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NIDDK NATIONAL INSTITUTE OF DIABETES AND DIGESTIVE AND KIDNEY DISEASES

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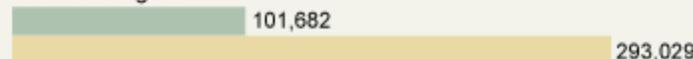
Growth in Aid Recipients With Advanced Degrees

The number of people with master's degrees or higher who receive food stamps, some other form of federal aid, or both, has grown in recent years as the academic job market tightened and the national economy weakened.

Number receiving aid in | Total population with **master's degree or higher**

2007	20 million
2010	22 million

Master's degree



Professional-school degree



Doctorate



Note: Tabulations by Austin Nichols, senior research associate, Urban Institute. Nichols drew on data from the 2008 and 2011 Current Population Surveys by the U.S. Census Bureau and U.S. Bureau of Labor Statistics. In those surveys, the U.S. Census Bureau asks people if they receive food stamps or "some other form of public assistance," which could include aid through such programs as Women, Infants, and Children; Medicaid; Medicare; and aid for heating, child care, and housing.

Source: Current Population Survey, 2008 and 2011, U.S. Census Bureau and U.S. Bureau of Labor Statistics

including liberal arts

["From Graduate School to Welfare" *The Chronicle of Higher Education* http://chronicle.com/article/From-Graduate-School-to/131795/](http://chronicle.com/article/From-Graduate-School-to/131795/)

Most PhDs on welfare have degrees in liberal arts. The situation for PhDs in the STEM fields is not as dire.

Yet, if humanity majors are the amphibians of higher education, the ecological health of the academic system sorely needs attention. Fortunately our training puts us in the position to adapt. So assess the situation, change your behavior, or find another niche.

Highlights from the Fellow's Retreat

Emily Cordas

Due to budget constraints, the 7th annual NIDDK Fellows' Retreat was held on campus in the Natcher Conference Center or Building 45. Most fellows will have noted that lunch was also not provided. However, through the generosity of the NIDDK Office of Fellow Recruitment and Career Development and several PIs, light refreshments were provided throughout both days and the catering was done by our own Kala Viswanathan and Lorraine Moore from the trainee department. Our trainee department sure works hard for us.



We had an amazing set of outside speakers including two keynote speakers, Karl Zimmer and Dr. Andrew Gewirtz. Carl Zimmer is a science writer for the New York Times and author of a 13 books, including *Science Ink: Tattoos of the Science Obsessed*, which features science themed tattoos and the stories behind them. He was touched when a NIDDK fellow told him before his talk that they use his book to teach science to their kids. I learned from Karl's talk that we have about 3 lbs of microbes living in our bodies. Our second keynote speaker, Dr. Gewirtz, spoke on the current hot topic of the microbial environment of the gut and inflammation, which he researches at Georgia State University.

In addition to his presentation on his scientific work, he also described his career path, the luck he has had on the way, and insight on decisions he had to make in his academic career path. It is too bad we didn't take Dr. Gewirtz out to lunch.

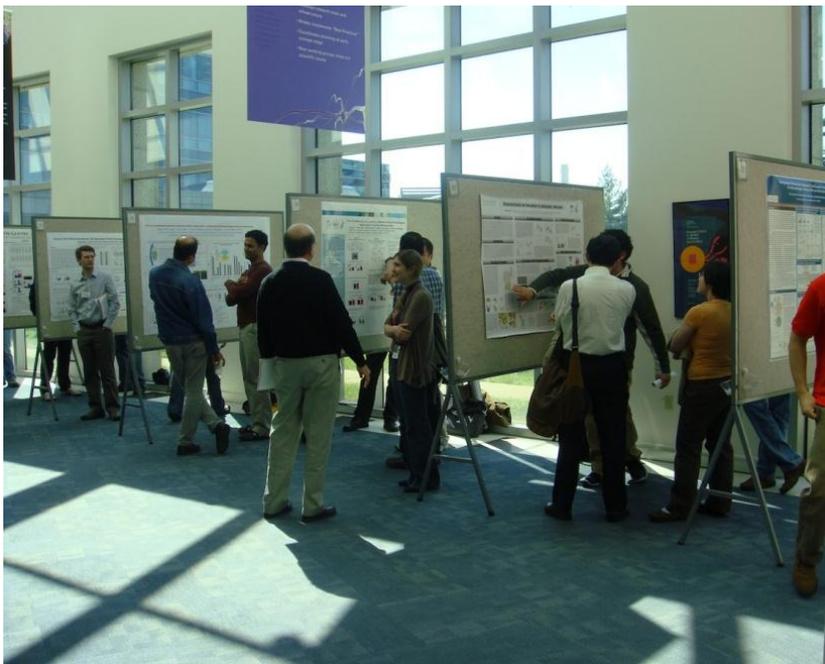
Dr. Louis Simchowitz, or Lou, our fearless training director, kicked off the career development sessions with a very timely talk on taking charge of our own careers. There was advice from recruiters on resumes, CVs and networking, a session on internships, and a career panel with an editor, a professor, and a scientific health analyst.



