



# Evaluation of an Educational Scholarship Fellowship Program for Health Professions Educators

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## Abstract

**Introduction** Historically, the requirement to produce scholarship for advancement has challenged health professions educators heavily engaged in teaching. As biomedical scientists or healthcare practitioners, few are trained in educational scholarship, and related faculty development varies in scope and quality across institutions. Currently, there is a need for faculty development and mentoring programs to support the development of these skills.

**Methods** The International Association of Medical Science Educators (IAMSE) established the Medical Educator Fellowship (MEF) Program to foster health professions educational scholarship. MEF addresses the following: curriculum design, teaching methods and strategies, assessment, educational scholarship, and leadership. Participants receive mentorship and faculty development, and complete an educational scholarship project. Using a logic model, we conducted a retrospective program evaluation with data from Program records, database searches, graduate surveys, and focus groups.

**Results** Over 14 years, MEF graduated 61 participants with diverse terminal degrees from five continents and six academic program areas. Graduate survey responses indicated enhanced post-Program skills in all focus areas, that the majority would recommend MEF to a colleague, and that mentorship, networking, and professional development were strengths. Focus group outcomes indicated professional growth, increased confidence, and increased sense of community.

**Conclusion** MEF addresses health professions educators' need for faculty development and mentorship in educational scholarship. Evaluation outcomes suggest that MEF effectively enhanced perceived skills across focus areas. Similar programs are essential to support faculty who dedicate significant time to teaching. Organizations like IAMSE can demonstrate the value of educational scholarship and positively impact health professions educator careers by supporting such programs.

**Keywords** Faculty development · Program evaluation · Educational scholarship · Fellowship program · Professional development · Mentoring

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## Introduction

In health professions education, educational scholarship refers to the research and scholarly activities that aim to advance the knowledge, skills, and attitudes of the academic community, and establish new interventions to address the community's needs. Within the literature and across institutions, “research” and “scholarship” are defined in many ways. Clearly defining research and the broader category of scholarship is necessary because, in health professions education, basic research is historically held in higher regard than other forms of scholarship [1–5]. However, the works that result from educator activities that seek to improve teaching and learning, such as the development of new curricula and assessments, are also a form of scholarship, when approached systematically and shared with the public.

In this report, we define scholarship as the serious and sustained academic pursuit of a line of enquiry, with the goal of dissemination of knowledge and the purpose of impacting practice [6]. We define research as scholarship that, in addition to what is defined above, applies a systematic approach to investigation and seeks to establish new knowledge or conclusions.

In 1990, to address the decades-long debate over research versus teaching in higher education, Boyer expanded the traditionally held definition of scholarship to include scholarly teaching [1]. Boyer's framework establishes four categories of scholarship that include the scholarship of discovery, the scholarship of integration, the scholarship of application, and the scholarship of teaching [7]. Since it was established, others have built upon Boyer's work. The Association of American Medical Colleges (AAMC) further defined educator activities and their forms of evidence for academic recognition: teaching, learner assessment, curriculum development, mentoring and advising, and educational leadership and administration [8]. Further, the Academy of Medical Educators (AOME) defined five practice domains for health science educators, which include teaching and facilitating learning, designing and planning learning, assessment of learning, educational scholarship and research, and educational management and leadership [9].

Although these organizations have articulated multiple forms of educational scholarship and examples of evidence of quality, the bias for basic research over other forms of educational scholarship persists. This is often reflected in academic promotion criteria and pathways, establishing a major barrier for faculty who dedicate a significant portion of their time to teaching. Further, as biomedical scientists and healthcare practitioners, few health science educators are prepared during graduate or professional

education to engage in educational scholarship. Faculty development for educational scholarship offered by health professions schools varies in scope, availability, and quality, and many educators face challenges due to a lack of awareness, knowledge, experience, or comfort with applying educational research principles and practices to their own work [3]. A survey of medical educators from 76 countries revealed that while most feel they have expertise in general principles of teaching, they identified research methodology in medical education as an area for improvement [10]. Longitudinal faculty development programs can provide training in these areas; however, evidence suggests that only a minority of faculty members undertake formal programs. For example, in a 2017 survey of 198 clinical educators in the Society of General Internal Medicine (SGIM), only 28% of respondents ( $n = 56$ ) reported completing a medical education fellowship program [11].

In addition to these barriers, it can be challenging to identify mentors and experienced collaborators for educational scholarship projects. Thus, there remains a pressing need for accessible faculty development and mentoring to increase knowledge and skills for educational scholarship. This report describes an initiative to bridge this gap by creating an international faculty development program for educational scholarship with mentors and participants from around the world. Our retrospective report reviews the impact of this program and its ongoing development.

## Materials and Methods

### History, Design, and Implementation of the Medical Educator Fellowship Program

In 2009, the International Association of Medical Science Educators (IAMSE) established the Medical Educator Fellowship (MEF) Program, with the primary goal of fostering educational scholarship in the health sciences education community. It is designed for educators from graduate health sciences institutions, such as medical, physician assistant, dental, and chiropractic schools, who seek to advance their careers through educational scholarship.

The MEF Program aims to develop the knowledge and skill of each candidate to promote authentic application of educational scholarship principles and practices at their home institutions. The fellowship program encourages proficiency in five focus areas, which were informed by the AAMC education activity categories [8]. The five areas are curriculum design, teaching methods and strategies, assessment, educational scholarship, and leadership.

There are no specified degree, employment, or appointment requirements, and educators from diverse educational backgrounds are eligible for the program. As a prerequisite,

applicants must complete the Essential Skills in Medical Education (ESME) course, currently offered by the Association for Medical Education in Europe (AMEE). This prerequisite course serves to establish a foundational knowledge of the core competencies of medical educators prior to matriculation into the Program.

