

The NICHD Connection

June 2011

INSIDE THIS ISSUE

The Scientific Landscape to Come: The Seventh Annual NICHD Fellows Retreat	1
Letter from the Editor	2
There Once Was a Fellow from the NIH...	3
Recap for the FranklinCovey Writing Advantage Workshop	4
Committee Corner: Opportunity Awaits	5
2011 Mentors of the Year	7
Interesting Opportunity: DC Science Cafés	8
June Events	8
June Announcements	9

EDITOR IN CHIEF

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

LAYOUT & DESIGN

Nichole Jonas

CONTRIBUTORS

Preethi Chandran, PhD
Christelle de Renty, PhD
Kevin Francis, PhD
Kris Langlais, PhD
Saravana Murthy, PhD
Shana R. Spindler, PhD
Mark Ziats
Silviya Zustiak, PhD

PHOTOGRAPHY

Jeremy Swan

The Scientific Landscape to Come: The Seventh Annual NICHD Fellows Retreat

By Shana R. Spindler, PhD

At an annual meeting of NICHD fellows, science is discussed, laughs are had, and maybe even a thing or two is learned. But this year something truly special happened. A theme emerged that united science with often-overlooked necessities: communication and teamwork.

The face of science is changing. The idea of a lone scientist, running a one-man-band-operation from a secluded lab, is being replaced by visions of highly skilled teams pulling talents from multiple disciplines. Most importantly, science is no longer sequestered to the research lab or to conversations among a narrow set of colleagues. Science is being presented to our policy makers, our teachers, our mothers and fathers, even our children.

Dr. Ann Bonham, Chief Scientific Officer of the Association of American Medical Colleges, set the stage with her keynote address “Science, Society, and the Social Contract.” As she articulated the realities of science, her attitude was cheerful and optimistic, yet her message was firm: the future of scientific progress depends upon our ability to communicate science—not only to each other, but to the general public as well.

“We have the privilege of improving the lives of people through discovery,” said Dr. Bonham. With privilege, however, comes responsibility. While 84 percent of the public believes science has a positive effect on society, she explained, only 41 percent of congressional staffers know how NIH funding is used. Dr. Bonham emphasized that it is important to sustain excellence in discoveries, but it is just as important to disseminate that information.

Her solution: we must take into account workforce realities. “We have to come to grips with the fact that graduate students and postdocs are actually workers *and* trainees,” said Dr. Bonham. She encouraged investing in new partnerships and broadening career paths during training. Most importantly, she stressed, it is not necessarily a lack of technical ability that hampers a career, but a lack of clarity in communication with others and an inability to work in teams that can hinder a person’s influence in science.

Dr. Constantine Stratakis, NICHD Acting Scientific Director, mirrored Dr. Bon-

(continued on page 2)

Letter from the Editor

It's been one year since the beginning of this newsletter, and what a year it has been! First and foremost, thank you to all of the fellows who have contributed articles, ideas, stories, research summaries, event recaps, and their time to make this newsletter happen.

Many of us get lost behind the bench, spending days and nights running gels, programming simulations, or troubleshooting. In the midst of collecting data, we must emerge every now and then from the focused corners of the mind to attend a workshop or talk to a colleague. Science is very quickly becoming a team sport rather than an individual race. Communication and collaboration have become the name of the game.

Our leaders at the NICHD understand this. To help our trainees be the most competitive scientists on the market, the NICHD hosts many career-broadening opportunities, from learning about team science to exploring short internships in various scientific

professions. This newsletter is an attempt to keep fellows updated on everything the NICHD has to offer.

Have you read a recap of an event that looked interesting? Mark it on your calendar to go the next time it's scheduled. Did a research summary from another fellow sound like it might provide insight into your own work? Email your colleague and compare notes. Did you see an article about parenting as a postdoc that inspired you to try something new? Spread the word!

These examples, and the many other actions like them, are the reasons why we write this newsletter. Scan the articles—find something that you can relate to. Use this publication to help you realize your tremendous potential.

Your Editor in Chief,
Shana R. Spindler, PhD
Shana.Spindler@gmail.com

Seventh Annual NICHD Fellows Retreat (continued from page 1)

ham's sentiments. "It is clear today, in the 21st century, that great science can not be done by a single person," affirmed Dr. Stratakis. He insisted that it is the NIH trainee's responsibility to inform the US public of the importance of science, serve as a mentor in the community, and understand that it is a privilege to discover something new. His final—not so small—request: "I want you to move the world!"