Retreat Highlights cont'd

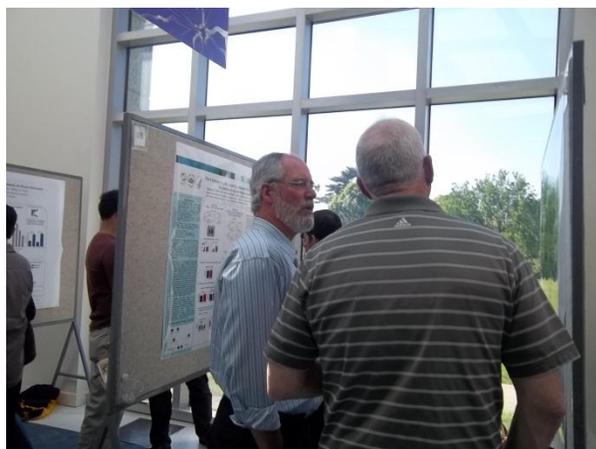


Time was also dedicated to developing our own careers. We had the opportunity to either give a talk or a poster of our own work. This was a great chance to demonstrate and practice the art of communicating science. We do some good science!



Congratulations to our travel award winners

- 1) Anthony Vecchiarelli
- 2) Lauren Holz
- 3) Mary Warren
- 4) Phyllis Thangaraj
- 5) Josh Chappie



...and our Nancy Nossal Award Winners



The Nancy Nossal Award award was established to honor the memory of Dr. Nancy Nossal who exemplified an enduring commitment to excellence in mentoring. Between 8 and 12 awards are made each year to eligible clinical and postdoctoral fellows. The highly competitive award is aimed at the top 10% of fellows. Recent awardees in the March 2012 competition are **Marvin Bayro (left)** and **Lalit Deshmukh (right)**.



Listen While You Work

Michelle Bond

Is your lab *too* quiet? Have you listened to the same 10 songs on the radio or your iPod *too* many times? Perhaps you want to check out the following science podcasts – they might make long hours at the microscope go by just a little more quickly. Plus, you’ll get caught up on current events and publications!

[Science Friday](#) is a fantastic, dynamic podcast hosted by Ira Flatow, a veteran science journalist. Focusing on scientific topics that have recently been in the news, this podcast brings an “educated, balanced discussion to bear on the scientific issues at hand.” For example, right after the earthquake in Japan, Science Friday hosted a variety of experts to talk about the devastation, clean up, and implications for nuclear power in other countries. And, after the recent Costa Concordia cruise disaster, experts

converged to discuss navigation and preventing similar catastrophes. You may want to listen to the interviews with [Carl Zimmer](#) – he was one of our speakers for the [2012 NIDDK Fellows Scientific Retreat!](#)

Both the New York Times and Scientific American have branched out to include podcasts as part of their multi-media enterprises. Tuesdays are science-themed for the [New York Times](#). Focusing on science, medicine, and environmental news in the popular press, host David Corcoran goes beyond reiterating scientific facts and opens up a dialog. Likewise, the weekly [Scientific American](#) podcast hosted by Steve Mirsky called “Science Talk” delves into recent scientific developments ranging from evolution to climate change. With a Scientific American take on science, it is a great way to get a broad picture of a particular topic. If you only

have a minute, tuning into “[60-second Science](#)” will give you a quick report on the most recent scientific events!

Finally, you may be interested in delving further into articles recently published in either [Science](#) or [Nature](#). Both magazines have their own podcasts that highlight scientific breakthroughs using interviews with scientists and commentary from the podcasts’ mediators. It is a great way to get a brief overview of some of the most recent top science stories!

Whether you have 1 minute or 1 hour, scientific podcasts are a great way to learn about scientific developments, current policy changes, and popular press impressions of scientific discoveries. Besides being an enjoyable way to pass time, you may just learn something while you listen!

How Economics Shapes Science

A scientist's review

Nadine L. Samara

Many of us are probably aware of the connection between science, innovation and economic growth. We may be cognizant of the dismal job market for life science Ph.D. scientists in academia and other sectors. We may also know about the budget cuts and how they have affected funding for scientific research, the effects of the NIH budget doubling in 2009, as well as other funding decisions that have been made by the federal government.

What Paula Stephan's new book *How Economics Shapes Science* (Harvard University Press, 2012) gives us is a detailed description of the economics of science research and the dependence of economic growth on scientific advancements. Stephan depends heavily on statistical data for her analyses that come from studies conducted earlier in the decade. However, most of the conclusions in the book are still relevant today.

