

# The NICHD Connection

## August 2019

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## Fifteenth Annual Fellows Retreat Recap

The NICHD Fifteenth Annual Meeting of Postdoctoral, Clinical, and Visiting Fellows and Graduate Students took place on May 31, 2019, at the William F. Bolger Center in Potomac, Maryland. The day began with a thought-provoking perspective on science in the mid-21<sup>st</sup> century by Scientific Director Dr. Constantine Stratakis. “Everything flows. Everything changes,” he reminded the crowd. “There is not another time in human history that things changed so fast.” To keep up with the pace of modern science as a trainee, Dr. Stratakis promoted three types of mentorship: primary mentor, advocate/sponsor, and advisor. And he emphasized that fellows need all three.

Following the Scientific Director’s opening remarks, the retreat planning committee treated fellows to a line-up of intriguing presentations, from the benefits of dog genetics to the varying roles of a mentor. Without further ado, we are excited to bring you the 2019 Annual Fellows Retreat recap, written by our very own NICHD fellows. Enjoy!

*Retreat photography by Mojgan Yazdankhah*



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## Letter from the Editor

When I was a child, I knew what I wanted to be when I grew up. The profession changed—about as often as my shoe size—but whatever the career of the month was, I *knew* that's what I wanted to be. An architect. An author. An inventor. A scientist. But as my age increased, that sense of certainty decreased. I still wonder now, *what do I want to be when I grow up?* I wager I'm not alone in thinking this question.

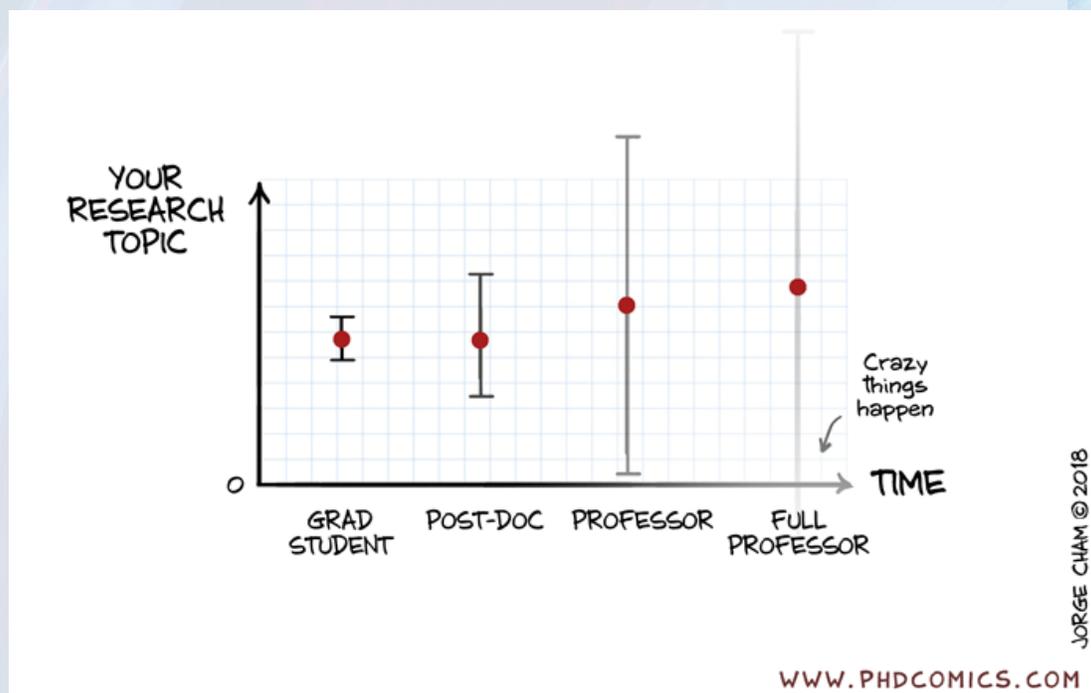
But is it so bad? Is there harm in fostering a sense of exploration? I imagine many senior scientists, firmly established in their fields, continue to contemplate new avenues of research. I would love to know the number of 80-year-olds who still wonder what they want to be when they grow up. I doubt the number is zero.

