

# Report to the National Advisory Environmental Health Sciences Council

Director, NIEHS

September 1, 2010

## **Director's Message**

NIEHS welcomes our National Advisory Environmental Health Sciences Council members. In the NIEHS Office of the Director, two new staff members have come on board since our last meeting. Dr. Ericka Reid has joined NIEHS as the director of Outreach and Education. She will work with staff across the Institute to coordinate our efforts in K-12 education, public outreach, and recruitment of minority staff and scientists. In the NIEHS Bethesda office, Dr. Christopher Weis, our new Toxicologist, is just entering on duty effective August 30. Dr. Weis will provide important liaison functions for NIEHS and NTP with other agencies and stakeholders on toxicology-related issues.

FY 2011 Appropriations – All three house Appropriations Subcommittees that have jurisdiction over funding for NIEHS have marked up their bills, but the full committee has not reported any of them. The House Interior & Environment Subcommittee provided \$ 81,763,000, the President's Request for the NIEHS Superfund Research and Worker Training Programs. Details from the Labor, HHS and Energy & Water Subcommittee markups will not be available until the full committee considers those bills.

The Senate Labor, HHS Subcommittee and full Committee mark for NIEHS is \$ 706,227,000, which is \$ 1,112,000 below the President's Request. The Senate Subcommittee Report urges NIEHS to enhance its research in the following areas:

- The effects of endocrine disrupting chemicals on women's health
- Exposures that may initiate or promote autoimmune diseases
- Exposures associated with risk from cosmetics and personal care products
- Exposures associated with increased time to pregnancy
- Intramural and extramural research related to the implementation of the NRC report, "Toxicity Testing in the 21<sup>st</sup> Century: A Vision and a Strategy" to create a new paradigm for risk assessment based on use of molecular biological methods in lieu of animal toxicity tests

The Senate Committee continues to support NIEHS leadership in the Genes and Environment Initiative and requests an update on the Sister Study.

The Senate Energy & Water Subcommittee Report states that \$10,000,000 is provided for the NIEHS/DOE Worker Training Program. The money is appropriated to DOE and transferred to NIEHS by an interagency agreement.

The Senate Interior & Environment Subcommittee has not marked up its bill. A table showing the current status of the NIEHS and NIH appropriations follows.

**National Institute of Environmental Health Sciences  
18 August 2010**

**FY 2009 - FY 2011**

	<b>FY 2009</b>	<b>FY 2009-2010</b>	<b>FY 2010</b>	<b>FY 2011</b>	<b>FY 2011</b>	<b>FY 2011</b>
	<b>Omnibus</b>	<b>Stimulus</b>	<b>Appropriation</b>	<b>President's Request</b>	<b>House Mark</b>	<b>Senate Mark</b>
<b>NIEHS<sup>1</sup></b>	<b>\$ 662,820,000</b>	<b>\$ 168,057,000</b>	<b>\$ 689,781,000</b>	<b>\$ 707,339,000</b>		<b>\$ 706,227,000</b>
<b>NIH<sup>1</sup></b>	<b>\$ 30,317,024,000</b>	<b>\$ 10,380,703,000</b>	<b>\$ 31,008,788,000</b>	<b>\$ 32,007,237,000</b>	<b>\$ 32,007,237,000</b>	<b>\$ 32,007,237,000</b>
<b>Common Fund<sup>1</sup></b>	<b>\$ 541,133,000</b>	<b>\$ 136,837,000</b>	<b>\$ 544,109,000</b>	<b>\$ 561,629,000</b>		<b>\$ 561,629,000</b>
<b>Superfund<sup>2</sup></b>	<b>\$ 78,074,000<sup>3</sup></b>	<b>\$ 19,297,000</b>	<b>\$ 79,212,000<sup>4</sup></b>	<b>\$ 81,763,000<sup>5</sup></b>	<b>\$ 81,763,000</b>	
<b>NIEHS/DOE Training<sup>6</sup></b>	<b>\$ 10,000,000</b>		<b>\$ 10,000,000</b>			<b>\$ 10,000,000</b>

<sup>1</sup>Funding authorized by the Public Health Service Act and falls under the jurisdiction of the Labor, HHS, ED and related Agencies Appropriations Subcommittees.

