NICHD DIR by the Numbers

• Total personnel of more than 950 employees
  • 62 PIs (56 Tenured; 6 Tenure-Track)
  • 2 tenure-track recruits in FY16, 1 more in FY17
  • 2 retirements in FY17

• >80 Clinical Protocols
  • 2/3 at the NIH Clinical Center
  • 1/3 at Wayne State and elsewhere

• Accredited medical training programs:
  o Pediatric Endocrinology
  o Adult Endocrinology
  o Reproductive Endocrinology and Infertility
  o Medical Genetics (with NHGRI)
  o Perinatal Research and Obstetrics (Wayne State Univ/PPRO)
<table>
<thead>
<tr>
<th>Affinity Group Membership</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aquatic Models of Human Development</strong></td>
</tr>
<tr>
<td>Burgess, Harold [Head]</td>
</tr>
<tr>
<td>Chitnis, Ajay</td>
</tr>
<tr>
<td>Drerup, Katie</td>
</tr>
<tr>
<td>Feldman, Ben (Core)</td>
</tr>
<tr>
<td>Weinstein, Brant</td>
</tr>
<tr>
<td><strong>Cell &amp; Structural Biology Group</strong></td>
</tr>
<tr>
<td>Buonanno, Andres [Head]</td>
</tr>
<tr>
<td>Banerjee, Anirban</td>
</tr>
<tr>
<td>Bonifacioino, Juan</td>
</tr>
<tr>
<td>Lilly, Mary</td>
</tr>
<tr>
<td>Machner, Matthias</td>
</tr>
<tr>
<td>Storz, Gisela</td>
</tr>
<tr>
<td><strong>Developmental Endocrine Oncology &amp; Genetics</strong></td>
</tr>
<tr>
<td>Pacak, Karel [Head]</td>
</tr>
<tr>
<td>Backlund, Peter (Core)</td>
</tr>
<tr>
<td>Lodish, Maya (Training Program)</td>
</tr>
<tr>
<td>Stojilkovic, Stanko</td>
</tr>
<tr>
<td>Stratakis, Constantine</td>
</tr>
<tr>
<td><strong>Genetics &amp; Epigenetics of Development</strong></td>
</tr>
<tr>
<td>Kassis, Judy [Head]</td>
</tr>
<tr>
<td>Kennison, Jim</td>
</tr>
<tr>
<td>Love, Paul</td>
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<tr>
<td>Macfarlan, Todd</td>
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<tr>
<td>Ozato, Keiko</td>
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<tr>
<td>Pfeifer, Karl</td>
</tr>
<tr>
<td><strong>Physical Biology &amp; Medicine</strong></td>
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<tr>
<td>Chernomordik, Leonid [Head]</td>
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<tr>
<td>Bezrukov, Sergey</td>
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<tr>
<td>Sodt, Alexander</td>
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<tr>
<td>Zimmerberg, Joshua</td>
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<tr>
<td><strong>Reproductive Endocrinology &amp; Gynecology</strong></td>
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<tr>
<td>Decherney, Alan [Head]</td>
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<tr>
<td><strong>Basic Mechanisms of Genome Regulation</strong></td>
</tr>
<tr>
<td>Maraia, Richard [Head]</td>
</tr>
<tr>
<td>Cashel, Mike</td>
</tr>
<tr>
<td>Clark, David</td>
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<tr>
<td>Crouch, Bob</td>
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<tr>
<td>Depamphilis, Melvin</td>
</tr>
<tr>
<td>Woodgate, Roger</td>
</tr>
<tr>
<td><strong>Bone &amp; Matrix Biology in Development &amp; Disease</strong></td>
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<tr>
<td>Marini, Joan [Head]</td>
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<tr>
<td>Leikin, Sergey</td>
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<tr>
<td><strong>Neurosciences</strong></td>
</tr>
<tr>
<td>Stopfer, Mark [Head]</td>
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<td>Balla, Tamas</td>
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<td>Fields, Douglas</td>
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<tr>
<td>Hoffman, Dax</td>
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<tr>
<td>Loh, Y Peng</td>
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<tr>
<td>McBain, Chris</td>
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<tr>
<td>Petros, Tim</td>
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<tr>
<td><strong>Physical Biology &amp; Medicine</strong></td>
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<tr>
<td>Chernomordik, Leonid [Head]</td>
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<td>Bezrukov, Sergey</td>
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<td>Zimmerberg, Joshua</td>
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<tr>
<td><strong>Reproductive Endocrinology &amp; Gynecology</strong></td>
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<tr>
<td>Decherney, Alan [Head]</td>
</tr>
<tr>
<td><strong>Maternal-Fetal Medicine, Imaging, &amp; Behavioral Development</strong></td>
</tr>
<tr>
<td>Bornstein, Marc [Head]</td>
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<tr>
<td>Bass, Peter</td>
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<tr>
<td>Gandjbakhche, Amir</td>
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<td>Margolis, Leonid</td>
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<td>Romero, Roberto</td>
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<tr>
<td>Suomi, Stephen</td>
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<tr>
<td><strong>Metal Biology &amp; Molecular Medicine</strong></td>
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<tr>
<td>Kaler, Stephen [Head]</td>
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<tr>
<td>Le Pichon, Claire</td>
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<tr>
<td>Rouault, Tracey</td>
</tr>
<tr>
<td><strong>Pediatric Endocrinology, Metabolism, &amp; Genetics</strong></td>
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<tr>
<td>Yanovski, Jack [Head]</td>
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<tr>
<td>Baron, Jeff</td>
</tr>
<tr>
<td>Chou, Janice</td>
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<tr>
<td>Delaney, Angela</td>
</tr>
<tr>
<td>Merke, Deborah (CC)</td>
</tr>
<tr>
<td>Mukherjee, Anil</td>
</tr>
<tr>
<td>Porter, Forbes</td>
</tr>
<tr>
<td>Name</td>
</tr>
<tr>
<td>-------------------------------</td>
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<tr>
<td>Scott Rivkees, MD (Chair)</td>
</tr>
<tr>
<td>Kate Ackerman, MD</td>
</tr>
<tr>
<td>Rita Balice-Gordon, PhD</td>
</tr>
<tr>
<td>Jeanne Brooks-Gunn, PhD</td>
</tr>
<tr>
<td>Serdar Bulun, MD</td>
</tr>
<tr>
<td>Frances Jensen, MD</td>
</tr>
<tr>
<td>Kojo Mensa-Wilmot, PhD</td>
</tr>
<tr>
<td>Antonios Mikos, PhD</td>
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<tr>
<td>Yoel Sadowvsky, MD</td>
</tr>
<tr>
<td>Lilianna Solnica-Krezel, PhD</td>
</tr>
<tr>
<td>Susan Taylor, PhD</td>
</tr>
<tr>
<td>Eric Vilain, MD, PhD</td>
</tr>
<tr>
<td>Michelle Williams, ScD</td>
</tr>
</tbody>
</table>
NICHD Board of Scientific Counselors

