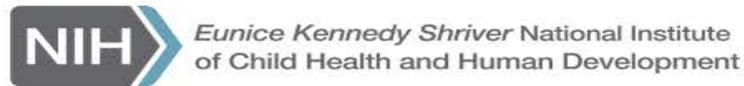


*Eunice Kennedy Shriver*  
National Institute of Child Health & Human Development

Constantine A. Stratakis, MD, D(med)Sci  
Scientific Director

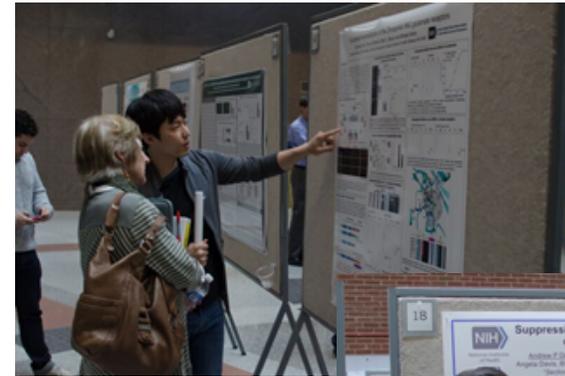
Open Session Report  
September 13, 2018, 10:25 am





# NICHD DIR by the Numbers

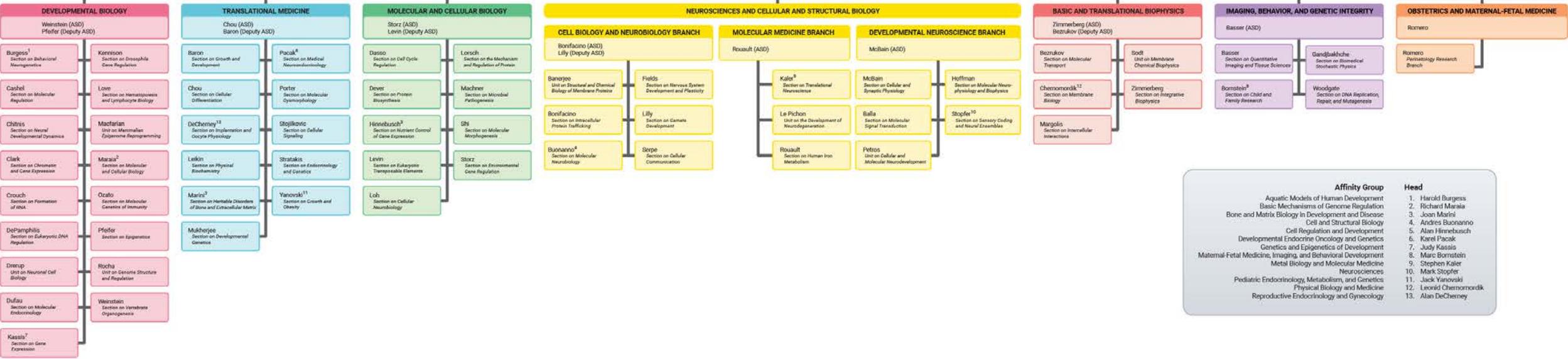
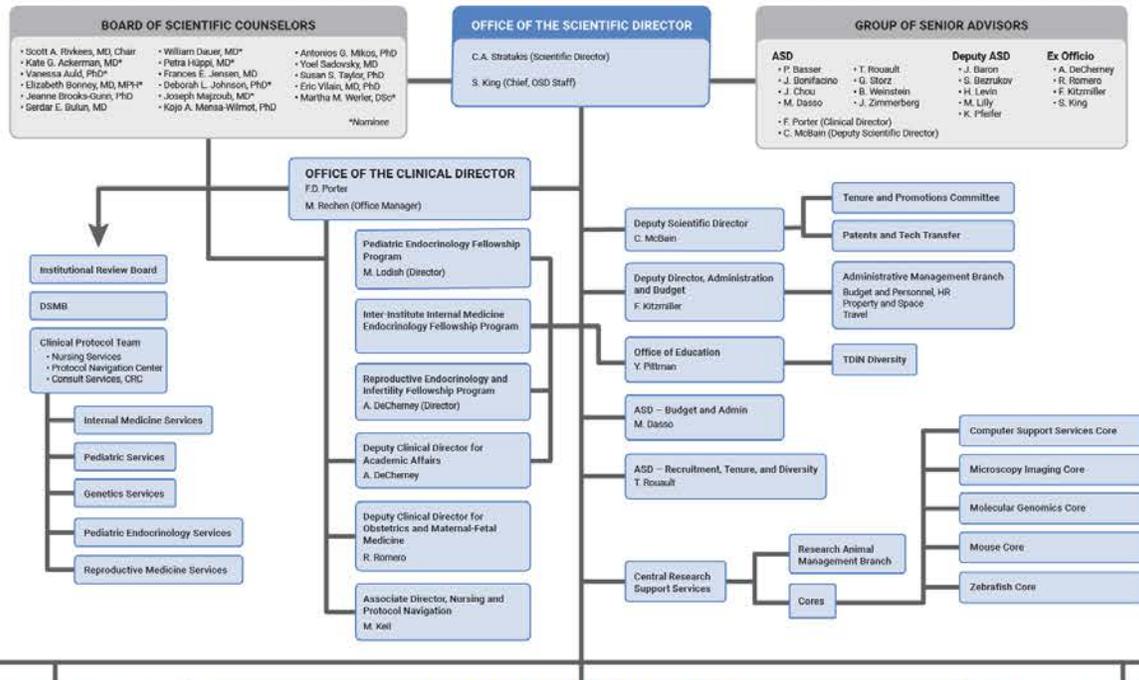
- Total personnel of ~900 employees
  - 60 PIs (54 Tenured; 6 Tenure-Track)
  - 3 retirements in FY18
- >70 Clinical Protocols
  - ~2/3 at the NIH Clinical Center
- Accredited medical training programs:
  - Pediatric Endocrinology
  - Adult Endocrinology
  - Reproductive Endocrinology and Infertility
  - Medical Genetics (with NHGRI)
  - Perinatal Research and Obstetrics (Wayne State Univ/PRB)





