

Report to the National Advisory Environmental Health Sciences Council

Director, NIEHS and NTP

October 3, 2017

Budget and Legislative Report



Appropriations

	FY 2015 Omnibus Appropriation	FY 2016 Omnibus Appropriation	FY 2017 Omnibus Appropriation	FY 2018 President's Request	FY 2018 House Appropriations Committee
NIEHS	\$ 667,333,000 ^{a/}	\$ 693,533,000 ^{a/}	\$ 714,261,000	\$ 533,537,000	\$ 725,387,000
Ebola (via CDC)	\$ 10,000,000 ^{d/}				
NIH (LHHS)^{b/}	\$30,084,000,000	\$32,084,000,000	\$34,084,000,000	\$26,701,103,000	\$35,184,000,000
Common Fund^{c/}	\$ 545,639,000	\$ 675,639,000	\$ 695,456,000	\$ 454,423,000	\$ 695,580,000
Superfund	\$ 77,349,000	\$ 77,349,000	\$ 77,349,000	\$ 59,607,000	\$ 75,370,000
NIEHS/DOE Training	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000		

a/ Reduced by \$169,000 transfer to the NIH Office of AIDS Research.

b/ Excludes Mandatory Type 1 Diabetes Research and Superfund.

c/ Includes addition of \$12.6 million for the Gabriella Miller Kids First Act pediatric research initiative.

d/ Transfer from CDC Ebola Emergency Response appropriation to NIEHS to remain available through fiscal year 2019.

FISCAL YEAR 2017 APPROPRIATIONS UPDATE

On May 5, 2017, the President signed into law the *Consolidated Appropriations Act, 2017*, Public Law 115-31, which appropriated a total of \$34.084 billion for the NIH, representing a \$2 billion or 6.2 percent increase over the Fiscal Year 2016 enacted level and a \$3 billion increase over the President's request for Fiscal Year 2017. Included within the overall increase for the NIH was a \$20.559 million or 2.67 percent increase for the NIEHS, bringing the Fiscal Year 2017 total amount for the NIEHS to \$791.610 million. This amount represents \$693.702 million appropriated through Title II of the *Department of Health and Human Services Appropriations Act, 2017*, plus \$77.349 million appropriated in Title III of the *Department of the Interior, Environment, and Related Agencies Appropriations Act, 2017*, for the Superfund Training Program (SRP) and the Worker Training Program (WTP). Dollar wise, the NIEHS received the 10th highest increase among the various NIH Institutes and Centers (this excludes the NIH Office of the Director and NIH

Buildings and Facilities accounts). Percentage wise, the NIEHS received the 18th highest increase (the 15th highest increase without factoring in the Superfund appropriation from the *Department of the Interior, Environment, and Related Agencies Appropriations Act, 2017*, which remained unchanged from 2016).

The final bill included specific increases at the NIH for research related to Alzheimer’s disease, the brain, antibiotic resistance, and the Precision Medicine Initiative (PMI). The final bill also increased the NIH Common Fund by \$19.817 million or 2.98 percent—on par with the increase Congress provided the NIEHS under the Labor-HHS-Education Appropriations bill—over the Fiscal Year 2016 level. The total amount appropriated to the NIH Common Fund for Fiscal Year 2017 was \$682.856 million. This final Fiscal Year 2017 appropriations law was enacted 217 calendar days after Fiscal Year 2016 expired on September 30, 2016. It followed three consecutive “Continuing Resolutions” that kept the NIH and other federal departments and agencies operating at close to Fiscal Year 2016 enacted levels after September 30, 2016.

FISCAL YEAR 2018 APPROPRIATIONS UPDATE

President’s Budget Request to Congress

On March 16, 2017, the President released a blueprint of his budget proposal for Fiscal Year 2018. The 62-page document requested that Congress appropriate \$69 billion for the Department of Health and Human Services (HHS) in Fiscal Year 2018, which represents \$4.5 billion or 6.12 percent less than the amount appropriated for the Department by Congress for Fiscal Year 2017. The President’s requested funding level excludes certain mandatory spending changes but includes additional funds for program integrity and implementing the *21st Century CURES Act* (Public Law 114-255). Specifically, NIH spending under the President’s request relative to the 2017 enacted level would be reduced by approximately \$8.2 billion (or 24 percent) to \$25.9 billion. The proposed budget also contained “a major reorganization of NIH’s Institutes and Centers to help focus resources on the highest priority research and training activities, including: eliminating the Fogarty International Center; consolidating the Agency for Healthcare Research and Quality (AHRQ) within NIH; and other consolidations and structural changes across NIH organizations and activities. The budget also reduces administrative costs and rebalance Federal contributions to research funding.”

The President’s detailed budget proposal, which expanded upon the blueprint, was released on May 23, 2017. The detailed budget requested that Congress appropriate \$593.144 million for NIEHS in Fiscal Year 2018: \$533.537 million through the Labor, HHS, Education and Related Agencies appropriations bill and \$59.607 million for the Superfund Research Program (SRP) and the Worker Training Program (WTP) through the Interior, Environment and Related Agencies appropriations bill. This combined, proposed amount is \$198.466 million or 25.07 percent less than the total amount appropriated for NIEHS in Fiscal Year 2017. A reduction over Fiscal Year 2017 funding levels was requested for all 24 NIH Institutes and Centers that receive a direct appropriation from Congress. The average proposed reduction across all such Institutes and Centers is 26.66 percent, which is 1.59 percentage points higher than the reduction proposed for the NIEHS. Among the Institutes and Centers, the NIEHS ranks ninth in proposed reductions when expressed as a percentage and when ordered from highest to lowest.

House of Representatives Action

On July 19, 2017, the House Appropriations Committee reported out the FY2018 Labor, HHS Education Appropriation bill. The bill, which had been reported out of Subcommittee on July 13, would provide a total of \$35.2 billion for NIH, an increase of \$1.1 billion above the fiscal year 2017 enacted level and \$8.6 billion above the President's budget request. No changes were made to the NIH portion of the bill during the full committee markup session. There were four NIH-related amendments that were offered but they were either withdrawn or failed to be adopted on a recorded vote. Three proposals that were contained within the President's budget request are not included in the House bill. First, the request defunded the Fogarty International Center (FIC). FIC is funded at \$73.353 million in the bill. Second, the request would limit indirect costs for extramural grants to 10%. Section 228 of the House bill would prohibit this proposed change from being implemented. Third, the request would have folded the Agency for Healthcare Research and Quality (AHRQ) into the NIH. AHRQ is funded at \$300 million and would continue as a separate, freestanding agency within HHS under the bill. Additionally, a general provision—Section 528—is contained in the bill that would prohibit the conduct or support of research using human fetal tissue if such tissue is obtained from an induced abortion.

Senate Action and Remaining Steps

To date, the Senate Appropriations Committee has not marked-up at either the full or Subcommittee level its version of the FY2018 Labor, HHS Education Appropriation bill. The leadership of the House of Representatives is currently evaluating options for completing work on the eight appropriations bills that have been reported out of committee but have not yet been voted on by the full House. There is an active proposal to bundle all eight of these remaining appropriations bills into a single omnibus legislative package for debate and a vote on the House floor in September. Elements of the proposal include structuring the rules for debate such that these eight bills, upon their passage in omnibus form, would automatically be combined with the four other appropriations bills that have already passed in a minibus structure thereby creating a super omnibus bill, comprised of each of the 12 appropriations bills, to send to the Senate for its consideration before September 30, the last day of Fiscal Year 2017.

