Chapter 1
Introduction: Origins and History of the CNS Meetings

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Abstract Since their official inception in 1992, the annual Computational Neuroscience (CNS) meetings have served as a format for the presentation and discussion of a broad range of research employing theoretical and experimental methods to study the functional organization and operation of an equally broad range of nervous systems. As the CNS meetings have now entered their third decade, this volume as a whole considers how the understanding of several of the subjects consistently highlighted in those meetings has advanced and changed over the last 20 years. Given the influence of the CNS meetings on many of this volume's authors, as well as the field of CNS as a whole, we thought it might be appropriate to provide a brief historical perspective and "back story" on the meeting's origins now more than 20 years ago. This chapter is therefore a narrative and combined personal recollection from the two scientists who worked together to conceive the CNS meetings.

Early Days

The first Computational Neuroscience (CNS) meeting was held from July 14th to 18th, 1992, at the University of California's Conference Center on Lister Hill in San Francisco and included 116 presented papers and 215 participants. Looking back at that meeting now, it is clear that not only the science but also much of the character of the subsequent CNS meetings was already established in that first meeting.

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The original impetus for this new series of meetings was to provide an open forum to specifically consider the computational structure of nervous systems. While by 1992 a number of meetings had been established that sought to link computational studies of the nervous system to more engineering related fields like neural networks (see below), CNS*92 was the first 'open' meeting to specifically focus on computational research intended to understand brains for their own sake. Thus, as stated in the original call for papers for CNS*92:

> This is an interdisciplinary conference intended to address the broad range of research approaches and issues involved in the new field of Computational Neuroscience. The meeting is intended to bring together experimental and theoretical neurobiologists along with engineers, computer scientists, cognitive scientists, and physicists to consider the functioning of biological nervous systems. Peer reviewed papers will be presented on a range of subjects related to understanding how nervous systems compute.

In addition to the clear focus on understanding nervous systems as the primary objective of the meeting, the organizers were also very aware that this was a new field and accordingly that its growth would be especially dependent on nurturing the young scientists entering the field. While a few universities in the late 1980s had begun to organize graduate programs in CNS, in most research laboratories, computational techniques were being introduced by individual isolated students who we felt would benefit from a place to come, present their work, and commune with like-minded colleagues. Quoting from the original NIH grant application to support the CNS meetings:

> The meetings organizers are particularly committed to providing graduate students, postdoctoral fellows, and young research faculty the opportunity to attend this meeting. We believe that this is generally important for the future growth of computational approaches to neuroscience, (as) it is often the case that individual students and postdocs are the instigators of computational research in their laboratories, and thus are often isolated.

This focus on building a community of graduate students, postdocs, and young research faculty had several important structural consequences for the meeting. First, from its inception, a significant percentage of the CNS operating budget and fund raising efforts were devoted to providing travel support for students. In fact, in the early days of the meeting senior invited speakers were often asked to pay their own travel expenses so that more resources could be made available for student participants. As a result of this focus on young investigators, many of today's leading computational neuroscientists, while still students, gave their first major science presentations at CNS. That includes several of the contributors to this current volume.

Second, while CNS papers have always been peer reviewed, the large majority of papers have always been accepted on the assumption that the meeting itself provided an important opportunity for scientific feedback, especially for students. Most of the accepted papers were presented in poster sessions in order to maximize the opportunity for this feedback. In fact, in the early days, an important factor for inviting senior faculty was the likelihood they would be willing to spend time interacting with students in front of their posters. To facilitate the culture of the poster sessions,

the organizing committee made sure they were well lubricated and, importantly, had no scheduled end. As a result, it was not unusual in early CNS meetings to find groups of participants sitting on the floor talking and debating until the wee small hours of the morning. To accommodate and support this obsessive behavior, the starting time for the morning oral sessions on each day was delayed more and more. To our delight, meeting evaluations consistently rated the poster sessions as the best feature of the meeting.