# Division of Intramural Research

Updated May 2018



Affinity Group	Head
1. Aquatic Models of Human Development	1. Harold Burgess
2. Basic Mechanisms of Genome Regulation	2. Richard Mariaia
3. Bone and Matrix Biology in Development and Disease	3. Joan Marini
4. Cell and Structural Biology	4. Andres Buonanno
5. Cell Regulation and Development	5. Alan Hinnebusch
6. Developmental Endocrine Oncology and Genetics	6. Karel Pacak
7. Genetics and Epigenetics of Development	7. Judy Kasata
8. Maternal-Fetal Medicine, Imaging, and Behavioral Development	8. Marc Bornstein
9. Metal Biology and Molecular Medicine	9. Stephen Kalir
10. Neurosciences	10. Mark Stopfer
11. Pediatric Endocrinology, Metabolism, and Genetics	11. Jack Yanovski
12. Physical Biology and Medicine	12. Leonid Chernomordik
13. Reproductive Endocrinology and Gynecology	13. Alan DeCherney

# Affinity Group Membership

## Aquatic Models of Human Development

**Burgess, Harold [Head]**

Chitnis, Ajay

Drerup, Katie

Feldman, Ben (Core)

Weinstein, Brant

## Basic Mechanisms of Genome Regulation

**Maraia, Richard [Head]**

Cashel, Mike

Clark, David

Crouch, Bob

Depamphilis, Melvin

Woodgate, Roger

## Bone & Matrix Biology in Development & Disease

**Marini, Joan [Head]**

Leikin, Sergey

## Cell Regulation & Development

**Hinnebusch, Alan [Head]**

Dasso, Mary

Dever, Tom

Dufau, Maria

Levin, Henry

Lorsch, Jon (NIGMS)

Serpe, Mihaela

Shi, Yun-Bo

## Cell & Structural Biology

**Buonanno, Andres [Head]**

Banerjee, Anirban

Bonifacino, Juan

Lilly, Mary

Machner, Matthias

Storz, Gisela

## Developmental Endocrine Oncology & Genetics

**Pacak, Karel [Head]**

Lodish, Maya (Training Program)