Whether a scientist moves the world as a principal investigator or a policy maker, it is important to consider that there are multiple ways to play a role in science. During the retreat, an informal break-out session allowed fellows to explore a variety of career opportunities, such as tenure-track research at a university, pharmaceutical research, science policy, and grants administration. Commonalities at the tables included the use of networking to find and obtain a position and the use of teamwork to

Keep an eye out for *Former Fellow Follow-ups* of the invited career table participants in future newsletter issues!

succeed.

Whether a session was about various career paths in science, the latest Ig Nobel Prizes, or projects studying *Legionella pneumophila* infection or diffusion tensor imaging, this year's retreat maintained an underlying tone of team science and communication.

Some fellows attended the meeting to take a small break from the bench. Some came to eat good food and have fun at the Whistling Swan Pub. Some even came to learn about their colleagues' research. But perhaps in the end, every fellow left with something a little unexpected: a vision of the scientific landscape to come.

There Once Was a Fellow from the NIH...

In honor of Marc Abrahams's annual retreat keynote address, "Improbable Research and the Ig Nobel Prizes," *The NICHD Connection* asked the fellow retreat presenters to generate a humorous limerick according to their talk's title.

Disclaimer: *The NICHD Connection* will not be held liable for anyone who busts a gut from reading this article.



"Modulation of DNA Condensation by Ion Valence for Nanomedicine Applications"
By Preethi Chandran, PhD

How DNA pack together is a mystery,
They need polycations, not eHarmony
Short DNA slows the affair
Fibers form, and their romantic flare
Helps DNA stick together for me to study!

(Preethi Chandran studies DNA assembly into nanoparticles using positively charged molecules. Her research has implications for a novel mechanism of DNA delivery during gene therapy.)



"Analysis of DNA Re-replication Dynamics by a Single Molecule Approach: What Can We Learn about Origins of Replication in Mammals?"
By Christelle de Renty, PhD

There once was a replication origin
That copied DNA over and over again
A brush you'll see
Can't detangle this mystery
We'll comb the DNA straight then

(Christelle de Renty is interested in the mechanism of DNA re-replication, an event where DNA is copied too many times in a same cell cycle. As mentioned in her limerick, she uses

a technique called DNA combing to separate DNA into single molecules for study.)



"Generation of Induced Pluripotent Stem Cells Is Regulated by Mitochondria within the Somatic Cell of Origin"
By Kevin Francis, PhD

Mitochondria serve many roles
During apoptosis, their membranes form holes
But if mitochondria are slow
Stem cell pluripotency is low
And now you're even further from your goals

(Kevin Francis studies how mitochondrial activity affects a mature cell's ability to reprogram back into a stem cell state. Kevin is excited that these induced stem cells can be used to create "diseases in a dish" for patient-based therapy.)



"An N-terminal Truncated Carboxypeptidase E Splice Isoform Induces Tumor Growth and Is a Biomarker for Predicting Future Metastasis in Human Cancers"
By Saravana Murthy, PhD

If there is a tumor in us
Look in the cell's nucleus
With CPE-delta-N
The tumor's movin'
Oh no, that's dangerous!

(Saravana Murthy studies the expression and localization of a protein known as CPE-delta-N in metastatic tumors. His findings suggest that a doctor can predict the outcome of a patient by determining the amount of CPE-delta-N in the nuclei of sporadic tumor cells.)

(continued on page 4)

There Once Was a Fellow from the NIH...

(continued from page 3)

“Gene Expression Profiling of Autism Candidate Genes in the Developing Human Brain Implicates Central Immune Signaling Pathways”

By Mark Ziats, future MD-PhD!

Autism genetics are complex
So the expression profiles were indexed
We were surprised to find
Pathways converge on cytokines
Novel implications for the Autistic cortex

(Mark Ziats uses bioinformatics to determine if Autism candidate genes are expressed in the human brain during development and to find if the candidate genes belong to a set of common biological processes. So far, he has found interesting evidence that cytokine signaling, a process used by the immune system, is a common thread among candidate genes.)

“Hindered Diffusion in Polymeric Solutions Studied by Fluorescence Correlation Spectroscopy”

By Silviya Zustiak, PhD

The study of protein diffusion
Is mostly full of confusion
Because we didn't know
Crowding versus binding's role
Binding hinders more is our study's conclusion

(Silviya Zustiak studies how non-specific binding and crowding affects the ability of proteins to diffuse in the intracellular environment, a notoriously difficult process to measure. Silviya is also the author of our popular postdoc parent articles!)



