

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

14-15, 2013

Director's Message

Strategic Planning Implementation

Planning is underway to implement the new NIEHS Strategic Plan. NIEHS leadership received reports in February from eight cross-divisional implementation planning teams, which they have been actively reviewing and discussing. The eight cross-divisional topics include Epigenetics, Inflammation, Stem Cells, the Exposome, Predictive Toxicology and Disease, Global Environmental Health, Knowledge Science and Data Management, and Website/Social Media. In addition, intra-divisional implementation planning is also underway with divisions examining their research and activities plans in connection with the goals articulated in the new Strategic Plan.

White House Women and Environment Summit

On March 21, Dr. Birnbaum participated in a panel at the 2013 White House Summit on Women and the Environment in Washington, DC. More than 100 women leaders in science, technology, engineering, and mathematics (STEM) fields gathered at the Executive Office Building to discuss the role of women in the environment.

Autism Centers of Excellence

The National Institutes of Health has announced grant awards of \$100 million over five years to continue the [Autism Centers of Excellence \(ACE\)](#) research program, which the NIEHS helps to support. The ACE program allows NIH institutes to leverage their resources to support the large collaborative efforts needed to advance the broad research goals of the [Interagency Coordinating Committee Strategic Plan for Autism Spectrum Disorders research](#). NIEHS is providing cofunding for an ACE award that was initiated in 2012.

NanoGo

In 2009, NIEHS awarded 13 two-year grants with \$13 million from the American Recovery and Reinvestment Act to advance research on the health impacts of ENMs. Ten grants were awarded through the NIH Grand Opportunities program and three were funded through the NIH Challenge Grants program. The primary goal of this investment was to develop reliable, reproducible methods to assess exposure and biological response to nanomaterials. To advance their shared goal, the grantees were brought together to form the Engineered Nanomaterials Grand Opportunity (Nano GO) consortium. Within the framework of the consortium, grantees designed and conducted a series of "round robin" experiments in which similar or identical methods were used to perform *in vitro* and *in vivo* tests on the toxicity of selected nanomaterials concurrently at their 13 different laboratories. The consortium quickly became an active hub of communication. Four in-person meetings, combined with conference calls held at least bimonthly, have allowed consortium members to work closely together to share experiences and results, identify problems, and refine

methods and protocols as the tests proceeded. These experiments and their results have now been published.

Staffing

The search committee for NIEHS Clinical Director has met and screened the applications, and sent its recommendations to the Scientific Director for his further consideration. The position announcement for Chief Information Officer, NIEHS, was released on May 6.

Special Visitors

NIEHS has hosted a series of special visitors over the past few months. These visits are part of continuing efforts by NIEHS to increase awareness of the Institute’s mission and work, and to look for potential areas of collaboration.

- National Institute of Neurological Disorders and Stroke (NINDS) Director Story Landis, Ph.D., was at NIEHS on January 17 and spoke on “Managing in Difficult Times: The NINDS Experience.”
- At the January 25 NIEHS observance of Dr. Martin Luther King Jr. Day, Griffin Rodgers, M.D., director of the National Institute of Diabetes and Digestive and Kidney Diseases, spoke on obesity, kidney, and metabolic disease research.
- On April 23, Gina McCarthy, PhD, Assistant Administrator and Janet McCabe, PhD, Deputy Assistant Administrator of the Office of Air and Radiation, US EPA, respectively, paid a visit to the NIEHS and met with Leadership. Dr. McCarthy is President Obama’s nominee to be the next Administrator of the EPA.
- On April 19, NIEHS scientists were on the visitor side of a meeting at the Bill and Melinda Gates Foundation in Seattle, Washington. NIEHS Director Linda Birnbaum, PhD, and Senior Advisor for Public Health John Balbus, MD, MPH, met with foundation staff and identified several areas for potential collaboration, including cookstoves and aflatoxins.