With that thought, I will leave you to explore the [2019 Annual Fellows Retreat recap](#) and the [August announcements](#). Perhaps some of the material within will offer inspiration for your own thoughts on the future.

Your Editor in Chief,  
Shana R. Spindler, PhD

We can't do this without you. Send questions, comments, and ideas to our editor at [Shana.Spindler@gmail.com](mailto:Shana.Spindler@gmail.com).

## PhD Comics



<http://phdcomics.com/comics/archive.php?comid=2031>

## Fifteenth Annual Fellows Retreat Recap

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### Science with a Paw-sitive Impact

BY JILLIAN BELGRAD

"I remember exactly where you are sitting as a trainee thinking, *what is it I want to do? Leave a mark on? And what could be fun?*" said **Dr. Elaine Ostrander**, NIH Distinguished Investigator and Chief of the Cancer Genetics and Comparative Genomics Branch in the National Human Genome Research Institute. "Above all, science should keep you interested, passionate, and science should keep you awake at night."

So, what keeps Dr. Ostrander awake at night? Dog genetics.



In her keynote address to over 100 fellows during the 2019 NICHD Fellows Retreat, Dr. Ostrander showed how her lab uses a citizen-scientist approach by collecting dog DNA samples from around the world to study the genetics of dog breeds and diseases. Combining carefully recorded pedigree information with technology to analyze big data, the Ostrander lab stands as a powerhouse in the analysis of dog breed genetic diversity, to provide insight into genes and genetic networks implicated in human disease.

Why dogs? Breeding records are pedigrees, and a large amount of breeding occurred in a tiny window of time. People have created 144 breeds of dogs since domestication about 15,000 years ago, with intense and purposeful breeding in the 1800s. This allowed for the quick selection of highly specific traits. Dr. Ostrander's group benefits from the dog clade to unite historical breeding information, genomics, and phenotypic traits.

Dogs within the same breed have little genetic variation, compared to interbred dogs' genetic diversity. Despite this, all dogs can mate to produce fertile offspring. Dr. Ostrander explained that a small number of genes can have a big effect in dogs, which accounts for why such a large diversification of dog breeds can occur over a relatively short period of time. Dog breeds vary greatly in appearance, behavior, and susceptibility to disease. A few genes can impact dog morphology so much so that, "based on a combination of two genes, you can determine what your dog's ears will look like," Dr. Ostrander explained.

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## Fifteenth Annual Fellows Retreat Recap

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The Ostrander lab has made massive contributions to the field of dog genetics. She told stories of genes that determine dog ear morphology that are implicated in human deafness. We learned that a gene involved in the distribution of back fat on a dog has a role in human susceptibility for diabetes. And apparently two genes can account for 24% of a dog's agility.

These findings are only a small sample of Dr. Ostrander's contributions to the world of dog genetics. She explains her secret to success: The odd result or exception is "not what you ignore, but what you build your next hypothesis on."

Dr. Ostrander wants to build on the foundation they have created and expand their studies to investigate the role of epigenetics. She aims to study if or how much epigenetics accounts for the significant breed to breed differences.

With so much genomic information out there and with groups like the Ostrander lab improving the health of dogs and humans alike, this work and the paw-sitive impact it's creating is something we can all wag our "tails" about.

## How do the Zebrafish's Stripes Disappear?

BY KATIE WENDOVER

When we think of animals changing color, our minds typically go to the chameleon. However, the zebrafish and its capacity to change its color could help shed new light on the mechanisms animals use to change their appearances. This question has been at the forefront of NICHD fellow **Dr. Dvir Gur's** research on the structural colors in zebrafish, work he continues in the Bonifacino and Lippincott-Schwartz laboratories.

At the 2019 NICHD Fellows Annual Retreat, Dr. Gur revealed two mechanisms utilized in nature to produce color: chemical and physical. Colors produced by a physical mechanism are referred to as structural colors. In zebrafish, structural colors result from the spacing between tiny intracellular crystals and the aggregation and dispersion of pigments in the fish skin.



