

OPINION

A Guide for Undergraduates to the Society for Neuroscience Annual Meeting

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The annual meeting of the Society for Neuroscience (SfN) attracts over 30,000 attendees, including many of the world's most accomplished researchers. Although it can be intimidating to attend a conference of this scale, there are many rewards for undergraduates. Based on surveys of

young neuroscientists, we provide planning strategies to ensure attendees maximize their exposure and retention of the breadth and depth offered by this large conference format without becoming overwhelmed.

Key words: undergraduate; conference; networking

Each year, over 30,000 people attend the Society for Neuroscience (SfN) meeting to exhibit and discuss cutting-edge research. Among the attendees are a growing number of undergraduates: 1606 college students went to the conference in 2016, nearly double the attendance five years earlier (Society for Neuroscience). At SfN, these undergraduate researchers are introduced to the diversity of researchers and topics in neuroscience, and quickly acquire both a broad understanding of the field and discover new interests. Most importantly, students meet their scientific community and gain unique insight into what it means to be a neuroscientist. SfN is a forum to network with scientists and professionals at all levels, to better understand how research is done and communicated, and to exercise critical thinking.

Here, we summarize best practices for the SfN meeting identified by veteran attendees and first-time undergraduate attendees. We offer suggestions on covering meeting expenses, and outline steps to take before, during and after the conference (Fig. 1). Included are reflections from our undergraduate authors who attended SfN 2016 with 13 of their peers as part of a Blueprint Program for Enhancing Neuroscience Diversity through Undergraduate Research Education Experiences (BP-ENDURE) at Washington University in St. Louis.

GETTING TO THE MEETING: STUDENT SUPPORT

With expenses that can include registration, travel, hotel, food, and abstract submissions, attending SfN can be costly. However, undergraduates can find support through travel awards and research programs. Sharing a hotel room can reduce expenses and foster new friendships. SfN offers a roommate-matching forum and students can also connect with each other through the Faculty for Undergraduate Neuroscience (FUN) listserv. Competitive travel awards typically require that students apply several months before the meeting. Some travel awards include:

- FUN Travel Awards (www.funfaculty.org).
- Undergraduate Brain Awareness Travel Award sponsored by SfN and FUN for students involved in neuroscience outreach (www.sfn.org/awards-and-funding/individual-prizes-and-fellowships/professional-development-awards).

Research opportunities and internships that offer support to present at conferences include:

- The [NIH BP-ENDURE initiative](http://www.nih.gov/programs/initiatives/bp-endure).
- NSF Research Experience for Undergraduates (REU) (<http://bioreu.org/>).
- Students' colleges and laboratories may have funding for students who ask to present their work.

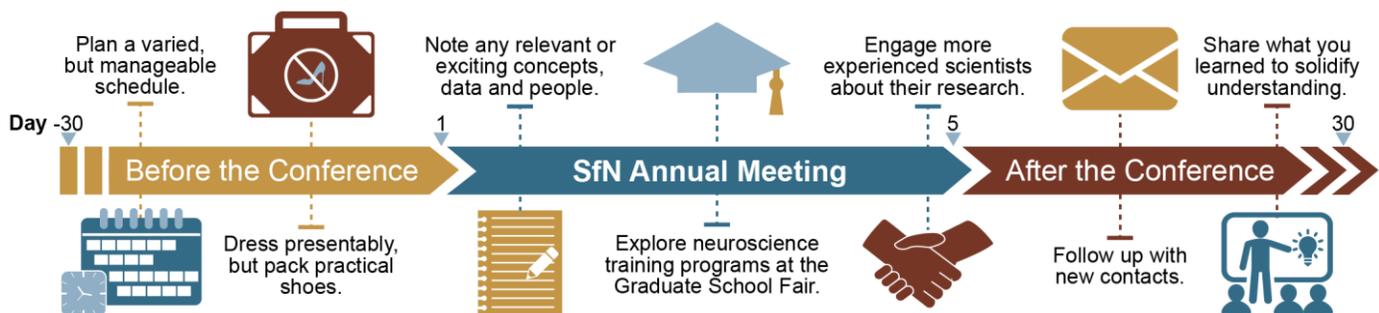


Figure 1. How to survive a large, international conference. Key advice for undergraduates before, during and after the SfN meeting. This two-month plan for the 5-day meeting aims to maximize a student's ability to meet and learn from colleagues.

BEFORE THE MEETING: ARRIVE PREPARED

With more than 15,000 scientific presentations covering everything from molecules to behavior, SfN has something for everyone. However, this also means that it is not physically (or mentally) possible to attend everything. For example, attending a symposium, a full slide session and three posters each morning and each afternoon, an undergraduate would be exposed to less than 3% of the conference's presentations. To complicate matters, sessions run concurrently. Overall, students need to plan a schedule. One undergraduate offered this advice:

"SfN is a large meeting, which can be overwhelming ...I've found that planning each day of the conference before I arrive helps to circumvent some of this stress. In contrast with previous years when I attended the conference without a personalized itinerary, this year I was able to focus less on navigating the conference and more on the content of the sessions I attended."

Attendees can use the Neuroscience Meeting Planner or Meeting App available online through the SfN to find events of interest.

