

The NICHD Connection

March 2013

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EDITOR IN CHIEF

Shana R. Spindler, PhD
Shana.Spindler@gmail.com

LAYOUT & DESIGN

Nichole Swan

CONTRIBUTORS

Stephanie Cologna, PhD
Jeffery Head
Yvette Pittman, PhD

PHOTOGRAPHY

Jeremy Swan
Stock.XCHNG
Morguefile

Thoughts of a Postbac: The Five-Year Plan Is Not Enough

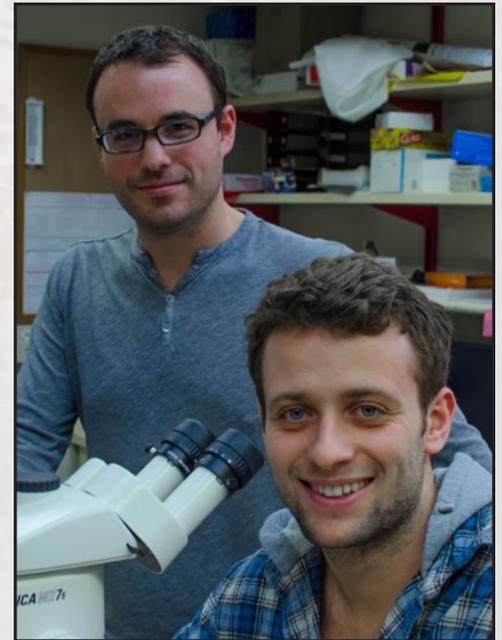
By Jeffery Head

As postbacs, the very nature of our employment is to toil endlessly over how to become the scientists and doctors we so long to be. Although we may define ourselves by the goal of obtaining an M.D. and/or Ph.D., we will inevitably be lost if we fail to recognize exactly why we want those degrees.

I was reminded of this during a conversation with Rocco Ferrandino, one of the NICHD second year postbac reps, who came into his fellowship with sights set on graduate school. When he received acceptance letters and needed to commit to a program, he took a hard look at where his life was heading and realized that he longed to interact with and assist patients. Now on his way to medical school, Rocco voiced his satisfaction with the decision: "I really feel like I'm headed in the right direction for my interests and personality. It's such a relief...I'm ready to get my life rolling."

Distant as our goals may seem (some 8-14 years away), in reality they are tangible and sit on a horizon that is only moderately out of reach. Speaking with several postdocs, I came to realize that the process of evaluating our goals does not end—it only becomes more difficult.

When I asked my mentor Dr. Damian Dalle-Nogare, for whom I have an enormous amount of respect, about his long-term goals for life after his post-doc, he paused momentarily and admitted candidly: "You kind of stop thinking about these things, you bury your head in your work to the point



Damian Dalle-Nogare & Jeffery Head

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Letter from the Editor

Everything evolves: organisms, relationships, government, and even how we do science evolves. We are practicing in a very different scientific landscape than a few decades ago. A lot of variables have influenced this: new technologies, global communication patterns, funding mechanisms, the ratio of trainees to academic positions, evaluation rubrics, team-science, and the list goes on and on.

Given this fluid atmosphere in science, young researchers are pioneering uncharted territory as they map career trajectories. I have no doubt that every fellow at the NICHD can be successful in his or her career choice, but don't be surprised if it takes a bit of planning. Which brings me to the theme of this month's issue: making a plan.

Our contributors have penned wonderfully thought-provoking articles. Jeffery Head shares his own considerations on planning in his **"Thoughts of a Postbac" column**, where he compares the planning process of younger trainees to those in more senior positions. He also discusses his own planning endeavors.

While chatting about career planning with an NICHD fellow who was struggling to balance work and family life, I learned that part-time research options for those who need them are confusing and ill defined. The new "Keeping the Thread" program attempts to address this concern, but this fellow was skeptical. To help fellows who have similar concerns and questions, we have included **a candid Q&A session with Dr. Sarah Daugherty**, an NIH

postdoctoral fellow who has navigated part-time research for several years.

