doctor to become. Internal medicine came to the top of my list; however, it became clear that if I wanted to go into academic medicine, I would have to specialize. There was not a lot of room for generalist at the table of academia. You needed a specialty and a traditional research portfolio.

I now hold an endowed chair as a professor of medicine at a major university and a general internist. You can see that the story turned out well and I can safely say that I have had a thriving career in academic medicine. At the time of this writing, I still have another 15–20 years of career ahead of me. The opportunity to shape curriculum, teach the next generation of medical students and residents and build an educational scholarship portfolio has been rewarding. I have always believed that times have changed to accommodate what is right and what is needed, it just takes patience. For instance, even as a medical student in the early 90s, the idea that a generalist would become a faculty member in an academic setting was a new concept. All my medical school faculty were either basic scientist or subspecialist. Primary care physicians were expected to graduate and hang a shingle and see patients. Our medical school did not even have a department of family medicine and our family medicine clerkships were conducted off site in a rural setting where we all spent 1 month rotating to complete the requirement. The concept of "Clinician Educator" (CE) started in the mid-80s but really took form in the mid to late 90s [20]. CE is a term used to describe physicians whose main role is caring for patients and who has formally incorporated educational principles and scholarship into their job. In the United States and Canada, CEs represent the group of individuals, often

primary care physicians, who have led medicine into the twenty-first century by bringing pedagogy and innovative curricular design into medical schools [21]. Fortunately, this role was coming into focus around the time I was starting my residency. As someone who did not have many role models in general internal medicine in my medical school, I was thrilled to have many generalist role models in residency who conducting what at the time was considered nontraditional research—health services research and quality improvement. I also was pleased to be amidst female faculty. The expansion of the tent to include women, generalist and improvement specialist in academia was pivotal in the history of academic medicine. It brought in systems thinkers, clinically relevant research, and opportunities to improve the health care system. This movement is what led to the Institute for Medicine, VA Quality Scholars program and moved the focus from being a triple threat to tackling the Triple Aim [22]. For many decades, physicians sat on their laurels as content experts who thought it beneath them to develop skills in management and learn the business aspect of medicine. Now getting an MBA is considered a competitive advantage when seeking employment. As we move from the traditional diaconal leadership roles to more centers of inquiry and excellence leadership, academic medicine will need to look beyond its traditional walls to redefine faculty leadership. This will also require retaining faculty who have different lived experiences so academic faculty may represent our societal make up and represent the patients we take care of. When I started my career in quality improvement and primary care education, many thought that my career will be short lived. I was advised to pick a disease specific topic such as heart failure or asthma if I wanted to be successful. Now looking back, I am glad that I did not heed the advice of those who thought that "quality improvement" is a fad that will pass. Primary care education was similarly thought to be simple and not academic. Primary care could not be more complex but given the pay structures, it will always be treated as more of a "non-procedure" field vs. a cerebral one. As I was completing my VA Quality Scholars fellowship in 2010, an opportunity came up to submit a grant proposal for a Center of Excellence in Primary Care Education. This was a funding opportunity through the VA's Office of Academic Affiliations and the request for proposal (RFP) was for $5 million over 5 years to develop innovative curriculum to train and integrate interprofessional learners to work in a patient centered medical home model. The Cleveland VA medical center was positioned for this type of request. I had just completed a patient centered medical home myself and was uniquely qualified to take the lead on this project. Our team submitted a successful letter of intent, and we were asked to submit a full proposal. When it came to getting a letter of support from the Chair of the Department of Medicine at our affiliate hospital (most VA medical centers are affiliated with a major university graduate program), our chair refused. Despite the monies it would bring in, he did not think having a primary care center of excellence was a good idea. His email to us was, "we do not want to detract from the academic nature of our residency program by building a primary

care focus". Not only did this decision lack vision (who walks away from $5 million as chair of department?), it reflected how medical centers perceive primary care—not academic enough. Interestingly, we went on to work with another affiliate and secure the funding not once but twice for a total of $8 million over 9 years and the Cleveland Center of Excellence went on to become a great example of how to train interprofessional learners in chronic complex care. I personally take pride in this project as it demonstrated what I have known all along, that if you build a strong infrastructure that allows for teamwork, collaboration and systems thinking, learners and faculty will follow. We have consistently recruited trainees from the COE into the VA over the years and it is a prime pipeline of health care professionals for the hospital.

