

NIH Research Festival

*A Celebration of
Intramural Science*

Join Us for the Annual Showcase of NIH Intramural Research

- Plenary sessions, lightning talks, posters, and more
- Vendor Tent Show on the 12th and 13th

researchfestival.nih.gov

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September 11, 2019

Building 10 | NIH Bethesda Campus

#ResearchFest

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Intramural Research Program
Our Research Changes Lives

2019 NIH Research Festival: **A Celebration of Intramural Science**

Welcome to the 2019 NIH Research Festival!

This year's Festival promises to be an extraordinary celebration of the diverse and innovative science conducted in our intramural research program. We have returned the Research Festival to its original one-day concept in order to entice you to spend the whole day with us, to mingle with old colleagues, and to meet new ones. We have three sets of plenary lectures, a blitz of micro-talks providing a snapshot of selected FARE awardees' work, and terrific poster presentations from some of our top junior scientists across the NIH.

The Research Festival is an opportunity to learn from the very best, to see what's happening in your own backyard, and to share novel ideas. And fun abounds. By popular demand, we will hold a bake-off /cook-off by the finest chefs among the Scientific Directors during the midday poster session. Then, the awards ceremony, at the end of the day, will feature light fare and bubbly to celebrate, as well as music by the NIH Director's band, ARRA. The Technical Sales Association joins us once again, too, with its popular vendor tent show on the two days following the Festival.

We encourage you to wander around the big tent in the South parking lot behind Building 10 to see vendor exhibits of the latest scientific goods and gadgets. We hope you will find this year's Festival as much fun as we had working on it.

#NIHResearchFest

NIH Research Festival Co-Chairs:

Amy Hauck Newman, Ph.D., NIDA

John I. Gallin, M.D., CC and NIAID

Wednesday, September 11, 2019

All events will be held in Building 10

8:46 a.m.

9/11 Anniversary Observance and Moment of Silence, Masur Auditorium

On September 11, 2019, Americans will pause to remember the September 11 attacks 18 years ago in which a series of four coordinated terrorist attacks killed nearly 3,000 people and injured more than 6,000 others in New York (World Trade Center Towers), Pennsylvania (Stonycreek Township near Shanksville), and Virginia (the Pentagon). We will observe a moment of silence in the Masur Auditorium at 8:46 a.m., the time on September 11, 2001, when hijackers deliberately crashed American Airlines Flight 11 into floors 93 through 99 of the North Tower of the World Trade Center.

9:00 a.m. – 10:50 a.m.

Plenary Session I

Celebrating NIH IRP Contributions to Curing Metabolic Diseases, Masur Auditorium

Moderator: John Gallin, M.D., NIH Clinical Center Scientific Director

Metabolism comprises the chemical processes that sustain life, from the conversion of food to energy, to the assembly of proteins and all key molecules, to the elimination of waste products. Metabolic diseases disrupt these core bodily functions, setting forth a cascade of debilitating symptoms and ultimately death if not successfully managed. The labs and clinics of the NIH Intramural Research Program (IRP) have been at the forefront of the identification and treatment of metabolic diseases.

For this first plenary session of the 2019 NIH Research Festival, we open with Nobel and Lasker laureate and NIH alumnus Ferid Murad, who discovered how nitric oxide relaxes smooth muscle by elevating intracellular cyclic GMP, a breakthrough for the treatment of cardiovascular disease. Marston Linehan will then recap how, over the course of three decades, his laboratory has defined kidney cancer as a metabolic disease. Through the identification of genes for common forms of kidney cancer and the description of their pathways, Linehan has developed treatments that have resulted in the regression of metastatic cancer in patients with type 1 and type 2 papillary kidney cancer. Next, Josephine Egan will summarize her group's remarkable progress in identifying therapeutic targets for treating Type 2 diabetes mellitus. Egan and her lab identified the GLP-1 receptor as a promising target for the development of insulinotropic agents including the GLP-1 receptor ligand exendin-4 that may provide a new approach for the treatment of diabetes. Lastly, Kevin Hall will pull us back to view the multi-organ metabolic disease that we call obesity. Well known for his study of contestants on the reality television program *The Biggest Loser*, Hall and his lab have shown themselves to be the biggest winners in understanding why it is so hard to maintain a healthy weight.

Ferid Murad, M.D., Ph.D.

NIH Alumnus and Nobel and Lasker Laureate
Discovery of Nitric Oxide and Cyclic GMP in Cell Signaling and Drug Development

Marston Linehan, M.D.

Chief, NCI Urologic Oncology Branch
Targeting the Genetic and Metabolic Basis of Kidney Cancer

Josephine Egan, M.D.

NIA Clinical Director
Chief, NIA Diabetes Section
From Insulin to Incretins

Kevin Hall, Ph.D.

Chief, NIDDK Integrative Physiology Section
What's Most Important for Weight Control: Diet, Carbs, Calories, or Quality?

11:00 a.m. – 12:20 p.m.**Data Blitz and Lightning Round, Masur Auditorium**

Prepare to be zapped. About two dozen postdoctoral FARE award winners will provide three-minute summaries of their research in rapid succession. When the smoke clears, you will have a new perspective on the broad and diverse NIH research portfolio.