Legislative and Budget Report

	FY 2011 Appropriation	FY 2012 Appropriation	FY2013 Enacted Level**	FY 2014 President’s Request
NIEHS	\$ 683,724,312	\$ 685,570,818	\$ 649,788,725	\$ 691,348,000
NIH	\$30,688,286,000	\$30,631,986,000	\$29,098,665,708	\$31,093,776,000
Common Fund	\$ 543,021,000	\$ 544,930,000	\$ 516,488,518	\$ 572,948,000

Superfund*	\$ 79,053,576	\$ 78,927,514	\$ 74,808,039	\$ 79,411,000
NIEHS/DOE Training	\$ 10,000,000	\$ 10,000,000	\$ 9,230,000	

FY 2013/FY 2014 Appropriations

In March, the Congress passed a Continuing Resolution that funds the federal agencies through 30 September 2013. It included appropriations bills for Defense, Military Construction-Veterans Affairs, Commerce-Justice-Science, Homeland Security, and Agriculture. Most HHS discretionary programs were funded at their FY 2012 levels with NIH receiving an increase of about \$70,000,000. The bill did not provide any relief from the sequestration of 7.8 % applied to defense programs and 5.0 % applied to nonexempt, nondefense discretionary funding. [See attached table.]

On 15 May 2013, Dr. Francis Collins, NIH Director will testify before the Senate Labor, HHS, Education Appropriations Subcommittee chaired by Tom Harkin (D-IA) about the **President’s FY2014 Budget**. Drs. Harold Varmus, NCI Director, Anthony Fauci, NIAID Director, Gary Gibbons, NHLBI Director, Story Landis, NINDS Director, and Richard Hodes, NIA Director will accompany him.

Hearings and Briefings

On 5 March 2013, Representative Jack Kingston, (R-GA) Chairman of the House Labor, HHS Appropriations Subcommittee, held a hearing on **Public Health and Research**. Francis Collins, NIH Director; Tom Frieden, CDC Director; Patrick Conway, CMS Medical Officer; Carolyn Clancy, AHRQ Director; and Mary Wakefield, HRSA Administrator, testified. All Subcommittee members plus Representative Nita Lowey, Ranking Member of the full Committee attended. Each witness provided a three-minute statement on his/her agency research activities. Even though this hearing was less contentious than some in recent years, it reflected a very changed view of federal health research. Republican members asked about duplication of activities and provided no hint of any interest in increasing funding for any of the agencies. Democratic members asked about the impact of sequestration and were supportive of the activities of all five agencies.

On 28 March 2013, Linda Birnbaum briefed Colin Vickery, Republican staff for the House Interior, Environment, and Related Agencies Appropriations Subcommittee, on the **NIEHS Superfund Programs**. Vickery opened the briefing with harsh news of an 18 % cut in the House passed FY 2014 Budget Resolution for the Subcommittee’s programs. He asked if we had plans for the sequestration reduction in funding, how many staff work on Superfund and to whom they report. He asked about the FY 2013 House Report language on charging participants in the NIEHS Superfund Worker Training Program a fee. At the conclusion of the briefing he said, “You are doing a great job.”

The House Committee on Science, Space, and Technology Subcommittees on Energy and Environment held a hearing on 26 April 2013 entitled **Review of Federal Hydraulic Fracturing Research Activities**. The purpose of the hearing was to review agencies’ hydraulic fracturing related efforts, with a primary focus on examining progress under Executive Order 13605 on *Supporting Safe and Responsible Development of Unconventional Domestic Natural Gas Resources* and the

associated interagency Memorandum of Understanding and steering committee. HHS was invited to testify along with EPA, DOE, and USGS. Dr. Robin Ikeda, CDC Director of the Office of Noncommunicable Diseases, Injury and Environmental Health, testified for HHS. NIEHS contributed information on its related efforts for her testimony.

On 28 February 2013, the NIEHS Friends sponsored a briefing on **women's environmental health** hosted by Representatives Nita Lowey (D-NY) and Lois Capps (D-CA). Capps opened the briefing with a strong endorsement of support for environmental health research. Linda Birnbaum (NIEHS) presented an overview of NIEHS research and accomplishments. Diane Gold (Harvard) talked about the impact of environmental exposures on respiratory function in women and their children. Cheryl Walker (Texas A&M) talked about studies on the effect of early life exposures to health later in life. Over sixty congressional staff and NGO staff attended.