Congressional Hearings

Several Congressional hearings and a briefing relating to the FY2018 appropriations process and the NIH budget were held on the following dates (listed in chronological order):

- *March 29, 2017:* House Labor, HHS, Education and Related Agencies Appropriations Subcommittee Budget Hearing on the Department of Health and Human Services. The sole witness was Dr. Tom Price, HHS Secretary. This hearing was held after OMB release in mid-March of the President's FY2018 initial budget proposal and before the full budget proposal was released in late May.
- *May 17, 2017:* House Labor, HHS, Education and Related Agencies Appropriations Subcommittee Oversight Hearing, "Advances in Biomedical Sciences." The six witnesses were: Dr. Francis Collins, NIH Director; Dr. Anthony Fauci, NIAID Director; Dr. Gary Gibbons, NHLBI Director; Dr. Joshua Gordon, NIMH Director; Dr. Doug Lowy, Acting NCI Director; and Dr. Nora Volkow, NIDA Director. Like the March 29 Subcommittee Hearing with the HHS Secretary, this hearing, which focused broadly on

current work and research priorities at NIH, was held after OMB release of the President's FY2018 initial budget proposal and approximately one week before the full budget proposal was released.

- *June 15, 2017:* Senate Labor, HHS, Education, and Related Agencies Appropriations Subcommittee Budget Hearing, "Review of the FY2018 Budget Request for the Department of Health and Human Services." The sole witness was Dr. Tom Price, HHS Secretary.
- *June 22, 2017:* Senate Labor, HHS, Education, and Related Agencies Appropriations Subcommittee Budget Hearing, "Review of the FY2018 Budget Request for the National Institutes of Health." The seven witnesses were: Dr. Francis Collins, NIH Director; Dr. Doug Lowy, Acting NCI Director; Dr. Gary Gibbons, NHLBI Director; Dr. Anthony Fauci, NIAID Director; Dr. Richard Hodes, NIA Director; Dr. Nora Volkow, NIDA Director; and Dr. Joshua Gordon, NIMH Director. The sole difference between the House and Senate witness panels for the FY2018 NIH budget hearings was: Dr. Hodes, NIA Director, appeared at the Senate hearing but not at the House hearing. Each of the other same five IC Directors were invited to appear at both hearings with Dr. Collins.
- *June 28, 2017:* Dr. Linda Birnbaum, NIEHS and NTP Director, briefed Mr. Chris Tomassi, the Professional Staff Member for the Majority of the Senate Interior, Environment and Related Agencies Appropriations Subcommittee, about NIEHS Superfund-related activities that fall under the Subcommittee's jurisdiction. Katherine Donley from the Office of the HHS Assistant Secretary for Financial Resources (ASFR) attended the briefing. Briefing documents were provided to the Minority staff member for the Senate Subcommittee, and the Majority and Minority staff members for the House Subcommittee. These staffers were unable to attend the briefing in person.

ENVIRONMENTAL HEALTH RELATED LEGISLATION INTRODUCED TO DATE IN CONGRESS

The following bills related to environmental health have been introduced since the 115th Congress convened on January 3, 2017. These bills are listed in chronological order based on the date of introduction.

H.R. 598, *Airplane Impacts Mitigation Act of 2017* ("AIM Act of 2017")

On January 20, 2017, Rep. Stephen Lynch (MA-08) reintroduced H.R. 598, the *Airplane Impacts Mitigation Act of 2017*, to require the Administrator of the Federal Aviation Administration (FAA) to commission a study of the health impacts of airplane flights on affected residents of certain metropolitan areas exposed to a range of noise and air pollution levels from such flights. The FAA Administrator would be required to enter into an agreement to conduct this two-year study with an institution of higher education that receives funding from NIEHS and meets other criteria. H.R. 598 has 20 cosponsors, principally members of the "Quiet Skies Caucus," and has been referred to the House Committee on Transportation and Infrastructure's Subcommittee on Aviation. This bill was H.R. 5075 in the 114th Congress.

H.R. 816, "*Federal Accountability in Chemical Testing Act*" (FACT Act)

On February 2, 2017, Rep. Ken Calvert (CA-42) introduced H.R. 816, the *Federal Accountability in Chemical Testing Act*, to amend the *ICCVAM Authorization Act of 2000* (Public Law 106-545) to require that the "Interagency Coordinating Committee on the Validation of Alternative Methods" (ICCVAM), a permanent

committee of NIEHS, include in its biennial report “a description of the progress on the development, validation, acceptance, and utilization of alternative test methods” and “animal use data by species, number and test type for toxicological testing conducted, supported or required by” ICCVAM-participating federal agencies. These agencies include: Department of Agriculture (USDA); Department of Defense (DOD); Department of Energy (DOE); Department of the Interior (DOI); Occupational Safety and Health Administration (OSHA) at the Department of Labor; Department of Transportation (DOT); Consumer Product Safety Commission (CPSC); Environmental Protection Agency (EPA); Agency for Toxic Substances and Disease Registry (ATSDR) and National Institute for Occupational Safety and Health (NIOSH) at Centers for Disease Control and Prevention (CDC), Food and Drug Administration (FDA), and NIEHS, NCI, and NLM at NIH under Department of Health and Human Services (HHS). H.R. 816 has been referred to the House Committee on Energy and Commerce, and within the Committee to the Subcommittee on Health. The bill has 63 cosponsors—19 Republicans and 44 Democrats.

H.R. 1348, “Investing in Testing Act of 2017”

On March 2, 2017, Rep. Sean Patrick Maloney (NY-18) introduced H.R. 1348, to require the CDC to complete, within two years, a study on the human health implications of per- and polyfluoroalkyl substances (PFAS) contamination in drinking water. The bill authorizes the appropriation of \$15 million to the CDC to carry out this requirement. The bill has been referred to the House Committee on Energy and Commerce, and has no cosponsors

H.R. 1909, A bill to prioritize educating and training for existing and new environmental health professionals.

On April 5, 2017, Rep. Brenda Lawrence (MI-14) reintroduced H.R. 1909, a bill to require HHS to develop model standards and guidelines for credentialing environmental health professionals. Additionally, HHS must develop a comprehensive and coordinated plan for the environmental health workforce that: (1) includes performance measures, (2) identifies any gaps between existing programs and future environmental health workforce needs, and (3) identifies actions needed to address any identified gaps. The GAO would also be required to identify the best practices related to training and credentialing environmental health professionals in six states. Finally, the bill also amends the Higher Education Act of 1965 to make environmental health professionals eligible for loan forgiveness programs from the Department of Education. The bill has been referred to the House Committee on Education and the Workforce.