During the MEF Program application process, applicants describe a proposed scholarly project. Upon acceptance, candidates are assigned to mentors who are most often members of the IAMSE committee responsible for MEF Program oversight, the Educational Scholarship (ES) committee. Mentors guide the candidate during their time in the program, to support professional development, and the development, implementation, and dissemination of the candidate's scholarship project.

Candidates complete the MEF Program in two overlapping phases within a 2-year timeframe. In the first phase, ideally completed within the first year of the fellowship, candidates are required to complete 12 h of faculty development, relevant to their scholarship interests. Beginning in 2009, required professional development activities included attending a MEF Program orientation session and attending 12 h of pre-conference workshops, in person, at the IAMSE Annual Conference. In 2020, these requirements were amended and a virtual option was added. Candidates in the revised program have the option to attend the MEF Program orientation session at the annual meeting or online, as well as the option to complete 12 h of faculty development outside of the IAMSE meeting, with approval, at health professions education conferences or through other forms of training. Finally, in the newest iteration, candidates are required to participate in virtual small group mentoring sessions and works in progress meetings.

In the second phase, candidates complete a capstone project resulting in educational scholarship. The capstone project must demonstrate application of knowledge related to one or more of the five MEF Program focus areas listed above. The results of the completed project must be presented or published within 3 years of the candidate's MEF Program start date at a national or international health professions education conference [12].

### Program Planning and Evaluation Framework

To provide a framework for planning, evaluation, and continued improvement of the MEF Program, we utilized a logic model. Logic models provide a graphic representation of an educational program's inputs, activities, and outputs [13–15], and have demonstrated effective use in planning and evaluating faculty development programs for health professions educators [16, 17].

The MEF Program logic model (Fig. 1) was developed, iteratively, by an interdisciplinary team of health professions

educators serving as MEF Program mentors. The model is divided into three components: inputs, outputs, and outcomes. In developing the program, it was assumed that participants must complete the AMEE ESME program and must pursue an educational scholarship project during the fellowship. We noted external factors that may impact candidate progress including change of institution, change of project focus due to institutional priorities or program change, and impacts of COVID-19.

We identified Committee time and expertise, staff support, member expertise, member mentoring, and the aforementioned ESME course as program inputs. Outputs were measures of activities completed in relation to the program and participation in the program. Outcomes are changes or benefits resulting from participation in the program. Outcomes were divided into two categories, short-term and long-term. We defined short-term outcomes as changes that followed participation in the program, e.g., within 1–2 years after completing the program, and long-term outcomes changes occurred several years or more after program completion. While long-term outcomes have been measured in this study, they may underestimate the true impact of the program, as recent graduates have had less time to accomplish these outcomes. Data were obtained from program records, participant survey responses, and focus group interviews.