<sup>2</sup>Funding authorized by the Superfund Amendments and Reauthorization Act of 1986 and falls under the jurisdiction of the Interior, Environment and Related Agencies Appropriations Subcommittees.

<sup>3</sup>The FY 2009 Omnibus designated \$49,629,000 for NIEHS Superfund research and \$28,445,000 for NIEHS Superfund Worker Training.

<sup>4</sup>The FY 2010 President's Request included \$50,352,000 for NIEHS Superfund Research and \$28,860,000 for NIEHS Superfund Worker Training. The Conference Report made no change in these amounts.

<sup>5</sup>The FY 2011 President's Request includes \$51,974,000 for the NIEHS Superfund Research Program and \$29,789,000 for NIEHS Superfund Worker Training.

<sup>6</sup>The Department of Energy (DOE) is required by Congressional mandate to provide training to people who cleanup DOE sites. Rather than establish its own program, DOE transfers the funding to NIEHS to manage the DOE Worker Training Program. The Energy and Water Appropriations Subcommittees have jurisdiction. Funding for this program is not a separate line in the President's Request for DOE; it is designated in the House and Senate Reports.

Prepared by Mary Gant

Breast Cancer and Environment – NIEHS is moving ahead with the implementation of Public Law 110-354. As outlined in the law, a new advisory committee has been formed to develop and coordinate a strategic federal research agenda on environmental and genetic factors related to breast cancer. The 19-member Interagency Breast Cancer and Environmental Research Coordinating Committee (IBCERCC) was established by the NIEHS, in collaboration with the National Cancer Institute, to review all breast cancer research efforts conducted or supported by federal agencies. The group's initial meeting is scheduled for September 30-October 1, 2010.

The committee will develop recommendations for the secretary of the Department of Health and Human Services (HHS), NIH, and other federal agencies, to improve existing research programs related to breast cancer research. Additionally, the IBCERCC will create a comprehensive plan to expand opportunities for collaborative, multi-disciplinary research, and develop a summary of advances in federal breast cancer research. For more information, see the recent NIEHS press release at <http://www.niehs.nih.gov/news/releases/2010/breastcancer.cfm>.

Deepwater Horizon Oil Spill – NIEHS continues to be a part of the overall Federal response effort to the oil spill disaster in the Gulf of Mexico. The protection of human life is our number one priority. We must be sure those doing the work to repair the damage are kept safe. To date, approximately 100,000 people on the Gulf Coast have been trained by BP or its contractor using NIEHS/Worker Training Program (WTP) training materials. NIEHS has distributed more than 8,000 "Safety and Health Awareness for Oil Spill Cleanup Workers" guides to frontline responders, instructors, and safety officials.

At the request of HHS, the Institute of Medicine convened a workshop on the health impact of the Gulf oil spill (GOS) for Federal and state agencies and academic institutions, June 22-23 in New Orleans. Numerous NIEHS scientists participated, from the Office of the Director, WTP, Superfund Research Program, National Toxicology Program, and the Epidemiology Branch. The workshop focused on identifying populations most at risk, assembling current knowledge about health effects to exposure to oil, and discussing means of monitoring health effects.

NIEHS grantees at the Deep South Center for Environmental Justice at Dillard University in New Orleans were host to Sec. HHS Kathleen Sebelius on July 10 for a community roundtable. New Orleans Mayor Mitch Landrieu and U.S. Rep. Joseph Cao (R-LA) attended with worker training graduates, Vietnamese community fishers, and other community members. WTP Director Chip Hughes and his staff worked with the NIEHS communications office to coordinate the visit.

On June 15, Dr. Francis Collins announced an initial investment of \$10 million to support NIEHS research on potential health effects of the GOS. This funding is being used to support toxicology studies as well as follow-up of exposed people. NIEHS is gearing up to launch a health study of oil spill clean-up workers and volunteers in late fall. The Gulf Long-Term Follow-up Study (GuLF) is being designed by the NIEHS Epidemiology Branch under the leadership of Dr. Dale Sandler. Gulf cleanup workers and volunteers will be asked to participate, and their health histories and tissue and environmental samples will be collected. Researchers would like to monitor respiratory, immune, and neurobehavioral effects. Planning is still underway; the study scientists are reaching out for input through a series of webinars to outside scientists and other stakeholders. Dr. Collins has appointed Dr. Teri Manolio to provide overall coordination of NIH GOS activities with the other HHS and Federal agencies, and our scientists are working closely with her and with the other Federal partners on our GOS efforts.