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## Fifteenth Annual Fellows Retreat Recap

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Past studies have largely focused on the role of the melanophore pigment movement in color change. However, Dr. Gur has focused on iridophores (specialized guanine forming cells), with the aim to characterize their role in structural color change and pattern formation in zebrafish.

To elucidate the physical mechanisms of structural color change in zebrafish, Dr. Gur tracks the crystals of the iridophores and observes their response to stimuli. To do so, he measures the tiny guanine crystals within the iridophores using synchrotron-based micro X-ray diffraction, which allows tracking the orientation of the crystals within the fish skin. The major takeaway from Dr. Dvir Gur's research is that the intracellular crystals are tunable and that the change in color is due to tilting of these crystals. As the crystals tilt, the spacing between them changes, resulting in the reflectance of different colors.

What are the social benefits of this behavior? The famous stripes of the zebrafish disappear when the fish is stressed, potentially alerting its shoal to danger. It turns out the chameleon has some competition as the star of color change, as the zebrafish has a few tricks of its own.

## Small Fe-S Clusters Play a Mighty Mito Role!

BY LI CHEN, PHD

"Imagine going through life with a body that only charges up to five percent," said **Dr. Anshika Jain**. She was referring to Multiple Mitochondrial Dysfunctional Syndrome (MMDS), a devastating condition resulting in early death, usually during infancy. Mitochondria, the mini-engine in our cells, require iron-sulfur as co-factors to function. MMDS patients have a compromised NFU1 gene, which encodes an iron-sulfur (Fe-S) cluster scaffold protein, affecting several steps of mitochondrial metabolism.

Now Dr. Jain, a postdoctoral fellow in Dr. Tracey Rouault's laboratory, has pinpointed the region in NFU1 key to its function.

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Dr. Jain's study focuses on understanding the mechanism of NFU1-mediated Fe-S transfer. She hypothesized that NFU1 interacts with a primary Fe-S cluster scaffold protein called ISCU. Indeed, NFU1 and ISCU directly interact both *in vitro* and *in vivo*, as shown by yeast two-hybridization and immunoprecipitation assays. The FY domain in NFU1 is critical for such interaction. NFU1 with a mutated FY domain cannot interact with ISCU or acquire Fe-S clusters. Most importantly, mutated NFU1 fails to rescue mitochondrial defects caused by NFU1 deficiency, including deficiency of complex II (a protein complex with dual roles in the electron transport chain and citric acid cycle) and compromised lipoylation (a lysine posttranslational modification) of key mitochondrial enzymes.

Altogether, these results lead to a working model in which ISCU synthesizes Fe-S clusters and transfers them to NFU1 via the FY domain. NFU1 delivers the clusters to mitochondrial enzymes to generate energy. This model represents a major advance in our understanding of MMDS and could one day help patients with this devastating disease charge their lives to 100 percent.

## Role of Retrograde Transport of Mitochondria in Neuron Survival

BY MEGHA RAJENDRAN, PHD

Neurons have a complex structure with signal-sending axons spanning anywhere from a few millimeters to a meter. To sustain the energy demands of neuronal activity at synapses, mitochondria are transported from the cell body to axon terminals (anterograde) and back (retrograde). **Dr. Amrita Mandal**, a postdoctoral fellow in Dr. Katie Drerup's laboratory, studies the importance of retrograde transport of mitochondria in neuron survival.

A single motor protein, dynein, carries out retrograde transport. Dynein mutations lead to mislocalization of mitochondria and have been implicated in neurodegenerative diseases such as Alzheimer's and Parkinson's disease. Dr. Mandal uses mito-mEOS, a photoconvertible fluorescent protein targeted to the mitochondria, to track retrograde mitochondrial transport in optically transparent zebrafish larvae. In particular, she studies mitochondrial transport in afferent neurons along the posterior lateral line of zebrafish. These neurons begin at the lateral line ganglia near the base of the ear and end at basket-like sensory organs called neuromasts along the trunk and tail.



