Report to the National Advisory Environmental Health Sciences Council
Director, NIEHS and NTP

September 13, 2016

Budget and Legislative Report

National Institute of Environmental Health Sciences
Your Environment. Your Health.

Appropriations

	FY 2015 Omnibus Appropriation	FY 2016 Omnibus Appropriation	FY 2017 President's Request	FY 2017 House Action	FY 2017 Senate Action
NIEHS	$ 667,333,000[a/]	$ 693,533,000[a/]	$ 693,533,000[c/]	$ 710,387,000	$ 722,301,000
NIH (LHHS)	$30,084,000,000	$32,084,000,000	$32,909,000,000[c/]	$33,286,089,000	$34,084,000,000
Common Fund	$ 545,639,000[b/]	$ 675,639,000[b/]	$ 775,639,000[b/]	$ 775,639,000[b/]	$ 803,142,000[b/]
Superfund	$ 77,349,000	$ 77,349,000	$ 77,349,000	$ 77,349,000	$ 77,349,000
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/ Includes addition of $12.6 million for the Gabriella Miller Kids First Act pediatric research initiative.
c/ Includes mandatory funding.

National Institutes of Health
U.S. Department of Health and Human Services

Appropriations

Overall Progress on FY2017 Appropriations Bills

The House of Representatives has passed five of the 12 annual appropriations bills for Fiscal Year 2017 (FY2017), which begins on October 1; the Senate has passed two of these bills, the Transportation-HUD and Military Construction-Veterans Affairs appropriations bills, the reconciliation with the House of which remains pending. The Senate has passed on other of these 12 bills; that is, the Energy and Water Appropriations bill, the House version of which failed on a 112-305 vote on May 26. Both

chambers have also passed different versions of a FY2016 supplemental appropriations bill for Zika virus response. On June 28 and July 14, the Senate rejected procedural motions to move a conference report written by the majority party for the FY2017 Military Construction-Veterans Affairs appropriations bill and the FY2016 Zika supplemental appropriations bill—to a final vote.

Negotiations on a Zika supplemental package and on how best to complete work on each of the individual appropriation bills for FY2017 continues. A continuing resolution (CR) may be enacted by September 30 to keep the federal government operating at FY2016 levels until Congress returns after the November 8 elections.

Summaries of action taken to date on a Zika supplemental appropriation bill, and on the Labor-HHS-Education and Interior and Environment appropriations bills are below.

Zika Response Supplemental for FY2016

On February 22, the President sent a formal request to Congress for more than $1.8 billion in emergency appropriations to enhance efforts to prepare for, and respond to, the Zika virus, both domestically and internationally. The President updated his request on April 18 to account for additional vaccine and diagnostic needs. Of the amount requested, $1.509 billion is for activities at HHS, with $277 million requested for NIH Zika-related research and vaccine development activities.

On May 18, by a vote of 241-184, the House passed H.R. 5243, the *Zika Response Appropriations Act*, which proposed $622 million in funding. The following day, on May 19, the Senate, by a vote of 68-30, acted on the matter by adding a $1.1 billion Zika supplemental package to H.R. 2577, the bill also making FY2017 Transportation-HUD and Military Construction-Veterans Affairs appropriations.

On June 22, a conference report, H. Rept. 114-640, was filed on H.R. 2577. The conference report contains three parts: (1) the FY2017 Military Construction-Veterans Affairs appropriations bill; (2) a FY2016 Zika supplemental appropriations bill in the amount of $1.1 billion, with $750 million of that amount offset through specified reductions of other previously-enacted appropriations; and (3) the text of H.R. 897, the *Zika Vector Control Act*. On June 23, the House passed this conference report by a vote of 239-171. On July 14, the Senate, by a vote of 52-44, rejected a procedural motion to move the conference report to a final vote.

The $750 million in offsets contained within the conference report include $543 million in funding that was appropriated by the Affordable Care Act (ACT) and made available to the U.S. territories for health care exchanges; $107 million in unobligated funding from the 2014 Ebola supplemental appropriation; and $100 million in unused administrative funding within HHS.

The $1.1 billion in supplemental appropriations for Zika response in the conference report include $230 million to be appropriated to NIAID for "research on the virology, natural history, and pathogensis of the Zika virus infection and preclinical and clinical development of vaccines and other medical countermeasures for the Zika virus and other vector-borne diseases, domestically and internationally." The conference report includes language authorizing the NIH Director to transfer

those funds "to other accounts of the NIH" for the same purposes for which they were appropriated to NIAID. This legislation remains pending and differences between the two chambers remain unresolved.

FY2017 Labor-HHS-Education Appropriations Bill Containing Core NIEHS Appropriation

Both the House and Senate Appropriations Committees have reported out their respective versions of the bill making FY2017 appropriations for the Departments of Labor, Health and Human Services, and Education, and related agencies. Both bills, summarized below, are pending floor consideration in their respective chambers. The House bill is H.R. 5926 and the Senate bill is S. 3040.

The House bill was reported from committee on July 14, and proposes $161.6 billion in base discretionary funding, which is $569 million below the FY2016 enacted level and $2.8 billion below the President's budget request. These are slightly more budget reductions than what is contained in the Senate version of the legislation. Despite these overall reductions, the House bill, like the Senate bill, proposes an increase for NIH. The House bill proposes a total of $33.3 billion for NIH, $1.25 billion above the FY2016 enacted level, and $2.25 billion above the President's discretionary budget request. This House proposal is $700 million less than what is proposed for NIH by the Senate bill.

With respect to NIEHS, the House bill proposes $710.387 million, which is $11.914 million less than what the Senate bill proposes and which would amount to roughly a 2.4% increase for the Institute over the FY2016 enacted level, which is $693.533 million. The figure in the Senate bill for NIEHS is $722.301, which would amount to roughly a 4.1% increase.

Within the amount proposed in the House bill for NIH, $165 million is to be spent on the reworked National Children's Study known as the "Environmental Influences on Child Health Outcomes" (ECHO) Program, $511.5 million is for Clinical and Translational Sciences Awards, and $333.3 million is for Institutional Development Awards (IDeA) programs.

The House bill also proposes increases for several research initiatives, including:

- $1.26 billion for the Alzheimer's disease research initiative, a $350 million increase;
- $195 million for the BRAIN initiative, a $45 million increase;
- $300 million for the Precision Medicine Initiative (PMI), which matches the request; and
- $12.6 million for the Gabriella Miller "Kids First" initiative, which is dedicated to pediatric cancer research.

The Committee Report accompanying the House bill is H. Rept. 114-699 and it includes one "significant item" pertinent to NIEHS. The exact language of this report provision, which relates to bisphenol A research, reads as follows:

> "*Bisphenol A Toxicity*.—The Committee is aware of the ongoing debate on toxicity exposure from Bisphenol A (BPA) amongst the National Toxicology Program (NTP), NIEHS, and Food and Drug Administration (FDA). The program includes the 2008 Draft Assessment of Bisphenol A for Use in Food Contact Applications, which reviewed the available data on the toxicity of BPA, performed by FDA staff at the Agency's National Center for Toxicological

> Research. The Committee requests NIEHS coordinate with FDA to publish the results of relevant studies as soon as the data analysis is completed. The Committee requests NIH publish a jointly agreed upon FDA/NIEHS/NTP timeline for publishing the most recent study results from the interagency consortium in the fiscal year 2018 budget request."

