Trump’s Budget Undercuts NIH Funding

What is happening to NIH research funding? That is the question on the mind of a lot of scientists right now, and the outlook is grim. The current administration is proposing a reduction of almost 20% in NIH funding for 2018. Proposed budget cuts were one of the factors leading protesters around the world to participate in the March For Science on April 22nd, with thousands taking to the streets of Denver to advocate for science policy. While Trump’s budget will need to get approval to go into effect, Trump’s proposal could jeopardize not only scientific discoveries for our future but also U.S leadership in the global scientific community.

The NIH is “the largest source of funding for medical research in the world,” according to their website (www.nih.gov). More specifically, a 2016 Study in The Journal of the Federation of American Societies for Experimental Biology found that NIH funding creates jobs for over 300,000 people across biomedical research who work at over 2,600 institutions. The same study showed that 20% of these positions were filled by postdoctoral researchers and students. If the 2018 budget proposal is passed as it stands, the NIH funding cut will have a devastating impact on the scientific community and ultimately on our career prospects.

AIA to host the 3rd Annual Rocky Mountain BioTechnology Symposium

Each spring the Academia Industry Alliance (AIA) hosts the Annual Rocky Mountain BioTechnology Symposium (RMBTS). In line with the pervading goal of the AIA to bring together a community of entrepreneurs, scientists, technology workers, and businesses via major networking events, the RMBTS was established to showcase life science companies. Attendees will have the opportunity to listen to talks throughout the full day symposium highlighting key historical moments, prominent findings, and current research efforts in companies inhabiting the pharmaceutical, biotechnology, medical devices and diagnostics, and digital health spheres. In addition, there will be two major networking opportunities to interact with the company representatives: two hours over lunch where companies will have informational booths set up, and again at the end of the day as an extension of the monthly Brews and Biotech Happy Hour at Ursula Brewery where drink and food truck meal tickets will be handed out to early arriving symposium attendees. 40 companies have already confirmed attendance including 3D Systems, Medtronic, Sharklet Technologies, Arca Biopharma, Siva Therapeutics, Biodesix, ArcherDx, GE Healthcare, and more. The Keynote Address will be given by Lauren Costantini, the President and CEO of Prima-Temp, Inc. For more information and to register for this free event (free refreshments and coffee provided throughout the day and lunch provided to registrants), visit tinyurl.com/aia-rmbts.

Networking Corner

Contributed by Kelsey Weigel, PhD
Science Advocacy On-Campus: Welcome to Project Bridge

Contributed by Sarah E. Clark, PhD and Erin Golden, PhD

Want to advocate for increased research funding? A new chapter of a science advocacy organization called Project Bridge has just been formed at the CU Denver Anschutz Medical Campus. According to the Press Release from the Project Bridge Staff:

"Project Bridge was founded at Johns Hopkins University in February 2013 in an effort to bridge the communication gap between scientists and the public. As the second established chapter, Project Bridge Colorado will continue to expand on this mission by offering trainings and opportunities for CU Anschutz scientists to connect with communities throughout Colorado"

Erin Golden, the President of the Colorado chapter, first hosted an “Eat and Educate” event offering tips on how to approach your representatives regarding science funding concerns. Her key words for what scientists should focus on were sustainable and predictable funding in the federal budget for research. If you’d like to contact your representatives (www.govtrack.us/congress/members/CO), it is as easy as sending an email or better yet calling them to express your opinions about funding for research. Sharing your personal experience as a scientist as well as citing how science improves our health and the U.S. economy can be effective tools to advocate for research funding.

More recently, Erin and the Project Bridge team invited advocacy gurus from the nonprofit organization ResearchAmerica to visit the Anschutz Medical Campus and give a crash-course on government and strategies for science advocacy. "Every dataset has a story behind it," said one of the speakers. "Framing your research in the context of helping people goes a long way."

If you’re looking for more resources to jumpstart your science advocacy, or are interested in getting involved, contact Project Bridge Colorado at projbridgeCO@gmail.com or visit their website www.projbridge.com.

Footsteps Series: Interview with Dr. Monique Beaudoin

The following is an interview with Dr. Monique Beaudoin, Science Director at the US Office of Naval Research (ONR) Global. Dr. Beaudoin is a CU alumnus of the Neuroscience PhD program.