H.R. 2049, “Radiation Exposure Compensation Act Amendments of 2017”

On April 6, 2017, Rep. Ben Ray Lujan (NM-03) reintroduced H.R. 2049, a bill to amend the *Radiation Exposure Compensation Act* to improve compensation for workers involved in uranium mining, and for other purposes. The bill has 25 original cosponsors: 24 Democrats and one Republican. The bill is a companion to S. 197, which Sen. Mike Crapo (ID) reintroduced on January 24, 2017. Among other provisions, H.R. 2049 and S. 197 would direct the HHS Secretary, through the NIEHS, to establish a program of grants to institutions of higher education to study the epidemiological impacts of uranium mining and milling among non-occupationally exposed individuals, including family members of uranium miners and millers. H.R. 2049 and S. 197 have been referred to the House and Senate Committees on the

Judiciary, respectively, which have jurisdiction over the *Radiation Exposure Compensation Act* and the compassionate payment program administered by the Department of Justice for classes of individuals who were either “downwind of” or “onsite participants in” the atmospheric nuclear weapons tests conducted in Nevada in the 1950s and 1960s. H.R. 2049 and S. 197 would add the Trinity Test Site in New Mexico to the program, among other provisions. Sens. Tom Udall (NM); James Risch (ID); Martin Heinrich (NM); and Michael Bennet (CO) are cosponsors of S. 197.

H.R. 2379, “Feminine Hygiene Product Safety Act of 2017”

On May 4, 2017, Rep. Carolyn Maloney (NY-12) reintroduced her bill to amend the *Public Health Service Act* to require the NIH, through the Office of the Director, to provide for the conduct or support of research on the extent to which components (including contaminants and substances used as fragrances, colorants, dyes, and preservatives) in feminine hygiene products pose any risks to the health of women or the health of the children of women who use those products during or before the pregnancies involved. This bill was H.R. 1708 in the 114th Congress and has been referred to the House Committee on Energy and Commerce.

Science Advances

One NIEHS (NIEHS authors’ groups in parens)

- **Binding of bisphenol A, bisphenol AF, and bisphenol S on the androgen receptor: Coregulator recruitment and stimulation of potential interaction sites.** Perera L (DIR), Y Li (DIR), LA Coons, R Houtman, R van Beuningen, B Goodwin, SS Auerbach (NTP) and CT Teng (NTP). *Toxicology in vitro* (2017) [In Press]
<http://dx.doi.org/10.1016/j.tiv.2017.07.020>
SP Goal 1
- **Identification of ATF-7 and the Insulin Signaling Pathway in the Regulation of Metallothionein in *C. elegans* Suggests Roles in Aging and Reactive Oxygen Species.** Hall JA (NTP), MK McElwee (DIR) and JH Freedman. *Environ. Mol. Mutagen.* (2017)
<http://dx.doi.org/10.1371/journal.pone.0177432>
SP Goal 1, 2
- **New rodent population models may inform human health risk assessment and identification of genetic susceptibility to environmental exposures.** Harrill AH (NTP) and McAllister KA (DERT). *Environ. Health Perspect.* 2017 Aug 15;125(8):086002. [ePub]
<https://ehp.niehs.nih.gov/ehp1274/>
SP Goal 1, 3

DNTP

- **Assessment of the DNA damaging potential of environmental chemicals using a quantitative high-throughput screening approach to measure p53 activation.** Witt KL (DNTP), JH Hsieh, SL Smith-Roe (DNTP), M Xia, R Huang, J Zhao, SS Auerbach (DNTP), J Hur and RR Tice (DNTP). *J. Chem. Inf. Model.* (2017) v. 57 (1): pp. 36-49.
<http://dx.doi.org/10.1002/em.22112>
SP Goal 1

- **Systematic review of community health impacts of mountaintop removal mining.** Boyles AL (DNTP), RB Blain, JR Rochester, R Avanas, SB Goldhaber, S McComb, SD Holmgren (DNTP), SA Masten (DNTP) and KA Thayer (DNTP). *Environment international* (2017) v. 107 pp. 163-172. <http://dx.doi.org/10.1016/j.envint.2017.07.002>
SP Goal 4, 5, 7

DIR

- **Intestinal Epithelial Sirtuin 1 Regulates Intestinal Inflammation during Aging in Mice by Altering the Intestinal Microbiota.** Wellman AS (DIR), MR Metukuri (DIR), N Kazgan (DIR), X Xu (DIR), Q Xu (DIR), NSX Ren (DIR), A Czopik, MT Shanahan, A Kang (DIR), W Chen (DIR), MA Azcarate-Peril, AS Gulati, DC Fargo (DIR), L Guarente and X Li (DIR). *Gastroenterology* (2017) [In Press]. <http://dx.doi.org/10.1053/j.gastro.2017.05.022>
SP Goal 1, 2, 4
- **ORIO (Online Resource for Integrative Omics): a web-based platform for rapid integration of next generation sequencing data.** Lavender CA (DIR), AJ Shapiro (NTP), AB Burkholder (DIR), BD Bennett (DIR), K Adelman (DIR) and DC Fargo (DIR). *Nucleic Acids Res* (2017) v. 45 (10): 5678-5690. <http://dx.doi.org/10.1093/nar/gkx270>
SP Goal 7
- **Season of Conception, Smoking, and Preeclampsia in Norway.** Weinberg CR (DIR), M Shi (DIR), O Basso, LA DeRoo, Q Harmon (DIR), AJ Wilcox (DIR) and R Skjaerven. *Environ. Health Perspect.* (2017) v. 125 (6): 067022 [ePub]. <https://ehp.niehs.nih.gov/ehp963/>
SP Goal 1
- **Grc3 programs the essential endoribonuclease Las1 for specific RNA cleavage.** Pillon MC (DIR), M Sobhany (DIR), MJ Borgnia, JG Williams (DIR) and RE Stanley (DIR). *Proc Natl Acad Sci* (2017) v. 114 (28): E5530-E5538. <http://dx.doi.org/10.1073/pnas.1703133114>
SP Goal 1

DETR

- **Temporal trends in sperm count: a systematic review and meta-regression analysis.** H Levine, N Jørgensen, A Martino-Andrade, J Mendiola, D Weksler-Derri, I Mindlis, R Pinotti, and S Swan. *Hum Rep Update* (2017) June 28. <https://doi.org/10.1093/humupd/dmx022>
SP Goal 5, 7

- **Prenatal naled and chlorpyrifos exposure is associated with deficits in infant motor function in a cohort of Chinese infants.** Silver MK, Shao J, Zhu B, Chen M, Xia Y, Kaciroti N, Lozoff B, Meeker JD. *Environ Int*; 2017 Sep;106:248-256. Epub 2017 Jun 8.
<https://www.ncbi.nlm.nih.gov/pubmed>
 SP Goal 2, 4, 6
- **Ambient and dosed exposure to quaternary ammonium disinfectants causes neural tube defects in rodents.** Hrubec TC, Melin VE, Shea CS, Ferguson EE, Garofola C, Repine CM, Chapman TW, Patel HR, Razvi RM, Sugrue JE, Potineni H, Magnin-Bissel, Hunt PA. *Environ Pollut.* 2017 Jul 18; 230:730-740.
<https://www.ncbi.nlm.nih.gov/pubmed/28618200>
 SP Goal 2, 4
- **Using machine learning to identify air pollution exposure profiles associated with early cognitive skills among U.S. children.** Stingone JA, Pandey OP, Claudio L, Pandey G. *NanoImpact* (2017) v. 6 pp. 39-54.
<https://www.ncbi.nlm.nih.gov/pubmed/28732336>
 SP Goal 2, 4, 6, 7
- **Computational Analysis of Lifespan Experiment Reproducibility.** Petrascheck M, Miller DL. *Front Genet.* 2017 Jun 30;8:92.
<https://www.ncbi.nlm.nih.gov/pubmed/28713422>
 SP Goal 2
- **Prostate Cancer Risk and DNA Methylation Signatures in Aging Rats following Developmental BPA Exposure: A Dose-Response Analysis.** Prins GS, Ye SH, Birch L, Zhang X, Cheong A, Lin H, Calderon-Gierszal E, Groen J, Hu WY, Ho SM, van Breemen RB. *Environ Health Perspect.* 2017 Jul 11;125(7):077007.
<https://www.ncbi.nlm.nih.gov/pubmed/28728135>
 SP Goal 2
- **Elevated Arsenic and Uranium Concentrations in Unregulated Water Sources on the Navajo Nation, USA.** Hoover J, Gonzales M, Shuey C, Barney Y, Lewis J. *Expo Health.* 2017;9(2):113-124. Epub 2016 Aug 23. <https://www.ncbi.nlm.nih.gov/pubmed/28553666>
 SP Goal 4, 5, 6

NIEHS News and Highlights

Staff Updates

Jeff Shilling has joined NIEHS as our Interim Director of CyberInfrastructure. He is charged with leading and coordinating IT activities of the offices known as the G4: Computer Technology Branch, the Office of Scientific Computing, the Office of Data Science, and the Office of Communication and Public Liaison.