Of note, Rep. Steve Womack (R-AR-3rd District) asked Dr. Francis Collins, the NIH Director, a "question for the record" (QFR) following the March 16 House subcommittee hearing on the NIH budget request. This was the only QFR relevant to NIEHS, and it was about bisphenol A research. Rep. Womack represents the district encompassing the FDA National Center for Toxicological Research (NCTR) in Jefferson, AR.

The Senate bill was reported from committee on June 9. Overall, the Senate bill proposes $161.9 billion in base discretionary spending, which is $270 million below the FY2016 enacted level and $2 billion below the President's budget request. Despite these overall budget figures, as mentioned above, the Senate Committee proposes funding NIH at $34 billion—which represents an increase of $2 billion over the FY2016 enacted level.

The Senate bill specifies:

- $300 million for the Precision Medicine Initiative, an increase of $100 million;
- $1.39 billion for Alzheimer's disease research, an increase of $400 million;
- $250 million, an increase of $100 million, for the BRAIN Initiative to map the human brain;
- $333.4 million, an increase of $12.5 million, for the Institutional Development Award;
- 463 million, an increase of $50 million, to Combat Antibiotic Resistant Bacteria; and
- $12.6 million for the *Gabriella Miller Kids First Research Act*.

The Senate bill provides increases for every NIH Institute and Center to "continue investments in innovative research that will advance fundamental knowledge and speed the development of new therapies, diagnostics, and preventive measures to improve the health of all Americans." NIEHS would be funded at $722.301 million as opposed to $693.533 million in FY2016, which would represent a $28.768 million or 4.1% increase.

The Senate Committee Report accompanying the bill, S. Rept. 114-274, includes two items pertinent to NIEHS: (1) *Autism*: the Committee urges NIEHS to ask the Interagency Autism Coordinating Committee to consider research on environmental factors related to autism, including onset patterns, and encourages NIMH to work in coordination with NIEHS to assure that research on environmental factors continues to be supported; and (2) *Healthy Housing*: the Committee encourages NIEHS to further study the impact healthy housing has on reducing environmental exposures that lead to health risks such as asthma and lead poisoning.

A written statement justifying the FY2017 NIEHS budget request was submitted for the April 7 Senate hearing record. The House hearing transcript was not open for a similar submission.

FY2017 Interior and Environment Appropriations Bill for Superfund-Related Activities

Among the five House passed-bills to date for FY2017 is the bill making appropriations for the Department of the Interior, the Environmental Protection Agency, and related agencies. On July 14 the House passed this bill, H.R. 5538, by a vote of 231-196. Title III of the bill appropriates $77.349 million to NIEHS for the Superfund Research and Worker Training Programs, which is an amount equal to the request made by the President and the FY2016 enacted level. The Committee Report accompanying the House bill is H.Rept. 114-632; it is contains no language of significant bearing on NIEHS.

On June 16, the Senate Appropriations Committee reported out to the full Senate, by a vote of 16-14, its version of the Interior appropriations bill for FY2017. The Senate bill is S. 3068 and the Committee Report accompanying the bill is S.Rept. 114-281. Like the House bill, the Senate bill appropriates $77.349 million to NIEHS for Superfund-related activities. The Senate Committee Report also contains no language of significant bearing on NIEHS. A vote by the full Senate on the Senate bill remains pending.

Congressional Meetings, Briefings and Responses

BPA Research

On March 3, Rep. Jason Chaffetz (R-UT-3rd District, the Chairman of the House Committee on Oversight and Government Reform, and Rep. Cynthia Lummis (R-WY-At-Large), Chairman of the Committee's Subcommittee on the Interior, wrote to Dr. Birnbaum, the NIEHS and NTP Director, to request documents related to Bisphenol A research. As a response to this letter, on April 8 and April 25, Dr. John Bucher, Associate NTP Director and Dr. Gwen Collman, DERT Director, briefed committee staff members about BPA research. These briefings included information about the "Consortium Linking Academic and Regulatory Insights on BPA Toxicity" (CLARITY-BPA) Program and extramural grants awarded for BPA research.

On April 26, committee staff narrowed the document request made by letter on March 3. Specifically, the committee staff requested that NIEHS prioritize producing for the committee e-mail communications that were exchanged between certain NIEHS personnel with FDA personnel about BPA research from January 1, 2011 through March 3, the date of the letter. On July 15, NIEHS submitted to the committee approximately 2,725 pages of printed email communications that are responsive to the committee's document request. On July 22, the committee staff sent a second request seeking additional documents. NIEHS is in the process of collecting documents that are responsive to this second request.

PFOA/PFAS Research

On June 27, Dr. Birnbaum, and Dr. Suzanne Fenton, Group Leader, NTP Reproductive Endocrinology Group, briefed, at their request, three staffers for Senator Kirsten E. Gillibrand (D-NY) about animal and human health effects known to be linked with exposure to perfluorooctanoic acid (PFOA) and other perfluorinated chemicals (PFCs). This briefing followed submission on June 9 of written information to the Senator's office about NIEHS-funded PFOA research. The Senator's office made contact with the HHS Assistant Secretary for Legislation (HHS/ASL) on June 8 to request support from CDC and NIH in responding to reported incidence of PFOA contamination in drinking water systems serving the Village

of Hoosick Falls and the Towns of Hoosick Falls and Petersburgh in Rensselaer County, New York. At the invitation of Senator Gillibrand, Dr. Fenton participated in a community meeting that the Senator hosted on July 8 in Hoosick Falls to address public concerns about the contamination and about blood test results given to residents by the State of New York Department of Health. Dr. Pat Breysse, Director of the CDC National Center for Environmental Health (NCEH) and Agency for Toxic Substances and Disease Registry (ATSDR), also attended this meeting as did two representatives from the EPA Region 2 Office.

On July 29, Dr. Collins, NIH Director, joined Dr. Thomas Frieden, CDC Director, in responding to a June 24 letter about this situation that was addressed jointly to them from Senator Charles E. Schumer (D-NY), Senator Kirsten E. Gillibrand (D-NY) and Representative Christopher P. Gibson (R-NY). NIEHS prepared the NIH portion of this reply letter.

On August 1, Dr. Birnbaum responded directly to a separate letter dated July 7 that Senator Gillibrand addressed jointly to Dr. Birnbaum and Dr. Breysse, CDC NCEH/ATSDR Director, about opportunities to support additional PFOA research.

On July 29 and July 30, additional community forums were held in Hoosick Falls and Petersburgh to address public concerns. Physicians from the Mount Sinai School of Medicine Department of Pediatrics in New York, a CDC Pediatric Environmental Specialty Unit (PEHSU), addressed questions from affected residents at these forums. NIEHS personnel are in communication with CDC personnel to coordinate responses to this PFOA contamination situation in New York and similar situations involving exposure to other PFCs in other communities.

