

# **Report to the National Advisory Environmental Health Sciences Council Director, NIEHS**

**2-3 June 2015**

## **Legislative and Budget Report**

### ***Appropriations.***

The House Appropriations Subcommittee on Labor, HHS, ED and Related Agencies held a hearing on NIH funding for FY 2016 on 3 March 2015. The new chairman Tom Cole (R-OK) set a tone of bipartisan cordiality. All members except Martha Roby (R-AL) were present and asked substantive questions.

Representative Roybal-Allard (D-CA) asked under what authority the NIH Director halted the National Children's Study, a congressionally mandated study for which NIH had spent over \$1.5 billion. Dr. Collins explained that the 2014 IOM report requested by Congress, cited problems so significant with the study that he asked his advisory committee to review the IOM report and make a recommendation about whether it was in fact feasible to move forward. The working group concluded it was not and Dr. Collins accepted their recommendation.

There were a number of questions about precision medicine. Representatives Rogers (R-WA), Womack (R-AR), and Harris (R-MD) had questions for NIDA about prescription drug abuse and legalization of marijuana. Support for BRAIN remains high among the Members. Funding young investigators is a priority for both Chairman Cole and Representative Harris. Representative Lee (D-CA) asked for updates on COPD and MS research.

On 30 April 2015, the Senate Labor, HHS Appropriations Subcommittee chaired by Senator Blunt (R-MO) held a hearing on the NIH budget. Francis Collins accompanied by Tony Fauci (NIAID), Gary Gibbons (NHLBI), Tom Insel (NIMH), Jon Lorsch (NIGMS), and Doug Lowy (NCI) testified. Collins opened with a forceful statement on the importance of NIH being an effective and efficient steward of the resources provided by the American people. To help set priorities, NIH is developing an overarching, strategic plan to be linked to individual institute and center plans. NIH is working to optimize the peer review process to enhance the diversity, the fairness, the rigor, and the reproducibility of NIH supported science.

Senators Murray (D-WA) and Mikulski (D-MD) both decried the caps and the need to raise them to support NIH and other worthy programs. Both Senators Mikulski and Durbin (D-IL) talked specifically about NIH and asked for data about loss of buying power, paylines (16 to 17 percent success rates) and the number of grants left on the table (55,000) for lack of funding. In particular, Dr. Collins mentioned that NIH funding doubled between 1998 and 2003, but since that time has steadily lost ground. The sequester added an additional severe

blow, taking \$1.5 billion away in the middle of the fiscal year from which it has not really fully recovered. The billion dollars in the president's budget would go a long way towards putting us back on a stable upward trajectory. NIH is down more than \$10 billion over where it would be if it had stayed on the trajectory set in the 1970s.

Senator Blunt opened with a strong statement in support of the Precision Medicine Initiative, and asked Dr. Collins for more information about it and the proposed cohort. He noted his support for an overall NIH strategic plan. Senator Moran also asked for detail on the strategic plan. Dr. Collins responded that NIH takes very seriously the importance of enhancing our current focus on stewardship to be sure that we are paying absolutely close attention to how every dollar is spent. NIH will develop an overarching NIH strategic plan covering all 27 institutes and centers.

The NIH AIDS portfolio received considerable attention. Dr. Collins mentioned at the outset that NIH is going to look closely at the portfolio of HIV/AIDS research. NIH has an active grant-by-grant review going on right now of the HIV/AIDS portfolio to see how that matches with the priorities that are most appropriate at the present time. Senators Cassidy (R-LA) and Langford (R-OK) took issue with the amount of funding spent on AIDS versus other diseases. Senator Cassidy said the NIH is spending about \$191,000 per HIV death and only \$6,700 per Alzheimer's death. Ten percent of NIH's budget is spent on HIV/AIDS, and only 1.9 percent on Alzheimer's, and Senator Cassidy called this "out of whack" in terms of disease burden.

There were questions about administrative obstacles, such as, travel to conferences that might be addressed by the Senate Health, Education, Labor, and Pensions Committee. Other topics of interest included chronic pain and opioid use, the cost of mental disorders, telehealth, early stage investigators, multiple sclerosis, the IDeA program, and the importance of electronic medical records, particularly for Precision Medicine.

### ***Budget Resolution***

The House and Senate have passed a budget resolution for FY 2016. Although it lacks the force of law, it sets the parameters for the 302(b) allocations, the amount of funding each Appropriations Subcommittee receives for the agency programs under its jurisdiction. A summary from the Congressional Quarterly follows:

The agreement calls for a balanced budget by FY 2024, entirely by reducing spending \$5.3 trillion over the next 10 years — including by repealing the 2010 health care law, reducing spending on Medicare and Medicaid and changing programs such as food stamps. It proposes \$4.2 trillion in reductions to mandatory programs over 10 years, calls for a deficit-neutral overhaul of the tax code that lowers rates, and assumes \$124 billion in additional savings through "dynamic scoring." It includes instructions to House and Senate committees with oversight over the health care law to trigger the budget reconciliation process to try to repeal that law.

The measure's FY 2016 discretionary spending adheres to the sequester-reduced defense and non-defense caps set by the Budget Control Act but also includes more funds for defense for FY 2016 through the uncapped DoD Overseas Contingency Operations account and proposes to add extra funds to that account through FY 2021. It assumes an extra \$245 billion for defense over 10 years while cutting non-defense spending below sequester-reduced levels by \$496 billion.