Please also plan to check out the recent research from the Pacak lab in this month's **"Hot Off the Press" column**. The group's plans to develop new drug therapies in the treatment of metastatic pheochromocytoma are well on their way.

As you make your own plans, you may realize that your strengths as a scientist come in various forms. For some, those strengths are best suited to an academic, tenure-track position. For others, a certain skill set may not be utilized to the fullest behind the bench or in the lab. Policy makers, communicators, teachers, consultants, and other non-academic careers in science are all important pieces of the overall picture. **Dr. Yvette Pittman covers four basic steps** to identify and realize your ideal career in science using the myIDP website.

Whatever career path fits you best, reaching your goals will likely require planning. I know it's easier to go about life without worrying about tomorrow, assuming something will pop up and carry you to your next step. But the fact of the matter is that today's world is extremely competitive. Act now to secure your place in the future. Make a plan.

Your Editor in Chief,
Shana R. Spindler, PhD

Questions, Comments, Suggestions?
Please contact us at **Shana.Spindler@gmail.com**.

Thoughts of a Postbac (continued from page 1)



where you can't step out of the forest because you're so focused on the trees...and it's hard when the advice you so often get is to focus on publishing papers and producing quality work." That's not to say that he had not already planned on entering academia in a faculty position, only that he felt he was no longer expected to contemplate the end-state goals that so often defined his life as a student.

On a personal note, writing this article could not have come at a better time in my life. After months of confusion and continually deflecting questions about my uncertain future, I have finally chosen a (still somewhat undefined) destination of medicine or clinical research. Despite my overwhelming feeling of relief, the poignant observation of a postbac colleague that I was simply "riding a wave of hypermotivation" reminded me that I must be

diligent in my effort never to stop evaluating the reasons for which I am pursuing these goals.

There will undoubtedly come a point in all of our lives when our resolve will have hardened and our aspirations solidified into careers. Even when this time has come, we should never stop revising our goals and the foundations on which they are based. As anyone familiar with the famous quote by John Lennon that "life is what happens while you are busy making other plans" can appreciate, life will be relentless in its quest to dismantle and sometimes violently overturn whatever fragile notion of reality we may have. This is not meant to be depressing, but merely to emphasize the fact that we must strive constantly to reflect on where we are going and, more importantly, why. In this manner we can make small adjustments to the paths we have chosen so that our careers and lives will be as fulfilling as possible.

Drawing a comparison to astronomy, my mentor summarized this essential idea perfectly: "If you see an asteroid coming towards earth from far enough away, simply adding a couple of kilograms to the rock will shift its trajectory enough over time to ensure that it will continue to drift peacefully on in space." Damian then added, "But if you don't notice it until it's bearing down on you, it would take smashing a nuke into it just to narrowly avoid a collision."



How to Navigate Part-Time Work

By Shana R. Spindler, PhD

A new, three-year pilot program designed to increase work flexibility for postdoctoral fellows during times of increased family needs is underway. The “Keeping the Thread” program includes flexible scheduling, part-time work, fee-for-service options, and special volunteer status for fellows who are unable to work at some point in time, but would like to maintain access to NIH resources.

While the decision to do part-time research seems like a nice solution for fellows who require a little extra flexibility, the challenges, benefits, and practicalities of a part-time arrangement are rarely discussed. For this reason, I contacted Dr. Sarah Daugherty, a postdoctoral fellow who has worked part-time for several years. In a candid Q&A, Dr. Daugherty shares her part-time experience at the NIH. She offers a first-hand account of the realities associated with a part-time position and shares tips and suggestions on how to make the experience a positive and successful one.



Dr. Sarah Daugherty, photo courtesy of Dr. Daugherty

And now, a Q&A with Dr. Daugherty:

Can you tell us a little about the background that spawned your need to switch to part-time hours?

I started working part-time after the birth of my first child. I had been working at the National Cancer Institute in the Division of Cancer Epidemiology and Genetics as a predoctoral fellow for the previous two years and had been invited back as a postdoctoral fellow. For me, it was never a question of whether I would work part-time or full-time, but whether I would work at all. Hard to believe that I would have walked away from such an amazing professional opportunity, so I am very grateful that my mentor and branch chief allowed me to stay on in a part-time capacity.