Developing goals for attending the conference will help focus one's efforts and make this task less daunting. Some may have the primary goal of acquiring an understanding of a specific topic or technique, or aim to explore familiar research to learn new ways to address their own project. Others may challenge themselves with a wide variety of unfamiliar areas of neuroscience to gain an idea of research they may pursue in graduate school. We recommend sampling from the different types of sessions:

- **Invited Lectures:** Leaders in the field discuss their ground-breaking research during the invited lectures. These talks are meant for a general audience and provide an overview of a topic. The invited lecturers often define terminology, highlight key developments, and deliver the talk as if telling a story; therefore, these presentations are excellent for students. Moreover, these lectures provide a great opportunity for undergraduates to understand the elements that make a lecture meaningful or forgettable.
- **Symposia:** Symposia examine one topic from the perspective of ~5 (regular), ~7 (minisymposia), or ~15 (nanosymposia) researchers over 2.5 hours. These sessions help students to understand different perspectives and approaches within an area of neuroscience.
- **Posters:** Poster sessions are unique in that they are self-paced, and students receive personal attention with the speaker. As such, one can readily ask questions to ensure a thorough grasp of the concept. Because students typically start their careers by presenting a poster, these sessions provide valuable exposure to best (and worst) practices for exchanging results and ideas with colleagues.

One can use the Neuroscience Meeting Planner to search the program by keywords, session types, theme, etc. and to generate a personalized meeting itinerary. Students may be tempted to see too much, resulting in time spent running around the meeting, but missing the chance to engage with the material, build their network of colleagues, and retain the

lessons they seek. A manageable itinerary for a talented undergraduate is typically 2-3 posters, 2 Invited Lectures and 1-2 Symposia per day.

Prioritization is key. To further narrow down the events to attend, attendees should go beyond the catchy title: read the session descriptions and abstracts. Asking advice from and coordinating with mentors and colleagues can also help with prioritizing. For example, some labs will delegate individuals to attend the same or different sessions so that the lab members can compare or combine notes. We strongly recommend leaving room for sessions that are outside the attendee's area of expertise, sparking new interests and connections.

Two essential additions to any undergraduate's SfN itinerary are the FUN Symposium and the Graduate School Fair. FUN hosts an evening satellite symposium where about 170 undergraduates are chosen to present their work. The Graduate School Fair, offered for two hours daily over four days, enables students to meet and learn from almost 80 Masters-, PhD- and MD/PhD-granting programs. These two events also provide information about summer research programs and fellowship opportunities. For those presenting posters, leave sufficient time before the meeting to both put together and practice your poster. Rehearse early and often with your labmates, friends or even a mirror. Resources on how to design and deliver a poster include the CLIMB program's detailed guide (www.northwestern.edu/climb/resources/oral-communication-skills), the SfN (www.sfn.org/Annual-Meeting/Neuroscience-2016/Abstracts/Presenter-Resources) and their Neuronline professional development pages (<https://neuronline.sfn.org/>).

Lastly, to ensure one is comfortable at the meeting and able to focus on the science, we offer these additional tips:

- **Formulate and practice a concise description of one's own research.** Everyone will ask, so it is important to be prepared to make a good impression.
- **Pack sensible shoes.** Convention centers are large and you will be doing a lot of walking.
- **Download the meeting app.** Attendees can view their itinerary, a map of the convention center and more.
- **Know the area.** Given that time is limited during the conference, it helps to know how to travel between the hotel, the convention center and a few recommended restaurants or landmarks.

DURING THE MEETING: LEARN AND ENGAGE

First and foremost, SfN is a learning experience. Attendees should take notes on concepts, results, techniques, presentation skills and people that are relevant or just simply exciting. Note that photography is prohibited since many presentations contain unpublished data.

Undergraduates should also engage more experienced scientists while at the meeting, to both build their professional network and to better understand what it means to be a neuroscientist. This may be easier said than done for young researchers. Something to keep in mind is that scientists love to talk about their work, and that all attendees share a common passion for neuroscience and lifelong learning. By recognizing this, students should feel confident

about engaging with others. Various groups sponsor evening social events that offer a chance to network with graduate schools of interest as well as establish important relationships with potential faculty mentors. Attending these events with a friend or mentor helps alleviate the stress of first introductions. It is appropriate to ask to be introduced by a mentor or colleague. As one undergraduate SfN attendee remarked:

"I took full advantage of the networking opportunities at SfN. I was surprised at the positive responses I received from reaching out to professors in my areas of research interest. ... You never know what can come from taking the initiative to connect with someone new."

AFTER THE MEETING: REFLECT

The knowledge gained and people encountered at the meeting can be important for one's future education and career. Reviewing notes from the meeting and writing or talking about the highlights of your experience with others can consolidate learning. Students may also consider compiling a list of action items resulting from the meeting to help them proceed towards their professional goals.

In addition, it is important to maintain the connections made while networking. This can be especially important for those students looking towards the next step in their careers as described by a college senior:

"Since returning from the conference I have followed up with graduate school representatives that offered programs of great interest to me. Having this personal connection with some of the schools was very comforting during my application process in case I had any questions or concerns."

A brief message thanking a graduate student or researcher that took the time to answer questions goes a long way to building a professional reputation and being remembered.

SUMMARY

SfN and other large meetings should inspire young scientists to share their findings, learn from their colleagues, and build their support network. One student commented that:

"Attending SfN is essential for an undergrad interested in neuroscience as it ... absolutely affirms and rekindles the passion to pursue the indisputably coolest area of science."

Optimizing this experience requires attendees to plan an itinerary before, focus on a few key events during, and reflect on knowledge gained after the meeting.

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