As I have spent much of my career identifying what makes a systems thinker, I realize that academic medicine spends much of its time moving away from system thinking while it continues to push the siloed and discipline specific education. I am happy to say that my generalist approach and systems perspective landed me many of my opportunities from directing a Center of Excellence in Primary Care Education to being the inaugural Assistant Dean of Health Systems Science at Case Western Reserve University School of Medicine. These positions and opportunities were created out of a need to cast a wider net and redefine what makes a twenty-first century academic physician. In my short career, I have seen the changing visage of faculty—from my traditional medical school where gray-haired white men who were either basic scientist or specialist were called faculty to women and minority faculty generalist who are engaged in health services, health equity research or quality improvement inquiry. This only expanded our perspectives and diversified our thoughts. It did not dilute the pool nor did the funding dollars dry up as often is feared. In fact, the funding dollars followed suit as even the NIH has expanded its portfolio to include implementation science and health services research. But to continue to traverse these long distances in short periods of time, we will have to develop strong structures which can retain different thoughts, embrace a growth mindset, and engage in meaningful dialogue when we have differences.

Summary

This type of expanded arena is possible in academic medicine, but it requires a more agile system that is willing to be inclusive. Leadership in academic medical centers will need to move from the hierarchy approach that knowledge and expertise is a limited resource that needs to be kept close but something that can be shared and ultimately expanded. We will need to look closer at the many cultural norms that serve as latent factors that disallow women and underrepresented minorities to not

truly embed into the system. Making room for others at the table and in leadership positions will only expand perspectives and dialogue all which can only lead to better patient care and a more thriving work environment.

References

1. AAMC. The State of Women in Academic Medicine 2018-2019: exploring pathways to equity. Washington, DC: AAMC; 2020. https://www.aamc.org/data-reports/data/2018-2019-state-women-academic-medicine-exploring-pathways-equity. Accessed 3 May 2022.
2. Roberts LW. Women and academic medicine, 2020. Acad Med. 2020;95(10):1459–64.
3. Valantine HA. Where are we in bridging the gender leadership gap in academic medicine? Acad Med. 2020;95(10):1475–6.
4. Richter KP, Clark L, Wick JA, Cruvinel E, Durham D, Shaw P, Shih GH, Befort CA, Simari RD. Women Physicians and Promotion in Academic Medicine. N Engl J Med. 2020;383(22):2148–57. https://doi.org/10.1056/NEJMsa1916935. PMID: 33252871.
5. Gharzai LA, Jagsi R. Ongoing gender inequity in leadership positions of academic oncology programs: the broken pipeline. JAMA Netw Open. 2020;3(3):e200691.
6. Ludmerer KM. Seeking parity for women in academic medicine: a historical perspective. Acad Med. 2020;95(10):1485–7.
7. Helzer EG, Myers CG, Fahim C, Sutcliffe KM, Abernathy JH. Gender bias in collaborative medical decision making: emergent evidence. Acad Med. 2020;95(10):1524–8.
8. Silver J, Larson AR, Reshma J. Covid-19 and the effect on the gender pay gap in medicine. BMJ Opin. 2020. https://blogs.bmj.com/bmj/2020/07/31/covid-19-and-the-effect-on-compensation-and-financial-stress-for-women-in-medicine/. Accessed 30 May 2022
9. Carr PL, Gunn CM, Kaplan SA, Raj A, Freund KM. Inadequate progress for women in academic medicine: findings from the National Faculty Study. J Women's Health (Larchmt). 2015;24(3):190–9. https://doi.org/10.1089/jwh.2014.4848. Epub 2015 Feb 6. PMID: 25658907; PMCID: PMC4363794.
10. Circulating Now. 2021. https://circulatingnow.nlm.nih.gov/2021/03/11/elizabeth-blackwell-that-girl-there-is-doctor-in-medicine-part-i/. Accessed 30 May 2022.
11. Circulating Now. 2021. https://circulatingnow.nlm.nih.gov/2021/03/11/elizabeth-blackwell-that-girl-there-is-doctor-in-medicine-part-ii/. Accessed 30 May 2022.
12. Nimura JP. The Doctors Blackwell: how two pioneering sisters brought medicine to women and women to medicine. New York, NY: WW Norton & Company; 2021.
13. Marshall AL, Dyrbye LN, Shanafelt TD, Sinsky CA, Satele D, Trockel M, Tutty M, West CP. Disparities in burnout and satisfaction with work–life integration in US physicians by gender and practice setting. Acad Med. 2020;95(9):1435–43.
14. Pelley E, Carnes M. When a specialty becomes "women's work": trends in and implications of specialty gender segregation in medicine. Acad Med. 2020;95(10):1499.
15. Haggins AN. To be seen, heard, and valued: strategies to promote a sense of belonging for women and underrepresented in medicine physicians. Acad Med. 2020;95(10):1507–10.
16. Gottlieb AS, Travis EL. Rationale and models for career advancement sponsorship in Academic Medicine: the time is here; the time is now. Acad Med. 2018;93(11):1620–3. https://doi.org/10.1097/ACM.0000000000002342.
17. Kimyon RS. Imposter syndrome. AMA J Ethics. 2020;22(7):E628–9.
18. DeAngelis CD. A long, adventurous journey: reflecting on 50 years as a woman in Academic Medicine. Acad Med. 2020;95(10):1472–4. https://doi.org/10.1097/ACM.0000000000003541.