Lead Contamination at Closed Battery Recycling Plant in California

On June 29, staff for Rep. Lucille Roybal-Allard (R-CA-40th District), contacted HHS/ASL to request HHS support in identifying "potential programs that might help mitigate the health impacts" surrounding the Exide Technologies lead-acid battery recycling plant in Vernon, CA that closed in 2015. The state is in the process of working with Exide to cleanup this site. According to news accounts from the *Los Angeles Times*, state health officials indicate that children living near the site have higher levels of lead in their blood than those living farther away. Specifically, the state found 3.58% of young children within a mile of the Exide site had elevated blood lead levels in 2012 (4.5 µg/dL or higher), compared with 2.41% of children living at a greater distance. Rep. Roybal-Allard's office provided a series of recent news articles about this situation. HHS/ASL forwarded the request for NIEHS response. One of the *Los Angeles Times* news articles forwarded quotes Dr. Jill Johnston, Community Outreach and Engagement Core (COEC) Co-Director at the NIEHS-funded USC Southern California Environmental Health Sciences Center (USC SCEHSC), about the state blood test analysis. On June 30, NIEHS provided general information about USC SCEHSC COEC work and the R21 time-sensitive grant mechanism. NIEHS lead and arsenic fact sheets were also forwarded as part of the same reply.

Harmful Algal Bloom Research

On July 19, NIEHS provided written information via HHS/ASL to staff for Senator Bill Nelson (D-FL) about Harmful Algal Bloom (HAB) research. The Senator's office had contacted HHS/ASL that day to (1) indicate that the "office is hearing from a number of constituents who are becoming increasingly

concerned about potential health consequences from algae bloom exposure" in Florida, and (2) request information about algae blooms and long-term health consequences.

Cosmetics Research

On May 13, Dr. Birnbaum briefed, at their request, two staffers for Senate Committee on Health, Education, Labor and Pensions Ranking Member Patty Murray (D-WA) about NIEHS-funded research relating to cosmetics and personal care products. The staffers sought this information in connection with evaluation of plans for a possible oversight hearing of the Committee about regulation of cosmetics. Dr. Birnbaum provided a thorough overview of both NTP and DERT involvement in cosmetics-related research. No hearing on this topic has been officially noticed.

Project TENDR Briefing

On July 13, a briefing about PROJECT TENDR—Targeting Environmental and Neurodevelopmental Risks—was held on the Senate side on Capitol Hill. The briefing was attended by approximately 60 Congressional staffers and was cosponsored by Senator Sherrod Brown (D-OH) and Rep. Doris Matsui (D-CA-6th District). Maureen Swanson of the Learning Disabilities Association of America moderated the discussion. Panelists included: (1) Irva Hertz-Picciotto, a NIEHS grantee and epidemiologist at UC Davis; (2) Jeanne Conry, past President of the American Congress of Obstetricians and Gynecologists (ACOG); (3) Arthur Lavin, a pediatrician practicing in Ohio; and (4) Nsedu Obot Witherspoon, Executive Director for the Children's Environmental Health Network (CEHN). Dr. Conry quoted Dr. Birnbaum in her presentation, indicating that "environmental chemicals act like uncontrolled medicine." As part of her remarks, Dr. Hertz-Picciotto highlighted the NIEHS mission and capabilities. The recently-published Project TENDR consensus statement in *Environmental Health Perspectives* was summarized and policy recommendations were discussed.

Science Advances

One NIEHS **(NIEHS authors' groups in parens)**

- ***A proposed framework for the systematic review and integrated assessment (SYRINA) of endocrine disrupting chemicals.*** *Vandenberg LN, M Agerstrand, A Beronius, C Beausoleil, A Bergman, LA Bero, CG Bornehag, CS Boyer, GS Cooper, I Cotgreave, D Gee, P Grandjean, KZ Guyton, U Hass, JJ Heindel (DERT), S Jobling, KA Kidd, A Kortenkamp, MR Macleod, OV Martin, U Norinder, M Scheringer, KA Thayer (NTP), J Toppari, P Whaley, TJ Woodruff and C Ruden. Environ. Health* (2016) v. 15 (1): pp. 74
  http://dx.doi.org/10.1186/s12940-016-0156-6
  SP Goal 7, 11

- ***DNA Methylation Score as a Biomarker in Newborns for Sustained Maternal Smoking during Pregnancy.*** *Reese SE (DIR), S Zhao (DIR), MC Wu, BR Joubert (DERT), CL Parr (DIR), SE Haberg, PM Ueland, RM Nilsen, O Midttun, SE Vollset, SD Peddada (DIR), W Nystad and SJ London (DIR). Environ Health Perspect* (2016) [InPress]
  http://dx.doi.org/10.1289/ehp333
  SP Goal 1, 3

DNTP

- **Advancing toxicology research using in vivo high throughput toxicology with small fish models.** *Planchart, A, Mattingly, CJ, Allen, D, Ceger, P, Casey, W (DNTP), Hinton, D, Kanungo, J, Kullman, SW, Tal, T, Bondesson, M, Burgess, SM, Sullivan, C, Kim, C, Behl, M (DNTP), Padilla, S, Reif, DM, Tanguay, RL, Hamm, J. ALTEX.* 2016. 2016/06/22
http://dx.doi.org/10.14573/altex.1601281
SP Goal 7, 11

- ***Key characteristics of carcinogens as a basis for organizing data on mechanisms of carcinogenesis.*** *Smith, MT, Guyton, KZ, Gibbons, CF, Fritz, JM, Portier, CJ, Rusyn, I, DeMarini, DM, Caldwell, JC, Kavlock, RJ, Lambert, PF, Hecht, SS, Bucher, JR (DNTP), Stewart, BW, Baan, RA, Cogliano, VJ, Straif, K. Environmental Health Perspectives.* 2016. 124(6): 713-721
http://dx.doi.org/10.1289/ehp.1509912
SP Goal 7, 11

DIR

- ***Occupational Exposure to Pesticides and the Incidence of Lung Cancer in the Agricultural Health Study.*** *Bonner MR, LE Beane Freeman, JA Hoppin, S Koutros, DP Sandler (DIR), CF Lynch, CJ Hines, K Thomas, A Blair and MC Alavanja. Environ. Health Perspect.* (2016)
http://www.ncbi.nlm.nih.gov/pubmed/26883092
SP Goal 3, 6

- **Rheumatoid Arthritis in Agricultural Health Study Spouses: Associations with Pesticides and Other Farm Exposures.** *Parks CG (DIR), JA Hoppin, AJ DeRoos, KH Costenbader, MC Alavanja and DP Sandler (DIR). Environ Health Perspect* (2016) [InPress]
http://dx.doi.org/10.1289/ehp129
SP Goal 3, 6

- ***The Spatiotemporal Pattern of Glis3 Expression Indicates a Regulatory Function in Bipotent and Endocrine Progenitors during Early Pancreatic Development and in Beta, PP and Ductal Cells.*** *Kang HS (DIR), Y Takeda (DIR), K Jeon (DIR) and AM Jetten (DIR). PLoS One* (2016) v. 11 (6): pp. e0157138
http://dx.doi.org/10.1371/journal.pone.0157138
SP Goal 1

- ***Maternal Age at Delivery Is Associated with an Epigenetic Signature in Both Newborns and Adults.*** *Markunas CA (DIR), AJ Wilcox (DIR), Z Xu (DIR), BR Joubert (DIR), S Harlid (DIR), V Panduri (DIR), SE Haberg, W Nystad, SJ London (DIR), DP Sandler (DIR), RT Lie, PA Wade (DIR) and JA Taylor (DIR). PLoS ONE* (2016) v. 11 (7): pp. e0156361
http://dx.doi.org/10.1371/journal.pone.0156361
SP Goal 1, 2