NIEHS, through the National Toxicology Program (NTP), has completed important steps in identifying knowledge gaps relating to GOS exposures of concern. The NTP has reached out to key agency partners

to begin compiling common toxicology research needs. Initial research efforts are focused on chemical characterization of oil and dispersant samples provided by BP and Unified Area Command. The NTP has also offered to provide analytical chemistry support for NIOSH's planned short-term dermal and inhalation toxicology studies. By September 30, 2010, NIEHS will obligate funds to carry out comprehensive chemical analysis and characterization of GOS samples acquired to date. The output from these various chemistry analyses will guide the development and conduct of additional toxicological studies to identify important biological and tissue targets for GOS exposures of concern.

The NIEHS Division of Extramural Research and Training is developing a funding opportunity announcement for a consortium focusing on GOS health issues. We are currently soliciting interest from other IC's to partner with us on this effort.

Several congressional committees have held a series of hearings on the Gulf oil spill. In June, NIEHS was invited to testify before the Senate Health, Education, Labor, and Pensions (HELP) Committee and the House Energy and Commerce Subcommittee on Health on HHS action to address the health effects associated with the oil spill. Dr. Aubrey Miller, Senior Medical Advisor from our NIEHS Bethesda office, testified on NIEHS worker training activities in the Gulf region and on the state of the science regarding health effects and NIEHS leadership in various interagency activities. Questions from the members reflected their concerns about exposures to the workers, safety of seafood, the VOCs released by the oil, the use of dispersants, whether BP had provided any funding for agency activities, communication with the public about possible risks from exposure to oil and/or dispersants, coordination among various agencies, plans to deal with storms and hurricanes, and possibility of DNA damage from exposure. In addition, there were questions about BP's cooperation with the various agencies, its willingness to respond swiftly and thoroughly to claims and concerns, and the availability of long-term resources for people who suffer chronic health problems.

Autism – In early August, the Senate Environment & Public Works Subcommittee on Children's Health held a hearing on the role of environmental exposures in the development of autism and other neurodevelopmental disorders. Linda Birnbaum, Paul Anastas (EPA Assistant Administrator for Research & Development), Isaac Pessah (NIEHS grantee at UC Davis), Bruce Lanphear (NIEHS grantee at University of Cincinnati), and Mary Moen (parent of an autistic child) testified. Dr. Birnbaum and Dr. Anastas described in detail the research supported by their agencies. Dr. Pessah presented a scholarly description of the status of research on autism and talked about the need for additional research. Dr. Lanphear focused on other neurodevelopmental disorders. Ms. Moen made a compelling statement about the difficulty of getting a correct diagnosis and appropriate services for her son.

The members asked about mercury levels in children with and without autism; environmental exposures and autoimmune disease; autism incidence; funding for autism research; need for industry to provide more information about chemical products; the high rate of autism in the Somali community in Minnesota; other neurological conditions in which environmental factors play a role; impediments to getting services and treatments for ASD children; the UC Davis CHARGE study and its findings related to the immune system; the MARBLES study of pregnant women with an ASD child; higher rates of autism in boys; and areas of needed research.

Leadership Recruitments – NIEHS has moved forward with the recruitments for our leadership team. In July and August, the top candidates for the positions of Deputy Director and Director of the Division of Extramural Research and Training identified by the Search Committee underwent interviews at NIEHS and gave seminars. For both the Deputy Director and DERT Director positions, a selection has been

made, and the Office of Human Resources is moving the process through the next steps. The final appointment approval for both positions must be obtained from the Director, NIH, before they can be officially announced, but we hope to have them in place by sometime this fall.