19. DeAngelis C. Pursuing equity in medicine: one woman's journey. North Charleston, SC: CreateSpace Independent Platform; 2016.
20. Branch WT, Kroenke K, Levinson W. The clinician-educator-present and future roles. J Gen Intern Med. 1997;12:S1–4.
21. Greenberg L. The evolution of the clinician–educator in the United States and Canada: personal reflections over the last 45 years. Acad Med. 2018;93(12):1764–6.
22. Berwick DM, Nolan TW, Whittington J. The Triple Aim: care, health, and cost. Health Aff (Millwood). 2008;27(3):759–69.

Part IV
Final Thoughts

Chapter 27
Word of Wisdom?

For wisdom is better than rubies, and all things desirable are not to be compared unto her. (Proverbs 8:11)[1]

We should not think ourselves wiser than we are. (Peter Mere Latham (1837))[2]

When several of my colleagues and trainees read the manuscript, they suggested that there be a chapter that summarizes all my "words of wisdom (their phrase not mine). What could I say that hasn't been said many times before by people more sage than I? There are the three 'wisdom books' of the Hebrew Scriptures—Job, Proverbs, and Ecclesiastes. There is great wisdom in the commentaries.[3] There is wisdom in the holy books of Christianity, Islam, Hinduism, other religions and other traditions [1, 2]. There is an enormous literature on wisdom in philosophy [3, 4]. In medicine, there are the aphorism of Hippocrates [5], the sayings of William Osler [6], and books on words of wisdom for academia and medicine [7] as well as

[1] http://www.breslov.com/bible/Proverbs8.htm#11. Accessed 5-22-22.

[2] Hektoen International—A journal of medical humanities. hekint.org. Accessed 5-23-22.

[3] In my Torah study class, we are currently reading Pirke Avot which is part of the Talmud rather than the Torah. Pirke Avot is sometimes translated as Words (or Ethics) of the Sages or Words of the Fathers.

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8_27

orations and articles [8].[4] Just type in medicine "words of wisdom" into Google and you get >5 million hits. What could I possibly say that would add anything of value? Probably not much, but my manuscript readers had laid down the gauntlet.