1. Why did you decide to pursue your current career?

When I decided not to continue with academic bench research after completing my PhD, I first thought that my only two options outside academia were to pursue a career in science policy or a career in industry. While waiting to hear a decision about a science policy fellowship I had applied for, I moved to DC and worked briefly as a research assistant at what is now known as The Eisenhower School. It wasn’t great pay for a PhD, but exposed me to an environment where I learned about different jobs available for scientists within the US Dept. of Defense (DoD), beyond science policy. After many applications and a lot of networking, I landed a position as a private industry consultant to DoD Program Managers as a SETA (science and engineering technical advisor). I liked being in that community, but wanted to be in more of a decision-making or leadership role. That is why I started looking for a position as a Civilian S&T Program Manager, which I eventually found with the Navy as a Science Director for the US Office of Naval Research (ONR) Global. It’s been a great fit.

2. What do you find most rewarding about your current career? What do you find least rewarding about your current career?

I like program management for international S&T research because I have the ability to actually direct scientific research in the shorter term. Least rewarding: definitely the level of “bureaucracy” that any government employee must go through daily. Of course, it is for a good reason- we are responsible for documenting and justifying the expenditures of US Tax Payer dollars.

3. How did your scientific training prepare you for your current position? What other training was, or would have been, helpful?

My scientific training provided me with lab-based experience and literature research experience that are critical to evaluating proposals and managing the projects. A grant writing course, in particular, was very useful for my current role. I highly recommend that everyone take one, even if you’re not planning on staying in academia. I always think that management training would be helpful for graduate students as well as postdocs. Postdocs who want to stay in academia are expected to make a huge jump from pure research to a leadership and management role when they become PIs in academia or in the pharma industry. Maybe if they had a primer on managing researchers before applying they could get a head start on creating their management approach. Even in my job, that sort of training would have been helpful.

4. What do you think you will be doing 5 years from now?

I will probably continue to work in some sort of S&T management or tech scouting position.

5. What advice would you give to a current CU Denver/Anschutz trainee who wants to transition to your profession?

I frequently recommend a book to new colleagues called “Bureaucratic Nirvana: Life within the Box” by Hugh Montgomery. You can learn more about the DoD’s funding agencies for S&T, which can help in two ways: 1) learn how to get your own DoD funding and 2) learn how the DoD funding system is organized and funding allocated. You can also apply with (your PI) as a graduate student or post doc for DoD grants to begin learning about working with these funding agencies. There are also PhD training fellowships including the OSD NDSEG (https://ndseg.asee.org/) and SMART fellowships (https://smart.asee.org/).

Edited by Chiharu Graybill, PhD
3D Printing: The Hype and the Promise

In the basement of the Colorado Children’s Hospital, in a windowless lab, 3D printers help the CU bioengineering department develop the next generation of prosthetic arms. Reporters talk about 3D printers bringing back manufacturing jobs but their biggest potential is in R&D and building new devices that cannot be made with traditional manufacturing. In our lab, we are testing new ideas and building 3D printed metal fingers with natural shapes and internal supports that are light and strong, which would have been impossible a few years ago.

3D printing works similarly to your home paper printer: instead of making text by drawing one line at a time and moving the paper, 3D printers stack material one slice at a time until they’ve built a whole object. Just about anything can be drawn in computer modeling software and printed on a 3D printer without the constraints of machining. A new generation of engineers who grew up designing without the constraints of traditional manufacturing are entering the labor force given the promise and potential of these advances.

This technology is not trouble-free, though. 3D printers require trained operators to run, and most 3D printers are not able to turn out production level parts. High quality printers are expensive and require proficiency in computer modeling software, requiring specialized training for employees. Still, 3D printing has been a boon to R&D. We can design and print prototype parts in a few hours for a fraction of the cost of sending it to a machinist. This allows us to evaluate and improve dozens of designs in days instead of weeks and quickly make replacements for broken parts that might have stalled research for months.

Someone with an amputation recently came to our lab to test our new prosthesis. When he arrived, we realized he needed a left hand but we’d built a right hand. Instead of having to reschedule, we flipped the design in software and put it on the printer and by the time we got back from lunch, we had a new left hand and were able to do the study.

3D printing has improved productivity and accelerated research. We are developing new prosthetics and testing DIY devices to be used in hospitals. We build custom flow chambers and supports for biological studies for other labs too. 3D printing probably won’t bring back manufacturing jobs but it has created new opportunities in R&D and production here at AMC.