For the Scientific Director, a selection was made but the candidate subsequently withdrew his name from consideration. Another candidate was interviewed by the Search Committee on August 25. In the meantime, Dr. John Pritchard, who has been the Acting Scientific Director for the past 18 months, will be returning to his well-earned retirement with the heartfelt gratitude of the entire Institute. Effective September 20, the duties of the Acting SD will be undertaken by Dr. David Miller, head of the Intracellular Regulation Group and Chief of the Laboratory of Toxicology and Pharmacology in the Division of Intramural Research.

### **Recent Science Advances** (NIEHS authors in **bold**)

Marcheva B, Ramsey KM, Buhr ED, Kobayashi Y, Su H, Ko CH, Ivanova G, Omura C, Mo S, Vitaterna MH, Lopez JP, Philipson LH, Bradfield CA, Crosby SD, JeBailey L, Wang X, Takahashi JS, Bass J. Disruption of the clock components CLOCK and BMAL1 leads to hypoinsulinaemia and diabetes. *Nature*. 2010 Jul 29;466(7306):627-31. [HTML](#) [PDF](#)

McConnell R, Islam T, Shankardass K, Jerrett M, Lurmann F, Gilliland F, Gauderman J, Avol E, Künzli N, Yao L, Peters J, Berhane K. Childhood incident asthma and traffic-related air pollution at home and school. *Environ Health Perspect*. 2010 Jul;118(7):1021-6. [HTML](#) [PDF](#)

**Smoak KA, Aloor JJ, Madenspacher J, Merrick BA, Collins JB, Zhu X, Cavigliolo G, Oda MN, Parks JS, Fessler MB.** Myeloid differentiation primary response protein 88 couples reverse cholesterol transport to inflammation. *Cell Metab*. 2010 Jun 9;11(6):493-502. [HTML](#) [PDF](#)

Harley KG, Marks AR, Chevrier J, Bradman A, Sjödin A, Eskenazi B. PBDE concentrations in women's serum and fecundability. *Environ Health Perspect*. 2010 May;118(5):699-704. [HTML](#) [PDF](#)

Huh D, Matthews BD, Mammoto A, Montoya-Zavala M, Hsin HY, Ingber DE. Reconstituting organ-level lung functions on a chip. *Science*. 2010 Jun 25;328(5986):1662-8. [HTML](#) [PDF](#)

Zanobetti A, Redline S, Schwartz J, Rosen D, Patel S, O'Connor GT, Lebowitz M, Coull BA, Gold DR. Associations of PM10 with Sleep and Sleep-disordered Breathing in Adults from Seven U.S. Urban Areas. *Am J Respir Crit Care Med*. 2010 Jun 10. [Epub ahead of print] [PDF](#)

Hollingsworth JW, **Free ME**, Li Z, **Andrews LN, Nakano H, Cook DN.** Ozone activates pulmonary dendritic cells and promotes allergic sensitization through a Toll-like receptor 4-dependent mechanism. *J Allergy Clin Immunol*. 2010 May;125(5):1167-70. [HTML](#) [PDF](#)

Mutlu GM, Budinger GR, Green AA, Urich D, Soberanes S, Chiarella SE, Alheid GF, McCrimmon DR, Szleifer I, Hersam MC. Biocompatible nanoscale dispersion of single-walled carbon nanotubes minimizes *in vivo* pulmonary toxicity. *Nano Lett*. 2010 May 12;10(5):1664-70. [HTML](#) [PDF](#)

**Cho HY, Gladwell W, Wang X, Chorley B, Bell D, Reddy SP, Kleeberger SR.** Nrf2-regulated PPAR{gamma} expression is critical to protection against acute lung injury in mice. *Am J Respir Crit Care Med*. 2010 Jul 15;182(2):170-82. [HTML](#) [PDF](#)

**Blystone CR, Kissling GE, Bishop JB, Chapin RE, Wolfe GW, Foster PM.** Determination of the di-(2-ethylhexyl) phthalate NOAEL for reproductive development in the rat: importance of the retention of extra animals to adulthood. *Toxicol Sci.* 2010 Aug;116(2):640-6. Epub 2010 May 19. <<http://www.ncbi.nlm.nih.gov/pubmed/20484383>>

**Boyd WA, McBride SJ, Rice JR, Snyder DW, Freedman JH.** A high-throughput method for assessing chemical toxicity using a *Caenorhabditis elegans* reproduction assay. *Toxicology and Applied Pharmacology* 2010 Jun;245:153-159. [doi:10.1016/j.taap.2010.02.014](https://doi.org/10.1016/j.taap.2010.02.014)