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To study the retrograde transport of mitochondria from the neuromast to the ganglia, Dr. Mandal irradiated mito-mEOS in the neuromast with UV light to convert them from green to red fluorescence. Dr. Mandal then measured the ratio of red to green mitochondria at the neuromast.

She found a 50% reduction in the red to green mitochondria ratio in the neuromast after 108 minutes, due to the retrograde transport of red mitochondria and anterograde transport of new green mitochondria. In contrast, zebrafish with Actr10 mutation failed to clear red mitochondria from neuromast due to defects in retrograde transport. Actr10 scaffolds mitochondria to dynein complex, and the loss-of-function mutant causes swelling in axon terminals due to the accumulation of mitochondria. Actr10's specific role in retrograde transport of mitochondria allowed Dr. Mandal to study the effect of inhibition of mitochondrial retrograde transport in neurons.

Dr. Mandal reported that inhibition of retrograde transport leads to a decrease in the mitochondrial membrane potential, calcium-buffering capacity, and increase in reactive oxidative species in neurons. This work shows the importance of retrograde transport in maintaining mitochondrial homeostasis in neurons.

## Channeling Traffic in Dendrites versus Axons

BY ANSHIKA JAIN, PHD

Neurons relay billions of signals throughout the body. Each neuron contains a cell body (soma), protrusions that receive signals (dendrites), and protrusion(s) that transmit signals away from the cell body (axons). Signaling between neurons is frequently discussed in the field of neuroscience; however, how neurons transmit signals from the dendrites to the axon (intra-neuronal signaling) is also an important question.

Dr. Dax Hoffman's group combines molecular, biochemical, and electrophysiological approaches to investigate the roles of dendritic voltage-gated channels in regulating neuronal development and signal transmission in the mammalian hippocampus.

**Adriano Bellotti**, a graduate student in the Hoffman lab, studies the potassium channel Kv4.2, which is key to intra-neuronal signal transmission. His work focuses on the differences in Kv4.2 trafficking in dendrites and axons.



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## Fifteenth Annual Fellows Retreat Recap

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Using confocal imaging of CA1 hippocampal cells, Bellotti visualizes cargo as fluorescent puncta “walking” along the microtubules in the cell. With this method, he has found increased trafficking of Kv4.2 in axons compared to dendrites.

To characterize the quality of cargo trafficking, Bellotti assesses the velocity, directionality, stall time and frequency of puncta movement from dendrites and axons using a graphical representation of spatial position over time referred to as a Kymograph.

Cargo in the axons appears to move faster, more frequently, and is superdiffusive, with decreased stall time, compared to cargo in dendrites. Bellotti suggests that these differences are related to differences in Kv4.2 distribution, since the ion channel is more highly expressed in dendrites than axons.

He has explored this hypothesis by developing a stochastic model of microtubule-based cargo transport. By using an experimentally obtained Kv4.2 distribution profile and associating the degree of superdiffusion to Kv4.2 surface concentration, Bellotti is able to replicate the experimental results in computational models. This research contributes to our understanding of cargo distribution and collection in cells with highly polarized morphologies, such as neurons. Such work has implications in neurological disorders of cargo distribution and accumulation, like epilepsy, Alzheimer’s, and other dementias.

## Novel Cut and Run Method Sees Initial Success

BY AMRITA MANDAL, PHD

“You fail to recognize that it matters not what someone is born, but what they grow to be,” Albus Dumbledore said in the *Goblet of Fire*.

This famous Harry Potter quote invokes the essence of **Sarah Frail**’s postbaccal work in Dr. Pedro Rocha’s laboratory. She explained that although all cells are born equal, complex genetic and epigenetic regulations determine what they grow to be.

Frail’s research aims to answer the million-dollar question of modern biology: how does each cell obtain its unique identity over the course of development. To answer this, Frail and her



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colleagues performed comparative genome-wide analysis of active and repressive markers in the genome both *in vivo* and *in vitro*.