Imagine you are at a train station in a foreign country. Many different trains are ready to go and you have to jump on one of them. The problem is that you can’t read the signs and you don’t know where each train will take you. Hurry, though! The doors are closing. Which one will you choose?

Deciding on a career after graduate school and postdoctoral training is similar to this train conundrum: the world presents you with many career options but you have little information on what each of them is like and, worst of all, time is ticking. We are advised to decide what we want to do and then go network to get our feet wet, which supposedly leads you to your dream job and you live happily ever after.

But, how do we decide what we want to do in the first place when we only have vague ideas of each option? Moreover, the “academic or bust” attitude with which we got trained can make you feel guilty because everything other than tenure-track positions seems wrong. Thus, thinking about the next step is overwhelming and paralyzing. The common results of this freeze-out are that trainees don’t think about the future until too late and take whatever job comes at the last minute. But, aren’t we dreaming of careers that we are passionate about, use our training and talent, and contribute to the society?

To break free from the fear of plunging into a new direction, the author of How to Find Fulfilling Work promotes an “act first, reflect later” approach. While it may not be practical to quit your day job today and go explore the deepest part of your soul, the book provides strategies for how to check out what it is like to have other careers you are interested in. If you are lost about what to do after your training, this book can serve as a starting point. After all, wouldn’t it be nice to know where you are headed before you get on the train?
The PCDO Perspective:
Stop presenting your data – Start TEACHING your science

It’s not your fault – really, it’s not. But if you’ve gone through (or are going through) the process of getting a PhD, it’s likely that you’re guilty of presenting your data, and not teaching your science.

Why is this a problem? Well, communicating science is one of the core tenets of the PhD, but presentation ≠ communication. And when we don’t communicate the importance of what we do, we end up with a scientific funding climate like the one we have right now. How’s that working out?

So why does this happen? Because, that’s how we’re trained: Show me the data! Use the technical language! Demonstrate how MUCH you know! And, to whom do we present? The real experts of course! We begin our careers when we, as presenters, know about as little about our topic as we ever will. So, we fill our talks with data, lots of data – yes, data will save us!

But, you can make a change. Applying some simple principles can fundamentally transform your presentations. In return, you’ll be able to better connect to your audience(s) and more effectively communicate your message.

Know your audience: Not all presentations happen in dark, coffee-scented, conference rooms. You have an opportunity to teach your science to everyone you come into contact with, from neighbors and family members to Nobel laureates. But, your message needs to be tailored to that audience, so start by thinking about to whom you’ll be speaking.

Start at the end: After you’ve identified your audience, and before you start preparing slides, decide on your take home message. What do you want people to remember? What’s the most important finding? Once that’s defined, then you can start to determine content. And, remember, not all audiences need ALL of your data, so focus on what’s most important and let the rest go.

Assess your delivery: Did your audience get your take home message? How do you know? Read expressions, ask questions, include an evaluation. If they aren’t getting it, slow down and don’t move on until they do. If you can’t assess whether you’re communicating what you want, then you might as well just hand out your slides and go home …

Again, it’s really not your fault – at least it wasn’t. Now that you’re aware of the issue, however, your decision to continue presenting rather than teaching is up to you – so, what’ll it be?

Contributed by Bruce H. Mandt, PhD
Director, Postdoctoral & Career Development Office (PCDO)

Women in STEM Represent CU at the Women’s Day of Service

Contributed by Ashley M. Bourke
Women in STEM, Co-Founder & Secretary

The University of Colorado Anschutz Medical Campus’ Women in STEM group participated in the first Women’s Day of Service on March 25th by hosting over 50 Girl Scouts from 10 different troops at the Anschutz Medical Campus.

The goal of the event was not only to get young girls excited about science but to encourage them to think about STEM fields as potential careers. Inspired by the Women’s March in January, graduate students and postdoctoral researchers joined members of the community to volunteer for this two-hour outreach event. Brownie, cadet, and junior girl scouts participated in engaging, hands-on activities.

Activities included constructing telegraphs, deciphering Morse code messages sent from scouts fifty feet away in an adjacent room, and determining the transmission route and source of the “Dreaded Red Disease”. For the scouts, participation in the event was an opportunity to earn a STEM badge. For the volunteers, participating in the event was an opportunity to shape the next generation of scientists.