Kirby A, Kang HM, Wade CM, Cotsapas C, Kostem E, Han B, Furlotte N, Kang EY, Rivas M, Bogue MA, Frazer KA, **Johnson FM**, Beilharz EJ, Cox DR, Eskin E, Daly MJ. 2010. Fine mapping in 94 inbred mouse strains using a high-density haplotype resource. *Genetics* 2010 Jul;185(3):1081-1095. [HTML](#)

### **Institute Highlights and Milestones**

- Superfund Research Program presented a draft Strategic Plan, published in Federal Register on July 1, based on a series of meetings inviting input. Further comments in response to the draft were accepted throughout July.
- NIEHS sponsored a Community Forum on “Healthy Homes and You,” held at Harlem Stage Gatehouse, NYC, April 13, co-hosted by Columbia University and WE ACT for Environmental Justice. The next Community Forum, “Social Determinants of Health,” is to be held in Louisville, KY on October 20.
- In July, NIEHS, EPA, and NTP welcomed FDA to the Tox21 collaboration.
- NIEHS and other institutes and centers within NIH have released a new funding opportunity for research on exposures and diseases related to climate change. First application receipt date is Sept. 28. PAR-10-235
- Scientific Advisory Committee on Alternative Toxicological Methods met June 17-18, on wide ranging topics including validation issues and international acceptances of alternative methods.
- NIEHS recipients of NIH Director’s Awards were Mgt. Analyst Kent Stone; Admin. Officer Connie Riley; Karen Adelman, Ph.D., Lab. Of Molecular Carcinogenesis; and Senior Advisor Christopher Portier, Ph.D.
- We also congratulate Dr. Portier on being named the next Director of the CDC’s National Center for Environmental Health/Agency for Toxic Substances and Disease Registry! His appointment was effective August 1.
- NIEHS young scientists receive 21 NIH Fellows Awards for Research Excellence (FARE), out of 260 awards announced by NIH on July 1. Awards are based on abstracts of research reviewed and ranked by panels of senior scientists.
- Division of Extramural Research and Training celebrated receipt of its 20,000<sup>th</sup> grant application on July 22.

## **NIH/Building 1 Information and Updates**

### **NIH Governance**

#### **Leadership Appointments at NIH**

*Principal Deputy Director:* On August 19, NIH Director Francis Collins announced the appointment of **Lawrence A. Tabak, D.D.S., Ph.D.**, as Principal Deputy Director of NIH. Dr. Tabak has served as the Director of the National Institute of Dental and Craniofacial Research since 2000. He also served previously as acting NIH Deputy Director in 2009 and most recently as acting director of the Division of Program Coordination, Planning, and Strategic Initiatives.

*Director of DPCPSI:* On August 9, Dr. Collins announced the appointment of **James M. Anderson, M.D., Ph.D.**, as the Director of the NIH Division of Program Coordination, Planning, and Strategic Initiatives. Dr. Anderson is currently Professor and Chair of the Department of Cell and Molecular Physiology in the School of Medicine at the University of North Carolina at Chapel Hill, a position he has held since 2002. The mission of DPCPSI includes identifying emerging scientific opportunities, rising public health challenges, and scientific knowledge gaps that merit further research. The Division plans and implements trans-NIH initiatives supported by the Common Fund and coordinates research related to AIDS, behavioral and social sciences, women's health, and disease prevention.

#### **Understanding the Origins of Health Disparities**

The NIH has launched a multidisciplinary program called, the Network on Inequality, Complexity, and Health (NICH). The NICH will be the first network to apply systems science approaches to health inequities. Overall, the network's goal is to identify important areas where interventions or policy changes could have the greatest impact in eliminating health disparities.

### **Office of Extramural Research (OER)**

#### **Apply For an NIH Director's Award**

NIH welcomes proposals for 2011 NIH Director's Transformative Research Projects, Pioneer, and New Innovator Awards. These programs are part of the NIH Common Fund and support exceptionally creative scientists who take highly innovative, potentially high-impact approaches to major challenges in biomedical or behavioral research. The deadline for applications is October 27, 2010 with Letters of Intent due by September 27, 2010. See the instructions in the RFA (RFA-RM-10-010).