- ***Transcription Factor GLIS3: a New and Critical Regulator of Postnatal Stages of Mouse Spermatogenesis.*** *Kang HS (DIR), LY Chen (DIR), K Lichti-Kaiser (DIR), G Liao (DIR), K Gerrish (DIR), CD Bortner (DIR), HH Yao (DIR), EM Eddy (DIR) and AM Jetten (DIR). Stem Cells* (2016)
http://dx.doi.org/10.1002/stem.2449

SP Goal 1

DERT

- ***Residential proximity to organophosphate and carbamate pesticide use during pregnancy, poverty during childhood, and cognitive functioning in 10-year-old children.*** *Rowe C, Gunier R, Bradman A, Harley KG, Kogut K, Parra K, Eskenazi B.* Environ Res. 2016 Jun 6;150:128-137.
  http://www.ncbi.nlm.nih.gov/pubmed/27281690
  SP Goal 2, 3, 6

- ***Residential proximity to traffic and female pubertal development.*** *McGuinn LA, Voss RW, Laurent CA, Greenspan LC, Kushi LH, Windham GC.* Environ Int. 2016 Jul 1. pii: S0160-4120(16)30251-3.
  http://www.ncbi.nlm.nih.gov/pubmed/27377913
  SP Goal 2, 3

- ***Comparative analyses of population-scale phenomic data in electronic medical records reveal race-specific disease networks.*** *Glicksberg BS, Li L, Badgeley MA, Shameer K, Kosoy R, Beckmann ND, Pho N, Hakenberg J, Ma M, Ayers KL, Hoffman GE, Dan Li S, Schadt EE, Patel CJ, Chen R, Dudley JT.* Bioinformatics. 2016 Jun 15;32(12):i101-i110.
  http://www.ncbi.nlm.nih.gov/pubmed/27307606
  SP Goal 2

- ***Regions of variable DNA methylation in human placenta associated with newborn neurobehavior*.** *Paquette AG, Houseman EA, Green BB, Lesseur C, Armstrong DA, Lester B, Marsit CJ.* Epigenetics. 2016 Aug 2;11(8):603-13.
  http://www.ncbi.nlm.nih.gov/pubmed/27366929
  SP Goal 1, 3

- ***Dietary Determinants of Perfluorooctane Sulfonic (PFOS) and Perfluorooctanoic Acid (PFOA) Concentrations in Human Colostrum.*** *Jusko TA, Oktapodas M, Palkovičová Murinová L, Babinská K, Babjaková J, Verner MA, DeWitt JC, Thevenet-Morrison K, Čonka K, Drobná B, Chovancová J, Thurston SW, Lawrence BP, Dozier AM, Järvinen KM, Patayová H, Trnovec T, Legler J, Hertz-Picciotto I, Lamoree MH.* Environ Sci Technol. 2016 Jul 5;50(13):7152-62.
  http://www.ncbi.nlm.nih.gov/pubmed/27244128
  SP Goal 2

- ***Detection of Poly- and Perfluoroalkyl Substances (PFASs) in U.S. Drinking Water Linked to Industrial Sites, Military Fire Training Areas, and Wastewater Treatment Plants.*** *Hu XC, Andrews DQ, Lindstrom AB, Bruton TA, Schaider LA, Grandjean P, Lohmann R, Carignan CC, Blum A, Balan SA, Higgins CP, Sunderland EM. Environ. Sci. Technol. Lett.*, Article ASAP Publication Date (Web): August 9, 2016
  http://pubs.acs.org/doi/abs/10.1021/acs.estlett.6b00260
  SP Goal 3, 5

- **Autism-specific maternal anti-fetal brain autoantibodies are associated with metabolic conditions.** Krakowiak P, Walker CK, Tancredi D, Hertz-Picciotto I, Van de Water J. Autism Res. 2016 Jun 17.
  http://www.ncbi.nlm.nih.gov/pubmed/27312731
  SP Goal 1

- ***Interaction of bisphenol A (BPA) and soy phytoestrogens on sexually dimorphic sociosexual behaviors in male and female rats.*** *Hicks KD, Sullivan AW, Cao J, Sluzas E, Rebuli M, Patisaul HB.* Horm Behav. 2016 Jun 30;84:121-126.
  http://www.ncbi.nlm.nih.gov/pubmed/27373758
  SP Goal 4

- ***Selfish drive can trump function when animal mitochondrial genomes compete.*** *Ma H, O'Farrell PH.* Nat Genet. 2016 Jul;48(7):798-802.
  http://www.ncbi.nlm.nih.gov/pubmed/27270106
  SP Goal 1

NIEHS Highlights

Staff Updates

- NIEHS is pleased to announce the selection of Chris Long, M.P.A., as our new Executive Officer and Associate Director for Management. Long formerly served as Acting Executive Officer and Deputy Director for Management.
- Janet Hall, M.D., is now officially the NIEHS Clinical Director.
- Rebecca Wiltshire, D.V.M., former director of laboratory animal services at Children's Hospital of Philadelphia, has tentatively accepted the position as Deputy Chief of the Comparative Medicine Branch. She is scheduled to start in September.

Feature: 50 Years of Informing Public Health Decisions

In establishing the NIEHS in 1966, Congress mandated our Institute to engage in "the conduct and support of research, training, health information dissemination, and other programs with respect to factors in the environment that affect human health, directly or indirectly." A particularly important aspect of our efforts in "health information dissemination" is our engagement with the White House, Congress, other federal agencies, and even international governing and scientific bodies, in which we provide scientific expertise to the formulation of a wide variety of laws, regulations, policies, and responses to the public related to environmental health. In addition to our mandated, and not insignificant, reporting requirements, NIEHS is called upon almost daily and often under urgent deadline to translate our science, inform about our programs, and bring our expertise to bear on the review of actions both proposed and taken to protect public health. Staff across every division of our Institute are engaged to respond to such requests assisted in chief by our Legislative Liaison, Jed Bullock, and staff of the Office of Policy, Planning, and Evaluation, headed by Sheila Newton, Ph.D. As trusted government servants, we take seriously our ability to influence public health policy, however indirectly, and work hard to apply our best knowledge and discernment to the task.

NIEHS's five decades of history are woven throughout with cases in which the expertise of our scientists and grantee researchers has been called to inform important actions in public health. Just a few examples include assessment of the impact of the use of Agent Orange in Vietnam, determination of the benefit to children of removing lead from gasoline, confirmation of the link between asbestos

exposures and lung tumors and the role of DES in birth defects, provision of compelling evidence for public health action on smoking, and demonstration of the opportunities present in decoding both human and animal genomes. More recently, NIEHS's scientific voice has contributed to conversations around issues such as the health implications to 911 first responders, the need for innovation in how we test the chemicals in our environment and in our bodies, an expansion of the way we respond to public health disasters, and the push beyond climate change as a question of "if" to a determination of "how and to whom."

To give you a sense of the breadth of the NIEHS voice, below are highlights of just some of the topics and some of the ways we've contributed to the scientific policy discourse since the NAEHS Council last gathered in May.