Another early objective of the meeting was to provide the opportunity for participants to publish their science in the meeting proceedings. Once peer reviewed had accepted the paper to the meeting, the authors were free to write up their results for publication in the conference proceedings as they saw fit. It seemed like almost every year the question was raised as to whether "real" peer review should be applied to the published papers themselves, for example, by requiring full papers to be submitted before the meeting. The organizers always argued that, given the youth of the field and its participants, the final published papers should benefit from the feedback at the conference. In addition the organizers always felt that once the science was accepted, it should be up to the individual researchers to present the work as they saw fit. After all, it was their reputation they were establishing. Looking back at the conference proceedings now, and as outlined in other chapters in this book, the publication process resulted in the publication of a number of important early papers in the field that may not have passed traditional peer review at the time. In fact, in those early days it was difficult to get computational papers published in more traditional forums. This is one reason why the CNS meeting organizers also worked to organize the Journal of Computational Neuroscience, which is, in fact, another spin off of the CNS meetings.

With respect to the proceedings themselves, during the first several years of the meeting, the publisher Kluwer Academic Press insisted that it would help sales if we came up with a new name for the volume each year. Accordingly, "Computation and Neural Systems 1992," became "Computation in Neurons and Neural Systems" in 1993, and then "The Neurobiology of Computation" in 1994. In 1995, a new publisher, Academic Press, finally allowed us to simply refer to the proceedings volume as "Computational Neuroscience: Trends in Research 1995" … 1996 … 1997. By 2002, the proceedings volume had reached almost 1,200 pages in length.

As already stated, a core function of the CNS meeting and its design was to promote interactions between its young and enthusiastic participants. Therefore, the 3 days of the formal meetings were followed by 2 days of workshops designed for yet more discussion and interaction. The early tradition of the meeting was to have these workshops at a separate site, and preferably a site remote enough to allow participants to focus on absorbing and debating what they had heard at the meeting with minimal outside distraction. For the first meeting, we chose the Marconi Center located on a remote site on the Pt. Reyes peninsula north of San Francisco. While the Marconi center was the site where Guglielmo Marconi first broadcast a radio signal across the Pacific in 1914, in 1992 it had no Internet

connections, no computers, and almost no way for code hackers and computational neurobiologists to exercise their fingers. It is still one of the more amusing "CNS scenes" watching 150 tech savvy and already tech-dependent CNSers all playing Frisbee on the lawn in order to have something to do with their hands. This first workshop also established a tradition that lasted for the next 10 years of not allowing formal workshop presentations. The meeting organizers provided flip charts and not much more, and many of the workshops took place outside, a tradition that was revisited at CNS 2010, when at least one workshop took place while "tubbing" down the Guadalupe River in Texas. In 1992, after 2 days of workshops, the conference participants were very happy to be bussed back to civilization. The "summer camp" atmosphere of the CNS meeting at the Asilomar Conference Center outside Monterey California in 2002 is explicitly captured in the poster for that year's meeting (see Chap. 2).

The other important CNS tradition established in the first meeting, which has lived on now for 20+ years, is the effort spent to assure that the CNS banquet is a memorable event with a location and character appropriate for the culture of the host city. The organizers were very intent on assuring that long after the particular scientific results were forgotten, memories of the CNS banquet would live on.

This is perhaps true for no banquet more than the first held in 1992.

Given the meeting was in San Francisco, and given the strong "hands on" orientation of the organizers, the obvious choice for the site of the first CNS banquet was the world famous Exploratorium Science Museum on the Embarcadero. Built after World War II by Frank Oppenheimer (the brother of Robert Oppenheimer), the Exploratorium was already the most famous "hands on" science museum in the world. A visitor to the museum then and now could put their hands on the exhibits, including many in 1992 that had to do with human perception and brain science. Perhaps the most remarkable of these was the "tactile dome" in which patrons entered into a completely dark space and climbed up, down, and around through various rooms and spaces designed to provide different tactile sensations. While the Exploratorium was the obvious choice for the banquet site, the culture of San Francisco also required that the food served be well above the average banquet fare. Accordingly, Frank Eeckman, the conference organizer in charge of logistics, was asked to find a caterer worthy of San Francisco. Unbeknownst to either of us, Frank took this charge very seriously, and arranged for catering by one of the BEST caterers in San Francisco, oysters on the half shell, curried shrimp, wonderful sourdough breads, fresh asparagus, and all in unlimited amounts as one after another catering truck replenished the tables adorned with ice sculptures. Further, also taking seriously our instructions that the CNS banquet should be a memorable (if not exactly precisely a remembered) event, Frank had arranged for an open bar. His and our assumption was that computational neurobiologists were not likely to over indulge. We were wrong. Worse the "hands on" and innovative nature of the museum combined with the equally inventive nature of the meeting attendees meant that once the party was in full force, several of the party faithful took "hands on" on face value and started modifying, or as they put it at the time, "improving" the exhibits. One of the meeting organizers (whose identity we continue to protect) ended up in the tactile