Democrats oppose the budget because of its cuts to domestic spending, its repeal of the health care overhaul, and its tax cuts that they say would benefit the wealthy, and they have threatened to vote against any associated appropriations bills that conform to the budget's caps.

### ***NIH Funding***

A number of members of Congress from across the political spectrum have made very strong statements supporting increased funding for NIH. They include Barbara Mikulski (D-MD), Ben Cardin (D-MD), Kevin Yoder (R-KS), and John McCain (R-AZ). Mikulski hopes to get support from defense hawks who are determined to raise the defense budget above the current cap. Eric Canter, former Majority Leader of the House enthusiastically endorsed increased funding for NIH in a recent statement.

Representative Eshoo (D-CA) has introduced a companion to Senator Durbin's bill that would authorize additional funding at a rate of GDP-indexed inflation plus five percent annually for NIH, CDC, the DoD Health Program, and the VA Medical & Prosthetics Research Program.

### ***Briefings***

Again this year, Senate Appropriations staff that handles NIH asked to meet for 25 minutes with all the IC directors who did not accompany Francis Collins to the hearing on the NIH budget. Since Dr. Birnbaum could not travel to Bethesda on those days, she met with Laura Friedel, Majority Clerk, and Alex Keenan, Minority Clerk, on 1 April 2015 on Capitol Hill to provide an overview of NIEHS research and accomplishments. The meeting lasted more than an hour. Friedel asked about NIEHS support for research on Alzheimer's and Parkinson's.

On 23 April 2015, Dr. Birnbaum briefed Senate Interior, Environment Appropriations staff Melissa Zimmerman (Minority) and Chris Tomassi (Majority) on the NIEHS Superfund Programs. Both staff members are new to the Subcommittee that has a new chairman, Lisa Murkowski (R-AK) and Ranking Member Tom Udall (D-NM). Both seemed supportive of our work and interested in NIEHS activities involving Native Americans.

On May 14, Dr. Birnbaum and Dr. John Balbus briefed the NIH I/C directors on NIH leadership on federal activities related to climate change and human health. In particular, they conveyed information on the new Climate and Health Data Challenge Series, in which NIEHS will be sponsoring and health challenge later in 2015. [For more information, see this item under *NIEHS Highlights: Data and Technology*].

## *Hearings*

On 18 March 2015, the Senate Environment & Public Works Committee chaired by James Inhofe (R-OK) held a hearing on S 697, the Lautenberg Chemical Safety for the 21<sup>st</sup> Century Act. Jim Jones (EPA) answered a multitude of questions calmly and intelligently without providing a position on any of the bill's major provisions. Inhofe asked other witnesses if they supported the bill. Their responses:

- Richard Dennison (EDF): "Senator, I personally and EDF support this legislation as a solid compromise."
- Edward McCabe (March of Dimes): "The March of Dimes has not endorsed this legislation, but we support the beginning of a dialogue. We think it's time, it's 40 years. I was a resident 40 years ago, and those in the room can see that was a long time ago. Our vulnerable women, children and infants deserve this. So we support the law, we think it's an important place to start, but there's a long way to go."
- Lynn Goldman (GWU): "Yes, I think as you heard from my testimony, that I do support this legislation, at the same time recognizing that there are avenues that could be taken to make it stronger."
- Brian Frosh (Maryland Attorney General): "I do not support it with the preemption provisions."
- Ken Cook (EWG): "Yes, Mr. Chairman, I come from the environmental wing of the environmental movement, and I do not support this legislation personally. EWG does not, and I can't name any other major national environmental groups that do."

On 19 April 2015, the House Energy and Commerce Subcommittee on Environment and the Economy chaired by John Shimkus (R-IL) with Ranking Member Frank Pallone (D-NJ) held a hearing on a draft bill to amend TSCA. Witnesses included Jim Jones (EPA), Michael Walls (AAC), Beth Bosley (Society of Chemical Manufacturers and Affiliates), Jennifer Thomas (Alliance of Automobile Manufacturers), and Andy Igrejas (Safer Chemicals, Healthy Families).

On 28 April 2015, the Senate Health, Education, Labor, and Pensions (HELP) Subcommittee chaired by Lamar Alexander (R-TN) with Ranking Member Patti Murray (D-WA) held a hearing on biomedical innovation. Roderic Pettigrew (NIBIB), Chris Austin (NCATS), Janet Woodcock FDA Center for Drug Evaluation & Research), and Jeff Shuren (FDA Center for Devices & Radiological Health) testified.

At the hearing, Alexander noted that the Committee's *"task is to help ensure that the exciting new technologies being developed and discoveries being made are reaching patients, and that the NIH is equipped to support the early-stage research required to make these advancements and that the FDA is equipped to review them."*

Also on 30 April 2015, the House Energy & Commerce Subcommittee on Health chaired by Joseph Pitts (R-PA) with Ranking Member Gene Green (D-TX) held a hearing on the draft 21st Century Cures bill. Kathy Hudson (NIH), Jeff Shuren (FDA), and Janet Woodcock (FDA) testified for the Administration. The draft bill is the product of eight hearings, more than two dozen roundtables, hundreds of discussions, and a number of white papers. According to Frank Pallone, full Committee Ranking Member, most notable in the new draft and the one that he is most proud to see is \$10 billion of mandatory funding for NIH over the next five years. It also includes a 1.5 billion increase in NIH discretionary authorization over the next three years. He believes federal funding is the foundation of our biomedical ecosystem, and that it is one of the most promising ways to spur economic prosperity, treatments, and cures for the 21<sup>st</sup> century.