Have a funny limerick of your own that you'd like to contribute to the newsletter? Send an email to Shana.Spindler@gmail.com!

Recap for the FranklinCovey Writing Advantage Workshop

By Shana R. Spindler, PhD

Writing without planning can be a daunting and time-consuming task. The NICHD Office of Education scheduled a full-day FranklinCovey *Writing Advantage* workshop on May 2, 2011, to give NICHD fellows the tools to feel empowered during the writing process.

Cordell Kylo, the workshop leader, presented a number of helpful writing tips during the meeting. A few main points stood out among the suggestions:

- Think for the reader
- Brainstorm ideas before writing
- Use the “Effective Writing Process”

THINK FOR THE READER

Every piece of writing should begin with the

reader in mind. Who are the readers? What do they need to know or do as a result of the writing? What are the readers' priorities? By keeping these questions in mind, a piece of writing is more likely to be effective.

A writer must also take into account how the target audience will read the document. For documents that will be read quickly, bullet points, simple bold titles, and short paragraphs can help a reader find and understand the information.

BRAINSTORM IDEAS BEFORE WRITING

Before writing a document, brainstorming can help capture new ideas and discover alternatives,

(continued on page 6)

Committee Corner: Opportunity Awaits

By the NICHD Fellows Committee

Do you have ideas, big or small, to make the training environment at NICHD even better? Do you feel like we need to strengthen our community with more communication, cross-pollination, and social events? Are there any resources you'd like to see available to us?

Nearly a year ago, a group of NICHD fellows who answered yes to these questions came together with a goal to foster communication among fellows, our mentors, and the general public. This group became the NICHD Fellows Committee. Today, the Committee continues to disseminate information, provide opportunities for networking, and foster a spirit of collegiality.

In the year that the Committee has been active, we have formed strong ties with NICHD leadership, developing a convenient platform to discuss our ideas/wants/needs within the committee as well as presenting them upwards if needed.

The Committee has already established a mission of communication and a set of core activities, but so much more is possible. In our partnership with the NICHD leadership, the Committee is and will continue to be a driving force in the NICHD community; our future possibilities are

wide open.

The core activities of the Committee include production of a fellows newsletter, organization of fellow gatherings, and formation of semi-monthly meetings to discuss how we can broaden our career opportunities through our training at the NICHD.

The time commitment to be part of the NICHD Fellows Committee is minimal, but the payout is substantial. The committee meets every other month (Jan, Mar, May, July, Sep, Nov) for one hour. Committee members are expected to occasionally contribute to the newsletter in the form of an article, interview, or idea. Finally, members can help make the mission of the committee possible by contributing during committee meetings or simply communicating more in their own labs.

If you are excited about the future of science, help make the NICHD shoot ahead of the power curve and continue to be one of the leading places in the world for the preparation of future scientists, policy makers, writers, consultants, and other careers that can benefit from world-class training.

Interested? Please contact Brenda Hanning at hanningb@mail.nih.gov



FranklinCovey Writing Advantage Workshop (continued from page 4)

said Cordell. Two brainstorming techniques include free writing and sticky note grouping.

During free writing, the author rapidly writes any thoughts that come to mind and avoids self-editing. Free writing enables new ideas to surface and can help overcome writer's block.

Putting separate ideas on sticky notes enables the writer to organize thoughts into a logical order. A scientist may find this process helpful while writing a materials and methods section with a colleague.

USE THE "EFFECTIVE WRITING PROCESS"

The "Effective Writing Process" helps you *PLAN, DESIGN, DRAFT,* and *REVISE* a document.

Planning includes identifying the target audience and brainstorming ideas. Cordell suggests using a document planner that identifies the document's purpose, what the readers should know or do, and who the readers are.

Designing documents can be guided by a four-box format:

1. Document's Purpose
2. Preview of key supporting

- points
3. Details
4. Review

Each section should be clearly separated, and subsections should have clear, informative headings. This article is an example of the four-box format.

Drafting a document is often the most difficult stage. Cordell suggests using your document planner, starting with an easier part of the document, and writing the first draft without self-editing.

Revising is the final stage of writing. "Be clear, concise, and correct," emphasizes Cordell. Revise the document for paragraph length, the use of active voice, and word choice.

THE "EFFECTIVE WRITING PROCESS" MAKES WRITING MORE EFFICIENT

With a little planning and patience up front, you can save valuable time when writing a document. The *Writing Advantage Workshop* offered useful tips about how to plan, design, draft, and revise your writing. Most importantly, "quality is in the mind of the reader," said Cordell.