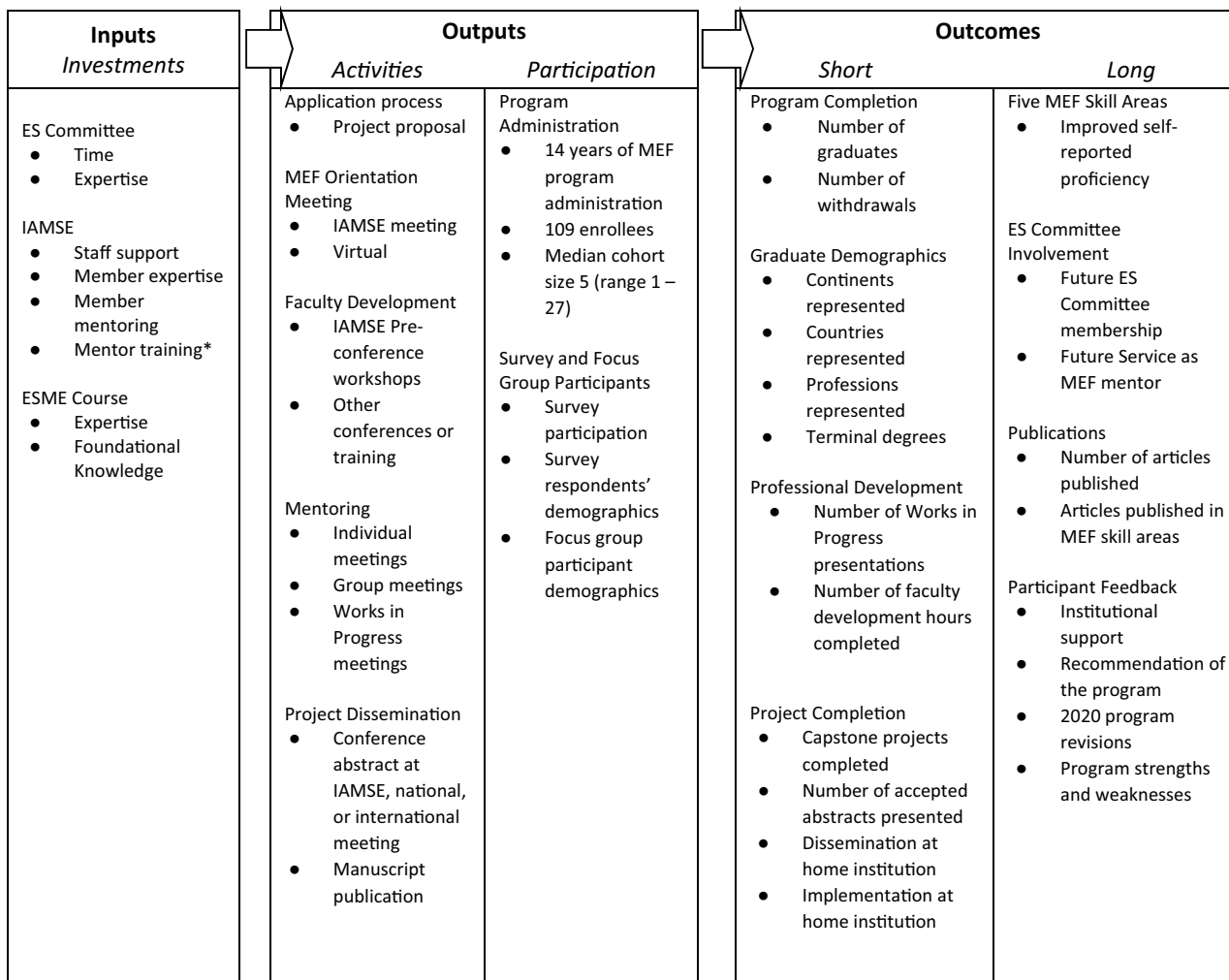
### Records and Database Searches

To obtain data on participation, we conducted a search of MEF Program records from 2009 through 2023. To obtain information on publications, we conducted searches using the PubMed and Scopus database (National Library of Medicine, 2023). Records of candidates who did not graduate from the program during or prior to the summer of 2023 were excluded from all PubMed and Scopus database searches.

### Survey Administration

We constructed a content-validated survey (appendices) to collect program graduates' demographic data and assess their perceived proficiency in the five program areas mentioned above. The survey was anonymous and, at its time of first construction, consisted of 28 questions in rating, multiple choice, and open-response formats. In 2022, the survey was revised to include a total of 40 questions of the same or similar formats.

The Western Michigan University Homer Stryker School of Medicine IRB review determined the survey to be quality improvement and the project a program evaluation (IRB#: WMed-2020-0607). The survey was administered through REDCap (Vanderbilt University 13.4.12) and its original version was disseminated via email between September and October of 2020 to all MEF program participants who



\*Began in 2022.

Assumptions	External Factors
Participants must complete the AMEE ESME program. Participants must work on an educational scholarship project during the fellowship.	External Factors affecting MEF Participant progress include: Change of institution; change of project focus due to institutional priorities or program change; Covid-19

**Fig. 1** Medical Educator Fellowship Program logic model. The Medical Educator Fellowship (MEF) Program was examined using a logic model to explore the inputs, outputs, and outcomes. Short-term out-

comes were a direct result of participants engaging in the activities of the MEF Program. Long-term outcomes are predicted results that may occur following participation in the program

graduated between 2009 and 2019. The revised version of the survey was administered and disseminated in the same manner between November 1 and November 30, 2022, to participants who graduated between 2020 and 2022.

**Focus Group Administration**

Upon completion of the survey, we invited respondents to participate in an optional focus group interview, designed to explore their MEF experiences. The focus group interview moderator was a member of the investigatory team. Interviews were conducted, recorded, and transcribed via Zoom

between January and February of 2023. A semi-structured interview method was used to solicit responses to content-validated questions (appendices).

**Data Analysis for Survey and Focus Groups**

Quantitative data are reported as frequencies and percents; statistical significance between pre-fellowship and post-fellowship responses was calculated using a paired *t*-test. Selected quotes from the free responses that represented the highest frequencies of responses are also reported. For focus group interviews, we conducted a thematic analysis using

the five aforementioned focus areas (curriculum design, teaching methods and strategies, assessment, educational scholarship, and leadership) as a conceptual framework for study [19]. Two authors conducted the thematic analysis [18, 19], employing an inductive approach, to analyze transcribed data. Coding of the transcripts occurred in three passes by each author. First, the data was analyzed at the level of the focus group questions, with all responses coded for the five MEF focus areas. Second, for each focus area, data was analyzed at the level of paragraphs, sentences, and phrases, and coded for explicit or implicit references toward the effectiveness of the MEF program for professional development in that focus area. Finally, codes were re-evaluated altogether, regardless of focus area, to determine overall effectiveness of the MEF program. At each level of analysis, overlapping codes within the data and between authors evaluating were merged. The results reflect unique codes pertaining specifically to the MEF focus areas and the program in general.

## Results

Results obtained from the MEF Program records review, participant survey, focus groups, and database search are presented below and are organized according the MEF Program logic model.

## Outputs

### Program Administration

The MEF Program has been offered for 14 consecutive years since 2009 and the 15th cohort of participants are currently enrolled. Between 2009 and 2023, 109 individuals enrolled in the program. The median cohort size was 5, ranging from 1 to 27 participants, with the maximum group size resulting in 2021 when the program was opened to virtual enrollment.

### Survey and Focus Group Participants

All MEF program graduates who completed the program between 2010 and 2022 ( $N=49$ ) were invited to participate in the survey. Of those invited, 71% ( $n=35/49$ ) completed the survey, 25 completed the first survey and 10 completed the second (revised) survey (Table 1). Of survey respondents, 63% ( $n=22$ ) of respondents identified as female and 31% ( $n=11$ ) as male. The majority of survey respondents 51% ( $n=18$ ) were 55 years of age or older. Survey items were not mandatory; thus, a variable number of responses is available for any given question.

Of those who completed the survey, an opportunity sample of seven respondents, who were representative of the group,

agreed to participate in the semi-structured, focus group interview as follow up (Table 2). Five of the participants identified female and three as male. Two held administrative positions, and six were faculty members with leadership positions in courses and within their respective departments.

## Short-Term Outcomes

### Program Completion

Of the 109 individuals enrolled in the program, 61 have graduated from the program and 8 withdrew from the program, resulting in a 56% completion rate. The remaining 40 individuals are currently enrolled.

### Graduate Demographics

Of MEF graduates, 59% ( $n=36$ ) were female and 41% ( $n=25$ ) were male. The majority of graduates were ranked associate professor at the time of graduation (39%,  $n=24$ ), 23% ( $n=14$ ) were ranked professor, 20% ( $n=12$ ) were ranked assistant professor, and 18% ( $n=11$ ) were in other roles.