The group has successfully employed a new genome-wide sequencing technique called the “Cut and Run” method. They use this novel technique to study the role of transcription factors that are important in establishing the primitive endoderm. Endoderm is the inner most layer of a cell or tissue in an embryo.

Cut and Run is an enzyme-based protocol for mapping protein-DNA interaction. It’s poised as a popular alternative to the widely used Chip-seq method because Cut and Run requires only a very small amount of biological materials.

Using this technique, Frail has characterized the binding pattern of Gata 6, Sox2, H3K27ac and CTCF: all-important regulators of endoderm specification. A future goal of Frail’s research is to extend her work into *in vivo* mouse models to understand how early cell fate decisions are made. This knowledge can give us clues about what happens during development in a disease state.

## A Fruitful Investigation into Bacterial Antibiotic Resistance Mechanisms

BY KATHERINE BONNINGTON, PHD

Declining antibiotic discovery rates necessitate increased research into mechanisms that can be exploited in the human-bacteria arms race. Small proteins, less than 50 amino acids in length, are often overlooked in the study of bacterial genomes, but these small molecules can make big impacts in bacterial physiology. In the Storz laboratory, **Dr. Mona Orr** studies one such small protein that modulates the antibiotic resistance capabilities of bacteria by binding to a prominent multi-drug efflux (MDE) pump to modulate its substrate specificity.

MDE pumps are an important component of the arsenal that bacteria utilize to combat antibiotic treatment. These pumps, present in many clinical bacterial isolates, shuttle harmful compounds (such as antibiotics) out of the bacteria to promote survival. The Storz lab discovered that a small protein called AcrZ co-purifies with the well-studied and well-conserved MDE pump AcrA/B. Deletion of *acrZ* in *E. coli* changed the antibiotic sensitivity profile, notably decreasing *E. coli* resistance to chloramphenicol.



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To understand the molecular mechanism behind the large phenotypic effect of this small protein, Dr. Orr collaborated with Dr. Ben Luisi's group at the University of Cambridge to visualize the binding of AcrZ to the AcrA/B pump. They obtained crystal structures in lipid nanodiscs (which simulate a more natural membrane environment) and found that the small protein AcrZ acts like a "hydrophobic banana."

Reminiscent of everyone's favorite yellow fruit, the AcrZ helix adopts a kinked structure that hugs the outer surface of the pump that touches the membrane. Compared with the pump alone, the AcrZ-bound pump displayed higher levels of cardiolipin, a minor phospholipid of the *E. coli* inner membrane, in its proximal environment. Further investigation revealed that cardiolipin and AcrZ act in concert to modulate pump activity.

Dr. Orr's future work aims to use similar methods to discover additional MDE-pump modulating proteins in other pathogenic gram-negative bacteria. Understanding how these proteins function could allow for the design of functional mimics or small molecule inhibitors useful for antibiotic development.

## The Pursuit of Mentorship

BY CARISSA STOVER, WITH HELPFUL GUIDANCE BY SUNA GULAY, PHD

**Dr. Mark Stopfer** began the last talk of the Annual Fellows Retreat in the familiar way you'd expect a talk at a scientific retreat to go: with an overview of some pretty cool research. He is a neurobiologist who investigates the neural processing of smell and taste in fruit flies through techniques like electrophysiology, behavioral testing, genetic manipulation, and computational modeling. But he is also a mentor, a very good one, and the audience got to see both sides of this remarkable scientist.

In one of Dr. Stopfer's most intriguing experiments, he compared the neural signals not only from different smells, such as mint and cherry, but also from different concentrations of the same smell. He then modeled how varying concentrations produce different responses in a single neuron. Dr. Stopfer's deep curiosity for how we perceive the world through complex stimuli shone through as he described his work.



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After this brief peek at his research, Dr. Stopfer transitioned into his thoughts on mentorship. He expressed how after being asked to give a talk on this topic, he had mulled over the question of mentorship and what it meant to him. He dove into his own experience with mentors, specifically being pushed outside his comfort zone, which resonated with the audience.