I first thought of asking people what they remembered of what I had said over the years and just listing them. Examples included: "Life is much too long not to have fun; if you are not having fun, you are not having it for a long time." Or "You have to demonstrate your value to thems that are payin' you. Once you do that, you can do whatever you want."

That approach didn't seem very useful to me, especially since I frequently quote others. Then I did some research on the topic looking for lists of pearls of wisdom related to academic medicine. For example, Conniff and Colgan came up with a top ten list of words of wisdom for junior faculty including such advice as develop a niche, learn how to say no, and play nice in the sandbox [9]. Nothing wrong with those. Daniel Hayes, former president of the American Society of Clinical Oncology offered 35 pearls of Wisdom for leadership and success in academic medicine from his 35-year career [10]. Two in that I especially like (though he credits each of them to someone else) are his 27: "If your desk is cleared when you go home at night, you're not doing enough;" and his 28: "If you're just showing up at work and are not passionate about what you are doing, think of something else to do."[5] However, I wanted something a bit different, an answer to what I learned that is not part of the usual canon of wisdom about academic medicine careers or of some of the lessons I learned that I really hadn't heard before or if I had heard them, had gone over my head. What did I learn while going from point A to point C via point B, from a lowly intern to an emeritus professor of medicine (Fig. 27.1). To start with, my journey from point A to point B was hardly linear and there were times when the slope was downward and times when it was upward, times when it didn't seem to be going " anywhere, and times when it seemed that I would never make it to point B or at least

[4] In preparing this chapter, I came across a reference to a book of sayings from Philip K. Peterson, entitled 'Get Inside Your Doctor's Head: Ten Commonsense Rules for Making Better Decisions about Medical Care.' For example, "If you don't what what you're doing, don't do anything" and "Most things are what they seem to be except when they're not." What is interesting, is that Dr. Peterson was a resident with whom I did an infectious diseases elective as a medical student; our attending was the incomparable Glenda Garvey. (The Glenda Garvey Teaching Academy was named for her after her untimely death.) What is remarkable is that I ran into him many years later. I had been on the dissertation committee of a student at the Karolinska Institute and we became friends. When she got her PhD, I decided I would go to her commencement in Stockholm. Having a lot of frequent flyer miles helped. The ceremony took place in the Stockholm City Hall where the Nobel Prize Ceremony takes place. The dinner reception was a regal affair. At the table adjacent to mine in the huge hall was Philip Peterson! He was receiving an honorary doctorate promoting collaboration between University of Minnesota and the Institute. I walked over and introduced myself and we had a nice chat.

[5] You could do worse than follow the advice given in the chorus of The Gambler. "You've got to know when to hold 'em, Know when to fold 'em, Know when to walk away, And know when to run. You never count your money When you're sittin' at the table, There'll be time enough for countin' When the dealin's done. https://www.lyricsfreak.com/k/kenny+rogers/the+gambler_20077886.html. Accessed 5-24-22.

Fig. 27.1 Three points in my academic journey

what I envisioned point B to be. So here are a few things and then I will explain why I think that they constitute at least a part of wisdom and why people in various fields seem to value my opinion. It ain't because I am a great scientist because I am not, although that can sometimes be an advantage. It must be something else.

I have given this much thought and I have come up with the reason for my academic success is an amalgam of phronesis, mêtis, kindness, and dogged persistence. Who but an academic would start with a few Greek words? So what does this all mean?

Phronesis, an ancient Greek word, has been defined in a variety of ways including practical wisdom, prudence, and practical virtue. It is a type of wisdom or intelligence relevant to practical action and implies both good judgment and excellence of character and habits [11]. In his work Nichomachean Ethics,[6] remarkably one of the required readings in freshman year at Columbia,[7] Aristotle describes phronesis as a true and reasoned state or capacity to act with regard to things that are good or bad for man. It involves not only theoretical knowledge of what is good or bad, but also the capacity to act on that knowledge [12]. This contrasts with techne—technical skill in arts and crafts; episteme—knowledge of science; sophia—theoretical wisdom of philosophy; and nous—intuitive reason [13]. Moreover, practical wisdom cannot be taught, but rather is learned from experience.[8] One of the main

[6] This book is thought to be based on notes from his lectures at the Lyceum, although there are other possibilities. https://en.wikipedia.org/wiki/Nicomachean_Ethics. 5-22-22.