The Zika Outbreak

On June 21, NIEHS was notified that the Government Accountability Office (GAO) was launching a new engagement entitled "Zika Virus Outbreak" (100946). GAO is conducting this review in response to a request made by the Chairman and Ranking Member of the House Committee on Energy and Commerce and the Chairman and Ranking Member of its Subcommittee on Oversight and Investigations. NIEHS is a participant (7 staff) along with other HHS groups including CDC, FDA, and BARDA/ASPR. In preparation for, and as part of the "entrance call" held on July 14, NIEHS provided information about our activities around Zika, which include:

- **NIEHS: "Zika in Infants and Pregnancy" (ZIP) study contributor.** NIEHS has joined the multi-country ZIP Study by providing one-year supplemental funding support ($850,000) to initiate ZIP study protocols in the U.S. territory of Puerto Rico for an existing birth cohort study (Northeastern University, P42ES017198). In doing so, NIEHS provides additional opportunity within the ZIP research efforts to understand the potential contribution of environmental risk factors including pesticide exposures to adverse outcomes in women infected with Zika during pregnancy and in their children.
  Leads: Kimberly Gray, Division of Extramural Research and Training (DERT); and Heather Henry, Division of Extramural Research and Training (DERT).

- **NIEHS: Environmental factors research**. NIEHS is conducting intramural experimental research to understand the role of environmental exposures, such as mosquito control pesticides, on the potential impact of Zika infection during pregnancy. This research is part of a multifaceted effort evaluating exposures that may increase susceptibility to viral infections of global public health concern.
  Lead: Scott Masten, Division of the National Toxicology Program.

- On July 25, Congress recessed until September 6, without having concluded its consideration of emergency appropriations requested by the President on February 22 to respond to the Zika virus both domestically and internationally. On August 12, HHS Secretary Sylvia Mathews Burwell, under authority set forth in Section 319 of the *Public Health Service Act*, declared that a "public health emergency" of national significance exists in Puerto Rico due to the Zika virus outbreak. It is a tool

enabling the federal government to provide greater support for the government of Puerto Rico in addressing the outbreak in the territory, and it underscores the public health risk of Zika, particularly to pregnant women and women of childbearing age. This declaration was made one day after the U.S. Surgeon General, Vice Admiral Vivek Murthy, visited Puerto Rico.

- As of the date of the declaration and since December 2015, the government of Puerto Rico has reported over 10,600 cases of local transmission of Zika. The government reports further that 90 individuals have been hospitalized because of the virus and at least 30 individuals on the island have been diagnosed with Guillain-Barre Syndrome linked to Zika. Surgeon General Murthy has stated that he expects 25 percent of Puerto Rico's nearly 3.5 million residents will become Zika infected by the end of this year.

- On August 29, NIEHS will participate in a follow on discussion with the GAO about mosquito control, epidemiology and diagnostics.

PFOA/PFOS Exposure Concerns

On June 24, Democratic Senators Charles Schumer and Kirsten Gillibrand, and Representative Christopher Gibson, all of New York sent a letter to the heads of the NIH and the CDC concerning elevated levels of perflourinated chemicals (PFCs), specifically perfluorooctanoic acid (PFOA), in the blood of their constituents residing in the Village of Hoosick Falls and the Towns of Hoosick Falls and Petersburgh, New York. The presumption is that residents were exposed to PFOA, a chemical which has been widely used as a commercial water repellent and flame retardant, and in non-stick packaging and cookware products, through contamination of their drinking water from manufacturing plants located in the towns. NIEHS was asked to respond on behalf of NIH and to help "inform citizens. . . with the best, most up-to-date information on what this means for them and their families, as well as guidance on the best practices to protect their health." The NIEHS, which has conducted research on PFCs for more than 30 years, was able to provide a response detailing the following:

- Research findings of potential links between PFCs and behavioral disorders, including attention deficit hyperactivity disorder; cognitive and neurobehavioral development; immune function; and obesity.

- Outcome of a peer review meeting on the *Draft NTP Monograph on Immunotoxicity Associated with Exposure to Perfluorooctanoic Acid (PFOA) or Perfluorooctane Sulfonate (PFOS),* held July 19, that concluded that exposure to PFOA can alter human immune function.

- Ongoing research activities in the Breast Cancer and the Environment Research Program, the Superfund Research Program, and the NTP Systematic Review process focused on these chemicals.

Cell Phone Radiation and NTP Studies

On August 11, NIH tasked NIEHS with responding to a letter sent from Senator Orrin Hatch of Utah to the NIH Director forwarding concerns from one of his constituents about health effects from exposure to cell phone radiofrequency radiation and the adequacy of NTP studies on this topic. Approximately 12 NIEHS staff collaborated to develop an official response letter within less than a week to provide information on the peer-reviewed findings of the NTP animal studies, the largest and most technically challenging research studies ever conducted by the program, and a response of willingness to study the issue further in the future should resources be available for such additional research.

Lead Exposures in Children

In response to the exposures of children to lead in drinking water in Flint, Michigan, the President's Task Force on Environmental Health Risks and Safety Risks to Children is updating its 2000 guidance on sources of lead exposure in children, and to inventory federal activities to prevent childhood lead exposures. This task force is co-chaired by EPA and HHS, which sent out a request to agencies to detail such activities. NIEHS has long been engaged in research on the impacts of exposure to lead on children, as well as efforts to prevent and treat the neurodevelopmental and other damage caused by such exposure. NIEHS staff not only provided information on our Institute's activities, but has helped to spearhead the development of the report.

Other Input/Clearances/Responses

In addition to direct responses for Congress, NIEHS engages on a variety of other requests from other federal agencies, interagency groups, and stakeholders for input, comment, clearance, and information on a wide variety of legislation, policies, statements, and other communications. Some recent examples include:

- Review of Questions for the Record (QFRs) from a House Agriculture Committee Hearing on the use of EPA/NIEHS Children's Centers epidemiology study data as support for pesticide regulation
- Comment on a proposed OMB Statement of Administration Policy (SAP) on H.R. 4775, the *Ozone Standards Implementation Act of 2016*, which would delay implementation of the EPA-established 2015 ozone health standard for 10 years and extend the review cycle for all National Ambient Air Quality Standards (NAAQS) from five to 10 years
- Input for draft Senate Appropriations Committee Report language about autism research and healthy housing promotion
- Technical Assistance to the House Energy and Commerce Committee in its review of H.R. 2858, *The Humane Cosmetics Act*, which would prohibit any testing of cosmetics on animals
- Comment on GAO's "Statement of Facts" document for Harmful Algal Blooms
- Evidence to Support FY2015 HHS Strategic Reviews
- Review and clearance of the Report to Congress: Pediatric Research Initiative, FY15
- Recommendation to NIH Clearance on EPA Proposed Rule – Federal Implementation Plan for Existing Oil and Natural Gas Sources; Uintah and Ouray Indian Reservation in Utah

- Comment and clearance of a DRAFT [Presidential] Proclamation of National Childhood Obesity Awareness Month, 2016

Testimony/Briefings/Forums

Although most information is provided in written form, fairly frequently, NIEHS leadership and subject matter experts are called upon to give testimony or briefings for Congress and its staff, members of the Administration, and state and local decision makers, on NIEHS research and its implications for public health. Recent events include:

- Linda Birnbaum, Ph.D., director of NIEHS and the National Toxicology Program, accompanied Senator Jack Reed of Rhode Island, on a May 23 visit to the Brown University Superfund Research Center, where they met with researchers to discuss ways to reduce exposures and improve health outcomes for people in Rhode Island.

- Michael Wyde, Ph.D. of the National Toxicology Program (NTP), accompanied by NIEHS Director Linda Birnbaum, PhD., and NTP Associate Director John Bucher, Ph.D., briefed officials from the FDA and the Federal Communications Commission (FCC) on findings from the 5-year NTP study on the health impacts of GSM and CDMA cell phone radiofrequency radiation. The findings, which indicated a low incidence in heart and brain tumors in male rats, were publicly released on May 27.