MEF graduates hailed from five continents including Asia, Australia, Europe, North America, and South America. In total, MEF participants represented 20 countries and 67 unique institutions during the study period.

Graduates were employed in six different academic program areas in the health sciences, including 79% ( $n=48$ ) from allopathic medical schools, 16% ( $n=10$ ) from osteopathic medical schools, and a combined 5% ( $n=3$ ) from physical therapy, pharmacy, doctor of chiropractic, and dental programs and schools. Terminal degree distribution among the graduates was 59% ( $n=36$ ) Ph.D., 25% ( $n=15$ ) M.D., 13% ( $n=8$ ) M.D./Ph.D., 2% ( $n=1$ ) M.S., and 2% ( $n=1$ ) Ed.D.

### Professional Development

Records indicate that, in total, graduates completed 732 faculty development hours as a component of the program from 2009 through 2023. In addition, the committee held seven work-in-progress (WIP) meetings between 2020 and 2023. At WIP meetings, participants gave a 10-min presentation of their work in progress, followed by a 10-min question and answer period, to an audience of fellowship mentors and participants. Across the seven WIP meetings, 27 participants presented their capstone work in progress to peers and mentors. We did not quantify individual and group mentoring meetings during the entire study period; however, 32 small group mentoring meetings were documented from 2020 through 2023.

**Table 1** Survey questions and responses

Question	Response Options %(n)	Notes
Section 1: Please share some information about yourself:		
Gender:	Male 31.4% (11) Female <b>62.8%</b> (22) Non-binary 35–44 17.1% (6) 25–34 2.9% (1)	Do not wish to respond 5.7% (2) 45–54 25.7% (9) 65 or above 8.6% (3) Do not wish to respond 2.9% (1)
Age:	Under 25	<b>55–64 42.8%</b> (15)
Continent of Residence:	Text response	
Faculty position:	Temporary faculty position 5.9% (2) Tenure track position 44.1% (15) Permanent non-tenure position <b>50%</b> (17)	No response (1)
When did you start the IAMSE Fellowship? Please give year	Text response	
Section 2: Your personal development on the Fellowship Program		
At the start of the Fellowship Program, please rate how you perceived your skills in the following areas:	Weak 14.7% (5) Somewhat weak <b>32.4%</b> (11) Somewhat strong <b>32.4%</b> (11) Very strong 20.6% (7) N/A (1)	
teaching methods and strategies:	Weak 8.8% (3) Somewhat weak 8.8% (3) Somewhat strong <b>61.7%</b> (21) Very strong 20.6% (7) N/A (1)	
assessment:	Weak 11.8% (4) Somewhat weak 32.4% (11) Somewhat strong <b>44.1%</b> (15) Very strong 11.8% (4) N/A (1)	
educational scholarship:	Weak 20.6% (7) Somewhat weak <b>47.1%</b> (16) Somewhat strong 23.5% (8) Very strong 8.8% (3) N/A (1)	
leadership:	Weak 9.4% (3) Somewhat weak <b>46.9%</b> (15) Somewhat strong 21.9% (7) Very strong 21.9% (7) N/A (3)	

**Table 1** (continued)

Section 2: Your personal development on the Fellowship Program					
	Weak 3.0% (1)	Somewhat weak 6.1% (2)	Somewhat strong 51.5% (17)	Very strong 39.4% (13)	N/A (2)
If you have completed the Fellowship Program, please rate your current skills in the following areas:					
curriculum design:	Weak 0% (0)	Somewhat weak 3.1% (1)	Somewhat strong 43.8% (14)	Very strong 53.1% (17)	N/A (3)
teaching methods and strategies:	Weak 0% (0)	Somewhat weak 9.4% (3)	Somewhat strong 59.4% (19)	Very strong 31.3% (10)	N/A (3)
assessment:	Weak 0% (0)	Somewhat weak 18.2% (6)	Somewhat strong 48.5% (16)	Very strong 33.3% (11)	N/A (2)
educational scholarship:	Weak 0% (0)	Somewhat weak 30.0% (9)	Somewhat strong 33.3% (10)	Very strong 36.7% (11)	N/A (5)
leadership:	Weak 0% (0)	Not yet 17.6% (6)	No response (1)		
Were you able to implement your research project at your institution?	<b>Yes 82.4% (28)</b>				
Have you presented the findings of your research at an approved conference, such as IAMSE, AMEE, or another institution?	<b>Yes 64.7% (22)</b>	Not yet 35.3% (12)	No Response (1)		Included optional explanation field
Have you presented the findings of your research at an approved conference, such as IAMSE, AMEE, Ottawa?	<b>Yes 97.1% (33)</b>	Not yet 2.9% (1)	No Response (1)		Included optional explanation field
Have you published any work arising from your Fellowship research project in a journal?	Yes 20.0% (7)	<b>In-progress 41.2% (14)</b>	No 38.2% (13)	No response (1)	Included optional explanation field
Have you increased your engagement with IAMSE following completion of your Fellowship, e.g. joining a Committee or Working Group, serving as a Reviewer for Medical Science Educator?	<b>Yes 54.5% (6)</b>	No 45.5% (5)			Revised survey version only Included optional explanation field
Please rate your response to the following statements:	No/Disagree 2.9% (1)	Unsure/Neutral 29.4% (10)	<b>Yes/Agree 67.6% (23)</b>		Answer options updated in revised survey Included optional explanation field
Colleagues at my home institution are aware that I enrolled on the Fellowship Program:					

Table 1 (continued)