<http://grants.nih.gov/grants/guide/rfa-files/RFA-RM-10-010.html> Additional information, including Frequently Asked Questions about the Transformative Research Projects Program is available at :

<http://commonfund.nih.gov/T-R01/>

#### **ARRA Quarterly Reporting Begins Again July 1**

If you received an ARRA award on or before June 30, 2010 (whether or not you have spent any money), you will need to file a quarterly report to FederalReporting.gov. The site will open for submissions on July 1, and recipients will have until July 10 to upload their reports for the April to June quarter. If you need assistance with ARRA reporting NIH has developed a Web site dedicated to ARRA Recipient Reporting. Please visit [http://grants.nih.gov/recovery/recipient\\_reporting.html](http://grants.nih.gov/recovery/recipient_reporting.html)

### eSNAP (Electronic Streamlined Non-competing Award Process)

Beginning August 1, 2010, NIH will require the use of the eRA Commons eSNAP feature for the submission of all streamlined, non-competing progress reports (NOT-OD-10-093). For these progress reports due on or after August 1, paper progress reports will not be accepted. With the mandating of eSNAP comes two important process changes:

1. SNAP progress reports will be due 45 days prior to the next budget start date (instead of 60 days), and
2. IRB and IACUC approval dates will not be required as part of each progress report submission (but must be submitted upon request).

Grantees should refer to the Notice of Award to determine whether the new requirement applies to a particular award. The eSNAP User Guide can be found at the following url.

[http://era.nih.gov/docs/eSNAP\\_UG\\_v2.25.0.0\\_041210.pdf](http://era.nih.gov/docs/eSNAP_UG_v2.25.0.0_041210.pdf)

### xTrain

As of January 1, 2011, NIH will require the electronic submission of appointment forms and termination notices for research training, fellowship, education and career development awards. After January 1, paper appointment forms and termination notices will not be accepted, and users must submit these documents via the xTrain feature in eRA Commons. To familiarize yourself with xTrain before January visit:

[http://era.nih.gov/services\\_for\\_applicants/other/xTrain.cfm](http://era.nih.gov/services_for_applicants/other/xTrain.cfm)

### Use My Bibliography and eSNAP to Track Public Access Compliance

The newly enhanced My Bibliography section of My NCBI (within the National Library of Medicine computer system) allows users to create and save a bibliography of papers, books, presentations, and patents. Using My Bibliography benefits eRA Commons users because these citations will also appear in your eRA Commons Profile and can be uploaded to your eSNAP. Starting at the end of January, "My Bibliography" will also help you track your compliance with the NIH Public Access Policy by listing the Public Access Compliance status for every item in your bibliography.

For more information on how to create bibliographies, add PubMed and Non-PubMed citations, and manage your bibliography, visit the NLM Technical Bulletin.

[http://www.nlm.nih.gov/pubs/techbull/so09/so09\\_my\\_ncbi\\_my\\_bib.html](http://www.nlm.nih.gov/pubs/techbull/so09/so09_my_ncbi_my_bib.html)

### **Other Items of Interest**

#### Sixth Annual NIH Director's Pioneer Award Symposium

The NIH Director's Pioneer Award program is a part of the NIH Common Fund that supports exceptionally creative scientists who take highly innovative--and often risky or unconventional--approaches to major challenges in biomedical or behavioral research. The symposium will be held September 30 and October 1 in Bethesda, MD. <http://commonfund.nih.gov/pioneer/Symposium2010/>

#### NIH Offers New and Faster Ways to Track Funding Opportunities

Applicants and applicant institutions can now track grant opportunities through the social networking site Twitter and an XML feed that updates nightly to reflect the latest information on active funding opportunities. Twitter allows NIH to post links to Funding Opportunity Announcements in a format no

longer than a text message. Our weekly RSS news feed simply “tweets” to Twitter so that researchers and grant applicants can find NIH funding news quickly. Follow us at <http://twitter.com/NIHforFunding> . You can also find general NIH health news at <http://twitter.com/NIHforHealth> .