In describing his first mentor, Dr. Tom Carew of Yale University, he mused, “I think of him as my science father...there must be a German word for that.” In fact, his time in Dr. Carew’s lab shaped his career aspirations. He recalled how he “almost died” when Dr. Carew scheduled him to present a lecture to a large undergraduate class. Looking back on it, Dr. Stopfer reminisced, he realized that his mentor had identified in what areas he needed to grow.

Dr. Stopfer presented his next mentor, Dr. Gilles Laurent of the California Institute of Technology, as an “unbelievably good writer” who is concise and elegant. When Dr. Stopfer received edits from Dr. Laurent, he said they could only be described as “a sea of red.” He explained how later in his career, feeling an accomplished writer himself, he collaborated with Dr. Laurent. Upon sending him a piece of writing, Dr. Stopfer confessed “...and of course, it came back as a sea of red.” Dr. Stopfer continued, “I guess I had gotten better, but he had gotten better, too!”

After this short history of his mentors and the unique impact each had on him, Dr. Stopfer stated in a sincere voice: “I seek mentorship still.”

The learning experiences garnered from each of Dr. Stopfer’s mentors (including his current “peer mentor” Dr. Chris McBain of the NICHD) helped shape his own style. Dr. Stopfer revealed his approach to mentoring through his thoughts on being a good mentor:

- » Give as little as possible, but as much as needed. Let your mentees be independent, but provide guidance when necessary.
- » Everyone is different—what individuals need will be different. Learn what approach works best for each of your mentees. Identify needs and provide for them.
- » Know what people want to do, and then make it happen. Help them develop and reach their goals.
- » Give them their own project. This allows them to develop as an individual and pursue their passions. Collaboration tends to happen naturally.
- » Avoid competition. Promote fairness and cooperation. This allows everyone to thrive and promote the science.
- » Lab meetings are important. They provide crucial practice for talking about science and may be able to draw shy students out.

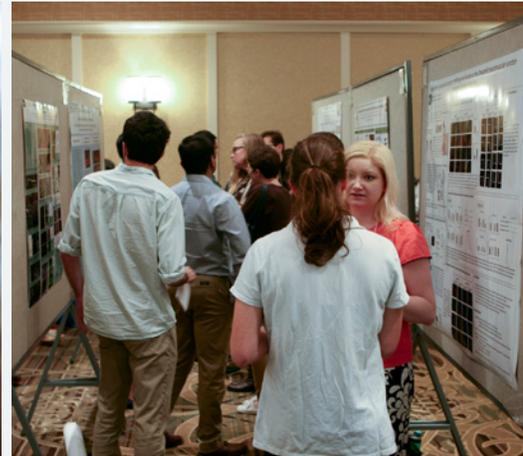
Dr. Stopfer emphasized the importance of practicing mentorship. He urged each of us to consider what it means to be a good mentor, because good mentors cultivate great scientists. With optimism and encouragement at the end of his talk, Dr. Stopfer reinforced his position that it’s exciting to be a mentor, to hear about people’s dreams, and to help them achieve those goals.

# Life Outside Lab

## *NICHD 15<sup>th</sup> Annual Meeting of Postdoctoral, Clinical, and Visiting Fellows and Graduate Students*

WILLIAM F. BOLGER CENTER  
IN POTOMAC, MARYLAND

FRIDAY, MAY 31, 2019



## *Reproductive Endocrinology and Infertility (REI) Fellows Graduation*

POTOMAC, MARYLAND | SATURDAY, JUNE 1, 2019



Left to right: Micah Hill (fellowship director, Reproductive Endocrinology and Infertility), Justin Pilgrim (Tripler ARMY Hospital), Nicole Doyle (Shady Grove Fertility), Toral Parikh (private practice: Houston TX), Constantine Stratakis (Scientific Director, DIR, NICHD), Alan DeCherney (Program Director, Reproductive Endocrinology, Infertility and Gynecology, DIR, NICHD)



## Upcoming NIH-Wide Office of Intramural Training and Education (OITE) Events

For more information and registration, please visit [Upcoming OITE Events](#).