Section 2: Your personal development on the Fellowship Program					
My direct supervisor/line manager was supportive of my enrollment into the Fellowship Program:	Strongly disagree 12.1% (4)	Disagree 9.1% (3)	Agree 30.3% (10)	Strongly Agree 48.5% (16)	No response (2) Included optional explanation field
The Fellowship Program has positively impacted on my promotion pathway:	Strongly disagree 9.1% (1)	Disagree 9.1% (1)	Neutral 36.4% (4)	Agree 36.4% (4)	Strongly Agree 9.1% (1) Revised survey version only Included optional explanation field
Section 3: Your experience on the Fellowship Program					
Please rate your response to the following statements:	Strongly disagree	Disagree	Agree	Strongly Agree	Revised survey version only Included optional explanation field
The quarterly Work-in-Progress meetings were a valuable part of my IAMSE Fellowship:		Disagree 9.1% (1)	Agree 27.3% (3)	Strongly Agree 63.6% (7)	
The Group Mentoring meetings were a valuable part of my IAMSE Fellowship:	Strongly disagree (1)	Disagree 10%%	Agree 40%% (4)	Strongly Agree 50.0%% (5)	No Response (1) Revised survey version only Included optional explanation field
Regarding the Group composition, I would prefer to join a mentoring group that (slide scale 0–100):	Was more localized to my time zone (0)	Broadened my network of IAMSE colleagues across the world (100)	Average score: <b>63</b>		Revised survey version only Sliding scale response
The input from Mentors to my research project was valuable:	Strongly disagree (2)	Disagree 18.2%	Agree 36.4% (4)	Strongly Agree 45.5% (5)	Revised survey version only Included optional explanation field



**Table 1** (continued)

Section 3: Your experience on the Fellowship Program					
The input from Fellows to my research project was valuable:	Strongly disagree (3)	Disagree 27.3% (3)	Agree 45.5% (5)	Strongly Agree 27.3% (3)	Revised survey version only Included optional explanation field
The 12-h of faculty development opportunities that I participated in were a valuable part of my IAMSE fellowship:	Strongly disagree 9.1% (1)	Disagree 9.1% (1)	Agree 18.2% (2)	<b>Strongly Agree 72.7% (8)</b>	Revised survey version only Included optional explanation field
Faculty development hours should be limited to 3 h from any single source:	Strongly disagree 9.1% (1)	<b>Disagree 72.7% (8)</b>	Agree 9.1% (1)	Strongly Agree No response (1)	Revised survey version only Included optional explanation field
Writing personal reflections on faculty development experiences helped me evaluate how those experiences contributed to my growth:	Strongly disagree	Disagree 9.1% (1)	<b>Agree 72.7% (8)</b>	Strongly Agree 18.2% (2)	Revised survey version only Included optional explanation field
The IAMSE fellowship should continue to offer both in-person and virtual enrollment options:	Strongly disagree 9.1% (1)	Disagree 9.1% (1)	Agree 27.3% (3)	<b>Strongly Agree 54.5% (6)</b>	Revised survey version only Included optional explanation field

**Table 1** (continued)

Section 3: Your experience on the Fellowship Program				
	Strongly disagree 9.1% (1)	Disagree 27.3% (3)	Agree 45.5% (5)	No response (1)
I would prefer it if the Fellowship were to offer more focused tracks considering ONE of the five content areas, and acknowledging it on my certificate, e.g. curriculum design:				Revised survey version only Included optional explanation field
I would recommend the Fellowship Program to colleagues:	Strongly disagree 8.8% (3)	Disagree	Agree 35.3% (12)	Strongly Agree 55.9% (19)
What would you say has been the most valuable aspect of taking part in the Fellowship Program?				Included optional explanation field
What, if any, were the downsides of taking part in the Fellowship Program?				
Section 4: Please provide suggestions for a better learning experience for future fellows and improvement of the Fellowship Program:				
IAMSE should START:				
IAMSE should STOP:				
IAMSE should CONTINUE to:				
Finally, we welcome any additional suggestions for the IAMSE Medical Education Fellowship Program:				Original survey version only
Finally, would you be interested in joining a Community of Practice comprising IAMSE past-Fellows and Mentors for continued professional development purposes?	<b>Yes 63.6% (7)</b>	No 27.3% (3)	No response (1)	Revised survey version only Included optional explanation field

**Table 2** Structured focus group interview questions

What has been the value placed on your Fellowship by your home institution?
How qualified do you now feel as a medical educator?
To what extent should the Medical Educator Fellowship add continuing education opportunities?
What aspects of the MEF are helping with your professional track promotion?
What aspects of the MEF are NOT helping with your professional track promotion?
To what extent has the frequency of meeting with your mentor or other fellows affected your experience in the Fellowship?
To what extent should the MEF include specific tracks of study?
IAMSE should START: _____
IAMSE should STOP: _____
IAMSE should CONTINUE TO: _____

### Project Completion

Our records indicated that as of 2023, 61 participants had successfully completed a capstone project and presented that work at a health professions education conference, in fulfillment of graduation requirements. Participants who completed the program have presented their work at international meetings such as the IAMSE conference and the AMEE meeting.