- On July 13, Irva Hertz-Picciotto, Ph.D., director of the NIEHS Environmental Health Sciences Core Center at the University of California at Davis and co-director of Project TENDR (Targeting Environmental Neuro-Developmental Risks) took part with other scientists in a Congressional briefing on the group's recent consensus statement detailing the evidence for learning and developmental disorders from environmental exposures and calling for lowering the risks of such impacts through targeted exposure reduction. The briefing was co-hosted by Senator Sherrod Brown (D-OH) and Representative Doris Matsui (D-CA), and was attended by approximately 60 staffers.

- The Endocrine Society is organizing a congressional briefing to coincide with the "*25th Anniversary of NIEHS Endocrine Disruptor Research: Past Lessons and Future Directions*" meeting, scheduled to be held on the main NIH campus on September 18-20. The follow-on congressional briefing will be held on the Senate side of Capitol Hill on September 21. The briefing title is: *"From Hormones to Brain Development: 25 Years of Groundbreaking Research on Endocrine Disrupting Chemicals."* Senator Barbara Boxer (D-CA) is sponsoring this briefing.

- The Friends of NIEHS is planning to host a congressional briefing followed by a reception on Capitol Hill on November 16 to mark the occasion of the 50th Anniversary of NIEHS. The briefing title is: "*NIEHS: 50 Years of Connecting Environmental Health Research to Community Needs*." Rep. David Price (D-NC-4th District) and Rep. Renee Ellmers (R-NC-2nd District) are the bipartisan cosponsors for the reception.

Past Meetings and Events

The **19th Annual NIEHS Biomedical Career Symposium** (formerly the NIEHS Biomedical Career Fair) was held on April 29. Now in its 19th year, it is one of the largest assemblies of biomedical organizations and young scientists in Research Triangle Park, NC. Targeting postdoctoral fellows and graduate students, the Career Symposium provides young scientists with an opportunity to explore a myriad of career options and create a contact network as they plan for their future careers in the biomedical sciences. This year there were 10 workshops in addition to the 9 career panels, as well as an afternoon networking session. **SP Goals: 8, 9**

Grantees in the second phase of the **Toxicant Exposures and Responses by Genomic and Epigenomic Regulators of Transcription (TaRGET) Program**, known as the TaRGET II consortium, met to discuss next steps at a May 2-4 meeting at NIEHS. The project is a follow-on to the NIH Roadmap Epigenomics Project, which documented over 120 epigenomes from human tissues, cells, and embryonic stem cells. TaRGET II will compare epigenetic changes from exposure to the same environmental pollutant in several types of mouse tissues at the same time. Researchers hope to determine whether epigenetic changes in easily obtained biological samples, such as blood, can simulate changes in tissues, such as the brain, that are difficult, if not impossible, to sample in humans. **SP Goals: 1, 3, 9**

Genome analysis tools took center stage at the annual **NIEHS Genomics Day** May 12. Scientists from across the Institute attended presentations on research tools available through the NIEHS Molecular Genomics Core, Epigenomics Core, and Integrative Bioinformatics Support Group. Scientists, ranging from trainees to lead researchers, who have used the various resources to advance their studies gave talks on their findings. An afternoon session featured more than 60 posters by scientists from NIEHS, the NTP, and the EPA, as well as vendors. **SP Goals: 1, 7**

A roadmap to replace animal use in U.S. safety testing was highlighted at the May 25 **public forum of the Interagency Coordinating Committee on the Validation of Alternative Methods (ICCVAM)**. Representatives of federal agencies invited the public to the annual meeting, held at NIH in Bethesda, Maryland, to provide input on alternative approaches for testing potentially hazardous chemicals and products. **SP Goals 3, 4, 11**

Scientists from NIEHS and academic institutions around the country shared ideas and identified knowledge gaps regarding the crosstalk between inflammation, mitochondria, and the environment in a workshop June 20-21 at NIEHS. **Inflammation and the Environment: The Role of the Mitochondrion and Energy Metabolism,** was organized by the NIEHS Inflammation Faculty, an interdisciplinary, cross-divisional collaboration among researchers across the institute. Participants examined the current state of science in these areas, identified and prioritized opportunities for translation to environmental health science, and identified key expertise and resources within the divisions of the NIEHS that can be better leveraged to advance these aims in pursuit of the NIEHS Strategic Plan. **SP Goals: 1, 3, 4**

NIEHS promoted novel statistical applications and grant writing resources through workshops at the 2016 Epidemiology Congress of the Americas meeting in Miami June 21-24. Bonnie Joubert, Ph.D., and Caroline Dilworth, Ph.D., program directors in the Population Health Branch of the NIEHS Division of Extramural Research and Training, co-led "Epidemiological approaches to assessing health effects of environmental mixtures." In the workshop, they presented new applications of statistical techniques to understand how exposure to many environmental factors at once can affect health. Presenters demonstrated sample runs of the methods and led a hands-on exercise to implement the methods in real-world and example datasets. **SP Goals: 7, 9, 10, 11**

On June 21, NIEHS Director Linda Birnbaum, Ph.D., D.A.B.T., and DERT Program Officer Symma Finn, Ph.D., attended the **Tribal Environmental Health Summit** in Flagstaff, Arizona. At the meeting, hosted by Northern Arizona University, Birnbaum discussed the NIEHS commitment to addressing environmental health disparities on Native lands, and later toured local Native facilities including a charter school run totally on solar power. **SP Goals: 5, 8, 9, 10**

As part of the yearlong celebration of the NIEHS 50th anniversary, scientists, policy experts, public health practitioners, fellows, and others gathered at the institute for **Global Environmental Health Day** on June 29. With more than 120 attending in person and nearly 70 via webcast, NIEHS and National Toxicology Program (NTP) Director Linda Birnbaum, Ph.D., welcomed everyone to the first of what is expected to become an annual meeting. Participants, including Asher Hildebrand from the office of Rep. David Price, D-N.C., and others attending by webcast from as far away as Africa and Europe, learned about topics ranging from electronic waste and hazardous exposures, to collaborations with local communities and the principle of one health, which examines the convergence of human, animal, and ecosystem health. **SP Goals 5, 7, 8, 9, 10**

The **SOT and NIEHS Past, Present, and Future: 50 Years of Collaboration** symposium took place on July 12-13 to celebrate the 50th Anniversary of NIEHS. The symposium highlighted collaboration between SOT and NIEHS over the years. Three well-recognized speakers provided their diverse perspectives on the past, present, and future of SOT and NIEHS cooperation. Following the presentations, the speakers joined Linda Birnbaum, Ph.D. Director of NIEHS and the National Toxicology Program, and John B. Morris, Ph.D. President of SOT, in a roundtable discussion of critical topics in the field including addressing questions from the audience. **SP Goals 7, 8, 9**

NIEHS staff, grantees, and partners gathered in Boston July 18-20 for a **Disaster Research Response (DR2) workshop and exercise**. The brought together over 170 federal, state, and local health officials, emergency management professionals, community members, labor unions, academic researchers, industry representatives, and officials from Canada and the United Kingdom to consider how to initiate health research following a hypothetical flood in the Boston and Chelsea areas. **SP Goals 5, 7, 9**