How did you approach your PI?

I approached my mentor and branch chief together to talk about my plans for transitioning into my postdoc fellowship. We talked both about my scientific and personal plans. Before entering into this conversation, however, I had to be very honest with myself about what I would be willing to sacrifice professionally to afford this type of flexibility. This helped me determine the extent to which I would alter my schedule.

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How to Navigate Part-Time Work (continued from page 4)

Can you describe your part-time work arrangement?

I worked 60% time, which equated to three full workdays [per week].

For some fellows, the type of benchwork they perform makes part-time work very difficult. Did you come across a similar problem? If so, how did you address it?

I am an epidemiologist, so I am not directly involved in benchwork. That said, there are some universal challenges to working part-time whether you are a bench scientist or an epidemiologist. With less time at work, your productivity and visibility are reduced.

As a result,

1. projects that require speedy completion because of their novelty are difficult to take on;
2. a deadline is a deadline regardless of part-time status; and
3. recalibrating expectations to match percent effort is difficult for the fellow and mentor to quantify since the benchmarks are set by your full-time peers.

Because of these challenges, working part-time may require more forethought and purposeful planning than working full-time and definitely needs the support of multiple mentors invested in and attentive to the success of the fellow and their career.

1. Not all worthwhile projects require speed. Some projects require duration, and this is one aspect that a part-time fellow has to their advantage. Since the work time is pro-rated, you may be able to invest in a project that other full-time fellows wouldn't consider because of the length of time it would take to complete. I was able to build a resource from start to finish during the course of my part-time tenure that not only is available to me for publication, but also is now an asset to the Division and extramural colleagues as well. Without a doubt, this experience has made me a well-rounded epidemiologist with enhanced study design and management skills that I might not have honed had I followed the typical full-time fellow's path.
2. While I usually stuck to my 60% schedule, when deadlines approached I found that I worked many nights and weekends to ensure that everything was complete and in on time. This allowed me to meet my scientific goals and yet still gave me the flexibility during the week that I wanted with my young children.
3. This is one advantage to having a formalized Keep the Thread Program in place. It requires a conversation up front about expectations and this is critical to ensure that you and your mentor are on the same page.

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How to Navigate Part-Time Work (continued from page 5)

How long did you work part-time? If you are now back at full-time hours, how did you make the transition back? Was it gradual?

I worked 60% time for four years and moved to 80% time this past fall. My time as a postdoctoral fellow was pro-rated based on time worked rather than calendar time, so I am now in my fourth year as a postdoctoral fellow.

What advice do you have for fellows who are interested in part-time work?

1. Identify clear expectations with your mentor based on percent time worked before you begin your alternative schedule. These expectations can help guide your goals and productivity.
2. Select projects carefully and evaluate time investments to ensure you are able to meet expectations.
3. Talk with your mentor about projects that might contribute to resource building. This makes you a valuable asset to your immediate research community and is a unique contribution that only you might be able to make as a part-time fellow.
4. Consider finding a balance between long duration projects and papers that can be published with relative ease to keep productivity up.
5. High visibility projects become even more important for you—if you can, get involved.
6. Establish a peer network—mentoring comes in a variety of shapes and sizes.
7. Consider all aspects of your postdoctoral training—including service and professional development and be sure to stay connected in small ways to each part of your training based on percent time worked—this prevents isolation and continues your visibility amongst your peers and coworkers despite working fewer hours.
8. Explore all your possibilities before making a decision.
9. Be true and honest with yourself about your needs and priorities. The needs and priorities will shift over time; so give yourself allowances to be present wherever you are.
10. Have faith that your contribution is important and valued.
11. Don't underestimate the value of being time-rich, particularly when you have young children.

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How to Navigate Part-Time Work

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What do you feel the Keeping the Thread program adds to the arrangement you created before the program was around?