NIEHS Senior Advisor for Public Health John Balbus, MD, MPH, was one of four scientists who spoke at a Senate Briefing on the **Latest Climate Science** convened by Senator Barbara Boxer (D-CA) and the U.S. Senate Committee on Environment and Public Works on February 13.

Federal Advisory Committee Act

On 20 March 2013, the House Committee on Oversight and Government Reform ordered reported HR 1104, the Federal Advisory Committee Act Amendments of 2013. The bill requires that all appointments to advisory committees be made without regard to political affiliation or political activity. It extends all of the FACA requirements (except charters) to working groups; it allows the public to make recommendations for committee members; it requires that advisory committee members be designated as a "special government employee" or "a representative"; it curtails the ability of contractors to create FACA-type committees; and it expands transparency requirements, for example, who nominated each member and why he/she was appointed. Each committee would be required to include a statement describing the process used in formulating its advice and recommendations.

Relevant Bills Introduced

NIEHS is mentioned in HR 526, the Appalachian Communities Health Emergency Act, introduced by John Yarmouth (D-KY) and Louise Slaughter (D-NY). A one-time fee on coal mine operators who engage in mountaintop removal would pay for research to be conducted by NIEHS in consultation with other federal agencies to study the practice's effects on the health of coalfield residents.

Senator Tom Udall (D-NM) has just introduced S 773 to amend the Radiation Exposure Compensation Act to expand compensation for people living downwind from atomic weapons tests and for people who worked in uranium mines or mills after 1971. In addition, the bill directs the HHS Secretary, through NIEHS, to establish a program of grants to institutions of higher education to study the epidemiological impacts of uranium mining and milling among non-occupationally exposed individuals, including family members of uranium miners and millers.

Representative Mike Honda (D-CA) has introduced HR 394, the Nanotechnology Advancement and New Opportunities Act. The bill requires the HHS Secretary to establish a grant program for nanotechnology research to address the health-related applications of nanotechnology.

Representative John Culberson (R-TX) has introduced HR 504, a bill that would save at least \$10 billion by consolidating duplicative and overlapping government programs identified in two recent

GAO reports.

Representative Michael Burgess (R-TX) has introduced HR 642 that limits hiring Title 42 employees to HHS.

Representatives Michael Doyle (D-PA) and John Cornyn (R-TX) have introduced companion bills that require federal agencies to develop public access policies regarding research supported by the agency.

Senator Frank Lautenberg (D-NJ) has introduced a new version of his Safe Chemicals Act to revise the current Toxic Substances Control Act. This bill includes a provision that would duplicate at EPA the work done by the NIEHS Interagency Coordinating Committee on the Validation of Alternative Methods and the NIEHS research on developing alternative methods.

Science Advances

One NIEHS (NIEHS authors' groups in parens):

- **Bisphenol A affects androgen receptor function via multiple mechanisms** Teng C (DNTP), B Goodwin, K Shockley (DIR), M Xia, R Huang, J Norris, BA Merrick (DNTP), AM Jetten (DIR), CP Austin and RR Tice (DNTP) *Chem. Biol. Interact.* (2013) [InPress]
<http://dx.doi.org/10.1016/j.cbi.2013.03.013>

OD:

- **Phthalate concentrations and dietary exposure from food purchased in New York state.** Schecter A, M Lorber, Y Guo, Q Wu, SH Yun, K Kannan, M Hommel, N Imran, LS Hynan, D Cheng, JA Colacino and LS Birnbaum [Journal Article] *Environ. Health Perspect.* (2013) v. 121 (4): pp. 473-479.
<http://dx.doi.org/10.1289/ehp.1206367>

DERT:

- **The effect of misunderstanding the chemical properties of environmental contaminants on exposure beliefs: A case involving dioxins.** [Zikmund-Fisher BJ](#), [Turkelson A](#), [Franzblau A](#), [Diebol JK](#), [Allerton LA](#), [Parker EA](#). 2013 *Sci Total Environ* 447:293-300.
<http://www.ncbi.nlm.nih.gov/pubmed/23391895>
- **Ultrasensitive on-chip immunoassays with a nanoparticle-assembled photonic crystal** [Han JH, L Sudheendra, HJ Kim, SJ Gee, BD Hammock and IM Kennedy. *ACS nano* (2012) v. 6 (10): pp. 8570-82
<http://dx.doi.org/10.1021/nn301656c>
- **Economic benefits of methylmercury exposure control in Europe: Monetary value of neurotoxicity prevention.** [Bellanger M](#), [Pichery C](#), [Aerts D](#), [Berghlund M](#), [Castano A](#), [Cejchanova M](#), [Crettaz P](#), [Davidson F](#), [Esteban M](#), [Exley K](#), [Fischer ME](#), [Gurzau AE](#), [Halzlova K](#), [Katsonouri A](#), [Knudsen LE](#), [Kolossa-Gehring M](#), [Koppen G](#), [Ligoocka D](#), [Miklavcic A](#), [Reis MF](#), [Rudnai P](#), [Tratnik JS](#), [Weihe P](#), [Budtz-Jorgensen E](#), [Grandjean P](#). 2013. *Environ Health*; doi:10.1186/1476-069X-12-3
<http://www.ncbi.nlm.nih.gov/pubmed/23289875>

- **The broad scope of health effects from chronic arsenic exposure: Update on a worldwide public health problem** Naujokas MF, B Anderson, H Ahsan, H Vasken Aposhian, JH Graziano, C Thompson and WA Suk. *Environ. Health Perspect* (2013) v. 121 (3): pp. 295-302.
<http://dx.doi.org/10.1289/ehp.1205875>
- **Traffic-related air pollution, particulate matter, and autism.** Volk HE, F Lurmann, B Penfold, I Hertz-Picciotto and R. McConnell *JAMA psychiatry* (2013) v. 70 (1): pp. 71-7.
<http://dx.doi.org/10.1001/jamapsychiatry.2013.266>
- **Prenatal exposure to mercury and fish consumption during pregnancy and attentiondeficit/hyperactivity disorder-related behavior in children.** Sagiv SK, SW Thurston, DC Bellinger, C Amarasiriwardena and SA Korrick. *Arch. Pediatr. Adolesc. Med.* (2012) v. 166 (12): pp. 1123-31
<http://dx.doi.org/10.1001/archpediatrics.2012.1286>

DIR:

- **Epigenome-wide Association Study of Breast Cancer Using Prospectively Collected Sister Study Samples** Xu Z, SC Bolick, LA Deroo, CR Weinberg, DP Sandler and JA Taylor. *J. Natl. Cancer Inst.* (2013)
<http://dx.doi.org/10.1093/jnci/djt045>
- **Vitamin D and the Risk of Uterine Fibroids** Baird DD, MC Hill, JM Schectman and BW Hollis *Epidemiology* (2013) 24
<http://www.ncbi.nlm.nih.gov/pubmed/23493030>
- **CD44 Plays a Critical Role in Regulating Diet-Induced Adipose Inflammation, Hepatic Steatosis, and Insulin Resistance** Kang HS, G Liao, LM DeGraff, K Gerrish, CD Bortner, S Garantziotis and AM Jetten. *PLoS One* (2013) v. 8 (3)
<http://dx.doi.org/10.1371/journal.pone.0058417>
- **Genome-Wide Joint Meta-Analysis of SNP and SNP-by-Smoking Interaction Identifies Novel Loci for Pulmonary Function.** Hancock DB, Artigas MS, Gharib SA, Henry A, Manichaikul A, Ramasamy A, Loth DW, Imboden M, Koch B, McArdle WL, Smith AV, Smolonska J, Sood A, Tang W, Wilk JB, Zhai G, Zhao JH, Aschard H, Burkart KM, Curjuric I, Eijgelsheim M, Elliott P, Gu X, Harris TB, Janson C, Homuth G, Hysi PG, Liu JZ, Loehr LR, Lohman K, Loos RJ, Manning AK, Marcianti KD, Obeidat M, Postma DS, Aldrich MC, Brusselle GG, Chen TH, Eiriksdottir G, Franceschini N, Heinrich J, Rotter JI, Wijmenga C, Williams OD, Bentley AR, Hofman A, Laurie CC, Lumley T, Morrison AC, Joubert BR, Rivadeneira F, Couper DJ, Kritchevsky SB, Liu Y, Wjst M, Wain LV, Vonk JM, Uitterlinden AG, Rochat T, Rich SS, Psaty BM, O'Connor GT, North KE, Mirel DB, Meibohm B, Launer LJ, Khaw KT, Hartikainen AL, Hammond CJ, Gläser S, Marchini J, Kraft P, Wareham NJ, Völzke H, Stricker BH, Spector TD, Probst-Hensch NM, Jarvis D, Jarvelin MR, Heckbert SR, Gudnason V, Boezen HM, Barr RG, Cassano PA, Strachan DP, Fornage M, Hall IP, Dupuis J, Tobin MD, London SJ. *PLoS Genet.* 2012;8(12):e1003098. doi: 10.1371/journal.pgen.1003098. Epub 2012 Dec 20.
<http://www.plosgenetics.org/article/info%3Adoi%2F10.1371%2Fjournal.pgen.1003098>