[7] It is still part of the curriculum for "Contemporary Civilization". http://www.college.columbia.edu/core/conciv/texts. Accessed 5-22-22.

[8] The idea of phronesis of course can be taught and an environment which is conducive to learning it can be created. There is currently a "Phronesis Project" at the University of Virginia Medical School. https://news.virginia.edu/content/teaching-wisdom-phronesis-project-brings-practical-wisdom-medical-school. Phronesis can be modeled and often is in medical case presentations, i.e. stories.

reasons for this, I think, is that it involves the application of the general to the particular and every particular is different; every patient is unique and every situation in academic medicine is unique. There may be similarities, but the context is always different. Part of wisdom lies in the ability to appreciate the context and see how the general applies to the particular [14]. What makes the particular is the context. This is one of my concerns with the "evidence-based medicine" approach which while giving lip service to patient preference and clinical judgement, emphasizes action based on the average response in randomized clinical trials [15]. The same applies to evidence-based management [16].

I was reintroduced to phronesis during a session of the VA Quality Scholars Fellowship Program when the book Making Social Science Matter was recommended.[9] In fact, phronesis has been discussed in the context of a variety of fields, not the least of which are management, the health professions, and social science in general [17–19]. Phronesis has been increasingly applied to medicine, although there are differences of opinion about it [20–24]. Among the proponents are Boudreau and Cassell. In a paper entitled 'Medical Wisdom' they argue that "clinical medicine is primarily, although not exclusively a phronetic activity" ([25], p. 252). I find their arguments quite convincing as well as their emphasis on the importance of medical narrative [26]. I think that I have gotten more wise with age, a function of experience and learning from my mistakes. This is succinctly described in a very short poem by Piet Hein: "The road to wisdom? Well, it's plain. And simple to express: Err and err and err again, but less and less and less" [27].

There is something else that is critical to thrive in academia: mêtis. Mêtis is a kind of knowledge that can only be gained by experience, is practical and is embedded in context [28]. It has a connotation of cunning and is often referred to as 'cunning intelligence.' In addition, some view it pejoratively, akin to being Machiavellian. The paragon of mêtis for the ancient Greeks was Odysseus who was able to outwit various foes and deal with difficult challenges. However, it is not phronesis. "At the heart of mêtis as compared to the practical wisdom of "phronêsis" is this sense of overcoming physical dilemmas rather than theoretical or moral. The sense of facing strength and power and using cunning and trickery to reverse the order of natural outcomes by a form of intelligence that some would see as both treacherous, cowardly, and womanish (the Greeks were admittedly sexist)" (citing Detiennne and Vernant, p. 6). Yet, for others mêtis was a superior form that overcame force by sheer cunning and trickery that came from vigilance, alertness, experience, and a sense of kairós—sense-of-timing or rhythm that the more slow-witted man of strength and power lacked."[10] Some have referred to mêtis as 'situated resourcefulness' [29]. That makes sense to me and it can certainly help when discretionary action is required [30]. So, mêtis bounded by phronesis is a great asset to surviving

[9] Flyvbjerg B. Making social science matter: Why social inquiry fails and how it can succeed again. Cambridge university press; 2001 Jan 15.

[10] Mêtis: Cunning Intelligence in Greek Thought. In Dr. Rinaldi's Horror Cabinet. Posted on February 23, 2016. https://socialecologies.wordpress.com/2016/02/23/metis-cunning-intelligence-in-greek-thought/. Accessed 5-25-22.

and thriving in the political environment that constitutes an academic department or institution. How can you ensure that mêtis is bounded by phronesis, i.e., used virtuously? It helps to have a core of kindness [31]. That is part of being a physician. It doesn't hurt to be kind and it makes it much easier to live with yourself.