Shilling will also provide leadership to strategic IT planning and IT service improvements. He was formerly acting Chief Information Officer at the National Cancer Institute.

ReImagine HHS

On April 12, the Office of Management and Budget (OMB) released a memo directing federal agencies to develop plans to submit to a “Comprehensive Plan for Reforming the Federal Government and Reducing the Federal Civilian Workforce.” On June 30, HHS Director Tom Price submitted to OMB “ReImagine HHS,” a draft of a plan to optimize how the Department operates. On the same day, he also submitted a draft 5-year HHS Strategic Plan. Price has stated he sees the two plans as being complementary.

“ReImagine HHS” is being led by a steering committee of members including the HHS Assistant Secretary for Planning and Evaluation, Assistant Secretary for Preparedness and Response and Assistant Secretary for Administration. The bulk of the work is being done by five working groups, each focused on a crucial HHS mission: the healthcare delivery system, the public health system, economic and social well-being, scientific advancement and management and stewardship. The process focuses on six principles for more effective strategy: engagement, empowerment, service, performance, stewardship, and sustainability. Initiatives announced under the draft plan include:

- Restoring Market Forces
- Putting People at the Center of HHS Programs
- Leveraging the Power of Data
- Turning HHS into a More Innovative and Responsive Organization
- Generating Efficiencies through Streamlined Processes
- Moving to a 21st Century Workforce

Collaborations

NIEHS–Japan MOU. A memorandum of Understanding (MoU) between the National Institute for Environmental Studies (NIES), Japan and the National Institute of Environmental Health Sciences (NIEHS) was signed by their respective Directors on August 30, 2017. The agreement calls for the two organizations to work together on mutual activities to improve and extend the Disaster Research Response (DR2) Program efforts.

WHO-NIEHS Collaborating Centre. In August, the NIEHS was redesignated a WHO-NIEHS Collaborating Centre for Environmental Health for four more years. As part of the process, NIEHS submitted a reformulated work plan around four themes: Children’s Environmental Health, Environmental Factors and Non-Communicable Diseases, Health Consequences of Weather and Climate Extremes, and the International Network on Risk Assessment. The new work plan also includes a new area of collaboration on environmental factors and Chronic Kidney Disease of Unknown Origin.

Breast Cancer Prevention Partners. A longtime collaborating organization with NIEHS recently celebrated its 25th anniversary and adoption of a new name. The former Breast Cancer Prevention Fund, now known as Breast Cancer Prevention Partners (BCPP), began working with NIEHS in the early 2000s

and has played a leading role in the Breast Cancer and the Environment Research Program, helping to recruit women to studies and to translate research findings into health-protective actions and policies. In 2016, the NIEHS recognized BCPP leader Jeanne Rizzo with a Champion of Environmental Health Research Award.

2nd Global Conference on Myositis. NIEHS, along with NINDS, NIAMS, 20 patient groups including The Myositis Association and CureJM Foundation, and corporate sponsors organized the 2nd Global Conference on Myositis in May. Myositis is a rare, multi-symptom disease that can affect people of all ages and involves dermatology, rheumatology, neurology, and pulmonary disease, among others. Fred Miller, M.D., Ph.D., head of the NIEHS Environmental Autoimmunity Group, chaired the steering and scientific committees for the event, which doubled in size from the 2015 inaugural event. Myositis is considered a “neglected” disease because it receives relatively little research funding, so efforts like this are particularly important to share information and build a knowledge base around the disease.

Human Health and Heredity in Africa (H3Africa) Consortium. DERT program officers Kim McAllister, Ph.D. and Bonnie Joubert, Ph.D., represented NIEHS to the 10th Human Health and Heredity in Africa (H3Africa) Consortium meeting in Gaborone, Botswana in May. H3Africa is a joint effort of the NIH (part of the Common Fund Global Health Program) and the Wellcome Trust, in partnership with the African Society for Human Genetics. The program goal is to help establish a sustainable African research infrastructure for the study of the genetic and environmental contributors to disease and health. Meeting presentations described research progress under Phase I of the program. The NIEHS representatives identified data gaps and provided research recommendations to facilitate environmental health research within the H3Africa program, to raise awareness among researchers and funders of environmental health issues in African populations, and to survey the needs of investigators that would enable environmental health research opportunities. Joubert and McAllister are working with their collaborators to develop an agenda for an environmental workshop for the next annual H3Africa meeting, as well as to establish an environmental working group for the Phase II of the program.

USGS Water Quality & Research Collaboration. This multiagency effort is focused on water quality and actions to assure water security. NIEHS Toxicology Liaison Chris Weis is working with this group to focus efforts on PFAS in response to the NCEH/ATSDR interagency efforts on this topic. Final preparations are ongoing for a pilot exposure study of tap water samples by Maria Argos, Ph.D. at the University of Illinois, Chicago. Water samples will be collected from 15 participating households in Spring 2017. Samples will be fully characterized by the USGS laboratory and forwarded for bioassay at EPA and NTP laboratories (DeVito).

Sound Health: Music and the Mind. On June 2-3, leading neurologists, researchers, and health professionals from NIH joined musicians, music therapists, and other artists at the Kennedy Center in Washington, DC for an event to explore how music influences the mind and health. Laura Thomas, Ph.D., a neurologist and scientific review officer at NIEHS, assists NIH Director Francis Collins in the initiative. At the event, scientists and artists engaged in novel scientific approaches to integrating music therapy with neuroscience. For example, researchers demonstrated the use of song to help stroke

victims unable to speak normally, and also showed how music helps to relieve the symptoms of neurodevelopmental disorders, such as Parkinson's and Alzheimer's.

NTP Reports

Report on Carcinogens. An expert review panel convened by the NTP has recommended that six chemical compounds known as haloacetic acids (HAAs) be classified in the *Report on Carcinogens* as “reasonably anticipated to be carcinogens.” The six chemical compounds are dichloroacetic acid, dibromoacetic acid, bromodichloroacetic acid, dibromoacetic acid, chlorodibromoacetic acid, and tribromoacetic acid. HAAs are byproducts created when chlorine, chloramine, or chlorine dioxide are used to disinfect drinking water.