Diana DeGette (D-CO) joined full Committee chairman Fred Upton (R-MI) in his district to meet with his constituents about the draft bill. He will be going to her district this spring.

### ***Bills***

**S 697.** On 28 April 2015, the Senate Committee on Environment and Public Works reported by a vote of 15-5 the Frank R Lautenberg Chemical Safety for the 21<sup>st</sup> Century Act. The amended bill provides some improvements over the original version, but still sets an unreasonable risk standard for EPA regulation. States are still prohibited from regulating a chemical once it has been named a high priority, but they can apply for a waiver that can then be challenged in court. Among the many provisions in the bill, the legislation would establish an interagency working group whose membership would include representatives from NSF, NIST, DOE, EPA, USDA, DoD, NIH, and any other agency that the President may designate to oversee the planning, management, and coordination of the Sustainable Chemistry Program.

**HR xxxx.** The House Energy & Commerce Subcommittee on the Environment & the Economy approved the TSCA Modernization Act of 2015 on a voice vote with bipartisan support. Many people see this bill, which is more limited in scope than S 697, as a possible vehicle for a compromise bill. Shimkus is more likely to negotiate a compromise. The standard for regulation is unreasonable risk of injury to human health or the environment. States can regulate a chemical until EPA makes a final decision, then federal preemption holds. According to Ken Cook, president of the Environmental Working Group, "The proposal being considered this week in the House falls short of what is needed to redress decades of neglect under a weak federal policy that resulted in a legacy of malfeasance by the chemical industry." The effort to reform chemical safety rules has drawn support from industry groups. The American Chemistry Council sent a letter of support for the draft bill to Chairman Shimkus and Ranking Member Tonko yesterday. "The draft provides for a strong

and cohesive federal system while maintaining a role for states in the protection of their citizens and environment, and it provides [the U.S. EPA] the additional resources necessary to evaluate risks," Cal Dooley, president and CEO of the chemical trade group, said in the letter.

**HR yyy.** The Energy and Commerce Health Subcommittee approved the draft 21<sup>st</sup> Century Cures Act 21-0 after adopting a bipartisan substitute amendment by voice vote that filled in some gaps in an earlier draft, including language on telehealth and the interoperability of electronic health records. The package is the product of the so-called "21st Century Cures" initiative, launched last year by Chairman Fred Upton (R-MI) and Representative Diana DeGette (D-CO). "We are passing a product that will someday be enacted into law later this year," Upton said Thursday. "This subcommittee mark is just the first step. We have a number of steps to go." Lawmakers from both parties expressed support for the effort, with Democrats praising the draft's funding for the National Institutes of Health. Representative Joe Barton (former Committee Chairman, R-TX) pressed for language to begin curtailing indirect costs at the NIH, while Representatives Renee Ellmers (R-NC) and G.K. Butterfield (D-NC) expressed concern with the disposable medical technology provisions. DeGette pushed for additional resources for the Food and Drug Administration, stating, "We can find all the wonderful cures that we can at the NIH, but if we can't get that approval process going to get those into the clinic then we might as well not have the advances." Frank Pallone (Ranking Member of the full Committee and D-NJ) supports the bill. In January, Pallone withdrew support over a lack of language authorizing an increase funding for NIH.

**HR 1030.** Representative Lamar Smith (R-TX) introduced his Secret Science Reform Act on 24 February 2015; it passed the House three weeks later. The bill prohibits EPA from proposing, finalizing, or disseminating a covered action unless all scientific and technical information relied on to support such action is the best available science, specifically identified, and publicly available in a manner sufficient for independent analysis and substantial reproduction of research results. Covered actions include a risk, exposure, or hazard assessment, criteria document, standard, limitation, regulation, regulatory impact analysis, or guidance. The White House threatened to veto the bill because it imposes "arbitrary, unnecessary, and expensive requirements" on EPA.

## Science Advances

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

- ***Development of Phenotypic and Transcriptional Biomarkers to Evaluate Relative Activity of Potentially Estrogenic Chemicals in Ovariectomized Mice.*** Hewitt SC (DIR), W Winuthayanon (DIR), B Pockette (DIR), RT Kerns (DIR), JF Foley (NTP), N Flagler (NTP), E Ney (NTP), A Suksamrarn, P Piyachaturawat, PR Bushel (DIR) and KS Korach(DIR). *Nat. Biotechnol. Environ. Health Perspect.* (2015) v. 123 (4): pp. 344-352  
<http://dx.doi.org/10.1289/ehp.1307935>

**SP Goal 1, 3**

- **Essential role of *Orai1* store-operated calcium channels in lactation.** Davis FM (DIR), A Janoshazi (DIR), KS Janardhan, N Steinckwich (DIR), DM D'Agostin (DIR), JG Petranka (DIR), PN Desai (DIR), SJ Roberts-Thomson, GS Bird (DIR), DK Tucker (NTP), SE Fenton (NTP), S Feske, GR Monteith and JW Putney, Jr. (DIR). *Proc. Natl. Acad. Sci. U. S. A.* (2015) [ePub] <http://dx.doi.org/10.1073/pnas.1502264112>

SP Goal 1

#### DNTP

- **Macrophage Solubilization and Cytotoxicity of Indium-Containing Particles as In Vitro Correlates to Pulmonary Toxicity In Vivo.** Gwinn WM (DNTP), Qu W (DNTP), Bousquet RW, Price H, Shines CJ (DNTP), Taylor GJ, Waalkes MP (DNTP), Morgan DL (DNTP). *Toxicological Sciences*. 2014. Epub 2014/12/19 <http://toxsci.oxfordjournals.org/content/early/2014/12/19/toxsci.kfu273.long>