dome, where, sliding into a pit of Ping-Pong balls in the complete dark, he happened upon a biological experiment fully underway. The upshot of all this chaos was a staggering catering bill, and a clear indication from the Exploratorium staff that, perhaps, the CNS meeting should seek another venue for future banquets (a few years later we had sushi at the San Francisco Aquarium instead). The next several months were spent trying to figure out how to pay for the banquet before the University of California followed through on its threat to confiscate John Miller's house to pay the outstanding bill. Those of you who have attended CNS meetings since will note that free drinks are limited to two tickets each, in many cases you can thank your faculty mentors' youthful indiscretion for that.

The Back Story

What should be clear from the previous account is that the CNS meeting had a very particular and intentional design from the start. The primary reason is that the first CNS meeting was actually a confluence of the experience of the conference organizers with several previous meetings, some of that experience good and some not so good. That is the back story of the CNS meetings.

[Jim's story] As briefly recounted by Dave Beeman in his article in this volume on the origin and development of neuronal simulators, my first efforts to build realistic models of the nervous system started while I was a postdoctoral fellow in Lew Haberly's laboratory in Madison Wisconsin in 1983. During that same period of time, I had co-taught a course with Dr. Josh Chover, then chairman of the Department of Mathematics at UW on methods for the analysis of multi-neuronal data. During this course, one of Josh's long time friends, Ed Posner, from the Jet propulsion Laboratory and Caltech, visited Madison and gave a talk on the exciting new developments in "neural network engineering" happening at Caltech. The week before Ed's visit, Caltech and AT&T's Bell Labs had organized a "Hop-fest" at Caltech, centered on the "'neural-like' 'Hopfield network'" that Caltech Professor John Hopfield had just published. Because I had just accepted a faculty position in the Department of Biology at Caltech, I was invited to dinner with Ed, who subsequently invited me to the follow-up "Hop-fest" that took place at the Miramar Hotel in Santa Barbara, California a few months later.

For a young faculty member interested in neuronal-modeling, what turned out to be the first "Neural Network" meeting of the modern era was a remarkable event, full of an extraordinary level of excitement and anticipation among a broad range of computational scientists. The "Hopfield network" was regarded by the participants as a breakthrough return to research on "'nervous system like' 'neural network'" engineering models after MIT professors Minsky and Papert put a damper on the field with their famous book on perceptrons (Minsky and Papert 1969). Reflected the renewed wide ranging interest in what were regarded as nervous system-like engineering solutions, the 40 participants in the Santa Barbara meeting represented a remarkable mix of scientists and government officials, including representatives

from powerful federal funding agencies like the DOD, CIA, NSA, etc. Of those participants, only two made any claim to being real biologists, myself and Terry Sejnowski. In fact, this was the first time I met Terry and, as I recall, the first time I heard his "net-talk" network "babbling" in what seemed to be a remarkable human-like fashion as it "learned" to produce speech from text. While Terry had been scheduled to give a talk at the meeting, I was only there as an observer until a scheduled speaker didn't show up, and I was asked to talk about modeling the actual brain. This turned out to be the first time I presented my work with Matt Wilson modeling the olfactory cortex (Wilson and Bower 1988) and I remember distinctly that it was news to many in the room that synaptic inputs could also be inhibitory. Having described olfactory cortex as having an extensive set of "associative" connections, I also remember being asked if olfactory cortex might be a Hopfield network. Although it was several years before I calculated (on a bar napkin) that if a human brain was fully interconnected like a Hopfield network, it would be 10 km in diameter, I remember saying that no, it wasn't; going on to suggest that because all real neural networks are much more complex than the basic Hopfield network, it was likely that hard problems would need to be solved by much more complex networks. This was not an opinion that the meeting participants believed or wanted to hear in 1985.