Stojilkovic, Stanko

Stratakis, Constantine

## Genetics & Epigenetics of Development

**Kassis, Judy [Head]**

Kennison, Jim

Love, Paul

Macfarlan, Todd

Ozato, Keiko

Pfeifer, Karl

Rocha, Pedro

## Physical Biology & Medicine

**Chernomordik, Leonid [Head]**

Bezrukov, Sergey

Sodt, Alex

Zimmerberg, Joshua

## Reproductive Endocrinology & Gynecology

**Decherney, Alan [Head]**

## Maternal-Fetal Medicine, Imaging, & Behavioral Development

**Romero, Roberto [Head]**

Basser, Peter

Gandjbakhche, Amir

Margolis, Leonid

## Metals Biology & Molecular Medicine

**Kaler, Stephen [Head]**

Le Pichon, Claire

Rouault, Tracey

## Neurosciences

**Stopfer, Mark [Head]**

Balla, Tamas

Fields, Doug

Hoffman, Dax

Loh, Y Peng

McBain, Chris

Petros, Tim

## Pediatric Endocrinology, Metabolism, & Genetics

**Yanovski, Jack [Head]**

Baron, Jeff

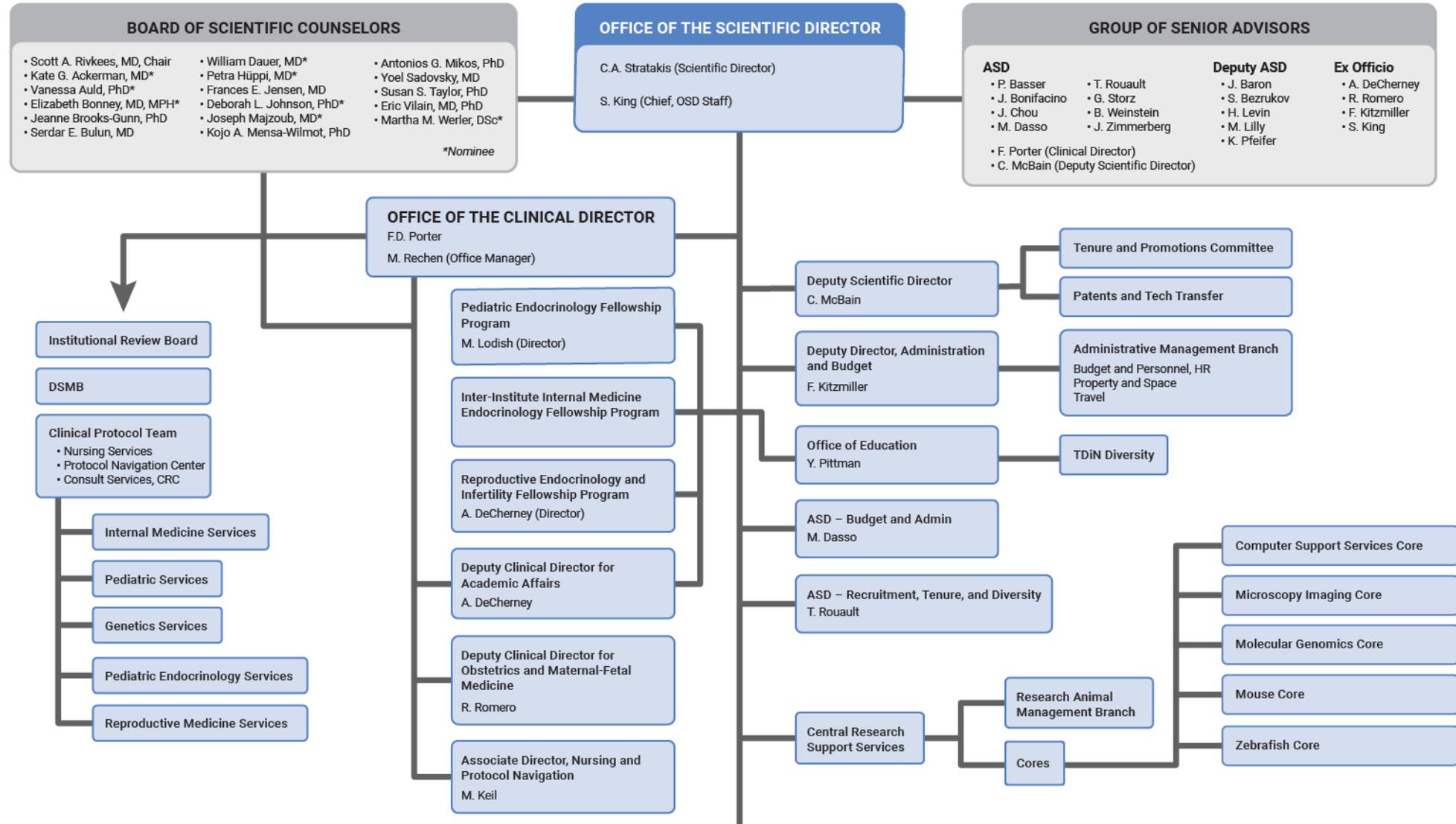
Chou, Janice

Delaney, Angela

Merke, Deborah (CC)