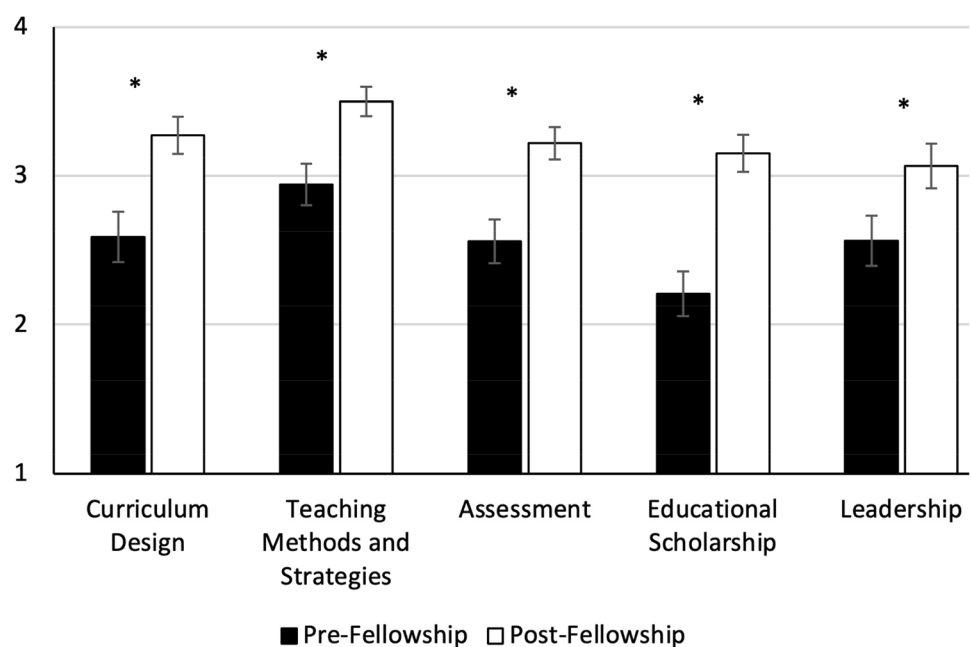
The survey included questions meant to assess the completion and dissemination of capstone project work. Nearly all respondents (97%,  $n = 33$ ) had presented their work at a health professions education conference, and 65% ( $n = 22$ ) of respondents shared their findings at their institution or another institution. Most respondents (82%,  $n = 23$ ) confirmed they successfully implemented their capstone project at their home institution.

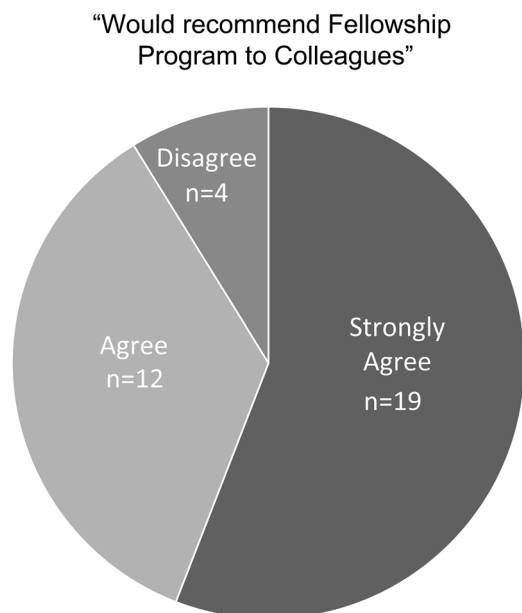
### Long-Term Outcomes

#### Proficiency in MEF Program Focus Areas

To measure the impact of the program on participants, survey respondents were asked to rate their perceived proficiency in each of the MEF program focus areas, both pre- and post-fellowship, on a 4-point Likert scale (Fig. 2). We found a statistically significant increase in perceived proficiency across all five areas ( $*P < 0.05$ ). Overall, respondents ranked their post-program skills in the areas of curriculum design, teaching methods, assessment, educational scholarship and leadership as “somewhat strong,” with the teaching methods and strategies area being ranked the highest by participants both pre- and post-fellowship. The greatest difference between pre- and post-fellowship skills was in

**Fig. 2** Perceptions of proficiency in the MEF Program skill areas pre- and post-program. Of program graduates who completed the survey, 33 participants self-ranked their skills pre- and post-program on a 4-point Likert scale ranging from weak to very strong. The average score  $\pm$  standard error is reported. Paired  $t$ -tests were performed with a significance of  $P < 0.05$  indicated by an asterisk (\*)





**Fig. 3** Proportion of participants who would recommend the program to colleagues. Program graduates were surveyed to gather feedback on the program and determine how participation in the program impacted their career. Survey responses were obtained from  $n=34$  individuals for this item

educational scholarship, which rose from somewhat weak to somewhat strong.

In the area of curriculum design, 32% ( $n=11$ ) rated their pre-program skill as “somewhat weak” and 32% ( $n=11$ ) as “somewhat strong” (Fig. 3). Post-program, 52% ( $n=17$ ) of respondents perceived their skills to be “somewhat strong.” In the area of teaching methods and strategies, 62% ( $n=21$ ) rated their level of skill as “somewhat strong” prior to the program and 53% ( $n=17$ ) rated their skills “very strong” after the program. In the area of assessment, 44% ( $n=15$ ) rated their skill as “somewhat strong” prior to the program and 59% ( $n=19$ ) as “somewhat strong” after program completion.

In educational scholarship, 47% ( $n=16$ ) respondents ranked their skill as “somewhat weak” prior to the MEF program. In contrast, 48% ( $n=16$ ) of respondents perceived their skill as “somewhat strong” after completion of the program. Finally, examining the area of leadership, we found that 47% ( $n=15$ ) of respondents ranked their pre-program skill as “somewhat weak.” After completion of the program, however, 37% ( $n=11$ ) of respondents perceived their skill as “very strong.”

Similarly, focus group participants were united in expressing that the MEF Program supported their development in all five focus areas. Additionally, they expressed that the Program promoted their well-rounded growth as a medical educator, professional identity formation, confidence in instruction and leadership, and a sense of community amongst educators from multiple disciplines and international locations. Participants

stated that these benefits have directly led to increased participation and contribution to faculty development and mentoring, curriculum design and deployment, and diversity, equity, and inclusion initiatives. Many expressed an enhanced desire to directly support the development and progress of their peers and colleagues in medical education.