The Keeping the Thread program formalizes and validates a part-time arrangement for fellows. Its structured presence provides a foundation from which fellows and mentors can have an open conversation about the possibilities available to a fellow that would afford them greater flexibility.

The Keep the Thread program has wisely required an intentional re-entry plan. This encourages thoughtful planning from entry to completion of the program and ensures that the fellow will not languish. With this program guiding the way, the fellow and mentors are forced to make a formal commitment that establishes responsibility and accountability to the success of the individual participating.

Finally, this program offers the opportunity to establish a cohort of like-minded fellows that can provide peer-support and mentoring to each other. Choosing to reduce your professional commitments during a critical period in your training is a difficult choice. Knowing others who are navigating similar responsibilities can help facilitate better solutions to the challenges faced.

A detailed description of the *Keeping the Thread Program* can be found in the NIH Sourcebook at http://sourcebook.od.nih.gov/prof-desig/Keep_the_Thread_2012.docx.

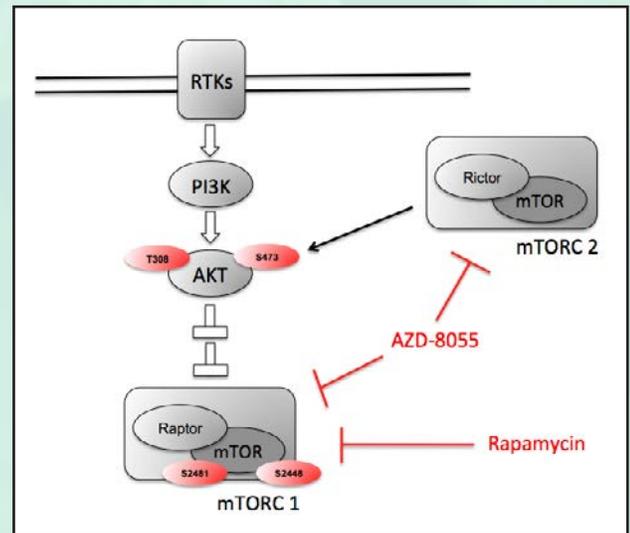
Hot Off the Press: Two Is Better Than One

By Shana R. Spindler, PhD

There is no cure. These four words are unacceptable to NICHD's Dr. Karel Pacak, who frequently meets patients diagnosed with metastatic pheochromocytoma or paraganglioma, neuroendocrine tumors arising from the adrenal gland or chromaffin cells outside the adrenal gland, respectively. Patients with pheochromocytoma or paraganglioma often have irregular heart rate and high blood pressure, owing to excess epinephrine or norepinephrine pumped from the abnormal cancer cells. While doctors treat most patients with surgical excision of primary non-metastatic tumors, for some, the tumor metastasizes to other tissues in the body. In this case, there is no cure.

The current chemotherapy for metastatic pheochromocytoma or paraganglioma is effective in about 30 percent of patients. Unfortunately, past attempts to inhibit key processes critical to cell survival have proven unsuccessful or less than optimal. For example, case reports using drugs that affect the so-called mTORC1 protein complex—a logical target in cancer given its involvement in cellular proliferation and homeostasis—report dismal outcomes for metastatic pheochromocytoma or paraganglioma.

Previously, Dr. Pacak's team found that inhibition of mTORC1 leads to the increased activity of another related protein complex, mTORC2, which is thought to influence cell motility. The old adage that two is better



Model of the mTOR molecular pathway. Some drugs, like Rapamycin, only inhibit mTORC1 activity. Other drugs, like AZD-8055, can inhibit both mTORC1 and mTORC2; courtesy of Dr. Alessio Giubellino.

than one may hold true in the treatment of metastatic pheochromocytoma: according to their new report in the February 2013 issue of *Endocrinology*, targeting both mTORC1 and mTORC2 greatly decreases tumor growth in experimental animal models of metastatic pheochromocytoma as well as in cultured tumor cells from pheochromocytoma patients.