Mukherjee, Anil

Porter, Forbes





# NICHD Board of Scientific Counselors

<b>Scott Rivkees, MD (Chair)</b>	U of Florida	Pediatric Endocrinology
<b>Kate Ackerman, MD</b>	U of Rochester	Dev Bio/Genetics/Pediatrics
<b>Vanessa Auld, PhD</b>	U of British Columbia	Cell & Developmental Biology
<b>Elizabeth Bonney, MD, MPH</b>	U of Vermont	Immunobiology/Mol Bio/OBGyn
<b>Rita Balice-Gordon, PhD</b>	Sanofi	Neuroscience
<b>Jeanne Brooks-Gunn, PhD</b>	Columbia	Dev Psych/Behavioral Sci
<b>Serdar Bulun, MD</b>	Northwestern	Obstetrics/Gynecology
<b>Frances Jensen, MD</b>	U of Pennsylvania	Neuroscience
<b>Deborah Johnson, PhD</b>	Baylor	Molecular & Cell Biology
<b>Kojo Mensa-Wilmot, PhD</b>	U of Georgia	Cell Biology
<b>Antonios Mikos, PhD</b>	Rice University	Bioengineering/Biophysics
<b>Yoel Sadovsky, MD</b>	Magee-Womens/Pitt	Rep Bio/Obstetrics/Gynecology
<b>Susan Taylor, PhD</b>	UCSD	Struc Bio/Mol Biochem
<b>Eric Vilain, MD, PhD</b>	Children's National	Mol & Human Genetics
<b>Martha Werler, DSc</b>	Boston	Epidemiology



# NICHD Board of Scientific Counselors

## **Petra Hüppi, MD**

**Expertise: Dev. Neurosciences, Neonatology, Neuroimaging, Biophysics**

Group Leader, Child Development Disorders  
University of Geneva



## **Joseph A. Majzoub, MD**

**Expertise: Internal Medicine, Endocrinology, Obesity & Reproduction, Neuroendocrinology**

Thomas Morgan Rotch Professor of Pediatrics &  
Professor of Medicine, Harvard Medical School  
Chief, Division of Endocrinology, Boston  
Children's Hospital



# NICHD Board of Scientific Counselors

## **William T. Dauer, MD**

**Expertise: Pediatrics, Pediatric Development & Behavior, Rare Disease & Genetics, Neurobiology**

Elinor Levine Professor of Neurology

Professor of Cell and Developmental Biology

Director, Movement Disorders Group & Udall Center of Excellence for Parkinson's Disease Research