12:00 p.m. – 2:00 p.m.**Special Exhibits on Intramural Resources, Central Corridor**

Stop by the information tables dotted along the central corridor to chat with your colleagues from the Center for Information Technology (CIT), the NIH Collaborative Research Exchange (CREx), the National Library of Medicine, the Office of NIH History and Stetten Museum, and more. Other activities such as virtual-reality demos will take place in the NIH Library until 4 p.m.

12:00 p.m. – 2:00 p.m.**NIH Green Labs Fair and Exhibits, South Lobby**

The Green Labs Fair features a variety of information on green products, green practices, and environmental initiatives that you can use to make your lab green. Dozens of vendors will be onsite.

12:00 p.m. – 2:00 p.m.**Food Truck Lunch, Lot 10H**

There will be an army of food trucks in Parking Lot 10H near the South Lobby with set meals at a small price. We will have some outside seating, as well.

12:30 p.m. – 1:30 p.m.**2019 NIH Research Festival Poster Session, FAES Terrace**

Poster session featuring select postdoctoral FARE award winners and tenure-track investigators.

2:00 p.m. – 3:00 p.m.**Plenary Session II****Celebrating NIH Efforts to Combat Physical and Emotional Pain, Masur Auditorium**

Moderator: Amy Newman, Ph.D., NIDA Acting Scientific Director

Pain, both physical and emotional, so often intertwined, has had a crippling effect on the health of Americans, representing the primary cause for the decline in U.S. life expectancy over the last three recorded years (2015–2018). One well-known driver has been the opioid epidemic, leading to an increase in drug overdoses and death. The NIH IRP always has risen to the challenge to confront complex public health emergencies, such as HIV–AIDS and nutritional deficiencies. Pain is no exception. This plenary session will feature four stellar intramural researchers who have made extraordinary strides in treating physical and psychological pain including non-opioid-based treatments.

Carlos Zarate Jr., M.D.

Chief, NIMH Experimental Therapeutics & Pathophysiology Branch

*Antidepressant Drug Discovery:
Taking the Road Less Traveled*

Lauren Atlas, Ph.D.

Investigator, NCCIH Section on Affective Neuroscience and Pain

*How Psychological Factors Influence
Responses to Pain and Opioid Analgesics*

George Koob, Ph.D.

NIAAA Director
Chief, NIDA Neurobiology of Addiction Section

*Opioid Addiction: "The Gain in the Brain is
in the Pain"*

Andrew Mannes, M.D.

Chief, Clinical Center Department of Perioperative Medicine

*Non-opioid Therapy for Treating Severe,
Refractory Cancer Pain*

3:00 p.m. – 4:00 p.m.

Plenary Session III

Celebrating Cutting-Edge Technologies at the IRP,
Masur Auditorium

Moderator: Bruce Tromberg, Ph.D., NIBIB Director

This third and final plenary of the 2019 NIH Research Festival will highlight four significant technological advances, the reverberations of which are already being felt in the scientific research community.

Adam Phillippy, Ph.D.

Head, NHGRI Genome Informatics Section
*Can Nanopore Sequencing Finally Finish
the Human Genome?*

Elizabeth Kang, M.D.

Head, NIAID Hematotherapeutics Unit,
Genetic Immunotherapy Section, LCIM
*Genetically Modified Cells for Chronic
Granulomatous Disease: Moving Forward
the Clinical Benefit*

Hari Shroff, Ph.D.

Senior Investigator, NIBIB Section on High
Resolution Optical Imaging
*Faster, Sharper, Deeper, Longer: New Optical
and Computational Techniques for Use in
Biomedical Imaging*

Hannah Valentine, M.D.

Senior Investigator, NHLBI Laboratory
of Transplantation Genomics
*The Liquid Biopsy: Cell-Free DNA for Early
Detection of Organ Rejection*

4:00 p.m. – 5:00 p.m.

Awards Ceremony & Reception, South Lobby

Please join us for an informal awards ceremony and reception featuring food (including microbial fermentations) and music. We will salute all FARE awardees, not all of whom presented at the 2019 Research Festival, as well as the winner of the Scientific Directors' cooking/baking competition. Then the NIH Director's band, aka "ARRA" (Affordable Rock'n' Roll Act) take over under the canopy of the South Lobby. All are welcome.

Technical Sales Association (TSA) Research Festival Exhibit Tent Show

Thursday, September 12, 2019 – 9:30 a.m. to 3:30 p.m.

Friday, September 13, 2019 – 9:30 a.m. to 2:30 p.m.

The TSA sponsors the popular Research Festival Exhibit Tent show. A large group of exhibitors will display state-of-the-art equipment supplies and services from leading regional and national biomedical research suppliers. For more information, please visit: <http://www.gtpmgt.com>. To view a list of confirmed exhibit booths please visit: <http://www.gtpmgt.com/attendees.php?id=10>.



Thank you for attending the 2019 NIH Research Festival and for your support of the NIH Intramural Research Program. We hope you will enjoy sharing and learning about the exciting research taking place at the NIH.

For more information, please visit <http://researchfestival.nih.gov>

You can also email us at researchfest@mail.nih.gov

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Cover image:

Antiviral drug: Polarized crystals (photographed through a microscope) of the drug 2-3 dideoxyadenosine (ddA), which is closely related to AZT or azidothymidine. The antiviral effect of ddA against HIV was discovered at the National Cancer Institute.

CREDIT: LARRY OSTBY, NCI