Dr. Roger Woodgate (Investigator) and Dr. Lauren Waters (Fellow) Named 2011 Mentors of the Year

What makes a top-notch mentor? According to this year's nomination letters, great mentors provide a supportive yet challenging environment, help trainees with their current projects as well as future career goals, and foster independent thinking while offering appropriate guidance. But don't take it from me; check out a few excerpts from the nomination letters for Dr. Woodgate and Dr. Waters:

ON DR. WOODGATE:



Mentor of the Year 2011, Investigator Dr. Roger Woodgate, with Brenda Hanning

as to work on achieving ultimate career goals."

"Roger is an exceptional mentor because of his vision for the direction of the scientific research of the lab as a whole and for the individual scientists within the lab."

"Roger's support, dedication, and commitment extend to everybody in the lab. He really cares about the scientific growth of his postdocs and fellows, constantly challenging them with interesting problems. He is always willing to help to solve their immediate tasks as well

"I learned from him how to interact with young postdocs and students, how to teach them, and how to show them the beauty of science."

"Dr. Woodgate has created a very friendly and supportive atmosphere in his laboratory."

"Meetings with Roger are both stimulating and challenging. His sincerity, insight, and thoughtful approach make even complex tasks interesting and compelling."

"Roger considers collegiality being integral to success. He puts the extra effort into creating a welcoming environment in the lab, where everybody is respected as a valuable member"



Mentor finalists Left to Right with acting Scientific Director Dr. Constantine Stratakis (center), Dr. Owen Rennert, Dr. Leonid Margolis, Dr. Stratakis, Dr. Roger Woodgate, and Dr. Karl Pfeifer.

(continued on page 10)

Interesting Opportunity: DC Science Cafés

By Shana R. Spindler, PhD

“Your chin is made of exploded stars!” quipped John C. Mather, Senior Astrophysicist at the Goddard Space Flight Center, 2006 physics Nobel Laureate, and most recent DC Science Café speaker. The room at Busboys and Poets was packed, not an empty seat in the house. The specialty drinks of the night, “Big Bang” and “Dark Energy,” were delivered to the crowd of reporters, geologists, chemists, librarians, civil rights attorneys—well, you name the profession and it was probably represented!

The group had gathered to learn about the complexities of astrophysics from one of the brightest minds in the field, but in a language understood by the general public. Eyes were trained on the tall, skinny man with prominent glasses who was about to simplify decades of complicated research into an evening discussion with both scientists and laymen.

A broad range of scientific backgrounds is at the heart of a science café. Meant to be a gathering place for the general public to learn about the lat-

est scientific discoveries, methods, models, or ideas, the science café offers the opportunity to contribute to today’s scientific discussion in a welcoming and non-intimidating atmosphere.

Every time Dr. Mather answered a question, ten more hands would shoot into the air. It was a night to learn about the big bang, dark energy, Hubble’s 1929 discovery, black holes, and what a Nobel Laureate enjoys in his free time—which happens to be the study of human history and anthropology.

If you’d like to take advantage of this interesting opportunity, the next DC Science Café will be held Monday, June 13, 6:00 PM at Busboys and Poets, 5th and K St. NW Washington DC. The theme of the night: NPR’s Joe Palca on “Annoying: the science of what bugs us.”

For more information, please visit <http://www.dcswa.org/mc/page.do?sitePagelD=127243>

June Events

TUESDAY, JUNE 14, 1-3 PM

Careers in Contract Research Organizations (CROs)
Hosted by OITE
Building 10, Lipsett Amphitheater
Please register at <https://www.training.nih.gov/events/upcoming>

TUESDAY, JUNE 14, 3-4 PM

Networking with Illumina
Hosted by OITE
Building 50, Room 1227
Please register at <https://www.training.nih.gov/events/upcoming>

TUESDAY, JUNE 21, 10-11:30 AM

Postdoc Success Forum: a panel of NIH fel-

lows including Wenge Zhu, PhD, of NICHD, now in Dept of Biology at George Washington University, discuss their upcoming (and recent) career transitions. Watch for announcements through OITE or send Brenda Hanning a message at hanningb@mail.nih.gov, registration limited to 35 people because of space.

MONDAY, JUNE 27, 12-1:30 PM

Careers in Consulting
Dr. Zigurts (Ziggy) Majumdar, NICHD alum- nus now working at Booz Allen Hamilton. This is the event rescheduled from the retreat. Contact Brenda to sign up at hanningb@mail.nih.gov

June Announcements

THE NICHD CONNECTION CELEBRATES ITS ONE-YEAR ANNIVERSARY!