University of Michigan Medical School

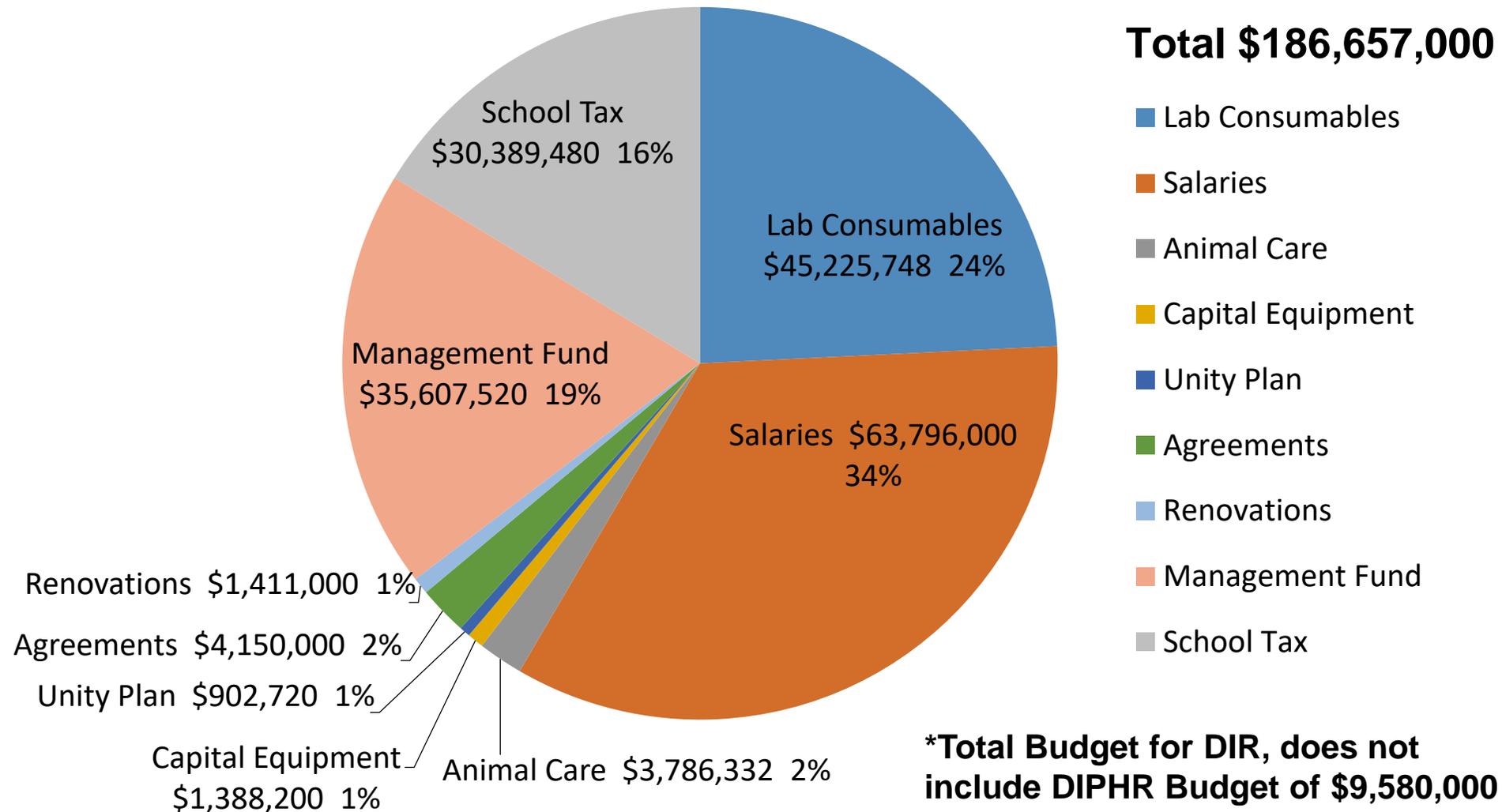




# Budget & Personnel



# NICHD DIR Budget: FY2018 Estimates





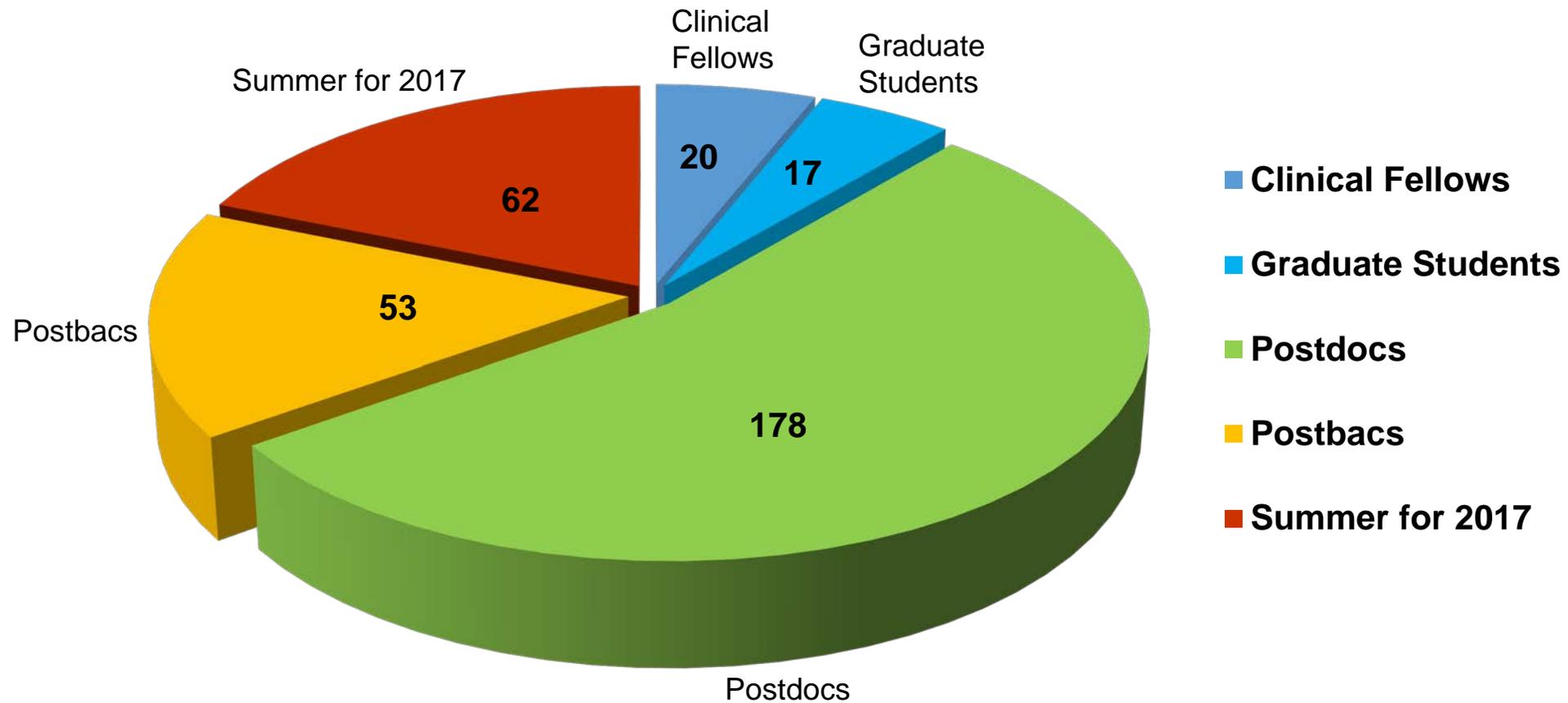
# NICHD DIR Personnel Trends

	<b>FY2015</b>	<b>FY2016</b>	<b>FY2017</b>	<b>FY2018</b>
<b>FTEs</b>	306	308	307	301
<b>Non-FTEs</b>	690	655	607	587
<b>TOTAL</b>	996	963	914	888



# NICHD Intramural Trainee Numbers

As of April 2018, 269 total

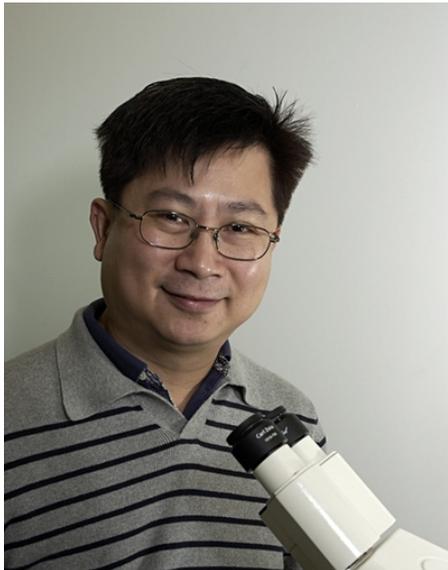




# Retirements & Departures

**Stephen Suomi, PhD**

Retired March 2018



**Chi-Hon Lee, MD, PhD**

Retired February 2018

Director, Institute of Cellular & Organismic  
Biology, Academia Sinica, Taiwan



## Retirements & Departures



**Marc Bornstein, PhD**

Retired May 2018

**Maya Lodish, MD**

Departed June 2018

S. Kaplan Chair of Pediatric  
Clinical Research at the  
University of California, San  
Francisco





# Recruitment



## **Pedro Rocha, PhD**

Stadtman Investigator

Started April 30, 2018

Unit on Genome Structure and Regulation



# BIONFORMATICS at NICHD



**Ryan Dale, MD**

Started June 24, 2018

Scientific Information Officer

Head, Bioinformatics and Scientific  
Programming Core



# Recruitment



## Fady Hannah-Shmouni, MD

Graduated from the NIH Inter-Institute Endocrinology Training Program in 2017

Starting in fall 2018 as:

Staff Clinician & Co-Chief, Internal Medicine, NICHD

Associate Program Director, Inter-Institute  
Endocrinology Training Program



# Tenure-Track Earl Stadtman Investigators

Deadline: September 30, 2018

The National Institutes of Health, the U.S. government's premier biomedical and behavioral research enterprise and a component of the Department of Health and Human Services, is pleased to announce its tenth annual call for researchers who want to be "NIH Earl Stadtman Investigators". These are tenure-track positions (assistant professor equivalent) within the NIH Intramural Research Program (IRP). As a member of the IRP, you join a team whose hallmarks are stable funding, intellectual freedom, shared resources, and access to a wide range of scientific expertise. A wide array of scientists already has been hired through the "Stadtman" recruitment mechanism over the last nine years.