Technical Reports. An NTP expert review panel concurred with the draft carcinogenicity and toxicity technical reports on three substances:

- 2,3-butanedione: a compound used in butter flavoring was associated with respiratory disease
- p-Chloro-alpha,alpha,alpha-trifluorotoluene: a solvent used in paints was shown to have clear evidence of carcinogenic activity in male and female mice, as well as increases in non-neoplastic lesions, or noncancerous tissue alterations.
- Dietary zinc: Studies showed equivocal evidence of carcinogenicity in zinc-deficient diets in rats. Non-neoplastic lesions were seen in rats with both excess and deficient diets. Genotoxicity tests also revealed some DNA damage in male and female rats.

Disaster/Emergency Response Training

The **Disaster Worker Resiliency Training** program, a joint program of the Worker Training Program and the U.S. Substance Abuse and Mental Health Services Administration, is being used to help first responders recognize symptoms of stress related to disaster work, obtain support, and build resilience. To determine the program's efficacy, Adam Gonzalez, Ph.D., founding director of the Mind-Body Clinical Research Center at Stony Brook University in New York and colleagues conducted a randomized clinical trial among Hurricane Sandy responders to explore changes in mental health and health-promoting behaviors before and after resiliency training. Data analysis is underway.

NIEHS Ebola Biosafety and Infectious Disease Response Worker Training Program conducted a training event for U.S. Customs and Border Protection (CBP) officers and [Duke Human Vaccine Institute](#) staff at the Raleigh-Durham International Airport (RDU) in June. This program helps workers protect themselves, their worksites, and their communities during infectious disease outbreaks such as influenza, Ebola, and new biological threats. CBP officers are especially vulnerable to infectious diseases due to routine contact with travelers from around the world. The session allowed NIEHS to pilot the Pathogen Safety Data (PSD) Guide. The institute developed the resource after conducting a training needs assessment and gap analysis of existing worker training for Ebola and other emerging infectious diseases. Similar sessions have taken place in Long Island City, Bloomington, Indiana; New York City (Manhattan), and Atlanta.

Strategic Planning and Future of Environmental Health Science

NIEHS is engaged in a number of strategic planning activities, as well as a workshop to explore the future of environmental health sciences from a workforce perspective.

NIEHS Strategic Plan Update. Comments received in response to the NIEHS *Insights & Trends* survey have been coded and a preliminary analysis will be shared with Council members at the September meeting for discussion. In October, additional analysis and discussion by NIEHS leadership and staff will take place, prior to the beginning of drafting of the updated plan.

NIH ICs. NIEHS scientific and program staff are engaged in advising strategic planning for the NIH Office of Disease Prevention and the National Institute of Minority Health and Health Disparities to ensure that relevant environmental health research and other priorities are considered.

Federal Lead Strategy. The President's Task Force on Environmental Health Risks and Safety Risks to Children is developing a Federal Lead Strategy to decrease children's exposure to exposure to lead. The Task Force includes representation of 17 federal agencies and offices. NIEHS staff are serving on the Lead Subcommittee and its workgroups, which are drafting the strategy goals and planning for its review and release. A draft strategy is expected to be available for public comment in Fall of this year. In conjunction, NIEHS is partnering with HUD, CDC, and EPA on activities during National Lead Poisoning Prevention Week in October, including release of a public awareness toolkit. The planning group is also working with the World Health Organization to disseminate an international version of the toolkit during the same week.

Research Triangle Environmental Health Collaborative Summit. The NIEHS is co-sponsoring and helping to plan the 10th Annual Summit of the Research Triangle Environmental Health Collaborative on October 30-31, 2017 at the N.C. Biotechnology Center. The Collaborative was the brainchild of former NIEHS Director Kenneth Olden, Ph.D., and others in the Research Triangle Park area. In celebration of the 10th anniversary, the conference, titled "When Facts Are Not Enough: Getting from Good Science to Good Decisions in a New Age of Environmental Health Science" will take the opportunity to take a critical look at the direction, workforce needs, and strategic management of environmental health science. Council members and NIEHS staff are encouraged to participate in the meeting, and can send expressions of interest and get more information from Kimberly Thigpen Tart, thigpenk@niehs.nih.gov.

Meetings and Events

- **Past**

- Dr. Linda Birnbaum provided the opening remarks at the **Annual CounterACT Conference** in Boston, MA on June 12-14. NIEHS grantees participating in the Trans-NIH Countermeasures Against Chemical Threats (CounterACT) initiative provided updates on the development and management of counter measures against pulmonary threat agents. The 11th annual meeting was hosted by Brigham and Women's Hospital and The Harvard Medical School Center for CounterACT Excellence. **SP Goals 1, 4, 5**
- Symma Finn, Ph.D., from the NIEHS Population Health Branch, and Intaek Hahn, Ph.D., from the U.S. Environmental Protection Agency (EPA), served as lead organizers for the **Trans-Federal Workshop on Extreme Events, Environmental Health, and the Elderly** on June 13-14, 2017, which was held at EPA headquarters in Washington, D.C. Finn and

Gwen Collman, Ph.D., director of the NIEHS Division of Extramural Research were among the featured speakers. **SP Goals 4, 5, 6**

- Dr. Linda Birnbaum, Director of the National Institute of Environmental Health Sciences (NIEHS), delivered the keynote address at the **Highly Fluorinated Compounds: Social and Scientific Discovery Conference**, hosted by the Northeastern University Social Science Environmental Health Research Institute (SSEHRI) on June 14-15. The two-day conference addressed the social, scientific, political, economic, and environmental health issues raised by per- and polyfluoroalkyl substances (PFASs). **SP Goals 5, 6**
- NIEHS and National Toxicology Program Director Linda Birnbaum, Ph.D., joined representatives from the University of Pennsylvania's **Center of Excellence in Environmental Toxicology (CEET)** for a **town hall** June 19 in Chester, Pennsylvania. Residents discussed air pollution, industrial waste, and health concerns. The event followed a CEET-sponsored symposium at the University of Pennsylvania about critical periods, such as early development and childhood, when the body is more vulnerable to environmental pollutants. **SP Goals 2, 6, 11**
- National Toxicology Program (NTP) scientists were organizers and key presenters at **BioMed21 – A Human Pathway-based Approach to Disease and Medicine**. The June 27-28 BioMed21 workshop in Bethesda, MD focused on how data can be used to develop a better understanding of human biology. The information could lead to novel drug development techniques to identify new drugs as either effective or toxic before conducting expensive animal and human tests. NICEATM co-organized the workshop with the Human Toxicology Project Consortium, and NICEATM Director Warren Casey, Ph.D., served on the organizing committee. **SP Goals 1, 2, 7**
- On June 27-30, Dr. Danielle Carlin traveled to Seoul, Korea, to provide the opening plenary presentation at the **15th International Congress on Combustion By-Products and Their Health Effects**. Dr. Carlin participated on the meeting's executive planning committee, comprised of staff from NIEHS, USEPA, industry, and academia as well as other meeting participants. Specifically, she provided suggestions for expert speakers for the meeting and suggestions for the format of the meeting. Dr. Carlin's role at this meeting included speaking about the NIEHS mixtures grant portfolio to an audience of scientists, government agencies, and stakeholders. Approximately 80 participants were in attendance. **SP Goals 1, 4, 5**
- National Toxicology Program (NTP) scientists were organizers and key presenters at the **Application of In Vitro-In Silico Approaches in Toxicology Safety Assessment and Regulation - OpenTox USA 2017 Conference**. The July 12-13 OpenTox USA 2017 conference in Durham, NC focused on how data from novel model systems can be effectively generated, managed, and used in new approaches to predicting toxic effects. Nicole Kleinstreuer, Ph.D., deputy director of the NTP Interagency Center for the Evaluation of Alternative Toxicological Methods (NICEATM), and NTP Biomolecular Screening Branch Acting Chief Richard Paules, Ph.D., chaired the conference. Presenters included NTP staff and contractors, NIEHS Clinical Research Unit scientists, and grantees. **SP Goals 1, 7**
- The **13th International Conference on Mercury as a Global Pollutant**, in Providence, RI was held on July 16-21. The National Institute of Environmental Health Sciences co-sponsored the event. The 13th ICMGP fostered wide ranging discussion among participants across issues spanning environmental media, biogeochemical processes, disciplines, types of mercury contamination and remediation, exposure and effects on wildlife and human health, temporal and spatial scales, societal issues, and outreach