Well, did we achieve our goal? I guess you could ask the group of scouts who shouted “Women in STEM!” while getting photographed, telegraphs in hand. We hope that by hosting this event Women in STEM helped to inspire some of these girls to envision themselves as scientists in the future.
Perspectives from the NPA Conference: Does our local PDA measure up?

The National Postdoctoral Association (NPA) conference: This past March, I had the pleasure of heading to San Francisco to attend the annual NPA Conference. This conference comprised attendees from postdoctoral and career development offices (PCDO), postdoctoral associations (PDA), research institutes, funding agencies, pharmaceutical companies, and consulting agencies. This diverse community of attendees provided ample networking opportunities during workshops, plenary sessions, coffee breaks, and more. I would highly recommend that postdocs, particularly first- and second-years, attend the NPA conference as this is a great chance to network and expand your reach outside of the lab.

National Recognition: Our postdocs should be proud as we are making strides both locally and nationally. Our PDA won 2\textsuperscript{nd} place for our poster presentation! My most rewarding experience was showcasing the opportunities and events that our PDA provides. PCDOs and PDAs enjoyed learning about our offerings and I was proud to provide advice to others from what we have learned getting to this point. Big hits were our social, outreach, and advocacy events. In fact, science advocacy was one of the most talked about topics during the conference, and for good reason, given the uncertainty of scientific funding.

Lessons from the NPA conference: (1) Attend networking events. This is your chance to learn what scientists inside and outside of your field are doing, the struggles they encounter, and share in their success stories. This conference solidified the premise of exploring and investigating a variety of careers at the start of your postdoc so that you have a better idea of your career direction. (2) Keep in contact with the people you meet; you never know when they might be on the other side of your job interview table. (3) Promote yourself, have a personal brand, and make timelines. With that knowledge, you are better prepared to set goals and follow them.

Recommendations to postdocs: Our University offers many workshops through the NIH BEST program (https://gs.ucdenver.edu/best) and our PCDO (http://www.ucdenver.edu/faculty-staff/postdoctoral/forpostdocs/Pages/Current-Postdocs.aspx) that are similar to those offered at the conference, and I encourage you to take advantage of them. To the postdocs battling with the ‘what do I do next’ blues, here are some helpful links from the conference:

- Interested in academia and seeing where you rank? https://career.ucsf.edu/ACRA
- Diversity funding: http://www.minoritypostdoc.org/view/resources

Contributed by Charmion Cruickshank-Quinn, PhD

Recruitment: You can make a difference

The journey of choosing, applying to, and surviving Graduate School is not easy. Do you remember having butterflies in your stomach when you heard back from the graduate school you fancied? It was exciting and scary at the same time to have to find a place which would integrate with your identity for the rest of your life. Foresight into the process would likely have made this journey easier. Well, now your experience gives you the opportunity to make a difference for someone on the other side of the table. Hence, I helped graduate student recruitment by serving as a mock interviewer for our Graduate School’s recruitment event at the Renaissance Denver hotel. This required asking 3 relevant interview questions and giving feedback to the students to prepare them for the following day. In addition to educating the “recruits,” I was able to sit down with Kristine Sikora, Director of Recruitment, and Liz Bowen, Pharmacology and Biomedical Sciences Program Administrator, to ask them about recruitment at CU Denver.

According to Kristine and Liz, for the 2017 incoming class they processed 632 applications and hosted 200 interviewees in February. Recruitment events included a day each of Interview prep, meet-and-greets, and the actual Interviews hosted by individual programs. Other activities included a Denver tour with current students, poster sessions on campus, and a formal banquet with faculty.

Recruitment warmly welcomes prospective students to our University and city, and inculcates a sense of the unique yet highly collaborative nature of each program. By participating, I learned how to confidently represent my institution to an external community of prospective students in a responsible and knowledgeable manner. I had to do some homework to learn more about the different Ph.D. programs involved. This way, I could give constructive feedback to the “recruits” during the mock interview session and answer their queries. You can also volunteer in this or any other capacity by communicating with Liz, Kristine, or your own program’s administrator for further details. You can select the option that will help you develop whichever soft skill and experience you need for your next career level. Hence, participation in recruitment is a win-win situation. You can develop skills while helping to represent the University, build professional relationships, and inform “recruits” on an important life decision.

Contributed by Rwik Sen, PhD

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