A variety of basic and translational/clinical positions are available, with areas of active recruitment including (but not limited to): Behavioral Sciences, Biochemistry, Biomedical Engineering, Biophysics, Biostatistics, Cancer Biology, Cell Biology, Cell Metabolism, Chemical Biology, Chromosome Biology, Computational Biology/Bioinformatics (including natural language processing and text mining), Developmental Biology, Epidemiology, Genetics, Genomics, Health Disparities, Immunology, Infectious Diseases, Microbiology, Molecular Pharmacology, Neurodevelopment, Neurosciences, Physiology, RNA Biology, Social Sciences, Structural Biology, Systems Biology, Toxicology, Translational and Clinical Research, and Virology.



# Lasker Clinical Research Scholars Program

- Goal – To grow the diminishing pool of talented clinical/translational researchers.
- Total program duration 8+ years:
  - Years 1-5: NIH Intramural Research Program full support (salary and research support)
  - Years 6-8: salary and/or research support of up to \$500,000/year at outside institution, OR continuation in Intramural Research Program
- Candidates – Early stage clinical researchers, within 10 years of completing core residency, with the ability to conduct independent research.
- Application deadline: August 31, 2018

<https://www.nih.gov/research-training/lasker-clinical-research-scholars>



## Recently Tenured - DIPHR



**Pauline Mendola, PhD**

Senior Investigator, Epidemiology Branch

Awarded Tenure: March 5, 2018



**Zhen Chen, PhD**

Senior Investigator, Biostatistics &  
Bioinformatics Branch

Awarded Tenure: May 21, 2018



**Stephen Gilman, ScD**

Senior Investigator & Chief,  
Behavioral Health Sciences Branch

Awarded Tenure: April 16, 2018



# Investigator Honors - DIR

## **Tom Dever, PhD**

Elected Fellow to the American  
Academy of Microbiology



## **Peter Basser, PhD**

Inducted into the American Institute  
for Medical and Biological Engineering



# **Competitive Awards**



# 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 4 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

	2013	2014	2015
LOIs/X02s	74	48	47
Approved	56	32	39
Approval rate	76%	67%	83%
New Apps	51	19	28
Resubmissions	-	14	6
Awards	10	10	5
Funding Rate	20%	30%	15%



# NICHD DIR Competitive Awards

## NICHD DIR Director's Awards, FY18

- Two years of funding
  - FY14-15, \$3M
  - FY16-17, \$2M, 8 of 25 applications funded
  - FY18-19, 26 applications
- 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.



# NICHD DIR Director's Awards, FY18-19

PI	Collaborators	Project Title
Banerjee, Anirban	Inglese, James (NCATS); Shi, Lei (NIDA)	A multipronged approach to develop small molecule probes for investigating the physiology and pharmacology of protein palmitoylation
Burgess, Harold Pfeifer, Karl		Characterization of random mono-allelic gene expression in zebrafish
Chernomordik, Leonid Margolis, Leonid		Mechanisms of Zika virus entry into human cervical and placental tissues ex vivo
Clark, David	Burgess, Harold	Autism-Spectrum Disorder-linked Chromatin Remodelers in Brain Development
Crouch, Robert Ozato, Keiko	Mukoyama, Yosuke (NHLBI)	Clearing endogenous nucleic acids in microglia: essential requirement for neuronal development and brain health
Dasso, Mary Serpe, Mihaela	Oliver, Brian (NIDDK)	IRBIT-dependent pathways for control of cell differentiation and tissue homeostasis
Feldman, Benjamin Coon, Steve	Kaler, Stephen; Porter, Forbes; Marini, Joan	Modeling of Disease-Related Missense Mutations in Zebrafish
Levin, Henry Macfarlan, Todd	Nath, Avi (NINDS)	The role of retrotransposons and zinc finger proteins in neural development and neurological diseases
Maraia, Rich	Iben, James	Functional modeling of TRIT1 deficiency alleles toward precision medicine
Marini, Joan	Robey, Pamela (NIDCR); Collins, Michael (NIDCR); Bhattacharyya, Timothy (NIAMS)	Role of MAP2K1 somatic mutations in melorheostosis
Storz, Gisela	Banerjee, Anirban; Luisi, Ben (University of Cambridge)	Modulating drug efflux pumps with small proteins
Yanovski, Jack	Zimmerberg, Joshua; Demidowich, Andrew; Margolis, Leonid	Novel Approaches to quantify and ameliorate the impact of adipose inflammation on insulin resistance