I have been a round peg trying to fit in a square whole, not all the time, but enough to have developed a certain reputation—a maverick [32]. A maverick is a person who thinks and acts in an independent way, often behaving differently from the expected or usual way (Cambridge University Dictionary) [33] or an independent individual who does not go along with a group or party (Merriam Webster Dictionary) [34]. I came across an interesting definition in a PhD thesis (I was unable to find the original source): "[Mavericks are] wilfully independent people … Mavericks are talented, truthful to the point of bluntness, visionary with an uncanny ability to exactly see the hole in the argument that is being presented to them, and how to fix it. Mavericks break rules, not out of spite but because the rules don't work. They are highly goal orientated, charismatic (if they choose to be), and will question anything and everything. The common question posed by a maverick is 'Why?'. Mavericks do not compromise their standards to fit in, and therefore cannot be managed conventionally. Despite the fact that they often do not utilise their talents effectively, mavericks tend to be the top performers in companies and within business. Common traits of low boredom and impatience means that mavericks often have trouble articulating effectively what they want or what they mean." (Judith Germain—UK management consultant, cited in Lester, 2010)" [35]. I am not a total maverick, but enough of one that it has enabled me to thrive in academia even though I have not followed the most valued path, i.e., research above everything else. I have done enough to demonstrate my value to those who pay me but leave plenty of room for flexibility. That flexibility enabled me to pursue different academic interests that appealed to me even if they were not particularly valued by the institution. Although I am generally risk averse, I will take enough risks if the potential benefit is high enough. Taking the position as associate chief of medicine was a risk, but the benefits turned out to be enormous, certainly to me, but if I did any good at all, those benefits" helped others.

References

1. Kynes W. The Oxford handbook of wisdom and the Bible. Oxford: Oxford University Press; 2021.
2. Walsh R. The world's great wisdom: timeless teachings from religions and philosophies. Albany, NY: SUNY Press; 2013.
3. Hall SS. Wisdom: from philosophy to neuroscience. New York, NY: Vintage; 2011.
4. Stanford Encyclopedia of Philosophy. Wisdom. n.d.. https://plato.stanford.edu/entries/wisdom/. Accessed 23 May 2022.
5. The Internet Classics Archive. Works by Hippocrates, translated by Adams, Francis, Daniel C. Stevenson, Web Atomics © 1994–2000, 1994 [1891] http://classics.mit.edu/Browse/browse-Hippocrates.html. Accessed 23 May 2022.