Dr. Pacak's team, along with their collaborators from Tufts Medical Center, Harvard Medical School, AstraZeneca, and the University of Oxford, tested two experimental drugs reported to be strong

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Hot Off the Press: Two Is Better Than One (continued from page 8)

inhibitors of both mTORC1 and mTORC2, called AZD8055 and Torin-1, on a mouse cell line commonly used for pheochromocytoma research (stable human cell lines from pheochromocytoma tumors do not exist). When exposed to the drugs, the cultured cells showed less proliferation and decreased cell migration. The team also showed that each drug inhibited downstream cellular activities controlled by mTORC1 and mTORC2.

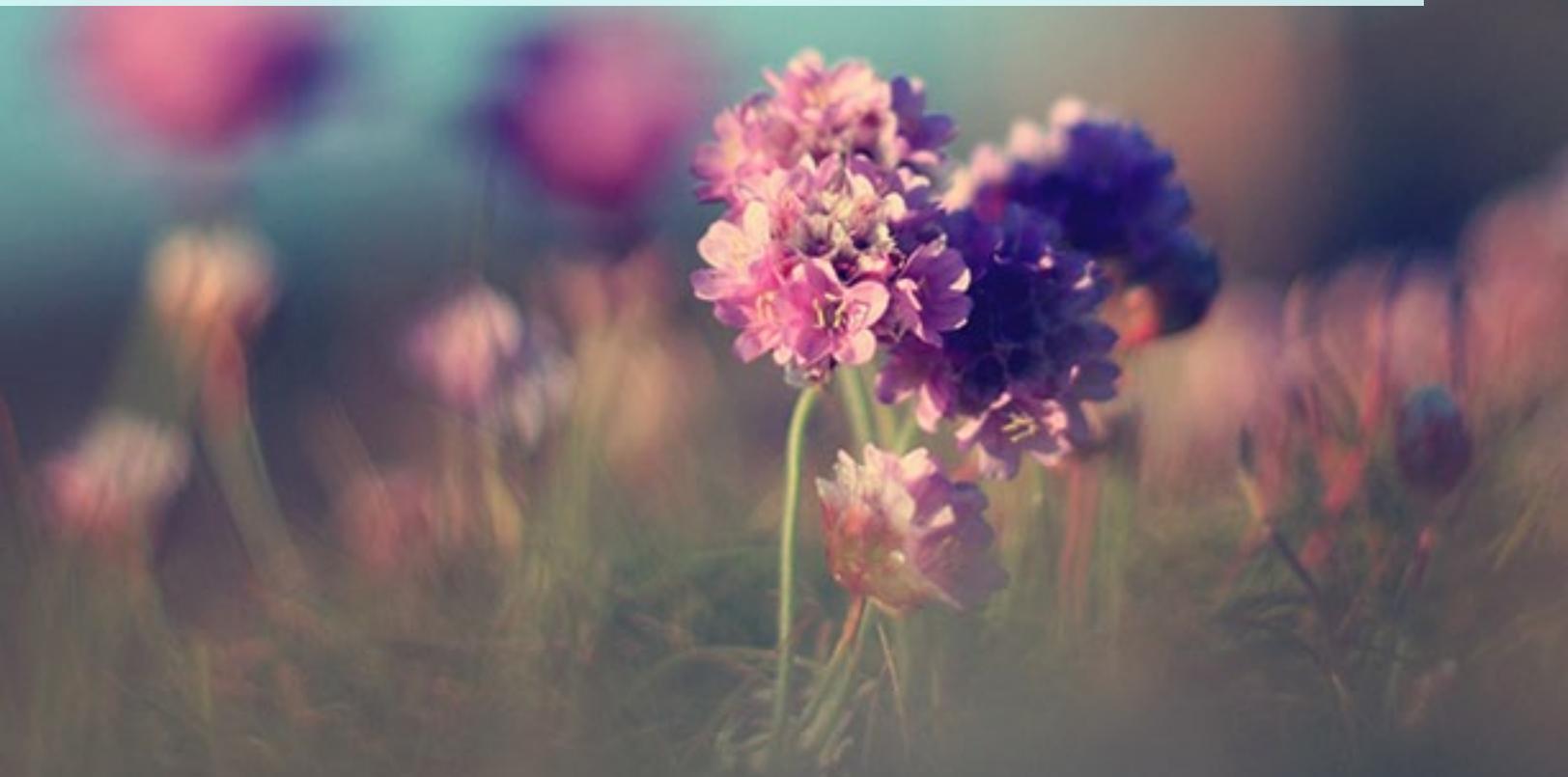
Encouraged by the *in vitro* results, the researchers tested AZD8055 on a recently developed mouse model of metastatic pheochromocytoma. The drug significantly reduced the formation of metastatic tumors in lungs. In one last experiment, the team exposed cells taken from the tumors of pheochromocytoma patients to AZD8055 and Torin-1 in culture conditions. Both drugs cut