activities. Four synthesis papers associated with the four plenary synthesis themes have been produced for ICMGP2017. This synthesis effort is supported by the Superfund Research Program of the National Institute of Environmental Health Sciences.

- The **BCERP Whole Mount Workshop and Mid-Year Integration Meeting** was held in Philadelphia, PA on July 16-21. Drs. Abee Boyles, Thad Schug, Symma Finn, and Claudia Thompson, from PHB, attended this meeting. The goal was to promote cross-program and interdisciplinary discussions around 3 themes: Environmental Exposure Equivalency, Mechanisms of Environmental Exposure, and Mechanisms of Breast Density. The format included a combination of overview talks from researchers within and from outside BCERP and World Café-style discussions of how to tackle pressing questions within these themes. The meeting will be preceded by a hand-on Whole Mount Workshop to provide training for this technique within BCERP. **SP Goals 1, 3, 4, 6**
- A panel of scientific experts convened for the June 24th **Peer Review of the Draft RoC Monograph on Haloacetic Acids found as Water Disinfection By-Products**, organized by the National Toxicology Program (NTP), recommended that six chemical compounds known as haloacetic acids (HAAs) be classified in the Report on Carcinogens as reasonably anticipated to be carcinogens. HAAs are byproducts created when chlorine, chloramine, or chlorine dioxide are used to disinfect drinking water. The report will help EPA assess the effects of those byproducts on human health and determine whether drinking water regulations should be updated. Currently, the EPA Office of Water regulates the levels of five HAAs and some trihalomethanes in public drinking water. **SP Goals, 3, 4, 11**
- On August 2-3 in Washington, DC, the National Academies of Sciences, Engineering, and Medicine hosted **Preparing for a Rapid Response to Major Offshore Oil and Gas Spills: A Workshop on Research Needs to Protect the Health and Well-being of Communities**. This workshop explored the research needs and other opportunities for improving public health response and protection during and after oil spills, and informed the design of rapid response activities the National Academies could provide should there be another offshore oil spill disaster. Aubrey Miller was asked to participate by the organizing committee. **SP Goals 5, 6**
- The **Gordon Research Conference (GRC) on Cellular and Molecular Mechanisms of Toxicity** was held in Andover, NH on August 13-18. Rick Woychik, Ph.D., Deputy Director of NIEHS, presented on "Understanding the Role of Repetitive Elements in Toxicity Responses." Other NIEHS researchers also presented during the weeklong conference. The conference highlighted the latest, most innovative advances in mechanistic toxicological research. For the 2017 conference, the organizers assembled a group of world-leading experts working on areas of investigation that are highly relevant to environmental, industrial, and pharmaceutical toxicology, with the goal of incorporating the molecular basis of disease into risk management and decision making. **SP Goals 1, 3, 8**
- SRP Administrator Heather Henry and Brown SRP center researcher Kelly Pennell organized a symposium at the **254th American Chemical Society Meeting** in Washington, DC August 20-24, 2017. The symposium, "Global Economic Impact of Environmental Health Research: A Case Study of the NIEHS Superfund Research Program," highlighted SRP research that has led to significant cost and time savings for site remediation and monitoring. It also touched on the potential global economic impact including benefits for improved public health resulting from innovative technologies. **SP Goals 6, 9, 10**

- Scientists from the National Institute of Environmental Health Sciences presented oral and poster presentations at **Dioxin 2017** held in Vancouver, Canada on August 20-25. This year marked the 37th anniversary of the International Symposium on Halogenated Persistent Organic Pollutants (POPs). The theme of this year's meeting focused on communicating scientific discoveries by recognizing the contributions of the early pioneers and promoting the work of your young researchers. **SP Goals 1, 5**
- The National Toxicology Program at the National Institutes of Environmental Health Sciences organized the **4th International Symposium on Systematic Review and Meta-Analysis of Laboratory Animal Studies** on August 24-25. The symposium was held on the NIEHS campus. The role of systematic review and meta-analysis in preclinical science, toxicology, and public health is evolving rapidly and these changes are reflected in our meeting themes. The symposium was for newcomers and experts alike, with strategic overviews and explicit examples of how systematic review approaches are being applied and methods are evolving to answer a diverse range of research questions. Other organizers include Collaborative Approach to Meta-Analysis and Review of Animal Data from Experimental Studies (CAMARADES), Environmental Protection Agency/National Center for Environmental Assessment/Integrated Risk Information System (EPA/NCEA/IRIS), University of Tasmania School of Medicine, UCSF Navigation Guide, Systematic Review Centre for Laboratory Animal Experimentation (SYRCLE), and the Evidence-Based Toxicology Collaboration (EBTC). **SP Goals 7, 11**
- The National Institute of Environmental Health Sciences and the National Institute on Aging co-sponsored the **Exploring Telomeres as Sentinels for Environmental and Psychosocial Stress and Susceptibility Workshop** on September 6-7. This event took place at the NIEHS Rodbell Auditorium and brought together experts in fundamental telomere biology, epidemiology, clinical practice, and social sciences to discuss the current state of the field and ways the status of telomeres can be used to understand exposures and susceptibility (e.g., as indicators of exposure and or susceptibility) in population-based research. **SP Goals 1, 2, 4**
- The **Environmental Mutagenesis and Genomics Society Annual Meeting** was held in Raleigh, NC on September 9-13. The scientific program consisted of symposia, platform and poster sessions, including rapid "flash" talks of abstracts, Saturday workshops, and internationally recognized speakers. Presenters included NIEHS scientists and grantees. Throughout there was a focus on the newest findings and technologies in basic and applied environmental science and how they are shaping future endeavors. In addition to the scientific program, the Annual Meeting convened the nine Special Interest Groups (SIGs) that represent the diversity of the Society and help set the agenda for future EMGS meetings. In addition, Dr. Linda Birnbaum, director of NIEHS and NTP, spoke at the Women in the EMGS luncheon. NIEHS visiting fellow Natalie Saini, Ph.D. presented the 2017 Young Scientist Award Winner Plenary Lecture. **SP Goals 1, 9**
- **Upcoming**
 - **NIEHS Global Environmental Health Day**, NIEHS, September 15
 - **8th Annual RTP Rodent Pathology Course: Current Topics in Rodent Pathology**, Raleigh NC, September 17-19
 - **Engaging Diverse Partners: Strategies to Address Environmental Public Health: A Joint NIEHS meeting of the Partnerships for Environmental Public Health (PEPH) network and Disaster Research Response (DR2) program**, NIEHS, September 18-20