Graduate Partnerships Program Annual Retreat 2019 (August 2)

Job Search Strategies (August 2)

OITE Orientation for New NIH Postbacs: Getting What You Came For (August 6)

Summer Poster Day 2019 (August 8)



## August Announcements

### SAVE THE DATE: NICHD DIR & DIPHR JOINT SCIENTIFIC RETREAT

**Monday, September 16, 8:30 a.m.–5:00 p.m.**  
**Lipsett Auditorium and FAES Terrace**

Please mark your calendars for the NICHD DIR & DIPHR Joint Scientific Retreat. We strongly encourage all intramural researchers—PIs and lab members—to attend as we celebrate our achievements and spark new collaborations. Apart from an exciting line-up of talks, every lab will have the chance to present at least one poster.

### SAVE THE DATE: NICHD POSTBAC ORIENTATION SESSION & PIZZA LUNCH

**Wednesday, September 11, 12–1 p.m.**  
**Building 31, Room 2A48**

Our institute has approximately 75 postbacs conducting both clinical and basic science research. We would like to bring our postbacs together to meet each other and discuss volunteer and training opportunities on campus. Learn about:

- » ICU simulator rounds
- » The annual postbac course
- » Genetics clinic shadowing
- » Children's Inn volunteer opportunities
- » And more!

The NICHD Office of Education aims to enrich fellows' NIH experience with career development, outreach, and social activities. If you would like to attend this informational event, please contact Dr. Erin Walsh at [erin.walsh@nih.gov](mailto:erin.walsh@nih.gov).

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## August Announcements

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### SAVE THE DATE: LINKEDIN WEBINAR

**“Developing Your LinkedIn Profile”**

**September 19, 1-2:30 p.m.**

In this webinar, Industry Careers Consultant Lauren Celano of Propel Careers provides guidance for how to build and develop a professional online brand on LinkedIn. The seminar will dive deep into the functionality of LinkedIn and will demonstrate how to customize a profile tailored to your career interests. Propel will cover how to develop/tailor sections including your summary as well as the experience and education sections. Examples will be shown for different types of roles, research and non-research, to indicate how details differ depending upon your career interest(s).

Lauren will discuss how to use LinkedIn for networking, informational interviewing, and job searching, and will discuss how organizations utilize these tools to identify talent for open positions. Lastly, this webinar will cover how to use the job preference features on LinkedIn to let internal and external recruiters know what you are looking for.

This webinar will be available to all NICHD fellows via WebEx. Please email Dr. Erin Walsh ([erin.walsh@nih.gov](mailto:erin.walsh@nih.gov)) to register.

### SAVE THE DATE: FELLOWS SOCIAL NETWORKING EVENT

The NICHD Fellows Advisory Committee will host its next **Fellows Social Networking (FSN)** event on **Thursday, September 26, from 5:30 – 7:30 p.m.**, at **Rock Bottom**, a local restaurant in Bethesda.

This is a great opportunity for the NICHD fellows' community to socialize and network with each other (**with good food!**) in an enjoyable environment. All current trainees within the institute are welcome.

Please send Dr. Erin Walsh ([erin.walsh@nih.gov](mailto:erin.walsh@nih.gov)) a quick note if you plan to attend this event.

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## August Announcements

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### DATA SCIENCE TRAINING VIDEOS AVAILABLE ONLINE THROUGH NIH LIBRARY

The NIH Library is pleased to introduce the [Data Science, Big Data Analytics, and Digital Methods video collection](#) from SAGE. These online videos cover a wide range of innovative methods and best practices for data analysis, data visualization, and computational social science research.

Whether you are just starting out and want to learn how to program in R, or are an expert interested in brushing up on statistics or analytical tools and methods, the SAGE data science video collection can help. The collection is browsable and searchable and, with an easy-to-create profile, users can save clips, playlists, searches, and generate alerts. Over 3,200 videos comprising over 120 hours are available.