The **NIEHS Community Forum — Appalachian Health and Well-Being** was held in Whitesburg, Kentucky, on July 25. The forum included a panel of local, state, and national community and health leaders who highlighted innovated model programs and activities; shared success stories and lessons learned; and discussed potential resources to help address community needs. Panelist included Dr. Linda Birnbaum, NIEHS Director; Mr. Mike Caudill, CEO of Mountain Comprehensive Health

Corporation; Dr. Fran Feltner, Director of Center for Excellence in Rural Health, and Dr. Dawn Brewer, University of Kentucky. The forum was hosted by the University of Kentucky and provided opportunities to connect individuals and groups working in overlapping areas to improve the overall health and well-being of Eastern Kentucky. **SP Goals: 3, 5, 6, 11**

The International Conference on **Calcium Signaling: From Stores to Channels** took place in Chapel Hill on July 31-August 3. Experts from around the world met to discuss calcium channels and honor former NIEHS researcher James W. Putney Jr. **SP Goals 1, 7**

Scientists from around the world met in Florence, Italy on the 40th Anniversary of the "Seveso" accident for the **36th International Symposium on Halogenated Persistent Organic Pollutants (Dioxin 2016)**. The symposium focused on halogenated persistent organic pollutants with respect to origin, metabolism, toxic effects, and epidemiology, as well as the impact on both populated and rural areas. **SP Goals 2, 3, 4, 5**

The **28th Conference of the International Society for Environmental Epidemiology (ISEE 2016)** was held in Rome, Italy on September 1-4. The theme of the conference was "Old and new risks: challenges for environmental epidemiology." The conference brought together academics, health professionals, and researchers to address challenges in data analyses, exposure assessment, and study design. **SP Goals: 1, 2, 4, 11**

Upcoming Meetings and Events

- 25th Anniversary of NIEHS Endocrine Disruptor Research Workshop, NIH, September 18-20
- NIEHS Obesity Grantee meeting, NIH, September 21-22
- Triangle Global Health Consortium Annual Conference, Chapel Hill, September 30
- American Public Health Association Annual Meeting, Denver, October 29-November 2
- NIEHS 50th Anniversary Celebration, NIEHS, November 1
- NAS Committee on Emerging Science for Environmental Health Decisions workshop on the Implications of Individual Environmental Exposure Measurements for Risk Communication, Washington, DC, November 16-17
- Annual NIEHS Partners Meeting, RTP, November 17
- NIEHS Environmental Health Science FEST, December 5-8
- Research Triangle Environmental Health Collaborative 2016 Summit on Citizen Science and Community-Engaged Research, RTP, December 8-9
- NAS Committee on Emerging Science for Environmental Health Decisions workshop on Enabling Inference-based Decision-making: Predicting vs. Observing, Washington, DC, January 10-11, 2017

Honors and Awards

NIEHS

- On September 22, 2016, the governor of North Carolina will present **Linda Birnbaum**, **Ph.D., D.A.B.T., A.T.S.,** with the North Carolina Award for Science. The highest civilian

honor given by the state, the North Carolina award recognizes significant contributions to the state and nation in the fields of fine art, literature, public service, and science.

- **Linda Birnbaum, Ph.D., D.A.B.T., A.T.S.,** was awarded the 2016 Dr. Phillip L. Smith Award for exemplary federal support for Native American health research from the Native Research Network, on June 8 in Cherokee, North Carolina.
- Twenty-two NIEHS staff and contractors were selected for this year's NIH Director's Awards. Winners from NIEHS include:
    - **Allen Wilcox, Ph.D.**, from the Division of Intramural Research, was honored "for pioneering epidemiologic research in human reproduction that has defined the field and led to improved understanding of fertility and pregnancy.
    - The **National Children's Study**, **Environmental Influences on Child Health Outcomes (ECHO) Program Working Group**, included **David Balshaw, Ph.D.**, **Kimberly Gray, Ph.D.**, and **Claudia Thompson, Ph.D.**, all from the Division of Extramural Research and Training. The working group was recognized "for catalyzing the advancement of pediatric and environmental health research through development of the [Fiscal Year] 2016 plan to redirect the National Children's Study efforts."
    - The **NIH Disaster Research Response Group** included a cross-divisional group of 13 staff and contractors from NIEHS, including **April Bennett** and **Betsy Eagin**, contractors in the Office of the Director; **Stavros Garantziotis, M.D.**; **Richard Kwok, Ph.D.**; **Joan Packenham, Ph.D.**; and contractor **Steven Ramsey**, from the Division of Intramural Research; and **David Balshaw, Ph.D.**; **Chip Hughes**; **Scott Masten, Ph.D.**; **Liam O'Fallon**; **Les Reinlib, Ph.D.**; **Jim Remington**; and **Claudia Thompson, Ph.D.**, from the Division of Extramural Research and Training. They were honored "for outstanding contributions to the development of an innovative research program to address human health effects of natural and man-made disasters."
    - The **NIH Strategic Plan Working Group**, which included **Sheila Newton, Ph.D.,** and **Kimberly Thigpen Tart, J.D.**, **M.P.H.,** from the NIEHS Office of the Policy, Planning, and Evaluation, was recognized "for significant contributions toward developing an NIH-wide Strategic Plan."
    - Administrative specialist **Kathleen Ochoa** was recognized "for exemplary performance and leadership in the administrative office of the Epigenetics and Stem Cell Biology Laboratory."
    - The **NIH Review Policy Committee**, **Reviewer Guidance Working Group**, which included **RoseAnne McGee**, scientific review officer in the Division of Extramural Research and Training, was selected "in recognition of outstanding leadership and creativity in designing, launching, and maintaining the new Guidance for Reviewers website."
    - **Raja Jothi, Ph.D.,** a principle investigator in the Systems Biology Group within the Epigenetics and Stem Cell Biology Laboratory won the Ruth L. Kirschstein

Mentoring Award for exemplary performance while demonstrating significant leadership, skill, and ability in serving as a mentor.

- Two groups based at NIEHS are the recipients of the 2016 U.S. Department of Health and Human Services (HHS) Green Champion awards for sustainability and stewardship projects. Thanks to their efforts, the NIEHS campus is safer, cleaner, and more energy efficient.
    - **The Project Team** included NIEHS Office of Management staff **Chris Long**, **Debra Del Corral, Christopher Hunt, Veevee Shropshire, Bill Steinmetz, Clyde Hasty**, and **Scott Merkle** (retired). Another member, **Joseph Shealey**, is part of the NIH Office of Research Facilities Branch based at NIEHS. "The NIEHS Project Team used innovation and dedication to recycle the bulk of waste materials located at the site." said the HHS announcement, which made the award under the category of Environmental Stewardship.
    - A team of NIEHS-based NIH Office of Research Facilities including **Kyle Hawkins, Joseph Shealey, Alison Karver, Victor Stancil, Brian Vannatten, Shawn O'Neal**, **and John Barbee** won in the Energy and Fleet Award category by installing a 60 kilowatt photovoltaic system to capture solar energy and converting all exterior roadway and walkway lighting from metal halide lamps to (LED) units. "The project resulted in a net energy savings of approximately 300,000 kilowatt hours and $18,000 in utility cost annually, as well as the recycling of approximately 300 tons of construction debris."
- **Janet E. Hall, M.D., M.Sc.**, has been awarded the Sidney H. Ingbar Distinguished Service Award that recognizes distinguished service to the Endocrine Society and the field of endocrinology. Through her service as the Endocrine Society's president, and on its Annual Meeting Steering, Nominating, Laureate Awards, and Strategic Planning Committees, Hall has highlighted the essential contributions that basic and clinical researchers and physicians-in-practice make to the field by working together and has championed the Endocrine Society's commitment to health disparities in endocrinology.
- **Warren Casey, Ph.D.,** scientist at the National Toxicology Program (NTP), received the Enhancement of Animal Welfare Award from the Society of Toxicology at their annual meeting in New Orleans in March. The award cited Casey for his leadership on projects supporting replacement of animal tests with robotic assays and computer models.
- **Carmen Williams, M.D., Ph.D.,** was awarded tenure May 2 by NIH. She heads the NIEHS Reproductive Medicine Group and holds a secondary appointment in the Epigenetics and Stem Cell Biology Laboratory.
- **R. Scott Williams, Ph.D.,** of the Genome Integrity and Structural Biology Laboratory and **Guang Hu, Ph.D.,** of the Epigenetics and Stem Cell Biology Laboratory were awarded tenure by NIH on August 1, 2016.