tumor cell survival in half.

“I’m convinced this study will facilitate the use of drugs that will combine inhibition of both mTORC1 and mTORC2,” says Dr. Pacak, who believes clinical trials will start sometime very soon.

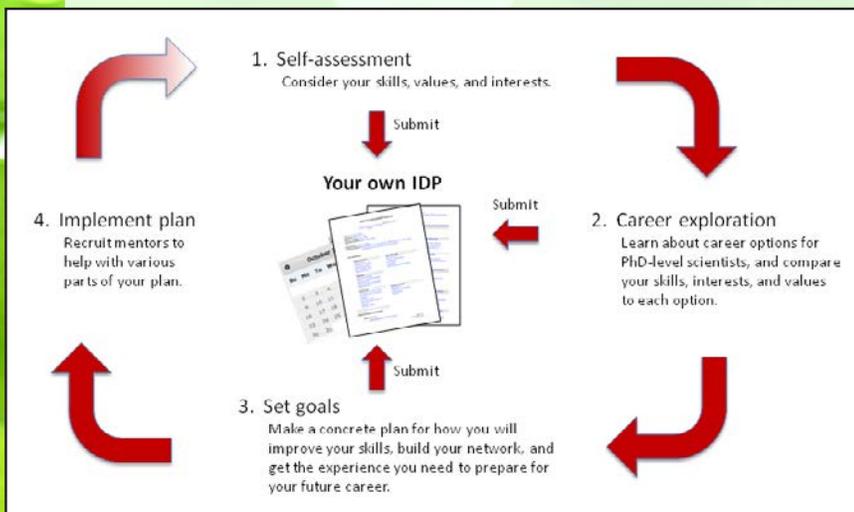
This is good news for Dr. Alessio Giubellino, NICHD research fellow and lead author of the study. He arrives to work each morning with an aim to find therapies for all these patients, no matter their metastatic status. “To know that the work we are doing in the lab will benefit the future of many patients, it motivates us every day,” says Dr. Giubellino.

Hopefully, with a little luck and a lot of perseverance, Dr. Pacak will at some point assure all his patients: there is a cure.



Career Planning with myIDP: The Four-Step Process

By Yvette Pittman, PhD



while providing a sense of skills you need to improve as a young scientist. The assessments are well executed, as they capture many topics that scientists think about when planning their career paths. For example, the skills assessment categories are based on the core competencies of the National Postdoctoral Association for PhD scholars, for example, research skills, communication, management, and leadership.

Adapted from <http://myidp.sciencecareers.org>

As you take a closer look at the “myIDP” website, you’ll see that creating your very own IDP is only a four-step process: self-assessment, career exploration, goal setting, and plan implementation.

The first step of the myIDP process is to complete three self-assessments that evaluate your skills, interests, and values. The process will help you reflect on what you enjoy doing and what you want to avoid in a future job,

Using the information from your self-assessments, the second step provides match scores to 20 different career categories for scientists, from principal investigator in a research-intensive institution to clinical research management. This can help you determine which scientific career option best fits YOU and what vital skills you may need to succeed in a particular career path. The myIDP website also offers countless resources for this career exploration step while encouraging you to attend meetings, join professional societies, and talk to people

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Career Planning with myIDP: The Four-Step Process

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ON THE JOB HUNT?