DNTP:

- ***The toxicity and pathology of selected dietary herbal medicines*** Dunnick JK and A Nyska. *Toxicol. Pathol.* (2013) v. 41 (2): pp. 374-386
<http://dx.doi.org/10.1177/0192623312466451>
- ***Perspectives on Validation of High-Throughput Assays Supporting 21st Century Toxicity Testing*** Judson R, R Kavlock, M Martin, D Reif, K Houck, T Knudsen, A Richard, RR Tice, M Whelan, MH Xia, RL Huang, C Austin, G Daston, T Hartung, JR Fowle, W Wooge, WD Tong and D Dix . *Altex-Alternatives to Animal Experimentation* (2013) v. 30 (1): pp. 51-66
http://www.altex.ch/resources/altex_2013_1_051_066_Judson21.pdf

NIEHS News and Highlights

Data and Technology

Big Data. On March 29, NIH Chief Information Officer Andrea Norris visited the Institute and presented a seminar on NIH Big Data Initiatives. Among these were the NIH BD2K, or Big Data to Knowledge Initiative, that was described in the February NIEHS Director's Report to Council.

National Consortium for Data Science. NIEHS is a federal partner in a new collaboration called the National Consortium for Data Science (NCDS). The consortium aims to address the challenges related to collecting, sharing and using large, diverse data collections, or big data. NCDS founding members include industry leaders, major research universities, and nonprofit and government organizations. Representing the private sector are Cisco, GE, IBM, NetApp and SAS. UNC Chapel Hill, RENCI, North Carolina State University, UNC Charlotte, UNC General Administration, Duke University and Drexel University comprise the founding academic members. Nonprofit and government sector members are The Hamner Institutes for Health Sciences, Microelectronics Center of North Carolina (MCNC), the National Institute of Environmental Health Sciences, RTI International, and the U.S. Environmental Protection Agency.

On April 23-24, the first NCDS Leadership Summit was convened in Chapel Hill. Each year, the summit will focus on data issues in a specific field. The 2013 summit, "Data to Discovery: Genomes to Health," brought together genomic and data scientists to draft recommendations on how to translate genomic data into better, more affordable healthcare. Eric Green, PhD, Director of the National Human Genome Research Institute, was the keynote speaker at this event. Another goal of the NCDS is to launch a Data Fellows program to provide internships for students at member companies and agencies, as well as visiting scientist positions at member universities for industry employees.

NTP Systematic Review. The NTP Office of Health and Translation held a webinar on April 23 to provide information on the new NTP Systematic Review process for identifying non-cancer environmental endpoints through literature-based assessments, and to receive comments on the success of this process as used in a case study on assessment of data quality in animal studies. The NTP will use this feedback to further refine this review methodology.

NIEHS Funding Widget. The NIEHS Funding Widget is a new web-based tool that allows public and university websites to display a list of NIEHS's latest grant opportunities and other grant resources

on their websites. It is available at http://www.niehs.nih.gov/research/supported/get_widget/index.cfm.