Thank you to all of the postdocs, postbacs, grad students, and undergrads who have contributed their ideas and time to this newsletter. You have helped make this a place of entertainment, information, and inspiration for fellows, by fellows. If you would like to contribute to the newsletter, please contact Shana Spindler at Shana.Spindler@gmail.com.

NICHD “MENTOR OF THE YEAR” ANNOUNCED

Every year, members of the NICHD community submit nomination letters for investigators and fellows who embody the characteristics of a great mentor. This year, Dr. Roger Woodgate, Chief of the Laboratory of Genomic Integrity, and Dr. Lauren Waters, postdoctoral fellow in the lab of Dr. Gisela Storz, accepted the 2011 “Mentor of the Year” award at the June 1st PI Retreat. See [page 7](#) for excerpts from the letters nominating Drs. Woodgate and Waters!

CONGRATULATIONS TO THE POSTBAC POSTER AWARD RECIPIENTS

After months and weeks of preparation, our post-baccalaureate fellows did a wonderful job presenting their posters at the 2011 NIH Spring Research Festival, but only three could take home the best poster award. The winners of the three best posters (unranked) for 2011 are: **Alexander J. Blood** (lab of Dr. Heiner Westphal), **Austin Good** (lab of Dr. Karl Pfeifer), and **Melissa Sandoval** (lab of Dr. Gisela Storz). Each winner received a dedicated, autographed copy of Dr. Francis Collins's book, *The Language of Life: DNA and the Revolution in Personalized Medicine*. Congratulations on a job well done!



Best poster winners Melissa Sandoval, Austin Good, and AJ Blood.

2011 Mentors of the Year (continued from page 7)

ON DR. WATERS:

"Dr. Waters's mentoring style is very positive; she is very supportive and encourages me to develop communication and analytical skills critical to becoming a successful scientist."

"Dr. Waters continues to encourage me to propose experiments or explanations of results in a supportive environment."

"As a result of Dr. Waters's constant communication, encouragement and support for independent thinking, I have been given constructive criticism leading to my progressive growth as a young scientist."

"Dr. Waters is passionate about science and mentoring. She represents NICHD to the highest standards through exceptional mentoring and is the caliber of mentor that the NIH expects in its postdoctoral researchers."

(continued on page 11)



Kristofor Langlais, PhD, NICHD Felcom Rep 2011 (background), with Brenda Hanning and one of three best poster winners, Austin Good.



Melissa Sandoval, one of the Best Poster winners, with Brenda



Kara Lukasiewicz, PhD, giving Mentor of the Year awards

BELOW: Graduate student Kel Sheldon, Dan Crooks, and Madhav Sukumaran



2011 Mentors of the Year (continued from page 10)



Dr. Roger Woodgate accepts his award.

Dr. Roger Woodgate is the Chief of the Laboratory of Genomic Integrity. In his 20 years at the NICHD, he has learned a thing or two about mentorship. His thoughts:

"I believe that my goal as a scientific mentor is akin to that of teaching somebody to swim. If you throw somebody who can't swim into the deep end of the pool, chances are that person won't be around too long. If, however, you start off in the shallow end and teach them how to swim over a period of time, you are likely to have more 'survivors' when you get to the deep water. It's pretty much the same thing with scientists. You can't necessarily expect a fellow coming to your lab to be absolutely brilliant the day they walk through the door...a good mentor needs to be patient, and provide guidance and support, as the fellow develops their own scientific skills and talents."

Dr. Lauren (Laurie) S. Waters is a postdoctoral fellow in the lab of Dr. Gisela Storz. The NICHD Connection congratulates Dr. Waters on the new addition to her family. We can rest assured that the baby will be well mentored!



Melissa Sandoval accepts the award for her mentor, Dr. Laurie Waters.

Congratulations to Drs. Woodgate and Waters! Here's a look at all "Mentor of the Year" finalist investigator nominees with their nominators:

- **Dr. Leonid Margolis** by Christophe Vanpouille and Andrea Lisco, postdoctoral fellows
- **Dr. Karl Pfeifer** by Austin Good, postbac
- **Dr. Owen Rennert** by Mark Ziats, graduate and medical student
- **Dr. Roger Woodgate** by Ekaterina Chumakov, John McDonald, Justyna McIntyre, Wojciech Kuban, Alexandra Vaisman, and Mary McLenigan, scientists and fellows in his lab