- **6th Annual American Society for Cellular and Computational Toxicology Meeting**, College Park, MD, September 21-22
- **29th Annual Conference of the International Society for Environmental Epidemiology**, Sydney, Australia, September 24-28
- **2nd Annual US DOHaD Meeting**, Detroit, September 25-27
- **Triangle Global Health Consortium 2017 Annual Conference**, Raleigh, September 28
- **International Society of Exposure Science (ISES) Annual Meeting**, RTP, October 15-19, 2017
- **NIEHS Worker Training Program: 2017 Fall Awardee Meeting and Workshop**, NIEHS, October 16- 18
- **DR2 Workshop and Japanese Society of Public Health Meeting**, Kagoshima, Japan, October 27-November 3
- **NIEHS Science Days**, NIEHS, November 2-3
- **APHA Annual Meeting and Expo – “Creating the Healthiest Nation: Climate Changes Health,”** Atlanta, November 4-8
- **American College of Toxicology 38th Annual Meeting**, Palm Springs, November 5-8
- **Genetics and Environmental Mutagenesis Society of North Carolina (GEMS) Fall Meeting**, Durham NC, November 7
- **12th Annual BCERP Meeting and Community Forum**, Duarte, CA, November 16-17
- **Inflammation, Aging, and Chronic Disease Conference**, Stanford, CA, November 27-28
- **Impact of Environment on Women’s Health**, Lucknow India, November 29-December 1

Awards and Recognition

- **NIEHS**
 - NIEHS postdoctoral fellow **Ketrell McWhorter, Ph.D.**, mentored by Chandra Jackson, Ph.D. in the Social and Environmental Determinants of Health Equity Group, earned this year’s Marco Cabrera Poster Award at the Network of Minority Health Research Investigators (NMRI) meeting April 26-28 in Bethesda, Maryland. The award recognized the best poster presentation for translational research.
 - The **National Toxicology Program’s Chemical Effects in Biological Systems (CEBS) database** received a Fed Health IT Innovations Award. “This database that provides an authoritative, online repository of curated empirical toxicology testing data to assess potential adverse health outcomes from exposure to chemicals has undergone a significant expansion. A 370-fold increase in the number of curated studies has been achieved by incorporating NTP legacy and current toxicological testing data.”
 - **“CRISPR and the genome editing revolution,”** by **Robin Arnette, Ph.D.**, was named winner of the Web Article category in the annual Blue Pencil and Gold Screen Award competition at the National Association of Government Communicators’ annual meeting June 14. This annual international awards program recognizes superior government communication products and those who produce them.
 - **Trevor Archer, Ph.D.**, chief of the Epigenetics and Stem Cell Biology Laboratory, was awarded the NIH 2017 Equity, Diversity, and Inclusion Award. The award is presented to an NIH executive, supervisor, or manager in recognition of longstanding commitment to recruitment and retention of diverse trainees
 - **NIEHS FARE Awardees**
 - **Franziska Bollmann, Dr. rer. nat. (Mentor: Dr. Perry Blackshear)** Signal Transduction Laboratory

Decreasing Reactive Oxygen Species During Chronic Inflammation Increases Arthritis Severity

- **Rachel M. Carroll, Ph.D. (Mentor: Dr. Shanshan Zhao)** Biostatistics & Computational Biology Laboratory
Analyzing Breast Cancer-specific Mortality in Louisiana SEER Data via a Spatial Accelerated Failure Time Model
- **Kelly E. Carstens, B.S. (Mentor: Dr. Serena Dudek)** Neurobiology Laboratory
Perineuronal nets: A Critical Regulator of Developmental Plasticity in the Autism Spectrum Disorder Rett Syndrome
- **Qing Chen, Ph.D. (Mentor: Dr. Guang Hu)** Neurobiology Laboratory
Cnot3 is Required for Male Fertility and Germline Stem Cell Maintenance
- **Amanda E. Conway, Ph.D. (Mentor: Dr. Raja Jothi)** Epigenetics & Stem Cell Biology Laboratory
Identification of Nuclear Export Receptor CRM1 as a Novel Regulator of Developmental Genes in Embryonic Stem Cells
- **Brian J. Deskin, Ph.D. (Mentor: Dr. Raja Jothi)** Epigenetics & Stem Cell Biology Laboratory
GABP-alpha Regulates Transcriptional Circuitry Controlling ESC Identity
- **Kerry Dorr, Ph.D. (Mentor: Dr. Anton M. Jetten)** Immunity, Inflammation, and Disease Laboratory
Deletion of JAZF1 Protects Against High Fat Diet-induced Obesity, Glucose Intolerance, and Insulin Resistance
- **Chunfang Gu, Ph.D. (Mentor: Dr. Stephen Shears)** Signal Transduction Laboratory
Programming of Cancer Cell Metabolism by the Inositol Pyrophosphate IP7
- **Juhee Haam, Ph.D. (Mentor: Dr. Jerrel L. Yakel)** Neurobiology Laboratory
Acetylcholine Regulates the Hippocampal Output to the Entorhinal Cortex to Gate Memory Consolidation
- **Wan-Chi Lin, Ph.D. (Mentor: Dr. Michael Fessler)** Immunity, Inflammation, and Disease Laboratory
Epithelial Membrane Protein 2 Regulates Transepithelial Migration of Neutrophils into the Inflamed Airspace
- **Yu-Hua Lo, Ph.D. (Mentor: Dr. Robin E. Stanley)** Signal Transduction Laboratory
Structural Analysis Reveals the Features of Ribosome Assembly Factor WDR74 Important for Localization and Interaction with the AAA-ATPase NVL2
- **Oswaldo A. Lozoya, Ph.D. (Mentor: Dr. Richard P. Woychik)** Genome Integrity and Structural Biology
Mitochondrial Dysfunction Results in Remodeling of the Epigenome and Transcriptome
- **Kathryn S. McClelland, BSc., Hons(IA), Ph.D. (Mentor: Dr. Humphrey Yao)** Reproductive & Developmental Biology Laboratory
Loss of COUP-TF/1 (NR2F2) Affects Fetal Testicular Development
- **Bart T. Phillips, Ph.D. (Mentor: Dr. Traci Hall)** Epigenetics & Stem Cell Biology Laboratory
Identification of Testis Proteins That Positively and Negatively Regulate Tnp1 and Tnp2 Translation