NIEHS Facebook. During the final week of March, NIEHS marked a social media milestone, as the number of its Facebook likes exceeded 1,000 for the first time.

Climate Change and Human Health

Metadata Access Tool for Climate and Health (MATCH). The Metadata Access Tool for Climate and Health (MATCH) assembles metadata (standardized information about data sets) from thousands of data sets from six federal agencies (NOAA, NASA, CDC, EPA, USGS, and US Army Corps of Engineers), and offers a single online access point to search data sets relevant to climate and health. Users can search by geographic region, health outcome, or keyword. For example, public health researchers and practitioners can use MATCH to find climate and environmental data more easily, and climate and environmental scientists now have a place to help them identify relevant health data. MATCH was developed by the NIEHS-led Interagency Cross-Cutting Group on Climate Change and Human Health, part of the US Global Change Research Program, and was released on May 9 in conjunction with the Federal Open Data initiative.

HHS Climate Change Adaptation Strategy. NIEHS is working closely with the HHS Chief Sustainability Officer to develop the HHS Climate Change Adaptation Strategy by providing subject matter expertise and project ideas to assist other HHS divisions in understanding vulnerabilities and increasing resilience for climate change impacts. Briefings are planned for HHS Secretary Kathleen Sebelius.

Consortium of Universities for Global Health (CUGH). NIEHS organized a session for the 4th Annual Conference of the CUGH in March titled: Climate Change and Global Health: Using Science to Protect Populations. NIEHS-sponsored panelists included: Rao Aiyagari, Scientific Advisor, Department of Science and Technology, India; Pamela Anderson, Director General, International Potato Center in Lima, Peru; and Gueladio Cisse, Senior Scientist, Tropical and Public Health Institute (Swiss TPH), working in Cote D'Ivoire and Burkina Faso. NIH Director Francis Collins, as well as several other NIH IC directors also participated in the conference.

Outreach and Community Forums

NIEHS Director Visits Indian Country. In March, Dr. Birnbaum paid a visit to Indian Country in New Mexico, accompanied by University of New Mexico (UNM) grantee Johnnye Lewis, where she toured abandoned uranium mines and met with Laguna Pueblo and Navajo leaders about their environmental health concerns. She also spent a day at UNM meeting with grantees and students from both UNM and the Lovelace Respiratory Research Institute.

Seattle Community Forum. On April 18, Dr. Birnbaum conducted a community forum on health impacts of pollution titled Seattle Waterways & Your Health: Duwamish River Cleanup, organized with the University of Washington. The Port of Seattle, Boeing, and other industries are located on the Duwamish, Seattle's working river. The Duwamish Superfund site, a 5.5-mile stretch of the river that flows into Elliott Bay, is one of the most polluted places in the United States. The diverse, historic Georgetown and South Park neighborhoods along the Duwamish are home to a disproportionate number of low-income, Hispanic, and recent immigrant residents. The river is also part of the traditional fishing grounds of three Northwest Tribes. The EPA released its proposed

cleanup plan for the site on February 28, 2013. This timely forum took place during the 90-day public comment period on EPA's proposed plan.

Detroit Community Forum. On June 18, Dr. Birnbaum will conduct a community forum in Detroit, co-organized by the NIEHS Center at the University of Michigan. The forum will focus particularly on air pollution. Detroit, and Southeast Michigan more broadly, have historically had levels of air pollution that exceed NAAQS standards, and residents experience excess risks of asthma, cardiovascular disease and preterm delivery—all health conditions linked with air pollution.

Training and Science Education

Keep the Thread Program. NIEHS scientists may participate in a new three-year pilot program to increase flexibility for NIH intramural fellows who need alternative career development schedules. The goal of the program, launched by the Women in Biomedical Careers Committee of the NIH Intramural Research Program is to encourage trainees to stay connected to the NIH community during times of intense personal or caregiving needs such as the birth of a child or care of a family member, in order to facilitate eventual re-entry into full-time research.

