THE SEISMO-V-GRAM

News and info to help our student and early-career scientists advance their careers

Seismological Society of America: Advancing Earthquake Science Worldwide

ISSUE NINE: 5 DECEMBER 2018 View this in your Web Browser

FINDING FUNDING AND BALANCE THE POWER OF AN SSA MEMBERSHIP DATES AND DEADLINES: 2019 ANNUAL MEETING AND MORE STAY IN TOUCH

Your Questions Answered: What are your best tips for securing funding for your research? How do you balance research and teaching?

You asked. Here are answers from **Heather DeShon**, associate professor of geophysics, Southern Methodist University; **John Ebel**, professor and senior research scientist, Weston Observatory of Boston College, and founding editor-in-chief of SRL; **Steven Roecker**, Professor of Geophysics, Earth and Environmental Sciences, Rensselaer Polytechnic Institute; **Jonathan P. Stewart**, professor and chair of the civil and environmental engineering department at University of California, Los Angeles, the William B. Joyner Memorial Lecturer for 2016 and the 2018 recipient of the Bruce A. Bolt Medal; and **Clifford Thurber**, professor of geoscience, University of Wisconsin-Madison.

What are your best tips for securing funding for your research?

Steven Roecker: First, while you always want to be original and innovative, don't work in a vacuum. Be aware of the funding environment. Talk to your colleagues and your program director and get a feeling for what areas of research are being prioritized, and also for what is currently expected to appear in a fundable proposal. You don't need to be on a bandwagon, but you should be aware of what your colleagues find interesting, as they are the ones who eventually are going to fund you.

Second, don't get discouraged if your proposal was turned down the first (or even the second) time around. Pay attention to the feedback you get from reviewers, the panel and the program director. Don't take criticism personally. Look at being turned down as a learning experience. The system is not out to get you--the vast majority of your colleagues are rooting for you to succeed.

Clifford Thurber: After an uncomfortably long stretch of getting proposals turned down by the National Science Foundation, a chat with a program manager gave me some insight. It is important to set your proposal apart in some way from the others the panel and reviewers will be seeing. You need to be able to generate some level of excitement, to get a reaction that this work will be something novel, something cool, something that pushes the envelope, something that will produce results that people will be interested to read about. The other thing to do is to make sure the funding organizations are aware of you as a potential reviewer or even a panel member. The latter may be the best way to gain

insight into how you need to approach writing proposals in order to give yourself the best chance of success.

John Ebel: I think the most important thing to realize about research funding today is that there is a heavy emphasis on team research projects. Those who review research proposals (both peer reviewers and project managers) tend to favor multi-investigator projects over a project that involves a single investigator and a graduate student or postdoc. Science has gotten big and complicated, and the research projects considered the most worthwhile are generally those that address big research questions that require a collaboration of investigators with different but complementary skills and approaches to helping answer the questions posed in the research. It takes time and effort to put together an effective research team that can produce a competitive proposal, and one must take this into account when planning to write a research proposal.

Jonathan P. Stewart: Identify topics that advance the science of your subject area while also being practically useful. Once you have a project, deliver what you promised and complete the work by the deadline. Timeliness, usefulness of work products and quality are crucial for long-term success with funding agencies.

How do you balance research and teaching?

Heather DeShon: I never hold the expectation of balance between research and teaching because I don't believe balance can be maintained. Each progresses at its own variable rate, and with planning and practice you have more control over those rates than you think. You also have to release the idea of perfection, especially with regard to teaching.

I am an educator, but I am, foremost, a scientist. Research progress takes priority over teaching preparation on most days, but interaction with students takes priority over everything. I am lucky to be in a department that shares my priorities and deep respect and enthusiasm for teaching. It is imperative that one understand both the department and university culture, for prioritization of research and teaching--and adapt accordingly.

I teach three undergraduate or graduate courses in a given academic year and rotate between five prepared courses over a two-year cycle. Before each semester begins, I set aside two to three days to identify time periods where both research and teaching will have overlapping deadlines, finalize most travel, set my kids' activity schedules, set regular student and group



meetings, and then complete syllabi. I schedule writing days with a calendar indication that I am unavailable for meetings. I frontload teaching preparation to the beginning of the semester, when I am excited and fresh. I make sure writing- and hence grading-intensive assignments are set to be due during lulls in research deadlines. I tweak weekly lecture materials over a limited time period (two to three hours), so that I do not unnecessarily modify lectures, which is my wont. I accept help and ask for help, with both teaching and research, when needed. And I keep a very detailed short- and long-term digital to-do list!

Clifford Thurber: Striking that balance is a huge challenge. What helped me was focusing my teaching on topics that I was deeply interested in, or when that was not so much the case, bringing to the class outside material, real-world examples and cool new scientific findings. That kept my interest level high and, with luck, got some students really excited about geophysics. Early on in one's career, one should expect the balance to tip toward teaching as new courses are developed, but with time and experience, things should tip the other way.