SP Goal 1

- **F344/NTac Rats Chronically Exposed to Bromodichloroacetic Acid Develop Mammary Adenocarcinomas With Mixed Luminal/Basal Phenotype and *Tgfb* Dysregulation.** Harvey JB (DNTP), Hong HH (DNTP), Bhusari S, Ton TV (DNTP), Wang Y (DNTP), Foley JF (DNTP), Peddada SD (DIR), Hooth M (DNTP), DeVito M (DNTP), Nyska A, Pandiri AR (DNTP), Hoenerhoff MJ (DNTP). *Veterinary pathology*. 2015. Epub 2015/03/02 <http://dx.doi.org/10.1177/0300985815571680>

SP Goal 1

- **Chronic inorganic arsenic exposure in vitro induces a cancer cell phenotype in human peripheral lung epithelial cells.** Person RJ (DNTP), Olive Ngalame NN (DNTP), Makia NL (DIR), Bell MW (DNTP), Waalkes MP (DNTP), Tokar EJ (DNTP). *Toxicology and applied pharmacology*. 2015. Epub 2015/03/21 <http://dx.doi.org/10.1016/j.taap.2015.03.014>

SP Goal 1

#### DIR

- **Mental health service use by cleanup workers in the aftermath of the Deepwater Horizon oil spill.** Lowe SR, Kwok RK (DIR), Payne J, Engel LS (DIR), Galea S, Sandler DP (DIR). *Soc Sci Med*. 2015 Apr;130:125-34. <http://www.ncbi.nlm.nih.gov/pubmed/25697635>

SP Goal 5

- **Lineage specification of ovarian theca cells requires multicellular interactions via oocyte and granulosa cells.** Liu C, Peng J, Matzuk MM, Yao HH (DIR). *Nat Commun*. 2015 Apr 28;6:6934. <http://www.ncbi.nlm.nih.gov/pubmed/25917826>

SP Goal 1

- **A novel role of microglial NADPH oxidase in mediating extra-synaptic function of**

**norepinephrine in regulating brain immune homeostasis.** Jiang L (DIR), Chen SH (DIR), Chu CH (DIR), Wang SJ (DIR), Oyarzabal E (DIR), Wilson B (DIR), Sanders V, Xie K, Wang Q (DIR), Hong JS (DIR). *Glia*. 2015 Jun;63(6):1057-72.

<http://www.ncbi.nlm.nih.gov/pubmed/25740080>

SP Goal 1

- **Indoor determinants of dustborne allergens in Mexican homes.** Hernández-Cadena L, Zeldin DC (DIR), Barraza-Villarreal A, Sever ML (DIR), Sly PD, London SJ (DIR), Escamilla-Núñez MC, Romieu I. *Allergy Asthma Proc*. 2015 Mar-Apr;36(2):130-7.

<http://www.ncbi.nlm.nih.gov/pubmed/25715241>

SP Goal 4

- **Anti-müllerian hormone and lifestyle, reproductive, and environmental factors among women in rural South Africa.** Whitworth KW, Baird DD (DIR), Steiner AZ, Bornman RM, Travlos GS (DIR), Wilson RE (DIR), Longnecker MP (DIR). *Epidemiology*. 2015 May;26(3):429-35.

<http://www.ncbi.nlm.nih.gov/pubmed/25710247>

SP Goal 4

#### DERT

- **Impact of Natural Gas Extraction on PAH Levels in Ambient Air.** Paulik LB, Donald CE, Smith BW, Tidwell LG, Hobbie KA, Kincl L, Haynes EN, Anderson KA. *Environ Sci Technol*. 2015 Apr 21;49(8):5203-10.

<http://www.ncbi.nlm.nih.gov/pubmed/25810398>

SP Goal 5

- **Secondhand Tobacco Smoke Exposure and Neuromotor Function in Rural Children.** Yeramaneni S, Dietrich KN, Yolton K, Parsons PJ, Aldous KM, Haynes EN. *J Pediatr*. 2015 Apr 13. [Epub ahead of print]

<http://www.ncbi.nlm.nih.gov/pubmed/25882879>

SP Goal 2

- **Assessing reproductive toxicity of two environmental toxicants with a novel in vitro human spermatogenic model.** Easley CA 4th, Bradner JM, Moser A, Rickman CA, McEachin ZT, Merritt MM, Hansen JM, Caudle WM. *Stem Cell Res*. 2015 Mar 25;14(3):347-355. [Epub ahead of print]

<http://www.ncbi.nlm.nih.gov/pubmed/25863443>

SP Goal 1

- **Early-life lead exposure recapitulates the selective loss of parvalbumin-positive GABAergic interneurons and subcortical dopamine system hyperactivity present in schizophrenia.** Stansfield KH, Ruby KN, Soares BD, McGlothan JL, Liu X, Guilarte TR. *Transl Psychiatry*. 2015 Mar 10;5:e522.