Regardless of the biological significance of neural networks, what was absolutely clear from the meeting in Santa Barbara was that the neural network movement was going to grow and that many more people would want to attend the next meeting. It was therefore decided to expand the meeting the following year, and hold it at the Snowbird Ski resort outside of Salt Lake City, Utah, the favorite skiing venue for one of the Bell Lab organizers. I attended that meeting and this time gave a prearranged invited talk on basic neurobiology, continuing to insist that a real neurobiological connection to neural networks required that engineers, physicists and mathematicians actually learn about the brain. Like the "Hopfest," the Snowbird meetings was also closed, with all speakers being invited by the organizing committee. However, the number of people who wanted to attend the Snowbird meetings continued to grow and quickly outstripped the capacity of the resort hotel. As a result, in the second year of the Snowbird meeting the decision was made to organize a more open meeting. In what I took at the time as an ecumenical gesture, it was suggested that I co-organize the meeting with my Caltech colleague Yasir Abu Mustafa, a well known learning theorist. The meeting we organized was the first NIPS (Neural Information Processing) meeting in Denver, CO, a meeting that will soon celebrate its 25th continuous year. I wrote the meeting announcement to emphasize the meetings interest in engineering as well as neuroscience.

To telescope events, by the end of the second NIPS meeting, I was growing increasingly uncertain as to whether the optimistic fusion of neurobiology with engineering really had legs. Not surprisingly, the principle focus of the engineers was on engineering, and the neurobiologists, including my friend John Miller, who I had invited to participate in the second NIPS meeting, found most of the talks either irrelevant to neurobiology or naive in their neurobiological claims. The meeting

also became wrapped up in politics especially when the newly formed Neural Network Society decided to organize its own meeting. I decided that it was time to consider founding a computational meeting specifically focused on the nervous system by itself. As John recounts in his own history, a meeting at the Neuroethology meeting in Berlin, followed by an invitation to attend the workshop on CNS John was organizing in San Francisco, led to our mutual decision to organize the first CNS meeting.

[John's story] In some ways complementary to Jim, and certainly reflected in the interdisciplinary nature of the CNS meetings, my own training spanned a large range of disciplines and approaches, ultimately pointing me toward the application of engineering and modeling approaches to studies of neural function. My undergraduate training was in physics, at U.C. Berkeley. On a lark, I took a Sensory Neurophysiology class during my senior year from a young professor named Frank Werblin, who got me interested in cracking simple neural circuits using neurophysiology and engineering analysis. After doing graduate work on the neurophysiology of the stomatogastric ganglion with Al Selverston at U.C. San Diego, I did a postdoctoral project with Wil Rall and John Rinzel at the NIH, where I soaked up their perspectives and approaches toward compartmental neuron modeling. During that postdoc, I also benefitted from interactions with Bob Burke at NIH and Gordon Shepherd at Yale, picking up knowledge and inspiration from the cutting edge electrophysiological and quantitative neuroanatomical studies they were pursuing. We all subsequently collaborated on the development of several complex compartmental neural models, all of which used a program called "NET-2," which was an early equivalent to the electronic simulation program "SPICE" (way back in 1985, we used compartmental models to study the implications of active membrane on dendritic spine heads, and made predictions that have only recently been verified by Roberto Araya and his colleagues (Miller et al. 1985; Araya et al. 2007)). So I came out of my postdoctoral studies with my training (and attention) distributed at uneven depths over a pretty broad terrain, but inspired to focus on quantitative analysis of synaptic integration in neurons with complex dendritic architectures.

Starting as a young assistant professor at Berkeley in 1981 "inspired" me to focus even more, and also exposed me to other researchers with similar and complimentary interests. In retrospect, one of the guiding lights during my early career at Berkeley, and a very important (but not-so-familiar) figure in quantitative systems neurophysiology in general, was Ted Lewis in the Department of Electrical Engineering. Ted was a senior Professor, and was way ahead of his time in applying advanced engineering and control theory approaches to the study of operational aspects of the auditory system. It was my interactions with Ted that ultimately led to my involvement in the establishment of the CNS meetings, which will also answer the question why was CNS*2010 identified as the 20th anniversary meeting (since, as Jim noted above, the first official CNS meeting was held in 1992). The CNS meetings were a direct descendent of a series of two workshops that were held the preceding 2 years at U.C. Berkeley. In 1989, Ted Lewis and I, along with Frank Eeckman and Muriel Ross at Lawrence Livermore National Labs, decided that it