6. Osler W. The quotable Osler. Minneapolis, MN: ACP Press; 2008.
7. Taylor R. Medical wisdom and doctoring: the art of 21st century practice. New York, NY: Springer Science & Business Media; 2010.
8. Aronson JK. When I use a word. Medical aphorisms. BMJ. 2022;8:377.
9. Conniff K, Colgan R. Education columns. Top 10 "words of wisdom" for junior faculty. Leawood, KS: STFM; 2012. https://www.stfm.org/publicationsresearch/publications/educationcolumns/2012/december/. Accessed 22 May 2022.
10. Hayes DF. 'Pearls of wisdom' for leadership and success in academic medicine gathered over a 35-year career. The ASCO Post. 2018;10:1. https://ascopost.com/issues/june-10-2018/pearls-of-wisdom-for-leadership-and-success-in-academic-medicine/. Accessed 24 May 2022.
11. Wikipedia. Phronesis. n.d.. https://en.wikipedia.org/wiki/Phronesis.
12. Lacewing M. Practical wisdom. Philosophy for A2: key themes in philosophy. London: Routledge; 2009.
13. Aristotle. The Nicomachean ethics, vol. VI. Oxford: Oxford University Press; 1980. Chapter 3.
14. Kristjánsson K, Fowers B, Darnell C, Pollard D. Phronesis (practical wisdom) as a type of contextual integrative thinking. Rev Gen Psychol. 2021;25(3):239–57.
15. Aron DC. Managing patients: evidence-based medicine meets human complexity. Complex systems in medicine. Cham: Springer; 2020. p. 63–74.
16. Aron DC. From evidence-based medicine to evidence-based management (and policy)? Med Care. 2015;53(6):477–9.
17. Küpers W. A handbook of practical wisdom: leadership, organization and integral business practice. London: Routledge; 2016.
18. Kinsella EA, Pitman A. Phronesis as professional knowledge: practical wisdom in the professions. New York, NY: Springer Science & Business Media; 2012.
19. Flyvbjerg B, Landman T, Schram S. Real social science: applied phronesis. Cambridge, MA: Cambridge University Press; 2012.
20. Davis FD. Phronesis, clinical reasoning, and Pellegrino's philosophy of medicine. Theor Med. 1997;18(1):173–95.
21. Edmondson R, Pearce J, Woerner MH. Wisdom in clinical reasoning and medical practice. Theor Med Bioeth. 2009;30(3):231–47.
22. Hofman B. Medicine as practical wisdom (phronesis). Poiesis Prax. 2002;1(2):135–49.
23. Bontemps-Hommen CM, Baart A, Vosman FT. Practical wisdom in complex medical practices: a critical proposal. Med Health Care Philos. 2019;22(1):95–105.
24. Wieland W. The character and mission of the practical sciences, as exemplified by medicine. Poiesis Prax. 2002;1(2):123–34.
25. Boudreau JD, Cassell EJ. Medical wisdom. Perspect Biol Med. 2021;64(2):251–70.
26. Mongtomery K. How doctors think: clinical judgment and the practice of medicine. Oxford: Oxford University Press; 2005.
27. Department of Physics. My favorite Grooks by Piet Hein. Gainesville, FL: The University of Florida. https://www.phys.ufl.edu/~thorn/grooks.html. Accessed 25 May 2022.
28. Detienne M, Vernant J-P. Cunning intelligence in Greek culture and society. Chicago, IL: University of Chicago Press; 1991.
29. Mackay D, Zundel M, Alkirwi M. Exploring the practical wisdom of mētis for management learning. Manag Learn. 2014;45(4):418–36.
30. Newswander CB, Newswander LK. Metis: using wile and wisdom to inform administrative discretion. Am Rev Public Adm. 2015;45(2):153–66.
31. Moreno Villares JM. Phronesis: medicine's indispensable virtue. Cuad Bioet. 2014;25(83):105–10.
32. Jordan R, Fitzsimmons TW, Callan VJ. Fear not your mavericks! Their bounded non-conformity and positive deviance helps organizations drive change and innovation. In: Andersen TJ, editor. Strategic responses for a sustainable future: new research in international management (Emerald studies in global strategic responsiveness). Bingley: Emerald Publishing Limited; 2021. p. 123–46.

33. Cambridge Dictionary. Maverick. n.d.. https://dictionary.cambridge.org/us/dictionary/english/maverick. Accessed 25 May 2022.
34. Merriam Webster. Maverick. n.d.. https://www.merriam-webster.com/dictionary/maverick. Accessed 25 May 2022.
35. Jordan R. Maverickism: round pegs in square holes. The who, what and why of mavericks in organisations. https://espace.library.uq.edu.au/data/UQ_d927a71/s30923740_final_thesis.pdf?Expires=1664291999&Key-Pair-Id=APKAJKNBJ4MJBJNC6NLQ&Signature=ScVeuuVsQpxOjvPBFlXw9vT0y-0nSfojStDwOCmSG3~Fi8q32Yg0GL~GFwHKT4h8o0VGYIZO4IBrqfbNm4~29J2D~5WCs~2dwTvpLZyI0uPx4li3JeRJHaJLoRSauJoOXZXdqjc44dYdqofVLGFElCT3KFUvhwgbMih68i6lf-DuPC4DAVY6~nVC11vT~~yznmXDIyj7nufKVSygET0FgixC7MbvU9s1-qPKzpd4N~R8xPoNSdptMg-iAklBxcbv6WunNg4HInGpe-RiwpfbbDP9q9YHXdd8~0XYRK3VXqQJ9DB3uF7UZo8mhk0xcpkghtCYHPjyte0M9MeAQVSi0Q__. Accessed 25 May 2022.