<http://www.ncbi.nlm.nih.gov/pubmed/25756805>

SP Goal 2

- **Estimated exposure to arsenic in breastfed and formula-fed infants in a United States cohort.** Carignan CC, Cottingham KL, Jackson BP, Farzan SF, Gandolfi AJ, Punshon T, Folt CL, Karagas MR. *Environ Health Perspect.* 2015 May;123(5):500-6.  
<http://www.ncbi.nlm.nih.gov/pubmed/25707031>  
SP Goal 5
- **Quantitative assessment of inhalation exposure and deposited dose of aerosol from nanotechnology-based consumer sprays.** Nazarenko Y, Lioy PJ, Mainelis G. *Environ Sci Nano.* 2014 Apr;1(2):161-171.  
<http://www.ncbi.nlm.nih.gov/pubmed/25621175>  
SP Goal 5
- **Early introduction and cumulative consumption of sugar-sweetened beverages during the pre-school period and risk of obesity at 8-14 years of age.** Cantoral A, Téllez-Rojo MM, Ettinger AS, Hu H, Hernández-Ávila M, Peterson K. *Pediatr Obes.* 2015 Apr 17. [Epub ahead of print]  
<http://www.ncbi.nlm.nih.gov/pubmed/25891908>  
SP Goal 2
- **Increasing sample size in prospective birth cohorts: back-extrapolating prenatal levels of persistent organic pollutants in newly enrolled children.** Verner MA, Gaspar FW, Chevrier J, Gunier RB, Sjödin A, Bradman A, Eskenazi B. *Environ Sci Technol.* 2015 Mar 17;49(6):3940-8.  
<http://www.ncbi.nlm.nih.gov/pubmed/25698216>  
SP Goal 3

## NIEHS News and Highlights

### *Research Translation and Outreach*

Five years after the **Deepwater Horizon** oil rig explosion, researchers supported by NIEHS continue work in three related areas—a study of oil spill cleanup workers called the GuLF STUDY, research partnerships between Gulf-area universities and community organizations, and an NIH disaster research response effort. The research team developed a job-exposure matrix that enabled scientists to characterize exposures of workers participating in the study and assess possible links between reported health symptoms and the chemicals each worker was exposed to, and preliminary results are being analyzed. University-community partnerships as part of the Deepwater Horizon Research Consortia are focusing on health concerns identified by communities after the oil spill, including pregnancy and birth outcomes, general physical and mental health of coastal residents, and seafood safety. One finding has been that seafood in the Gulf is not contaminated by the spill. And the NIH Disaster Research Response project is developing publicly accessible, field-tested data collection tools, research protocols, training materials and exercises, and development of a network of trained research responders. **SP Goals 2, 4, 6, 7, 11.**

**Vapor intrusion** is the migration of vapors from volatile compounds into occupied buildings,

from underlying contaminated groundwater or soil. In February, NIEHS Superfund Research Program-funded scientists and staff met in Winston-Salem, NC to engage and educate communities of two schools concerned about a discovery that the harmful chemicals trichloroethylene and tetrachloroethylene could be seeping into the classrooms. Kathleen Gray, the research translation leader for the University of North Carolina at Chapel Hill (UNC) SRP, coordinated input from the Kelly Pennell, Ph.D., a vapor intrusion researcher from the University of Kentucky SRP, Wendy Heiger-Bernays, Ph.D., an environmental health professor with the Boston University SRP, and Lenny Siegel, executive director of the Center for Public Environmental Oversight, where he educates communities on vapor intrusion detection and cleanup to offer expert advice to the parents. **SP Goals 8, 11.**

More than 115 tribal community members representing some 20 tribes joined the University of Arizona Southwest Environmental Health Sciences Center (SWEHSC) and NIEHS for a tribal community forum, “**Tribal Stories of Health and the Environment,**” held on April 16 in Tucson, Arizona. Sessions of discussion focused on drinking water exposures from arsenic, uranium, cryptosporidium, and other contaminants; dust, pesticide use in agriculture and communities, and indoor air quality; health effects of climate change and epidemiological perspectives on tribal issues; environmental health concerns ranging from health disparities and cancer prevalence, to health education and children’s health; and resources available to address tribal health disparities. **SP Goals 5, 6, 7, 11.**

On May 21, Dr. Linda Birnbaum, participated in a Community Forum in Brooklyn, NY. The event was hosted by UPROSE, Brooklyn’s oldest Latino community based organization. UPROSE is an intergenerational, multi-racial, nationally-recognized community organization that promotes the sustainability and resiliency of the Sunset Park community in Brooklyn through community organizing, education, leadership development and cultural/artistic expression. The event included a walking tour through the Sunset Park neighborhood, followed by the forum: “**A Community Conversation on Toxics, Climate Change & Health.**” The industrial waterfront is one of the city’s last working waterfronts. It is known for its port facilities, maritime commerce, and vibrant industrial sectors. The waterfront is home to several manufacturers ranging from apparel to woodwork. Due to the industrial and manufacturing nature of the waterfront the community has faced a number of disproportionate environment and health burdens such as a bus depot, numerous truck routes, including the overtaxed Gowanus Expressway, two New York Power Authority electrical turbine engines with 100 tons of yearly emissions, three antiquated power plants, a sludge transfer facility and dozens of brownfield sites. Although Sunset Park is a waterfront community, residents are largely cut off from accessing the waterfront except for the 58th Street pier. Sunset Park is also the largest walk-to-work neighborhood in the city with the waterfront industries serving as a major source of local employment. **SP Goals 5, 6, 7, 11.**

The *New York Times* has developed a new video that features Dr. Birnbaum and others discussing the health risks linked to flame retardant chemicals. The 13-minute **NYT Retro**

**Report video**, “A flame retardant that came with its own threat to health,” is available at <http://www.nytimes.com/2015/05/04/us/a-flame-retardant-that-came-with-its-own-threat-to-health.html>. **SP Goals 5, 11.**