Health Literacy. NIEHS is participating in the NIH reissuance of a Funding Opportunity Announcement (R01, R03, R21) on Understanding and Promoting Health Literacy. The Purpose of the announcement, reissued on March 1, is to encourage empirical research on health literacy concepts, theory, and interventions as these relate to the U.S. Department of Health and Human Services' public health priorities outlined in the Healthy People initiative. Health literacy is defined as the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions.

NIEHS Scholars Connect. NIEHS Scholars Connect is an undergraduate internship program at NIEHS designed to foster the development of students who belong to minority groups traditionally underrepresented in science, technology, engineering, and math (STEM) careers. The second cohort of scholars is nearing completion of the semester-long program in which students spend up to 20 hours on research-related activities each week as paid interns while they continue their academic programs. Research-related activities include laboratory work mentored by lead researchers, scientists, and postdoctoral fellows, along with literature reviews, participation in lab meetings, and attendance at research workshops and seminars.

NIEHS Biomedical Career Fair. The 16th annual NIEHS biomedical career fair was held on April 26. The fair is held in conjunction with EPA, and includes workshops and panel sessions designed to give young scientists the skills and connections they need for career satisfaction and success. This year's fair included panels focused on non-traditional, non-bench careers in areas such as science policy, public health, heading up a lab, and education.

Meetings and Events

Questions about funding were high on the list of queries for Dr. Birnbaum at a Meet the Director symposium held on March 11 at the **Society of Toxicology** Annual Meeting in San Antonio, Texas. Dr. Birnbaum updated participants on the potential effects of sequestration, which results in a >5% cut in NIEHS funding, on the paylines of grants. Due to budget constraints, the NIEHS presence was smaller than in years past, however, Institute scientists still gave many presentations on the state of

the science of environmental toxicology, as well as met with present and potential grantees. NIEHS, NTP, and EHP jointly exhibited for the Institute.

Representatives of the 49 funded **T32 Training Grant Directors** met at NIEHS on March 27 to share information on their programs and approaches. The meeting, organized by Carol Shreffler, PhD, focused on the NIEHS strategic plan, particularly Strategic Goal 9: Inspire a diverse and well trained cadre of scientists to move our transformative environmental health sciences forward; train the next generation of EHS leaders from a wider range of scientific disciplines and diverse backgrounds. A more detailed report is included in the Council Book.

NIEHS co-sponsored the **Sixth International Symposium on Flame Retardants** on April 7-10 in San Francisco. NIEHS Director Linda Birnbaum, PhD, presented an overview of the prevalence and toxicity of flame retardants, as well as described methods to measure compounds and identify their toxicity, during a plenary lecture, NIEHS SRP grantees Heather Stapleton, Ph.D., from Duke University, and Thomas Webster, D.Sc., from Boston University, were members of the national organizing committee.

A two-day symposium on April 11-12, **Unlocking the Promise of Stem Cells**, brought prominent experts in stem cell research, an area of strategic interest to NIEHS, to the Institute. The symposium featured world-renowned experts in the areas of embryonic and adult stem cells, cellular reprogramming and differentiation, and epigenetics. NIEHS intramural researchers Raja Jothi, PhD. and Guang Hu, PhD., organized the symposium to help inform scientists who have begun to use stem cells to address clinical and environmental questions.

The **NIEHS Environmental Health Sciences Core Centers** annual meeting was held April 17-21 in Seattle, Washington. The meeting was hosted by the Center at the University of Washington and included a variety of panels and presentations, both by staff of the centers and NIEHS staff and scientists.

Upcoming Meetings and Events

- ONES (Outstanding New Environmental Scientist) Meeting, May 20-21, NIEHS
- International Meeting on Electronic Waste and Children, a joint meeting with the World Health Organization, June 10-12, Geneva
- The XIII International Congress of Toxicology, June 30-July 4, Seoul, South Korea; staff of the NTP will also meet with the South Korean NTP in conjunction with this event
- [Environmental Health Disparities & Environmental Justice Meeting: Identifying Priorities for Action](#), July 29-31, NIEHS
- 25th Conference of the International Society for Environmental Epidemiology: Environment and Health: Bridging South, North, East and West, August 19-23, Basel, Switzerland

Awards and Recognition

NIEHS

- Kathy Laber, DVM, will join NIEHS in June as Chief of the Comparative Medicine Branch, where she will act as attending veterinarian and animal program director. Laber is currently at the Medical University of South Carolina.
- The Society of Toxicology honored Bill Suk, PhD, Director of the NIEHS Superfund Research Program, with its 2013 Founders Award for outstanding

leadership in fostering the role of toxicological sciences in safety decision-making.