# NIH Competitive Awards

## Office of AIDS Research Strategic Funding

Funding through the NICHD Office of the Director

- The aim of this Fund is to redirect NIH HIV/AIDS research funds to the highest priority, most meritorious, research aligned with the current NIH HIV/AIDS research priorities:
  - Reducing Incidence of HIV/AIDS
  - Next generation of HIV therapies
  - Research toward a cure
  - HIV-associated comorbidities, coinfections, and complications
  - Basic research
  - Health disparities
  - Training



# Office of AIDS Research Strategic/Innovation Funding, FY18

PI	Project Title	FY18 Funding
Levin, Henry	The role of mRNA splicing in HIV-1 integration	\$110,000
Levin, Henry	Mapping chromatin interactions of LEDGF by creating highly specific antibodies	\$105,000
Banerjee, Anirban	Investigation into the organization, function and interacting partners of SERINC3 and SERINC5	\$187,000
Chernomordik, Leonid	Molecular Mechanisms Underlying Phosphatidylserine-Dependent Stage of HIV-1 Entry	\$120,000
Zimmerberg, Josh	Determining the Cellular Mechanisms of HIV Viral Assembly and Latency	\$100,000



# **Diversity & Training Initiatives**



# DIR 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): **5 new recruits for 2018-19**

Alumni group of 14: our three new alumni are starting professional school in the fall with full scholarships; L. Crawford (PhD program at Penn State University), A. Simmons (Cornell Medical School), and O. Bankole (Rush College, Biotechnology Master's)

**Summer Trainees:** Centrally-funded slots for students from groups traditionally underrepresented in science or from disadvantaged backgrounds

**15 filled for 2018** (1/4 of our summer population)

**Fellows Recruitment Incentive Award** (Postdocs):

1 recruit every fiscal year

Alejandra Garcia (Stopfer Lab, started in Nov. 2017)

FRIA alumni: AAAS Science Policy Fellow





# Intramural Research Fellowships

Our 2<sup>nd</sup> Application Cycle Started on May 12

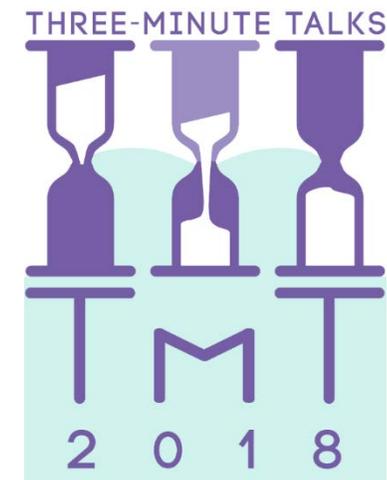
- For Postdoctoral and Clinical Fellows in their second or third training year
- Training on how to write various components of an NIH grant
- Application prepared by fellow under guidance of their mentor
  - 10 pages max. (NIH Biosketch, Specific Aims, Significance and Approach, Budget Justification,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

Review by BSC members. Fellows' applications and reviewing instructions will be sent on September 10<sup>th</sup>. Scores with comments are due by October 15<sup>th</sup>.



# 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 June 28, 2018 with other participating institutes: NIDCR, NIAMS, NEI, & NHGRI



## 2018 FINALISTS:

Karen Plevock Haase (Dasso)  
Larissa Erben (Buonanno)  
Jakob Gutzmann (Hoffman)  
Lindsey Friend (Serpe)

**Congratulations to Dr. Jakob Gutzmann for placing 3<sup>rd</sup> overall!**



**Thank you!**



# New Directions in Microstructure and Functional MRI

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**Peter J. Basser, Ph.D.**

Associate Scientific Director, Imaging,  
Behavior, & Genetic Integrity

Senior Investigator and Head, Section on  
Quantitative Imaging & Tissue Sciences