On April 17, NIEHS Office of Human Research Compliance (OHRC) co-sponsored a **Women’s Health Awareness Day**, along with North Carolina Central University (NCCU) Department of Public Health Education and Delta Sigma Theta Sorority, Inc. April is set aside for recognition of public health, domestic violence, and minority health and health disparities, planners placed special emphasis on serving women of color as well as the underserved, uninsured, and underinsured. The event offered four major health components in one centralized location— seminars, information sessions, health services, and on-site screenings and resources. **SP Goals 6, 8, 11.**

The Office of Science Education and Diversity hosted a visit by faculty and staff of the **University of North Carolina at Greensboro (UNCG)** to NIEHS on March 10 as part of an exchange that will foster environmental health research at the university. The visitors learned about the Institute, its opportunities, and the review process for environmental health research grants. NIEHS staff reciprocated with a visit on April 7 to UNCG to talk with students about environmental health, NIEHS research, and paid internships. This visit is part of an overall outreach project to help universities connect to the grantmaking and research processes of NIH and NIEHS. **SP Goals 7, 8, 9.**

On April 17 the Institute celebrated the third year of the **NIEHS Scholars Connect Program (NSCP)** with a symposium featuring research presentations by each scholar and naming, for the first time, an Outstanding Scholar. NSCP is a concerted effort to connect with surrounding colleges and universities and take steps toward increasing the number of students from underrepresented groups in the sciences. Carri Murphy, a senior at North Carolina Central University, who worked in the Chromosome Stability Group, and was mentored by group leader Mike Resnick, Ph.D., staff scientist Daniel Menendez Rendon, Ph.D., and biologist Joyce Snipe, was named Outstanding Scholar. Murphy worked to establish a cell model that would shed light on synthetic lethality in cells deficient in the tumor suppressor p53. **SP Goals 1, 9.**

NIEHS is recruiting participants for two new clinical studies:

- Women who take **black cohosh** for hot flashes, cramps, or other symptoms can take part in a study on the health effects of this herbal supplement. This study is being led by Kristine Witt, Ph.D., head of the NTP Genetic Toxicology Group, in collaboration with the NIEHS Clinical Research Unit. **SP Goal 2.**
- The NIEHS Clinical Research Unit is recruiting people with moderate to severe asthma to participate in the **Natural History of Asthma with Longitudinal Environmental Sampling study**, or NHALES study. The research, led by Stavros Garantziotis, M.D., will examine how bacteria living in and on humans and in their homes, known collectively as the microbiome, may be associated with asthma activity. **SP Goals 1, 2.**

## ***Data and Technology***

On April 7, the White House Office of Science and Technology Policy held a live webcast on the **Climate and Health Data Nexus** during National Public Health Week to highlight data and innovation related to health and climate change. NIEHS Senior Advisor for Public Health John Balbus, M.D., M.P.H. demonstrated new online data resources including the **U.S. Climate Resilience Toolkit** and the **Building Health Care Sector Resilience toolkit**, both of which NIEHS helped to develop. Balbus also chaired a panel on climate change and infectious diseases. **SP Goals 5, 7, 8, 11.**

NIEHS is partnering with the HHS Office of Business Management Transformation, the HHS IdeaLab, and GIS company Esri to develop a **Climate Change and Human Health Innovation Challenge Series**. NIEHS will develop its own Challenge during the summer of 2015. The Challenge Series is built around four goals:

- Create tools that empower the public to take action by providing information about climate change's impacts on health or about the potential health benefits of personal actions to reduce greenhouse gas emissions.
- Create climate change and health decision support tools for health and other professionals (e.g. urban planners).
- Empower the academic and technology communities to analyze data in innovative ways, moving research forward in key areas (products may range from data visualizations to useful indices/metrics to adopt).
- Challenge the private sector to combine government data with their own data to develop innovative decision support tools or address research questions.
- **SP Goals 5, 7, 11.**

The President's Task Force on Environmental Health Risks and Safety Risks to Children's Subcommittee on Climate Change is conducting a **Climate Change and Children's Health Policy Roundup** to gather examples of policy actions aimed at protecting children from health impacts of climate change. These policies will be featured on the Task Force website, highlighted at an event during Children's Health Month, and disseminated across the community of practice to raise awareness, share what's working, and encourage others to adopt similar policies. The [solicitation](#) is open to the public. The Subcommittee is co-chaired by NIEHS, EPA, and DHS. **SP Goals 5, 6, 10, 11.**

Researchers funded by the **NIH Roadmap Epigenomics Program**, which is co-led by NIEHS, have now mapped more than 100 types of human cells and tissues. The resulting comprehensive catalog of epigenomic data provides a first-of-its-kind resource that will help researchers make direct comparisons across cell types and tissues. The researchers expect that the data, which is freely available, will be of broad use to scientists for studies of gene regulation, cellular differentiation, genome evolution, genetic variation, and human disease. This data was published in *Nature* in February. [[www.ncbi.nlm.nih.gov/pubmed/25693563](http://www.ncbi.nlm.nih.gov/pubmed/25693563)] **SP Goals 1, 2, 7.**

The UC-Davis/NIEHS Superfund Research Program is offering an **Entrepreneurship Academy**, a 3-day workshop designed for science and engineering graduate students, postdoctoral researchers and university faculty who would like to learn more about the commercial, real-world application of their work. Registration and travel support are available to all National Superfund Researchers. There are two upcoming Academies, one in July and the other in September. The deadline for applying to the one in July is June 12.