Paula Stephan is a Professor of Economics at the Georgia State University Andrew Young School of Policy. She is the co-author of the 1992 book *Striking the Mother Lode in Science: The Importance of Age, Place, and Time* that outlines policies to boost scientific productivity in the United States.

She continues along the same theme with her new book. *How Economics Shapes Science* is well structured and straightforward but rather dry at times. Overall, Stephan does a superb job of concisely describing the current economic state of science research in the United States. Thus, I would strongly encourage scientists to read it, or at least read the conclusions at the end of each chapter.

Stephan discusses sources and allocation of scientific funding, salaries, the abundance and market for Ph.D. scientists, the role played by foreign-born scientists, the effects of science and innovation on economic growth, as well as other topics relevant to science and innovation. She concludes with a chapter dedicated to proposing possible solutions to what she perceives to be an unsustainable research system in the United States.

Scientists, from experience, are typically aware of the economic issues that they face. Often times, we learn through our personal experiences, or by observing those around us. This is one reason that this book is unique:

studies conducted on larger samples give us an idea of how much scientists are paid (low incomes), how many are getting funding (a few), and the job market for scientists (weak). The bleak outlook is not an emotional outcome of one's woes, but an actual scientific result of a survey. I can appreciate an economist such as Stephan's description because it adds a rational layer to a discussion that is often a result of the frustrations that many of us are feeling at our low salaries and bleak prospects in many scientific fields.

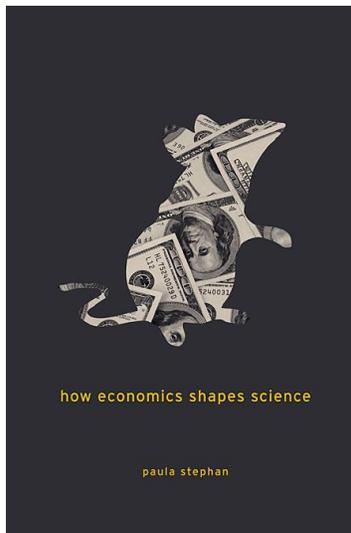
The overall mood of this book is grim. It made me question my choice about pursuing a Ph.D.; could I have gone a different path that would have had higher rewards and is less stressful? Am I just another PhD who will be a postdoc for years?

I come to the realization that there is no point in regret. I, like many other scientists was motivated by a desire to solve puzzles. I love the challenge. However, I have reached a point in my life that extends beyond the joys of problem solving and I, like many postdocs at NIH will have to find a

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job in this challenging economic environment. I hope that post-doctoral fellows at the NIH are aware of the challenges of employment, funding and success in science. More importantly, I sincerely hope that those in our field who have the power to make changes will read her work to begin to understand that things have changed and the current system is unsustainable.



Fair market value

Christine C. Krieger

Quid pro quo

A principal investigator will embrace field-changing innovations in anything but the function of their postdoctoral fellows. In the delicately balanced PI-postdoc dynamic, a postdoc is expected to adopt a “starving artist” mentality and throw themselves at a cutting-edge research project for the chance to prove themselves worthy for an independent position of their own. Postdocs willingly pay the short-term price of long hours and small stipends for the long-term goal of intellectual freedom. When the system works, this relationship is mutually beneficial...but the system is flawed. Competition for academic positions has never been higher. A postdoc could do all the right things and still have

less than 10% chance of getting a faculty appointment much less funding and tenure. Barring academia, customary fallback jobs for PhDs are becoming more selective. In this changing economy, reinventing their role in the scientific workplace is the only way a postdoc can recoup any reward after investing so much into their careers.

Necessary but not sufficient

The last issue reported on the call for graduate education reform and the need to prepare postdocs for careers in non-academic fields (Samara, “On Reforming Graduate Education,” *INFORMER* vol. 5 iss. 1). Essentially, reforms demand the incorporation of education found in a Professional

Science Master’s (PSM) degree, which combines advanced training in math and science with professional skills in management, marketing, and communication. As a current postdoc, I fully support training in more marketable skills. As a future PI, I am daunted by the thought of paying upwards of \$60k in additional training for my students when tuition is already going up and funding is harder to obtain. Therein lies the painful paradox. A PI has the duty to prepare postdocs for future employment but desperately needs them to get results to secure more funding. Requiring a PI to give up a postdoc’s time is a double blow. What is a PI paying their postdocs for anyway?

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Frankly, PIs are not paying their postdocs much of anything. Long hours are not unheard of in academia. Many of those doing research in industry also often work nights and weekends – but get a hefty paycheck in return. Taking into account retirement benefits and overtime, someone with a master's degree in an entry-level position is financially better off than a postdoc. So if a postdoc is not financially compensated for their time, what are these long hours supposed to accomplish? What has *not* changed is the more time a postdoc invests in their project, the better quality their final papers, the value of which, like everything else nowadays, has gone down.