Vanessa Auld, PhD
Expertise: Developmental Biology
Professor,
Department of Zoology,
University of British Columbia

Elizabeth Bonney, MD, MPH
Expertise: Molecular Biology, DNA/RNA
Professor, Director of Research Division
Dept of Ob/Gyn & Reproductive Sciences
University of Vermont
Deborah Johnson, PhD

Expertise: Molecular & Cellular Biology
Professor,
Department of Molecular & Cellular Biology,
Baylor College of Medicine

Martha Werler, DSc

Expertise: Epidemiology
Professor & Chair,
Department of Epidemiology,
Boston University School of Public Health
Budget & Personnel
NICHD DIR Budget: FY2017 Estimates

Total $181,251,940

- Lab Consumables: $50,803,000 (28%)
- Salaries: $53,600,000 (30%)
- Animal Care: $2,059,000 (1%)
- Capital Equipment: $1,345,000 (1%)
- Unity Plan: $600,000 (0%)
- Agreements: $3,950,000 (2%)
- Renovations: $3,379,000 (2%)
- Management Fund: $36,902,300 (20%)
- School Tax: $28,613,700 (16%)

*Total Budget for DIR, does not include DIPHR Budget of $9,088,000
NICHD Intramural Trainee Numbers
As of April 2017, 265 total

- Clinical Fellows (16)
- Graduate Students (18)
- Postdocs (180)
- Postbacs (51)
Retirements

Igor Dawid, PhD
Retired December 2016

Thomas Sargent, PhD
Retired January 2017
Recruitments - DIR

Catherine Drerup, PhD
Developmental Biology
Started October 3, 2016

Claire Le Pichon, PhD
Neurosciences & Cellular & Structural Biology
Started September 18, 2016

Timothy Petros, PhD
Neurosciences
Started January 17, 2017
Recruitment

Tenure-Track or Tenure-Eligible Research Positions in
Cellular & Developmental Neurobiology and Translational Research

Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD)
National Institutes of Health
Department of Health and Human Services

We are recruiting for two outstanding tenure-track investigators or tenure-eligible researchers to create innovative and vibrant research programs. The applicants will join our interactive faculty who use a variety of models to study basic mechanisms of development, pediatric disease processes, and their translation into clinical treatments (see http://www.nichd.nih.gov/about/org/dir/Pages/index.aspx).