would be interesting to organize an invited workshop built around our common interest in the nature of the processing tasks executed by nerve cells and systems, the codes by which information is represented during the execution of these tasks, and the structure of the neural machinery through which the computational algorithms are implemented. Although we always enjoyed communicating with one another during random encounters at committee meetings or other specialized scientific conferences, we lamented that there was no single meeting that took the general field of "Computational Neuroscience" as its core theme. At the time, there were several other excellent smaller conferences that were meeting on an annual basis, featuring excellent CNS research. However, these all tended to focus on specific subdisciplines or technological approaches: e.g., meetings on Vision, Audition, or the application of back-propagation to tune artificial neural networks, or computational brain models based on Adaptive Resonance Theory as mentioned above by Jim. A notable exception to that trend was the International Congress of Neuroethology, which hosted presentations of interdisciplinary research on a wide variety of vertebrate and invertebrate preparations, framed within the context of natural behaviors. While these meetings featured many excellent talks at the interfaces between neuroscience, engineering, applied mathematics, and computational modeling, they only took place every 3 years at the far ends of expensive plane tickets. It was actually at the second International Congress of Neuroethology in Berlin, in September 1989, where Jim Bower and I met, were inspired by some great presentations, and began to hatch schemes that eventually led to our mutual involvement in the CNS meetings (as well as John's ultimate move from Berkeley to Jim's old *alma mater*: Montana State University in Bozeman). There was also the Annual Society for Neuroscience meeting, but the size and complexity of that meeting, and the fact that many computational scientists didn't attend, were limiting. Accordingly, Frank and Muriel came up with the idea of running a workshop on CNS, and played major roles in organizing and raising the necessary funding. The Berkeley workshops in 1990 and 1991 were extremely popular and successful from a scientific standpoint, and seemed to fill a very important niche. At that point, Jim and I decided to "incorporate" the workshops as the "CNS Meetings," and continue them on a regular (and more financially stable!) basis.

The Ongoing CNS Culture

From the previous brief histories, the distinct cultural origins of the CNS meetings should be clear. Instead of a closed meeting with the meeting organizers determining invited presentations, we pushed hard in the direction of few invited speakers and a meeting consisting mostly of submitted papers. Instead of a meeting dominated by the current "dons" of the field, our strong sense was that the real growth of CNS should be fostered from the ground up, with strong support for student participation and presentations. If something new was really starting, then students were probably in a better position to recognize and pursue the new directions than more

seasoned faculty members anyway. To preserve its scientific and political integrity, the meeting had a very strong policy that members of the organizing committee not be allowed to give oral presentations themselves and that the program committee and organizers change frequently and include young faculty. We put in place what we considered to be a strong and fair peer review system predisposed to accept rather than to reject papers. In addition to the promotion of young scientists, the CNS meeting has also always placed particular emphasis on diversity and, as a result, the CNS organizing committee has, for 20 years, included an approximately even mix of men and women. In the early days, the CNS meeting even included day care options for young parents. Early on we decided it would increase the ability of students to attend if the meeting changed locations each year, and that the meeting should have a designated local organizer to help with logistics, but also to identify an appropriate location of the meeting as well as the all important banquet. By tradition, the CNS meeting venue is often old and sometimes a bit funky, but strongly reflective of local culture. The point being again that the CNS meeting should be fun, interesting, and anything but generic. The CNS meeting has also, from the outset, been highly multinational, and now explicitly alternates between North America and Europe every other year.

Programmatically, the CNS meetings have always been crafted to attract grad students, postdocs, and early-career researchers from a variety of intersecting fields and give them the opportunity to interact and learn from each other. The main meeting sessions are held over a period of 3 days, with no concurrent sessions. The large majority of presentations are selected from those submitted in response to an open call for abstracts, with the best submitted papers, often authored by students, offered longer oral presentations. Approximately two talks per day are reserved for longer invited seminars, given by international leaders in the field. In the early meetings, these speakers were often chosen based on their likely receptivity to the use of computational techniques, the idea being that they should learn by attending the meeting as well. As the field has grown, distinguished invited speakers are often now full fledged computational neurobiologist in their own right, many of whom, again, gave their first major talks at a CNS meeting as students. Speakers are expected to stay for the entire meeting, providing student attendees in particular the opportunity to meet with leading figures in the field within an extremely interactive atmosphere. We steadfastly maintain time for questions at the end of all oral presentations, and dedicated a significant proportion of the meeting time toward smaller "break-out" workshops, organized by meeting participants themselves. In the early days the topics of the workshops were actually chosen during the meeting to directly reflect the content and important issues raised in the meeting. We also encouraged a "no-holds-barred" attitude toward incorporating extreme mathematical and theoretical rigor in all presentations. And to encourage (and facilitate) the interdisciplinary nature of the early meetings, we added 1-day pre-meeting tutorial sessions: in the early days offering one in "neuroscience for non-neuroscientists," and a concurrent one in "computational analysis for neuroscientists." One of us (JPM) remembers organizing (along with his grad student Frederic Theunissen) an exciting "hybrid" pre-meeting tutorial at CNS*94 intended for both groups, on "applications of

information theory to CNS." Only a handful of people in the room had even heard about information theory at the time.