Example topics include:

- » Social media analytics
- » Data visualization
- » Data management
- » Data and text mining
- » Statistical models and methods
- » Programming (Python, R)
- » Artificial intelligence, machine learning & deep learning
- » Networks & social network analysis
- » Spatial analysis

Check out the [Data Science, Big Data Analytics, and Digital Methods video collection](#) and start accelerating your data science training today.

### DUE NEXT MONTH: INTRAMURAL RESEARCH FELLOWSHIP (IRF)

*Funding opportunity for all NICHD fellows*

In 2017, DIR launched the **Intramural Research Fellowship (IRF)**, a competitive research funding opportunity for NICHD postdoctoral, visiting, and clinical fellows. Its main objective is to promote grant writing among our intramural trainees, while enhancing awareness of the various components of an NIH grant application.

**The IRF submission date is Monday, September 9, 2019.**

For more information on the IRF, please visit [NICHD Intramural Research Fellowship](#).



## August Events

**THURSDAY, AUGUST 8, 9 AM – 3 PM**

### **Summer Poster Day**

Natcher Conference Center (Building 45)

Read more about Summer Poster Day at [https://www.training.nih.gov/summer\\_poster\\_day](https://www.training.nih.gov/summer_poster_day).

**MONDAY, AUGUST 12, 9 AM – 4 PM**

### **Grant Writing Workshop**

This workshop will be led by Grant Writing Mentors, a team of experts with careers in academic research, grant writing and peer review, grants management, federal policy, and scientific writing. Mentors will address both practical and conceptual aspects that are important to the proposal writing process, including how NIH research grant proposals are prepared and reviewed.

This event has limited slots available and requires pre-registration. Please email Dr. Erin Walsh ([erin.walsh@nih.gov](mailto:erin.walsh@nih.gov)) for information about availability.

**MONDAY, AUGUST 19, 1 – 3 PM**

### **Public Speaking Workshop**

“Speaking about Science” is a highly interactive workshop led by public speaking coach Scott Morgan. The core of this workshop is a nine-step preparation process that ensures a clear and engaging talk for a variety of audiences. Learn strategies for improving your delivery of lab talks or giving presentations at big meetings.

Topics include: presenting data, identifying theme and focus, creating effective visual aids, and beginning and ending a talk. Participants in this program will also have the opportunity to schedule an individual one-hour coaching session prior to a scheduled presentation.

To register for this workshop, please email Dr. Erin Walsh ([erin.walsh@nih.gov](mailto:erin.walsh@nih.gov)).

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## August Events

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**TUESDAY, AUGUST 27, 1 – 2:30 PM**

### **Consulting Careers Webinar**

*“An Overview of Careers in Consulting: Demystifying this Career Path”*

In this webinar, Careers Consultant Lauren Celano of Propel Careers provides an overview of career paths for scientists that exist in consulting. Since consulting is such a broad term, this webinar will break down what it is and will provide insight into the different types of consulting firms and projects that exist for individuals with advanced degrees. Information will be provided regarding which skills and experiences relate to the different types of firms and what these firms look for in a candidate. Lastly, advice will be provided on how to identify relevant firms and how to develop application materials for specific positions.

This webinar will be available to all NICHD fellows via WebEx. Please email Dr. Erin Walsh ([erin.walsh@nih.gov](mailto:erin.walsh@nih.gov)) to register.

**WEDNESDAY, AUGUST 28, 1 – 3:30 PM**

### **College Teaching Workshop**

*“Active Learning Strategies for the College Classroom”*

Dr. Kate Monzo of the University of Maryland and Montgomery College will lead this workshop, introducing NIH fellows to current research in college teaching and learning, and facilitating a guided teaching experience through the development of educational learning modules.

Workshop Lesson Plans Include:

- » Introduction to the Backward Design Model
- » Writing and Assessing Learning Outcomes
- » Introduction to Active Learning Tools and Techniques
- » Designing Learning Activities

To register for this workshop, please contact Dr. Erin Walsh ([erin.walsh@nih.gov](mailto:erin.walsh@nih.gov)).