The positions are fully supported by the intramural program of NICHD and include a start-up allowance as well as an ongoing commitment of research space, laboratory resources, and positions for staff and trainees. The successful applicants will join a faculty of 65 principal investigators whose work covers a broad range of basic, clinical, and translational research areas.

**Cellular & Developmental Neurobiology** *(Tenure-track or Tenure-eligible)*
The successful applicant must have a Ph.D., M.D., M.D./Ph.D. or equivalent doctoral degree, and will work on cellular/molecular mechanisms regulating neuronal development and differentiation at the Porter Neuroscience Research Center (PNRC) on the NIH main campus in Bethesda, Maryland, a multi-institute center dedicated to basic and clinical brain research (see https://www.nih.gov/PNRC). Applicants will have access to state-of-the-art imaging equipment in their lab and at the PNRC imaging facility, NICHD core mouse and zebrafish facilities for the study of model organisms, and biomedical imaging and metabolic assessment facilities (see http://clinicalcenter.nih.gov/).

**Translational Research** *(Tenure-track)*
The successful applicant(s) must have an M.D. or M.D./Ph.D degree, or equivalent, and will join a Physician Scientist Development Program, which promotes the development of an independent research career. The investigator will combine laboratory research with a focus on human disease pathophysiology and treatment, with an emphasis on pediatric and women's health issues, although individuals from all subspecialty backgrounds that are aligned with our intramural research mission will receive equal consideration. The facilities of the NIH Clinical Center provide state-of-the-art diagnostic, treatment, and research support, in our 200-bed hospital and 93 day-patient stations devoted exclusively to the care of patients on 1600 clinical research protocols.
Honors & Awards

Gigi Storz, PhD

Biomedical Research Exemplar,
WUSTL Research Exemplar Project
For individuals doing high-quality, high-impact, federally-funded research who also maintain an impressive reputation for professionalism and integrity in their work

2017 Anita B. Roberts lecturer
For Distinguished Women Scientists at NIH

2017 Ruth L. Kirschstein Mentoring Award
Competitive Awards
NIH Bench-to-Bedside Awards

• Bench-To-Bedside Award Program (1999)
  • $135,000 direct costs for two years
    • Increased to $150,000 for 2017
  • Competitive awards

• Criteria
  • Utilize the NIH Clinical Center
  • Basic/clinical collaboration
  • Intramural/extramural collaboration (2006)
Opportunities for Collaborations at the NIH Clinical Center (U-01)

- **Goal:** to support collaborative research projects aligned with NIH efforts to enhance the translation of basic biological discoveries into clinical applications that improve health
- Up to $500K/year x 3 years, renewable
- Teams **must** have one extramural and one intramural co-PI
- Some of the work **must** be done at the CC
- **NICHD:** 2 awards in Cycle 1
  - 2 awards in Cycle 2
  - 3 applications in Cycle 3
  - 2 applications in Cycle 4
# NICHD Bench-to-Bedside Awards, FY17-18

<table>
<thead>
<tr>
<th>NICHD PI</th>
<th>Extramural Collaborators</th>
<th>Project Title</th>
<th>Total Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yanovski, Jack</td>
<td>Kristen O’Connell (U of Tenn)</td>
<td>Melanocortin agonist to bypass leptin resistance of Bardet-Biedl Syndrome</td>
<td>$353,200</td>
</tr>
<tr>
<td>Porter, Forbes</td>
<td>Daniel Ory (WUSTL)</td>
<td>Investigations of Juvenile Neuronal Ceroid Lipofuscinosis (CLN3)</td>
<td>$285,000</td>
</tr>
<tr>
<td>Stratakis, Constantine</td>
<td>Tomlins Rainey (UMich)</td>
<td>Therapeutic Targets in African Americans with Primary Aldosteronism</td>
<td>$285,000</td>
</tr>
</tbody>
</table>
NIH Bench-to-Bedside Awards

Bench-to-Bedside Awards by Lead Institute 2006 – 2015

- AIDS
- Behavioral and Social Sciences
- Dietary Supplements
- Minority Health
- Rare Diseases
- Women’s Health Projects
DDIR Innovation Awards

• The goals of the program are to provide seed money for innovative and high-impact research, and to stimulate interactions among investigators.