- William Ge, a high school summer intern in the laboratory of Michael Fessler, M.D., who leads the Clinical Investigation of Host Defense Group and the Environmental Innate Immunity Group, was one of just six NIH summer interns chosen as a semifinalist in the 2013 Intel Science Talent Search (STS), the nation's oldest and most prestigious precollege science competition. Ge is a student at the North Carolina School of Science and Mathematics.
- Yuanyuan (Laura) Xu, PhD, of the National Toxicology Program (NTP) Laboratory, was honored by the Society of Toxicology for best postdoctoral publication for her work related to arsenic, stem cells, and cancer. Xu is a third-year postdoctoral fellow in the NTP Inorganic Toxicology Group, led by Michael Waalkes.

NIEHS-related Awardees:

- Marti Lindsey, PhD, director of the community outreach and education core of the NIEHS-funded Southwest Environmental Health Sciences Center at the University of Arizona, was awarded the SOT Public Communications Award for her work with Native American populations.
- Carol Folt, Ph.D., a member of the NIEHS-funded Dartmouth Superfund Research Program, has been named chancellor-elect at the University of North Carolina at Chapel Hill
- Five NIEHS grantees were elected as fellows in the Biological Sciences and Pharmaceutical Sciences sections of the American Association for the Advancement of Science (AAAS) in February. They include:
 - Michael Aschner, PhD, a professor of pediatrics and pharmacology and Gray E. B. Stahlman Chair in Neurosciences at the Vanderbilt University School of Medicine whose work focuses on the role of astrocytes in brain physiology and pathology.
 - Richard S. Pollenz, PhD, professor, associate dean for undergraduate studies, and director of the Office for Undergraduate Research at the University of South Florida who has developed innovative strategies to enhance undergraduate research.
 - Alvaro Puga, PhD, professor in the University of Cincinnati (UC) College of Medicine's top-ranked environmental health department and an associate director for the UC Center for Environmental Genetics, a pioneer in the use of molecular biology to study the biological responses to toxic insult.
 - Michael Skinner, PhD, professor in the School of Biological Sciences at Washington State University, for contributions to mammalian reproduction and environmental epigenetics
 - John Stamatoyannopoulos, MD, associate professor of genome sciences and medicine at the University of Washington, for major contributions to the ENCODE project, an international effort to understand the regulatory elements of the human genome

News from Building 1 and HHS
NIH BRAIN Initiative

NIH has launched a new “Grand Challenge” to map the human brain, called Brain Research through Advancing Innovative Neurotechnologies, or BRAIN. President Obama had this to say about the project: “So there is this enormous mystery waiting to be unlocked, and the BRAIN Initiative will change that by giving scientists the tools they need to get a dynamic picture of the brain in action and better understand how we think and how we learn and how we remember. And that knowledge could be -- will be -- transformative.” The FY14 investment by three federal groups: NIH, DARPA, and NSF are \$110 million (\$40 million from NIH). An additional \$122 million will come from four private partners: The Allen Institute for Brain Science, the Howard Hughes Medical Institute, the Salk Institute for Biological Studies, and the Kavli Foundation. NIH is establishing a high-level working group to:

- Articulate the scientific goals
- Develop a multi-year scientific plan, including timetables, milestones, and cost estimates

The group was selected on the basis of expertise in:

- Experimental neuroscience
- Technology development
- Computation and theory
- Human neuroscience

The Working Group will:

- Seek input broadly from the scientific community, patient advocates, and the general public;
- Hold open meetings and workshops on specific topics as needed
- Deliver an interim report with an initial list of high-priority areas for FY14 funding in summer, 2013, and present its final report to the full ACD at its June, 2014 meeting.