Afterward: Legacy

How can one sum up a life in academia? What can one hope for? In 2015 David Brooks wrote an op-ed piece in the New York Times entitled The Moral Bucket List. In it, he wrote that "there were two sets of virtues, the résumé virtues and the eulogy virtues. The résumé virtues are the skills you bring to the marketplace. The eulogy virtues are the ones that are talked about at your funeral—whether you were kind, brave, honest or faithful. Were you capable of deep love?"[1] My résumé (CV) lists my peer reviewed papers and other publications, grants, awards, honors, and dates of faculty rank. It is a fairly sterile summary of my life in academia. It doesn't include the patients I took care of; It does not include my role in improving quality of care, and most of all, it doesn't include the things of which I am most proud, what I hope will be at least part of what is thought of as my legacy. It is the people I have mentored and trained who have gone on to do good things clinically, or in education, or in research or in quality improvement. I hoped to foster their ability to think, create, and innovate. This was brought home to me in a story one of those I have mentored and trained.

Sherry Ball has a PhD in neuroscience and she had laboratory and research funding for about 15 years. Then her grant applications stopped being funded and since those grants paid for her salary, she was now out of a job. She went to the administrative officer of the research department who suggested that she talk to me. I had a funded project and was looking to hire a project manager. We chatted for a while. She needed the money and was willing to consider any kind of job. I figured that even though she had no experience as a manager of a health services research project, she had a PhD and must have sufficient candlepower to do the job. I don't recall where we left it. Apparently, I was vague because she later got a call from the administrative officer and was surprised to find out that she had been hired and should report to work on Monday. That began an incredible collaboration. She

[1] Brooks D. The Moral Bucket List. https://www.nytimes.com/2015/04/12/opinion/sunday/david-brooks-the-moralbucket-list.html.

© The Editor(s) (if applicable) and The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8

already had the research bug, the desire to be an independent investigator and that was fine with me. I already had in mind that I would try to train her to take over my operation when I retired. She learned what she had to learn, developed expertise in qualitative methods and helped to hire (did almost all of the work) new research assistants who were great. I helped her make connections and she became sought after as a collaborator. In a few years, she had built up the operation such that it had more funding than I ever did. What could be a better legacy? Shortly before I retired, she told me about a dream that she had. I asked her to write it up.

> In my dream I was looking at 2 or 3 gift wrapped boxes about the size of a what a person my age sees when imagining a desktop computer. Too big to put in your purse but easy to carry around. One of the boxes had a nice lid like the boxes reams of paper come in that everybody takes home from work when they're packing for a move. The lid to this box was wrapped separately so I didn't need to take off the wrapping to see what was inside. The gifts were all to me from you and I felt bad that I hadn't open them all because it seemed that I had them for a while. I opened one and there were family photographs I think from my childhood – and this is where it starts to get more unclear but there were somehow stacks of cards – not playing cards but something that looked more like idea generating cards or like Tarot cards. On the top of each stack was a childhood picture. You should know that whether it's true or not I don't know (hasn't been quantified) but I've always felt that my parents took about 7 picture that I happened to be in during my childhood. I am the youngest of 10 kids and I think my parents were just tired by the time I came around. Anyway, pictures from my childhood are a rare and precious thing to me. That's all I remember. I was happy to have the gifts, felt bad that I hadn't opened them sooner and felt there was so much to explore in all those stacks of cards. Thanks for the opportunity to start this exploration, Sherry.

Giving gifts that keep on giving is about as nice an academic legacy as I can think of. And not just academic either.

Index

© The Editor(s) (if applicable) and The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

D. C. Aron, *An Insider's Guide to Academic Medicine*,
https://doi.org/10.1007/978-3-031-19535-8