A commonly given piece of advice is that anyone interested in an academic position should focus their efforts on that since it is the hardest job to get. However, developing your academic potential at the expense of your commercial marketability is the biggest mistake a postdoc can make. According to David Jensen in *Science Careers*, “employers are no longer looking for a great brain and a world of potential. They're looking for that one CV

that lists the skills they need right now -- not after 6 months of training.” Unless your project is “How to make your company a lot of money in 60 days or less,” your resume needs work. Research in industry is very different than what a typical graduate student or postdoc experiences.

According to a current Merck employee, academically trained PhDs often have “sloppy habits, a disregard for safety protocols, and insufficient record-keeping skills.” Thus, experience at the bench may not be as valued as you think. Putting cultural differences aside, the ability to discover the effects of a drug in an experimental system does not directly translate into producing and distributing that drug in a commercially viable way.

As mentioned in this newsletter's previous issue, the NIH has many resources to help postdocs explore different career options. Those of you savvy enough to attend the career symposiums during the fellows' retreat already know about the internships NIDDK has to offer and have seen how past postdocs have benefitted from them. Recent *Science Career* articles recommend certificate programs in Regulatory Affairs or

Biotechnology as a cheap way to develop marketable skills. Johns Hopkins and the University of Maryland are two local universities offering many of these programs. With time and planning, NIDDK postdocs can outcompete anything a PSM degree has to offer.

Actions speak louder than words

Most companies hesitate to hire an individual who is incapable of taking charge of their own career. If you really want a job, then you have to prove it by getting out of the lab. Are you undecided on what career path you want? All the more reason to get out and experience the different options available. Unless your PI can personally guarantee your future employment, you have every right to demand time to gain marketable experience. Most importantly, you do not have to do this alone. Whether you need support talking to your PI or advice on how to effectively utilize your time as a postdoc, Lou Simchowicz at the fellowship office is there to help. Just remember, time is the most valuable resource you possess, be sure to invest it into your personal development. After all, no one will see value in you until you begin to put value in yourself.

For more information...

"Tooling Up: The Big Disconnect" http://sciencecareers.sciencemag.org/career_magazine/previous_issues/articles/2012_02_17/caredit.a1200019

"Tooling Up: Customize Your Training" http://sciencecareers.sciencemag.org/career_magazine/previous_issues/articles/2012_03_16/caredit.a1200031

"Biotech Training Programs Expand Employment Options"

http://sciencecareers.sciencemag.org/career_magazine/previous_issues/articles/2012_03_09/caredit.a1200029

"Does a Professional Science Master's Degree Pay Off?"

http://sciencecareers.sciencemag.org/career_magazine/previous_issues/articles/2012_03_30/caredit.a1200036

New Fellows

A. Jeff Huang
Visiting Fellow, Taiwan
Ph.D, University of Illinois
Laboratory of Endocrinology and Receptor
Biology (Forrest) Bldg 10

B. Matthew Hassink
IRTA
Ph.D, University of Delaware
Laboratory of Bioorganic Chemistry
(Appella) Bldg 8

C. Mike Scerbe
IRTA
Ph.D, Johns Hopkins
Laboratory of Biochemistry, (Luecke)

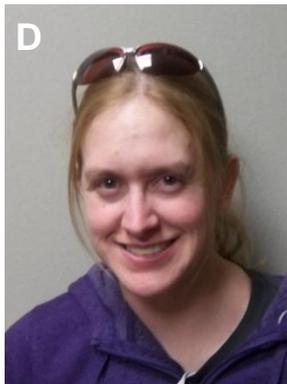
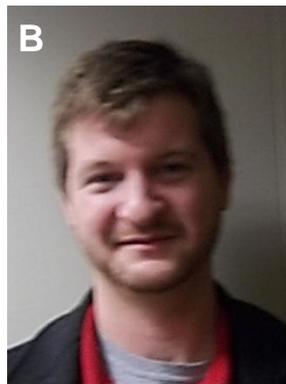
D. Pam Smith
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(Philpott) Bldg 10

E. Patompon Wongtrakoongate
Visiting Fellow, Thailand
Ph.D, University of Sheffield, UK
Laboratory of Molecular Biology,
(Felsenfeld) Bldg 5

F. Paul Lee
Special Volunteer, Australia
M.B.B.S, Ph.D, University of Melbourne,
University of New South Wales
Diabetes, Endocrinology and Obesity
Branch, (Celi) Bldg 10

G. Shiliyang Xu
Visiting Fellow, China
Ph.D., Syracuse University
Laboratory of Endocrinology and Receptor
Biology (Kai) Bldg 10

H. Shruti Desai
Visiting Fellow, India
Ph.D, University of Pune
Metabolic Diseases Branch (Sunita
Agarwal) Bldg 10



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