Reflecting the first meeting, CNS continues to represent an extraordinary diversity of specific problems, preparations, and methods used in computational research. Through the years, it has became obvious that no one approach to CNS is ideally suited to all problems, and that all researchers interested in the structure and operation of nervous systems can benefit from a deeper understanding of the values and limitations of a variety of theoretical and modeling strategies. Likewise, no one preparation is ideally suited for all analyses, and the meetings have seen the presentation of a huge variety of vertebrate and invertebrate studies. With all of these factors in mind, this meeting was always intended to facilitate cross-fertilization between experimentalists and theorists using a wide variety of preparations and approaches, and to help those researchers discover and articulate the general principles that emerge. We believe that each of these objectives, designs, and properties of the CNS meeting are responsible for its continuing success and extension into a third decade. In addition, the CNS meeting now benefits from the establishment of the Organization for Computational Neurosciences (OCNS) which has provided important financial and leadership stability, and whose organization itself reflects many of the design features of the meeting itself.

Of course, the ultimate success of any scientific meeting, or any human endeavor, depends not only on the strength of its program and scientific content but also on the level of engagement of its participants. From the outset, CNS meeting attendees have been willing to get down and party scientifically and otherwise. All of that said, however, the other essential ingredient in the success of the meeting has been the extraordinary people (and we don't mean ourselves) who have spent hours even years of their lives supporting the meeting. Of the large number of people in this category, several are worthy of special mention. First, it is not at all clear that CNS*92 would have happened had it not been good fortune that a seasoned Belgian meeting organizer, Chris Plougart, was not already indirectly (through family relations) associated with Jim's laboratory at Caltech. Her previous experience with meeting organization was invaluable in establishing the basic administrative structure for the meeting. All participants in the next 10 years of the meeting also know that the meeting would have stopped in its tracks had it not been for the extraordinary skills and efforts of Judy Macias, Jim's secretary at Caltech. For 10 years, Judy Macias was synonymous with the CNS meeting, managing every component of the meeting from the most minute to the most absurd. Finally, it is important to acknowledge one other important, even critical reason for the meetings success, and that is the unwavering assistance, guidance, and support of Dennis Glanzman initially and then Dennis and Yuan Liu at the National Institutes of Health together. Dennis actually attended the first CNS meeting and it was at his suggestion that the second meeting be held in Washington, DC. Designed to expose other government officials to this developing field, discussions with Dennis about the second meeting inspired the first of the CNS meeting posters which are now included together in chapter two

of this volume with commentaries for the first time. While other governmental agencies, and notably the National Science Foundation, have provided support for the CNS meeting through the years, at 20 years, it is our understanding that the CNS meeting currently has the record as the scientific meeting with the longest continuous funding from NIH. Continuing in the tradition he himself helped to establish, the CNS meeting has always openly encouraged attendance by program officers and others interested in CNS, providing them a spot in the agenda to present the interests and new funding opportunities of their agencies. In this case, the invitation to Yuan Liu to the CNS meeting in Montana in 1997 proved a personal life changing experience for both Dennis and Yuan. We have always thought of the CNSers as being a family operation. In the case of Dennis and Yuan, it literally is.

Finally, in retrospect and looking back, it is rewarding to look at the list of early student attendees of the CNS meetings and find a veritable roll-call of the current "rich and famous" mid-career and senior computational neuroscientists. In addition, the meetings have always been a lot of fun. Through the hard work of a lot of different people, we still regard it as remarkable that the CNS meeting continues to live up to its original objectives as listed in the first grant submitted to NIH:

> to provide an annual open forum for the discussion of progress in CNS, broadly defined… to support the increase in the quantity and quality of research being carried out in the field of computational neuroscience… to stimulate and facilitate interdisciplinary collaborative research… to provide a forum for young researchers to present their research and get professional feedback… to provide for rapid publication of current work in computational neurobiology through a well-organized set of meeting proceedings.

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