• Follows recommendation from the IRP Review

• Four types of awards:
  • Building Scientific Communities – program project awards
  • Building Research Capacity – centers & facilities
  • Building Bridges – collaborations with extramural investigators & industry
  • Building a Strong Workforce
## DDIR Innovation Awards

<table>
<thead>
<tr>
<th>Pls</th>
<th>Project Title</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chitnis, Ajay</strong></td>
<td>Investigating Collective migration in the Zebrafish Lateral Line primordium ($300K)</td>
</tr>
<tr>
<td>Tanner, Kandice (NCI)</td>
<td></td>
</tr>
<tr>
<td>Liu, Jian (NHLBI)</td>
<td></td>
</tr>
<tr>
<td><strong>Zimmerberg, Joshua</strong></td>
<td>Advancing NIH Super-resolution Optical Microscopy Capabilities ($500K)</td>
</tr>
<tr>
<td>Duffy, Patrick (NIAID)</td>
<td></td>
</tr>
<tr>
<td><strong>Hoon, Mark (NIDCR)</strong></td>
<td>Mechanisms Linking Neural Stress and Injury to Persistent Pain ($300K)</td>
</tr>
<tr>
<td>Chesler, Alexander (NCCIH)</td>
<td></td>
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<tr>
<td><strong>Le Pichon, Claire</strong></td>
<td></td>
</tr>
<tr>
<td>Ryba, Nicholas (NIDCR)</td>
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<tr>
<td><strong>Hu, Guang (NIEHS)</strong></td>
<td>Systematic Dissection of the Mechanisms Governing Retrotransposon Silencing ($250K)</td>
</tr>
<tr>
<td>Macfarlan, Todd</td>
<td></td>
</tr>
<tr>
<td>Ge, Kai (NIDDK)</td>
<td></td>
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<tr>
<td>Wade, Paul (NIEHS)</td>
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</tbody>
</table>
NICHD DIR Competitive Awards

NICHD DIR Director's Awards, FY16

• Two years of funding
  • FY14-15, $3M
  • FY16-17, $2M, 8 of 25 applications funded
• Established pursuant to a recommendation in the July 2013 Blue Ribbon Panel Report to create competitive research opportunities with a collaborative focus among investigators, and to support new research ideas.
• Uses a modified application based on an R-21, and an expedited administrative review process with the support of NICHD’s Division of Extramural Research and a panel of NIH extramural reviewers.
<table>
<thead>
<tr>
<th>PI</th>
<th>Collaborators</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baron, Jeffrey</td>
<td>Roche, Katherine W (NINDS) McBain, Chris Delaney, Angela</td>
<td>The role of DLG2/PSD-93 in the initiation of puberty and the impact of mutations on NMDA receptor signaling and pubertal disorders</td>
</tr>
<tr>
<td>Dasso, Mary</td>
<td>Serpe, Mihaela Oliver, Brian (NIDDK)</td>
<td>Mechanistic analysis of IRBIT protein function in tissue homeostasis</td>
</tr>
<tr>
<td>Kassis, Judy</td>
<td>Pfeifer, Karl</td>
<td>The role of the Wapal, a regulator of cohesin removal, in development and disease</td>
</tr>
<tr>
<td>Love, Paul</td>
<td>Pfeifer, Karl Fan, Ruzong (DIPHR) Dave, Uptal (Vanderbilt) Ehrlich, Lauren (UT Austin)</td>
<td>Investigating the role of Ldb1 transcription complexes in T cell Acute Lymphoblastic Leukemia</td>
</tr>
<tr>
<td>Marini, Joan</td>
<td>Yanovski, Jack David, Nicolae V (Northwestern)</td>
<td>PEDF-PPARα-CyclophilinA/B pathway modulates osteogenesis and adipogenesis</td>
</tr>
<tr>
<td>Stopfer, Mark Lee, Chi-Hon</td>
<td></td>
<td>Neural Mechanisms of Gustatory Coding</td>
</tr>
<tr>
<td>Weinstein, Brant</td>
<td>Bonifacino, Juan</td>
<td>Regulation of endocytic trafficking by the microtubule motor dynein</td>
</tr>
</tbody>
</table>
NICHD DIR Competitive Awards

NIH Intramural-to-Russia: US-Russia Collaborative Research Partnerships in HIV/AIDS and Comorbidities Awards