### ***National Toxicology Program***

The NTP, along with the Society of Toxicologic Pathology Education Committee and the Reproductive Pathology Special Interest Group held a meeting March 13 at NIEHS focused on **juvenile toxicology**, looking particularly at the interactions of chemicals with hormonal systems at this critical life stage. Traditional studies often fail to obtain data from infancy to adulthood. Darlene Dixon, D.V.M., Ph.D. was the main NIEHS organizer of the event. **SP Goals 1, 2.**

The National Toxicology Program (NTP) and the Office of Dietary Supplements (ODS) convened an external, expert panel in a public meeting to identify whether further research is needed, and if so, specific research needs related to the **safety of high intakes of folic acid**. In a steering committee, NTP and ODS coordinated with staff from the Centers for Disease Control and Prevention (CDC), U.S. Food and Drug Administration, American Society of Nutrition, March of Dimes, and Health Canada to obtain input on the prioritization of topics and expert panel composition. NTP screened the literature and prepared a draft monograph to identify potential adverse effects associated with high folic acid intake for four health effect categories: (1) cancer, (2) cognition in conjunction with vitamin B<sub>12</sub>, (3) hypersensitivity-related outcomes, and (4) thyroid and diabetes-related outcomes. Introductory talks will address folic acid's recognized beneficial role in birth defects prevention, sources of folic acid, and assessments of blood folate levels. The panel will evaluate the scientific literature for the four health effect categories and make recommendations regarding any further research needs. **SP Goals 1, 11.**

The Interagency Coordinating Committee on the Validation of Alternative Methods (**ICCVAM**), conducted a **public forum** on May 27 at NIH. The event included presentations on current activities related to the development and validation of alternative test methods and approaches for assessing acute systemic toxicity, endocrine activity, vaccine safety, and skin sensitization potential, as well as updates on ICCVAM processes. Participants were also invited to give suggestions for how best to track progress towards replacement, reduction, and refinement of animal use for safety testing, as well as specific activities or areas on which ICCVAM should provide more focus. **SP Goals 1, 7, 11.**

### **Past Meetings and Events**

The NIEHS hosted the Institute of Medicine (IOM) Roundtable on Environmental Health Sciences, Research, and Medicine and an international group of researchers on March 2-3 to share their findings on **“The Interplay Between Environmental Exposures and Obesity”** Nearly 600 people attended by webcast and about 120 attended in person to hear a broad-ranging discussion on topics such as the role of environmental chemicals, nutrition, artificial sweeteners, hormones, and other factors in the development of obesity and metabolic disorders, as well as research needs going forward. **SP Goals 1, 2, 3, 4, 5, 6, 10, 11.**

NIEHS staff, including Chris Weis, Ph.D. who presented a keynote address, participated in the **International Symposium on Alternatives Assessment**, on Mar 5-6 in Washington, DC. The field of alternatives assessment is built on the concept that before choosing a chemical for any purpose— whether a cleaning agent, pesticide, laboratory chemical, or other compound—people should consider whether they actually need to use the chemical at all, and if so, whether there may be a safer alternative. The Lowell Center for Sustainable Production at the University of Massachusetts organized the event, assisted by April Bennett of the NIEHS Office of the Director. NIEHS was a co-sponsor, along with the U.S. Environmental Protection Agency and ToxServices LLC, a scientific consulting firm. **SP Goals 1, 7.**

An NIEHS symposium on March 18-19, **Population-Based Rodent Resources for Environmental Health Sciences**, addressed ways that traditional and newer strains, or models, of laboratory mice can accurately reflect human disease. One group of mouse strains discussed, called Collaborative Cross, was developed to mimic the variable genetic backgrounds in the human population. When tested with Ebola, for instance, the distribution of responses in some of the CC mice was much closer to that seen in humans than was found in tests on traditional strains. Other models highlighted include preclinical models used to replicate human illness that may reduce the cost of developing medicines and a hybrid mouse that helped to elucidate why clinical trial participants taking acetaminophen developed signs of liver injury. **SP Goals 1, 3.**

**NIEHS Centers for Nanotechnology Health Implications Research Consortium (NCNHIR)** Grantee Meeting was held at the RTI headquarters on May 6-7. This was the final meeting of the consortium, which was established in 2010 to support efforts to understand how physical and chemical characteristics of engineered nanomaterials (ENMs) influence their interactions with biological systems and how these effects impact human health. The NCNHIR Consortium is an interdisciplinary program consists of 5 U19 and 3 U01 Cooperative Centers, along with other active grantees funded through Nanotechnology Environmental Health and Safety (Nano-EHS) program. This meeting focused on the overall achievements of the consortium with investigators presenting how their efforts on silver-, and MWCNT-effects across diverse cell and animal models led to a comprehensive toxicity database that was used by computational modelers within the consortium. **SP Goals 1, 3.**

On May 28-29, the NIEHS-supported NAS Standing Committee on Emerging Science for Environmental Health Decisions held a workshop on **Metabolomics As a Tool for Characterizing the Exposome**. Metabolomics—the study of the chemical fingerprints that cellular processes leave behind—is emerging as an important way to characterize exposure. Presentations and panel discussions focused on issues such as developing a vision for using metabolomics to characterize human exposures to environmental stressors, technical obstacles and opportunities for collecting metabolomics data, and turning metabolomics data into usable, databased information. **SP Goals 1, 3.**