John Ebel: Everyone has a different way to balance research and teaching. Some faculty work elements of their research into their courses as assignments, so that students can help with some of the data acquisition or data analysis. Other faculty, myself included, try to devote some days to teaching and some days to research. During the academic year, I try to spend about half my time each week on teaching and half on research. Some days are teaching days and some days are research days.

For faculty at universities where both teaching and research are emphasized, the key to success is to learn how to be productive in short time windows and how to switch immediately from one task to another very different task. On a day when I am teaching, I might spend most of my day preparing coursework, advising students, grading, lecturing, etc., but then at 4 p.m. sometimes I put that aside and work on a computer code or some other data analysis task for my research for an hour or two. I might write a couple paragraphs on a paper that I am working on, or I might work on a figure for a paper that I am preparing for publication. Even though it is a teaching day for me, if I can find a little time to work on research, I go for it.

Steven Roecker: Beyond the obvious caveat of not overloading yourself with either of these responsibilities, I think a lot of faculty would read this question as "how can I spend more time on research and less on teaching?" as many of us stayed in academia because we loved doing research and, curiously enough, had little to no formal training (or interest) in teaching.

That's a mistake, because teaching, in addition to being intrinsically rewarding, can inform and enhance your research. This is easy to see at the graduate level, where constantly integrating new material can require a lot of effort, but as these courses typically are much more closely related to your research interests (by design), that extra work usually winds up complementing and expanding, rather than competing with, your research.

You can do this to a certain extent with undergraduate courses as well by trying to include your research in your course materials. At the very least, try to avoid bringing anything into a classroom that you don't find interesting. At a practical level, a better way to think of this question is as an optimization problem along the lines of: how can I reduce the amount of effort I spend on things that are repetitious, tedious or of no particular interest?

Beyond trying to foist these chores on TAs/graduate students/postdocs, I try to frontload as much of this as possible so that it does not become part of a noisy background. For example, my strategy with some undergraduate courses has been to put a lot of effort into constructing the course at the beginning and giving the material a revamp every few years. In between those times, the course will require just a bit of tweaking, freeing up a lot of time for other activities.

In short, I suggest the best way to achieve a balance between research and teaching is by integrating them as much as possible. Think of them as two sides of the same coin.

Have a career question you want answered? Send it to <u>info@seismosoc.org</u>, and we'll do our best to address it in a future issue.

Membership Matters

SSA membership is one of the most valuable investments you can make in your career—don't let yours lapse!

Visit the SSA website/Members' Area to renew, and continue your connection to a community of support—one that includes mentoring from veteran members and global travel grant opportunities.

Stay connected to a global network of scientists and engineers who are here to celebrate your successes and help you overcome obstacles. You'll also enjoy access to the best information about earthquake science through *BSSA* and *SRL*, our widely cited journals.

Students pay only \$30 per year. Or, if you are within three years of your terminal degree, you can join SSA as an early-career member for \$55/year or \$150 for three years.

Look for full membership details here: seismosoc.org/membership/.

Questions? Contact SSA at membership@seismosoc.org or 510.525.5474.

Dates and Deadlines to Remember

SSA Annual Meeting

23-26 April 2019, Seattle, Washington

Are you ready for the most important gathering in seismology? We can't wait to see you in Seattle!

Submit your abstract now through **11 January 2019** via email: <u>abstracts@seismosoc.org</u>.

Register for the Annual Meeting (and enjoy your member discount) starting **2 January 2019** at **seismosoc.org/annual-meeting/registration/**.

The meeting offers five **workshops** you won't want to miss: Achieve Your Career Goals, Developing and Visualizing Community Seismic Velocity Models, Getting Published: Writing a Good Scientific Paper, Machine Learning for Seismology, and Measuring Fault Parameters and Slip from Geodetic Imaging Data using GeoGateway Online Tools.

AGU Fall Meeting

10-14 December 2018, Washington, D.C.

Attending the 2018 AGU Fall Meeting next week? Stop by the SSA Booth (# 615) and bring your friends to take advantage of the free SSA student memberships we're offering throughout the event. Don't miss our special member reception with wine, apps and chocolate at 4 p.m. on **Tuesday, 11 December**!

SSA Board of Directors Election: Now through 4 January 2019

Now is your chance to help steer the future of our society. Vote for the 2019 SSA Board of Directors today. Visit the Members' Area online (renew your membership if you haven't done so already!), and

click on the election icon to review candiate statements and vote (a quick and easy process). Voting closes at 5 p.m. P.S.T. on **4 January 2019**.

Stay in Touch

Follow SSA on LinkedIn to stay up-to-date with important Society news, including reminders about upcoming deadlines for grant submissions and calls for papers.

Send your feedback on this newsletter, good seismology jokes and ideas for future issues to **info@seismosoc.org**.

SSR-V-

Seismological Society of America

400 Evelyn Avenue, Suite 201 Albany, CA 94706-1375 United States

Email **info@seismosoc.org** Call us: 510-525-5474

If you would like to unsubscribe click here.