Funding through the NIH Office of AIDS Research

• 3 years of funding, FY17-FY19

• Reviewed in parallel by NIH’s Center for Scientific Review and the Russian Foundation for Basic Research

• The program seeks to further develop crucial research infrastructure and capacity building between research communities in the U.S. and Russia.
### NIH Intramural-to-Russia Awards, FY17-19

<table>
<thead>
<tr>
<th>PI</th>
<th>Project Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zimmerberg, Joshua</td>
<td>GAG protein of HIV: from mechanisms of self-assembly towards novel vaccine</td>
</tr>
<tr>
<td></td>
<td>($19K in FY17; $57K over 3 years)</td>
</tr>
<tr>
<td>Margolis, Leonid</td>
<td>Multi-targeted antivirals for prevention and treatment of HIV infection</td>
</tr>
<tr>
<td></td>
<td>($93K in FY17; $263K over 3 years)</td>
</tr>
</tbody>
</table>
### Office of AIDS Research Strategic Funding, FY17

<table>
<thead>
<tr>
<th>PI(s)</th>
<th>Project Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zimmerberg, Joshua</td>
<td>Determining the cellular mechanisms of HIV viral assembly and latency ($321K)</td>
</tr>
<tr>
<td>Chernomordik, Leonid</td>
<td>New potential target for HIV antiviral: Phosphatidylserine dependence of HIV cell entry ($380K)</td>
</tr>
<tr>
<td>Margolis, Leonid</td>
<td></td>
</tr>
</tbody>
</table>
Postdoctoral Research Associate (PRAT) Fellowships

- Administered by NIGMS, the PRAT program supports ~20 postdoctoral fellows in intramural NIH labs, providing 3 years stipend support

- 2017 Awards:
  - Sara Young (Dever Lab)
  - Abhi Subedi (Burgess Lab)
  - Jim D’Amour (McBain Lab)

- Fellows currently in the program:
  - Joo Yun Jun (Yanovski Lab)
  - Jonathan Murphy (Hoffman Lab)
  - Ashley Swanson (Woodgate Lab)

NICHD now hosts six PRAT fellows out of 20 slots
Intramural Research Fellowships

- For Postdoctoral and Clinical Fellows in their second or third training year
- Training on how to write various components of an NIH grant
- Application prepared by fellow under guidance of their mentor
  - 10 pages max. (NIH Biosketch, Specific Aims, Significance and Approach, Budget Justification, and Mentor’s Statement of Support)
- Award of $30K for 1 year, toward the fellow’s stipend; up to 3 awards per year

Review by BSC members. Fellows’ applications and reviewing instructions will be sent on August 15th. Scores with comments are due by October 1st.
Diversity Initiatives
committed to train, support, and sustain a diverse cohort of individuals traditionally underrepresented in science

• NICHD Developing Talent Scholars Program
  Postbacs/Grad Students: 2 new recruits for ‘17-18
  • LaTaijah Crawford (Shi Lab)
  • Carlos Echeverria (Dasso Lab)
  • Two alumni (Rim Mehari and Nicolas Johnson) recently accepted into medical school

• Summer Trainees
  • Centrally-funded slots for students from groups traditionally underrepresented in science or from disadvantaged backgrounds
  • 15 filled for 2017

• Fellows Recruitment Incentive Award
  Postdocs: 1 recruit every fiscal year
  • Alejandra Garcia (Stopfer Lab, started in Nov. 2017)
Three-minute Talks (TmT): Science Communication Training and Awards Program

• Professional training in speech development and presentation delivery

• One-on-one coaching and feedback in a supportive environment

• For finalists: A professionally produced video of your talk for NICHD promotional efforts and your own use, plus travel/training awards

• Final competition with NHGRI & NIDCR June 27th

2017 NICHD Finalists
Afrouz Anderson
Miranda Broadney
Neda Sadeghi
Arup Chakraborty
Hadis Dashtestani
TmT Finalist

Miranda Broadney, M.D., M.P.H.
Senior Fellow, Section on Growth & Obesity
Thrasher Research Fund Scholar

MD, MPH from Ohio State University

Graduate of the NIH Pediatric Endocrinology Fellowship Training Program
Thank you!
Coatopathies: Genetic Disorders of Protein Coats

Juan S. Bonifacino, Ph.D.

Associate Scientific Director,
Cell Biology & Neurobiology Branch

Senior Investigator and Head,
Intracellular Protein Trafficking Section