Try the following resources:

NIH Intramural Science LinkedIn Jobs List
(<http://www.linkedin.com/groups/NIH-Intramural-Science-1404617/about>)

BioCareers
(<http://nichd.biocareers.com>)

OITE Virtual Career Center Job List
(https://www.training.nih.gov/career_services/jobs)

Science Careers Job Search
(<http://scjobs.sciencemag.org/JobSeekerX/SearchJobsForm.asp>)

associated with the career of your choice.

Once you have identified your preferred career path, the third step is to set goals, which help you move forward—one step at a time. Whether related to your career advancement, skill set, or research project in the lab, myIDP strongly suggests setting SMART goals that are Specific, Measurable, Action-oriented, Realistic, and Time-bound. It is important to focus on improving the target skills that potential employers value.

The fourth and final step is to implement your plan by completing task and meeting deadlines according to your specific goals. The myIDP site also prompts you to take the time to build a team of mentors with different expertise, as they can guide you throughout your career and help you meet your goals. Of course, it is important to keep the ultimate goal in mind—a satisfying and successful career.

Log in at <http://myidp.sciencecareers.org> and begin your myIDP self-assessments now!

Committee Corner Column: February Meeting Summary

By *Stephanie Cologna, PhD*

The Fellows and the Office of Education held an open forum for all NICHD Fellows on February 12th to discuss current topics, events, and brainstorm about future activities. Here's a list of highlights from the meeting.

- » First, the **NICHD Fellows' Retreat is May 21, 2013**, proposed to take place at the Smithsonian National Museum of the American Indian. Drs. John Bohannon and Shirley Tilghman are confirmed as our speakers! There will be a strong focus on careers and this is a great time for you to network and learn more about what is going on in NICHD.
- » The FARE website is now up! Submit your FARE abstract for a chance at a travel award. Don't forget FARE abstracts have a different format; a tip sheet will be emailed. More info can be found at: <https://www.training.nih.gov/felcom/fare>
- » Career Development: Check out myIDP (<http://myidp.sciencecareers.org>) to develop your own development plan [[see article](#) in this issue of the *Connection*].
- » Public speaking and interview coaching sessions are available with Scott Morgan. Contact **Brenda Hanning** to coordinate a time to work with Scott.
- » Upcoming events include a seminar on bioinformatics on March 21st as well as workshops for Fellows, workshops on cover letter and CV writing, and peer networking events in the summer.

We are always looking for fellows who want to get involved. If you are interested in helping out with any of the upcoming activities, or have any questions, please email Brenda Hanning (hanningb@mail.nih.gov).

March Announcements

DR. ANDY BAXEVANIS TO DISCUSS 21ST-CENTURY SCIENCE

Dr. Andy Baxevanis, assistant director of Computational Biology for the NIH Intramural Research Program, will visit with NICHD fellows to discuss the role of bioinformatics in 21st-century science on **March 21, 3-4 p.m. in building 31, room 2A48.**

Dr. Baxevanis' talk, titled "The Genome of the Ctenophore *Mnemiopsis leidyi*: Insights into the Genetics of Innovation and the Evolution of Multicellularity," will explore the integration of bioinformatics into biological research. He will provide training resources for fellows in the presentation, as well.

Before assuming his current position, Dr. Baxevanis served as NHGRI's Deputy Scientific Director from 1998 to 2011. He has co-authored a bioinformatics textbook, served as Executive Editor for *Nucleic Acids Research*, and currently serves as Editor-in-Chief for *Current Protocols in Bioinformatics*—all while maintaining an active involvement in teaching at The Johns Hopkins University and Boston University.

In 2000, the Bodossaki Foundation awarded Dr. Baxevanis Greece's highest honor for young academics and scientists of Greek heritage, the Academic Prize in Medicine and Biology. Dr. Baxevanis has also received the 2007 IEEE Computer Society's Outstanding Achievement Award for his contributions to the field of bioinformatics.

Please mark your calendars and join us for this not-to-be-missed talk! For more information, please contact Brenda Hanning and hanningb@mail.nih.gov.