- **Lee F. Langer, Ph.D.,** a fellow in the Chromatin and Gene Expression Group, Epigenetics and Stem Cell Biology Laboratory, was awarded a 2016 Postdoctoral Research Associate (PRAT) Program Fellowship from NIGMS. The PRAT is a three-year program that provides outstanding laboratory experiences, access to NIH resources, and mentorship, career development, and networking. Langer will be mentored by Trevor Archer, Ph.D.
- Eighteen NIEHS fellows were awarded the NIH Fellows Award for Research Excellence (FARE). (See table below).

FARE Awardee	Mentor	Group and Laboratory/Branch
Georgia M. Alexander, Ph.D.	Serena M. Dudek, Ph.D.	Synaptic and Developmental Plasticity Group, Neurobiology Laboratory
Jonathan T. Busada, Ph.D.	John A. Cidlowski, Ph.D.	Molecular Endocrinology Group, Signal Transduction Laboratory
Derek W. Cain, Ph.D.	John A. Cidlowski, Ph.D.	Molecular Endocrinology Group, Signal Transduction Laboratory
Yu-Wei Chen, Ph.D.	Patricia Jensen, Ph.D.	Developmental Neurobiology Group, Neurobiology Laboratory
Shannon L. Farris, Ph.D.	Serena M. Dudek, Ph.D.	Synaptic and Developmental Plasticity Group, Neurobiology Laboratory
Bo He, Ph.D.	John A. Cidlowski, Ph.D.	Molecular Endocrinology Group, Signal Transduction Laboratory
Ming Ji, Ph.D.	Xiaoling Li, Ph.D	Metabolism, Gene, and Environment Group, Signal Transduction Laboratory
Yuan Yuan Li, Ph.D.	Leping Li, Ph.D.	Biostatistics & Computational Biology Branch
Hoai Nghia Nguyen, Ph.D.	Stephen B. Shears, Ph.D.	Inositol Signaling Group, Signal Transduction Laboratory
Barbara C. Nicol, Ph.D.	Humphrey Yao, Ph.D.	Reproductive Developmental Biology Group, Reproductive and Developmental Biology Laboratory
Rajneesh Pathania, Ph.D.	Raja Jothi, Ph.D.	Systems Biology Group, Epigenetics and Stem Cell Biology Laboratory
Mathew A. Quinn, Ph.D.	John A. Cidlowski, Ph.D.	Molecular Endocrinology Group, Signal Transduction Laboratory
Erin M. Romes, Ph.D.	Robin E. Stanley, Ph.D.	Nucleolar Integrity Group, Signal Transduction Laboratory
Matthew J. Schellenberg, Ph.D.	R. Scott Williams, Ph.D.	Genome Stability and Structural Biology Group, Genome Integrity and Structural Biology Laboratory
Sheng Song, Ph.D.	Jau-Shyong Hong, Ph.D.	Neuropharmacology Group, Neurobiology Laboratory

Shuang Tang, M.D., Ph.D.	Xiaoling Li, Ph.D	Metabolism, Gene, and Environment Group, Signal Transduction Laboratory
Seddon Y. Thomas, Ph.D.	Donald N. Cook, Ph.D.	Immunogenetics Group, Immunity, Inflammation and Disease Laboratory
Ma Wan, M.D, Ph.D.	Douglas A. Bell, Ph.D.	Environmental Genomics Group, Genome Integrity and Structural Biology Laboratory

- **Summer Internship Program Best Poster Awards**
  The NIEHS Summer Internship Program poster session was held on Thursday, July 28, and awards were presented for Best Poster in three categories, High School Interns, Undergraduate Interns and Graduate Interns.
  - High School Intern:
    Neil Shah, Wake Early College of Health and Sciences, Reproductive and Developmental Biology Laboratory, Mentor: Fei Zhao, Reproductive Developmental Biology Group, Poster Title: "Decoding Reproductive System Development: A Novel Cell Population Influencing the Formation of the Female Reproductive Tract"
  - Undergraduate Intern:
    Asha Anand, North Carolina State University, Reproductive and Developmental Biology Laboratory, Mentor: Manas Ray, Mouse Knockout Core, Poster Title: "Utilizing CRISPR/Cas9 to Disrupt Galectin-3 and Protein Kinase C Delta to Study Their Role in LC3-associated Phagocytosis"
    Lucas Van Gorder, North Carolina State University, Neurobiology Laboratory, Mentor: Negin Martin, Viral Vector Core, Poster Title: "Validating CRISPR/Cas9 Delivery and Use with Adeno-associated Virus"
  - Graduate Intern:
    Rachel Nethery, University of North Carolina, Chapel Hill, Epidemiology Branch, Mentor: Richard Kwok, Poster Title: "The Residential Neighborhood Environment and Its Impact on GuLF STUDY Participants"

Grantees

- **Jada Brooks, Ph.D.** of the University of North Carolina at Chapel Hill was awarded a five-year NIEHS grant to support mentored patient-oriented research and career development.
- NIEHS grantees **Mary Lou Guerinot, Ph.D.**, from Dartmouth College, and **Michael Kastan, M.D., Ph.D.**, of Duke University, were among 84 new members elected May 3 to the National Academy of Sciences.

- Each year, the Dr. Martin Rodbell Lecture Series Seminar features a presentation by a scientist who has made significant contributions to a particular field of study. The 2016 speaker, **Myles Brown, M.D.,** of Harvard Medical School, has changed the way researchers think about the role of hormones in breast and prostate cancer. His May 10 talk, "Hacking the Hormone Code," was hosted by NIEHS Reproductive and Developmental Biology Laboratory Chief Kenneth Korach, Ph.D.
- **John R. Balmes, M.D.**, of the University of California, Berkley School of Public Health was awarded the American Thoracic Society's Public Service Award on May 16, 2016 at the ATS International Conference in San Francisco.
- NIEHS grantee **Kent Gates, Ph.D.**, of the University of Missouri and former NIEHS grantee **Susan Richards, Ph.D,** were selected for the 2016 class of American Chemistry Society (ACS) Fellows.
- **Martyn Smith, Ph.D.**, the Center Director for the UC-Berkeley Superfund Research Center, was recently appointed to the Kenneth and Marjorie Kaiser Endowed Chair in Cancer Epidemiology.