### ES Committee Involvement

Having demonstrated proficiency in the MEF Program skill areas, fellowship graduates may serve, long-term, as ES Committee members or MEF Program mentors. To date, 8 graduates have served on the ES Committee and 14 are current or former mentors in the program.

### Publications

According to the survey data, 21% ( $n=7$ ) of graduates who responded have published their capstone work in a peer reviewed journal, and 41% ( $n=14$ ) were in the process of doing so at the time of the survey. Our database search, conducted between August and September of 2023, found that at least 23 graduates have published their projects in a peer-reviewed journal indexed either in PubMed or SCOPUS. Publications were more common for graduates who completed the program between 2010 and 2020 ( $n=20/40$ , 50%) than those graduating in the last 3 years ( $n=3/21$ , 14%), likely due to the time required for successful publication.

### Participant Feedback

The results of the survey revealed the MEF program was well received. In total, 56% ( $n=19$ ) of respondents stated that they “strongly agree” that they would recommend the fellowship to a colleague (Fig. 3). Further, 79% ( $n=26$ ) of those who responded stated they “agree” or “strongly agree” with the statement “My direct supervisor/line manager was supportive of my enrollment into the Fellowship.” Finally, in the revised version of the survey, when asked if the Fellowship program had a positive impact on their promotion pathway, 45% ( $n=5$ ) stated they “agree” or “strongly agree” and 36% ( $n=4$ ) responded “neutral.”

Analysis of focus group data revealed institutional recognition as an emergent theme. Participants stated the MEF Program received mixed reactions at their home institutions, and had variable impact on career promotion. Those graduates that received informal or formal recognition by their departments or colleges expressed that having someone familiar with the Program at their institution influenced the perceived value of their accomplishment. This aligns with survey data that revealed that 12% ( $n=4$ ) of respondents strongly disagreed their direct supervisor was supportive and 18% ( $n=2$ ) respondents who disagreed or strongly disagreed that participation in the program

had a positive impact on promotion. Based on the survey data, it is important to note that many individuals who participated in the program were already at the full professor stage; thus, further career advancement was not possible.

In the revised version of the survey, multiple questions were included to solicit respondents' opinions on the revisions made to the program in 2020. Most participants 90% ( $n=9$ ) and 91% ( $n=10$ ) agreed or strongly agreed that the newly added group mentoring meetings and WIPs meetings were a valuable part of the Program. Additionally, 55% ( $n=6$ ) strongly agreed that the Program should continue to offer both in-person and virtual enrollment options. Focus group data supported these findings. Interviewees who participated in the program prior to the 2020 revisions expressed that more frequent and formalized meetings would have been helpful to support their completion of capstone projects.

Finally, when revised survey respondents were asked if the input from Program mentors during their Fellowship time was valuable, 82% of graduates agreed ( $n=4$ ) or strongly agreed ( $n=5$ ). This was reflected in open-ended responses on both the original and revised versions of the survey. Additional questions invited comments on strengths, opportunities for improvement, and suggestions for the future. Through thematic analysis, we identified the following themes as strengths: mentorship, networking, and professional development. In response to the most valuable aspects of the program, one respondent stated:

“The mentors are really great. They are very supportive. My mentor guided me from the beginning of the project till I presented my presentation. She is awesome and she facilitated the whole process. This is what we are looking from the mentors who can guide you and facilitate the project.”

Another shared the following:

“Mentorship. I met a number of highly skilled individuals, any of whom I know that I can call on for advice.”

In response to a question regarding downsides of taking part in the MEF program, qualitative analysis revealed the amount of time required to complete the program and the cost of faculty development to be the most common themes.

When asked what should be continued, one respondent wrote:

“Offer good mentors. The whole essence of this fellowship program is of having good and supportive mentors. IAMSE ES committee should keep good mentors.”

Others expressed that the program should continue to be offered and advertised. When given the opportunity to provide any additional comments, one respondent wrote:

“I loved every minute of it and can't wait to jump back in!”

The remaining questions provided respondents with the opportunity to make suggestions on future directions, which are discussed below.

## Discussion

While most health professions schools provide faculty training to grow as an instructor, the majority do not offer a formal, structured route to develop skills in educational scholarship [20, 21]. The MEF Program addressed this unmet need, and the current evaluation of the Program indicated that it provided an effective professional development course for educators to enhance their confidence and skills in five essential focus areas: curriculum design, teaching methods and strategies, assessment, educational scholarship, and leadership. In addition, 100% of MEF Program graduates complete a capstone project in educational scholarship and present their work at a national or international conference. Feedback from Program graduates demonstrated positive perceptions and a high degree of overall satisfaction. The majority would recommend the Program to colleagues.

Programs such as this are essential to fulfil the unmet needs of health professions educators who desire to take a scholarly approach to teaching. Despite reliance on best practice, for an educator's activities to be considered scholarly, they must take an evidence-based approach, respond to peer review, and disseminate their work publicly to contribute to the broader body of knowledge [22, 23]. Project-based programs like ours lead participants through this process and subsequently give them “a head start on building their scholarly portfolio and reputations” [24]. A scholarly portfolio serves as an important indicator of an educator's productivity and expertise, and is a familiar currency to faculty leaders.

Still, some institutions align scholarship in teaching and learning with “teaching” rather than “research” endeavors, which has had a historically negative impact on the prospects for promotion for educators at research-intensive universities [25, 26]. However, encouraging evidence that demonstrated a shift in the way we think about educational scholarship is beginning to emerge. For example, a 2017 survey in the USA found that the majority of emergency medicine department chairs placed equal value on education research publications compared with clinical research publications [27]. Further, in recent years, health professions education has experienced a rise in the number of publication and presentation outlets for educational research, and an increase in the overall impact factor of medical education publications [28].