### **Upcoming Meetings and Events**

- Climate Justice meeting, NIEHS, June 8-9
- Workshop on new approaches for detecting environmentally-induced DNA damage and mutation, NIEHS, June 11-12
- Elucidating Gene-Environment Interactions in Neurological Disorders and Disease, UC-Davis, CA, June 17-19
- Targeting Environmental and Neurodevelopmental Risks (TENDR) Workshop, DC, June 23-24
- Virtual Forum on Near-Roadway Pollution & Health, online, July 10
- Epidemiological Analysis of Exposure to Chemical Mixtures Workshop, NIEHS, July 13-14
- Safer Chemicals through Better Data, EPA in RTP, July 14-15

### **Awards and Recognition**

#### ***NIEHS Awardees***

- Jennifer Martinez, Ph.D., joined NIEHS this spring to head the Inflammation and Autoimmunity Group in the NIEHS Immunity, Inflammation, and Disease Laboratory.
- Shaun Halloran joined NIEHS on the staff of *Environmental Health Perspectives* as Operations Manager. Shaun has over 14 years of experience in the scientific publishing world as a publisher, a compositor, a manager, and a consultant, focusing on both production and publishing technology.
- Mary Gant, NIEHS Legislative Liaison in the Office of the Director, is retiring from federal service.
- NIEHS was awarded the NIH 2015 Ethics Program Innovation Award in Recognition of Innovative Ethics Education and Communication Practices. The Institute's annual Ethics Day will be held June 4.
- Dale Sandler, Ph.D., head of the NIEHS Epidemiology Branch, is the recipient of a Dr. Nathan Davis Award for Outstanding Government Service from the American Medical Association.
- Xiaoling Li, Ph.D., a researcher in the Signal Transduction Laboratory, has received tenure from NIH.
- New Outstanding New Environmental Scientist (ONES) awardees:

- [Neel Aluru, Ph.D.](#), at Woods Hole Oceanographic Institution in Massachusetts, will use zebrafish models to study how early-life exposures to toxic chemicals may lead to developmental disabilities.
- [Kara Bernstein, Ph.D.](#), at the University of Pittsburgh, will study how errors in DNA repair lead to tumor growth, and how at-risk individuals may be more sensitive to DNA damage.
- [Samir Kelada, Ph.D.](#), at the University of North Carolina at Chapel Hill, will use innovative approaches to identify genes and pathways that play a role in the effect of ozone on asthma.
- [Kun Lu, Ph.D.](#), at the University of Georgia, will study the interaction between the gut microbiome and arsenic, a widespread environmental pollutant and known human carcinogen.
- [William Mack, M.D.](#), at the University of Southern California, will research how particulate matter exposure can be toxic to blood vessels in the brain, and identify risks to cognitive health in vulnerable populations.
- [Dana Miller, Ph.D.](#), at the University of Washington, will explore the long-term effects of toxic substances on basic physiology.
- David Miller, Ph.D., received a 3-year grant to improve therapeutic drug delivery for treating amyotrophic lateral sclerosis (ALS) from TargetALS. The grant will provide Miller with support for research into how the central nervous system (CNS) becomes drug resistant during the progression of ALS.
- NIEHS postdoctoral fellow Erin Quist, D.V.M., was this year's recipient of the Roger O. McClellan Student Award. Quist is an Intramural Research and Training Award fellow in the National Toxicology Program (NTP) Reproductive Endocrinology Group, led by Sue Fenton, Ph.D., and the NTP Pathology Group headed by David Malarkey, D.V.M., Ph.D.
- NIEHS trainee Shannon Farris, Ph.D., completed her year as a 2014 Society for Neuroscience Early Career Policy Fellow, and in February, she began a year of mentoring 2015 fellows. Farris, an Intramural Research and Training Award fellow in the NIEHS Neurobiology Laboratory is the first NIEHS fellow to receive this opportunity.
- Joyce Goldstein, Ph.D., Systemic Biology Branch and Signal Transduction Lab, has been named an NIH Scientist Emeritus.
- Pierre Bushel, Ph.D., was honored at the Massachusetts State House on April 23 with the Distinguished Alumni Award from the University of Massachusetts at Amherst for his substantial influence in the field of toxicogenomics.
- Michael Fessler, M.D., was elected to the American Society for Clinical Investigation. Fessler is deputy chief of the NIEHS Immunity, Inflammation, and Disease Laboratory and heads the Clinical Investigation of Host Defense Group
- Scientific Director Darryl Zeldin, M.D., was inducted into the Association of American Physicians.

### ***Grantees/Others***

- University of Arizona (UA) Superfund Research Program (SRP) graduate student Corin Hammond, Ph.D. is the winner of the 2015 Karen Wetterhahn Memorial Award. Hammond and colleagues are experimenting with using native plants as an easy, cost effective, and sustainable method of stabilizing arsenic in mine waste
- Frederica Perera, Ph.D., Columbia University Mailman School of Public Health and director of the Columbia Center for Children’s Environmental Health, was the recipient of the 2015 Heinz Environment Award. In giving her the award, the Heinz Family Foundation called Perera “a tireless champion of children’s health whose research has revealed how prenatal and childhood exposures to common environmental toxicants can cause neurodevelopmental problems, cancer, and other diseases.”
- Julian Schroeder, Ph.D., co-director of UC San Diego Center for Food and Fuel for the 21st Century and SRP grantee, was elected to the National Academy of Sciences.
- The NIEHS-funded Environmental Resource Program (ERP) at the University of North Carolina at Chapel Hill (UNC) was honored for its partnerships with North Carolina organizations and its project to communicate fish consumption advisories to people who may eat fish caught in contaminated waterways. The program was presented with the 2015 UNC Office of the Provost Engaged Scholarship Award for Engaged Partnership on April 7 and accepted by ERP Director Kathleen Gray.