Dr. Andrew Baxevanis; photo credit: Maggie Bartlett, NHGRI

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March Announcements

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SAVE THE DATE! POSTER JAM IS FRIDAY, APRIL 19, 10-12 NOON

Postbac Poster Day 2013 is scheduled for May 1st and the deadline for submitting our poster titles is Friday, March 29th. Save-the-date for Poster Jam on **Friday, April 19th, from 10 am to 12 noon**. Come and learn how to give a crisp three to five minute presentation of your poster, with public speaking coach Scott Morgan. The judges of Postbac Poster Day will appreciate a concise description of your research!

Registration is open to NICHD postbacs first!

GENOME EXHIBIT AT THE SMITHSONIAN—VOLUNTEERS NEEDED

Are you looking for an informal teaching opportunity? Do you enjoy talking about science with nonscientists and children? You might consider volunteering at the Smithsonian Museum of Natural History's new genomics exhibit, "Genome: Unlocking Life's Code," scheduled to open in June 2013 (<http://www.genome.gov/Smithsonian/>).

According to the NIH OITE website:

Public engagement will play an important role in extending the impact and reach of this groundbreaking exhibit. Senior scientists and staff, as well as graduate students and postdoctoral fellows* with their supervisor's recommendation, are invited to present in informal programs hosted by the museum: "The Scientist Is In" and "Genomic Nerds."

Science teaching programs in nonacademic environments are unlike standard scientific talks. Volunteers must attend a one-hour training session on the NIH campus that focuses on effectively communicating your science in an informal museum setting.

For details about "The Scientist Is In" and "Genomic Nerds" programs and contact information to volunteer, please visit <https://www.training.nih.gov/sas/20/499>.

*Interested Postbac? Email NMNHVolunteer@si.edu for additional volunteer opportunities.

DON'T FORGET TO CHECK OUT OITE-HOSTED EVENTS

The NIH's Office of Intramural Training and Education hosts a number of workshops and seminars for fellows at all stages in their careers. Some of the topics in March include industry interviews, the transition from postdoc to faculty, and personal statements for professional school—among many others. For dates, times, and registration, please visit <https://www.training.nih.gov/events/upcoming>.

March Events

MONDAY, MARCH 11, 3-5 PM

FELCOM Event: Careers in Government

A panel of Ph.D.-level scientists who have transitioned into various areas within the federal government will discuss day-to-day routines, likes, dislikes, and how they landed their current positions. A social networking event will follow the seminar.

Building 50, Room 1227

Please register online at <https://www.training.nih.gov/events/view/2/1056/>
FelCom Event Careers in Government

THURSDAY, MARCH 21, 3-4 PM

“The Genome of the Ctenophore *Mnemiopsis leidyi*:

Insights into the Genetics of Innovation and the Evolution of Multicellularity;”
on 21st-century science/bioinformatics

with Dr. Andy Baxevanis, NHGRI

Building 31, Room 2A48

Please see March announcements for more info, [pg 13](#)

MONDAY, MARCH 25, 2-4 PM

Public Speaking Workshop: “The Grant Pitch”

Led by Scott Morgan

This workshop is designed to help fellows explain their work to a variety of audiences. Commonly known in America as the “Elevator Speech,” framing one’s work in the right context with the proper amount of background is critical for interviews, grants, job talks, and scientific presentations in general. This extremely interactive and hands-on workshop will provide a safe environment to practice delivery before one’s peers, and by the end of the session, participants will feel comfortable sharing the essence of their work to just about anyone.

Scott Morgan is a well-known public speaking coach and has been teaching science communication for 18 years. His clients include a majority of the institutes at the NIH, Merck, NASA, EPA, and several universities (UNC Chapel Hill, Cornell, Maryland, Ohio State, Minnesota, Duke). In addition, he teaches media training and communication skills for many research think tanks in the Washington DC area. Scott has also co-authored the book “Speaking about Science” published by Cambridge University Press (2006).

Note there are 25 spots available for this workshop, if you would like to attend, please send Yvette Pittman (pittmanyv@mail.nih.gov) an email.