- **Monica C. Pillon, Ph.D. (Mentor: Dr. Robin E. Stanley)** Signal Transduction Laboratory
Grc3 Programs the Essential Endoribonuclease Las1 for Specific RNA Cleavage
 - **Emmi Rotgers, M.D., Ph.D. (Mentor: Dr. Humphrey Yao)** Reproductive & Developmental Biology Laboratory
Aberrant Expression of Steroidogenic Factor 1 (Sf1) in the Ovarian Somatic Cells Disrupts Ovarian Function and Fertility
 - **David W. Scoville, Ph.D. (Mentor: Dr. Anton M. Jetten)** Immunity, Inflammation, and Disease Laboratory
The Role of the Transcription Factor Glis3 in Directing Pancreatic Beta-cell Development and Function
- **Angela King-Herbert, D.V.M.**, leader of the NTP Laboratory Animal Medicine Group, received the Mentor of the Year Award from the American College of Laboratory Animal Medicine for setting up an on-line study group preparing for the ACLAM Board Exam.
- **Natalie Saini, Ph.D.**, visiting fellow in the Genome Integrity and Structural Biology Laboratory and mentored by Dr. Dmitry Gordenin, received the 2017 Environmental Mutagenesis and Genomics Society (EMGS) Young Scientist Award.
- Innovation Award from the Office of AIDS Research:
 - Drs. **Steve Kleeberger** (IIDL) and **Michael Resnick** (GISBL) received a \$499K Innovation Award from the Office of Aids Research for a project entitled “p53, TLR8 and mitochondrial influence on HIV-1 pathogenesis and co-morbidities at the population level.” They will be collaborating with Drs. **Shepherd Schurman** (CRB) to use the Environmental Polymorphism Registry and Eric Seaburg at Johns Hopkins University. This program supports high priority HIV/AIDS research at the NIH.
- DDIR Innovation Award: This program was initiated by the NIH Scientific Directors to provide seed money to stimulate innovative, high-impact research, and to foster trans-NIH collaborations on a competitive basis. 155 applications were submitted NIH-wide and only 25 were funded. The following projects were funded from NIEHS.
 - **Dr. Guang Hu** (ESCBL) received a \$250K DDIR Innovation Award for a project entitled “CRISPRi-scrRNA-seq Screening to Dissect Retrotransposon Silencing.” Drs. **Paul Wade** (ESCBL), Kai Ge (NIDDK) and Todd Macfarlan (NICHD) are co-investigators on the project.
 - Dr. **Jennifer Martinez** (IIDL) received a \$300K DDIR Innovation Award for a project entitled “Characterization of the Crosstalk Between Mitochondria and Inflammation.” Drs. **Michael Fessler** (IIDL) and Richard Youle (NINDS) are co-investigators on the project.
 - Drs. **Jerrel Yakel** (NL) and **Guohong Cui** (NL) are co-investigators on a \$500K DDIR Innovation Award by Dr. Veronica Alvarez from NIAAA for a project entitled “Center on Compulsive Behaviors”.
- K99/R00 Award:
 - **Kristen Upson, Ph.D.**, received a K99/R00 award from the National Institute of Nursing Research (NINR) entitled “Influence of diet, iron stores, and toxic metals on uptakes and effects on uterine fibroid risk in African American women.” She will train in the Epidemiology Branch under the direction of Donna Baird, Ph.D.
- NIEHS-NIDDK Joint Fellowship Program: This program was initiated by the Scientific Directors at NIEHS and NIDDK to support a shared research fellow for up to three years

between two investigators, one in each institute. The award is based on scientific merit, innovation, and its ability to foster relevant interactions between the ICs. Three applications were submitted; one project was funded.

- Drs. **Michael Fessler** (IIDL) and Jeffrey Kopp (NIDDK) received the award for a project entitled “APOL1 modulation of the innate immune response in human disease.”

- **Grantees/Others**

- **Dr. Kenneth McMartin**, Professor of Pharmacology, Toxicology & Neuroscience at LSU Health Shreveport, has been appointed as Chair of the Board of Scientific Counselors of the National Toxicology Program within the National Institutes of Health.
- **K.C. Donnelly Externship Awards** – This award honors the legacy of longtime SRP grantee and environmental health researcher Kirby (K.C.) Donnelly, Ph.D.
 - **Oluwadamilare (Dami) Adebambo** is a doctoral candidate at North Carolina State University. For her externship at the Columbia University SRP Center, she will expand her current research to study how exposure to metals and metal mixtures results in changes at the molecular level, which may lead to adverse pregnancy outcomes.
 - **Pamela Barrett, Ph.D.**, is a postdoctoral fellow at the University of Washington. Barrett will travel to Dartmouth College for her externship to train on different chemical separation procedures, extraction techniques, and analytical methods for measuring different types of arsenic in environmental and biological samples.
 - **Anne Bozack** is a doctoral candidate at Columbia University. She will conduct an externship at Oregon State University to focus on statistical approaches for characterizing complex mixtures and associating exposures with health outcomes in humans.
 - **Nancy Cardona-Cordero** is a doctoral candidate in public health at the University of Puerto Rico. For her externship, she will travel to the University of Arizona to work on two ongoing citizen science garden projects and to build skills in the development of participatory research.
 - **Rosemarie de la Rosa** is a doctoral candidate at the University of California, Berkeley. She will spend her externship at Boston University learning molecular modeling and experimental design techniques to understand how mixtures of potentially harmful chemicals affect a molecular pathway involved in the body’s response to stress.
 - **Jennifer Guelfo, Ph.D.**, is a postdoctoral researcher at Brown University. At the U.S. Environmental Protection Agency National Health and Environmental Effects Research Laboratory, she will learn about chemical contaminants in coastal regions that are of particular interest to surrounding communities and stakeholders.
 - **Victoria Parker** is a doctoral student at the University of Iowa. Her externship at the University of Kentucky will expand upon her current work with human fat cells to explore important differences between human and rodent cell models.
 - **Eric Uwimana** is a doctoral candidate at the University of Iowa. At the University of California, Davis, he will use a high-throughput screening approach to study the underlying mechanisms linking polychlorinated biphenyl (PCB) exposure and liver disease.

- **Dr. Doug Brugge**, Professor of Public Health and Community Medicine, was recently awarded one of Tufts University's Zucker Research Prizes. Two prizes are awarded annually. The Zucker Family Prize is awarded annually to any member of the TUSM faculty for outstanding research. Dr. Brugge was recognized for his outstanding work in the area of environmental health. His NIEHS-supported work on traffic-related pollution exemplifies the broad reach of his research. This work builds on biological fundamentals as well as community-based prevention studies and touches both local and national communities.
- SRP Research Brief 270, *Prenatal PCE Exposure and Maternal Alcohol Use Linked to Increased Risks of Teenage Drug Use*, featured research from **Drs. Lisa Gallagher, Thomas Webster, and Ann Aschengrau**, of the Boston University SRC. The team found Prenatal exposure to both alcohol and tetrachloroethylene, also known as perchloroethylene or PCE, may increase the risk of using multiple illicit drugs as a teenager.
- **American Thoracic Society Respiratory Health Awardees**
 - **Andrew P. Fontenot, MD**, Henry N. Claman Professor of Medicine at the University of Colorado Anschutz Medical Campus, received the American Thoracic Society Recognition Award for Scientific Accomplishments. The award recognizes outstanding scientific contributions in basic or clinical research to enhance the understanding, prevention, and treatment of respiratory disease or critical illness.
 - **Avrum Spira, M.D., M.Sc.**, Professor of Medicine, Pathology & Laboratory Medicine, and Bioinformatics at the Boston University School of Medicine, was awarded the Research Innovation and Translation Achievement Award. This award recognizes outstanding contributions to the advancement of respiratory research focused on specific innovations to improve health by advancing practice, policy, and health care delivery.
- **Dr. Katrina Waters**, SRP Deputy Director, Oregon State University, was recognized for her work with other Pacific Northwest National Laboratory scientists in helping stem the Ebola epidemic in West Africa 2 years ago. The scientists were honored with the Secretary of Energy's Appreciation Award.

In Memoriam

- **Herbert Needleman, MD**, Emeritus Professor of Psychiatry at the University of Pittsburgh, died on July 18, 2017. Dr. Needleman is best known for his work linking lead exposure in children to health issues. His research led to the removal of lead from gasoline and other consumer products.