Despite the history of relegation for medical education scholarship, the Program graduates surveyed in this study reported positive impacts on skill development and aspects of career progression, providing further support for a rebalancing of the teaching and research nexus in defining

academic merit [3]. To assess whether participation in the Program has any impact during tenure and promotion processes, further, long-term studies are warranted.

Despite these positive endorsements by graduates, approximately one in five graduates reported a lack of support from their supervisors. In line with this, a lack of institutional recognition for excellence in teaching and a perceived disinterest in educator development by department chairs have been reported previously in the literature as unfortunate contributors to faculty attrition [3, 29, 30]. Opportunities to participate in professional development programs are key to retaining expert health professions educators [31]. McAleese and colleagues in their report to the European Commission recommended that, “Heads of institutions and institutional leaders should recognize and reward ... higher education teachers who make a significant contribution to improving the quality of teaching and learning, whether through their practice, or through their research into teaching and learning” [32]. However, encouraging institutional support and recognition of educational scholarship are not only the responsibility of educators and administrators, professional societies must do so as well. The IAMSE MEF Program plays a key role in this regard not only by promoting the development of essential skills, but also by promoting the visibility of educational scholarship. Showcasing these scholarly activities through presentation and publication in educational journals builds educators’ individual scholarly profiles as educational research strives to reach parity with scientific research outputs [27]. In the future, IAMSE and the MEF Program can enhance their impact by engaging with institutional leadership to encourage the recognition of MEF participants and graduates by sharing news and information, and to demonstrate the value of educational scholarship through awards and promotion.

In addition to promoting skills and visibility relevant to educational scholarship, the MEF Program paves the way toward leadership opportunities within the professional organization, as demonstrated by the high number of graduates who become ES Committee members or Program mentors. Service and leadership experience within professional organizations provides evidence to demonstrate a national or international reputation as expert during the promotion process, and helps to grow one’s leadership skills.

Key to the successful completion of the MEF Program is the mentorship provided to Fellows. In 2009, Lown and colleagues reported on perceptions of graduates of medical education fellowship programs at two Harvard teaching hospitals, and assigning project mentors was one of the suggestions for change [28]. Mentorship is a cornerstone feature of the MEF Program. In addition to the beneficial guidance that mentorship provided, our data suggested that participants appreciate the peer mentoring the Program affords. Previously, Buckey and Nimmon [34] described the benefits of “a dynamic social

enterprise” in health professions educators’ faculty development. Further, it has been shown that social relationships positively influence learning about teaching [33, 34] and the adoption of teaching innovations [35]. Participation in the MEF Program ensured educators an academic support network via an international community of practice.

In addition to the sense of isolation many felt, the COVID-19 pandemic required educators to learn and adopt new skills as they quickly shifted to online curriculum delivery. In 2020, in response to the pandemic and the need to enhance the accessibility of the program, we revised the MEF Program to allow for online completion with more flexible options and enhanced mentorship support. These changes, still in place today, ensured participants experienced mentorship and opportunities to interact with peers through group mentoring sessions throughout the pandemic. Observational learning, supported by social learning theory, plays a key role in these group sessions, where the pedagogical frameworks and research strategies used by others provide valuable lessons for both fellows and mentors. This “learning by example” [36] enables action by the observer in that they are likely to try out similar approaches within their own teaching practice. It also promoted a collaborative environment, in which peers and mentors work together to support the each other’s educational scholarship and development.

Based upon the data we obtained in this study, the ES Committee is considering future revisions and iterations of the Program. One theme that emerged, not previously discussed here, was the high cost of professional development. The Committee aims to explore the provision of scholarships that would help mitigate the financial constraints faced by educators. Such scholarships could have a positive impact on equity and would be aligned strategically with IAMSE’s vision of “embracing the diversity of all colleagues regardless of cultural, geographic, or political boundaries” (<https://www.iamse.org/vision/>).

We also observed requests for, as one respondent put it, “life after the Fellowship.” In response, the Committee is exploring future iterations of the Program that could incorporate graduates into formal, online mentoring and peer-to-peer interactions after Program completion, in order to promote social learning and build communities of practice beyond the current formal Program. Currently, IAMSE-related opportunities for graduates of the Program include committee service, Medical Science Educator roles, and participation in professional development activities such as the Annual Meeting and Virtual Forum, but the findings of the current study support the notion of further educator opportunities should be developed.

Finally, the small sample size in this study may not be representative of health professions educators and our study may be limited by a non-response bias, in which there is potential for high achievers to complete the survey and skew the results. However, answers to survey questions suggested

that individuals with a wide range of skill participated in this study. Self-reported data are subject to cognitive bias, and we were not able to corroborate self-assessments of proficiency in the MEF program focus areas through other means such as peer or student feedback. Lastly, recent graduates of the Program may not have had a sufficient opportunity to achieve long-term outcomes such as publication of their capstone project and IAMSE committee membership.

## Conclusions

This evaluation of the IAMSE MEF Program based on our logic model demonstrated the Program to be an effective mode of professional development, fulfilling a widely recognized unmet need for educational scholarship support. It offers participants a structured route to develop essential knowledge, skills, and professional attributes in health professions education, as well as the opportunity to lead in the design, implementation, and dissemination of educational scholarship. Furthermore, the MEF Program provides participants the opportunity to grow a community of practice for the future. Together, these activities will ultimately improve the learning experience of health professions students. Professional organizations like IAMSE can play a role in demonstrating the value of excellence in teaching and learning, and to achieve greater parity of esteem between educational scholarship and scientific research, which will have a positive impact on the careers of health professions educators.

**Data Availability** All data generated or analyzed during this study are available from the corresponding author upon request.

## Declarations

**Competing Interest** The authors declare no competing interests.

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