

Report to the National Advisory Environmental Health Sciences Council

Director, NIEHS

February 18-19, 2010

Director's Message

In October 2009, the President signed the Energy and Water Appropriation and the Interior and Environment Appropriation. These two laws provide funding for FY 2010 for the DOE/NIEHS Worker Training Program and for the NIEHS Superfund Research and Worker Training Programs. In mid December 2009, the President signed an Omnibus funding bill that provided funding for NIEHS programs authorized by the Public Health Service Act. Details are presented in the chart below.

In the Labor, HHS bills, for the first time ever, NIEHS received the largest percentage increase of any of the Institutes or Centers from both the House (4.9%) and the Senate (3.1%) Committees. In Report language both the House and Senate recognized the importance of translational research programs and applauded the DISCOVER Program. The House Report encouraged NIEHS to support studies on the impact of endocrine disruptors. The Senate Report noted that NIEHS received a larger percentage increase than other ICs because the President's Request included \$9,000,000 to support a new initiative in nanotechnology safety research. In addition, the Senate Committee expressed concern about the slow pace at which federal agencies have adopted regulations to replace or reduce animals used in testing. The Senate Report asked the NTP Center for the Evaluation of Alternative Toxicological Methods and the Interagency Coordinating Committee on the Validation of Alternative Methods to hold workshops on the challenges associated with the adoption of alternative methods.

The President's Request for FY2011 was submitted to the Congress on February 1, 2010. It includes an increase in the NIEHS budget of 2.6%, to \$707,339,000. For the Superfund program, the President's Request includes an increase of 3.2%, to \$81,763,000. Overall, NIH fared well in a difficult time.

Searches are now underway to fill the leadership positions that are open, including the Scientific Director (SD), NIEHS Deputy Director, and Director of the Division of Extramural Research and Training (DERT). The search for the SD position is at the most advanced stage of the three. The SD search committee was scheduled to interview 6 people on February 9 with the intention of narrowing down to a short list, but the meeting had to be canceled due to the severe weather. Search committees have also been formed for the Director, DERT and NIEHS Deputy Director positions. The charge meetings for those committees were held September 17, 2009, and November 23, 2009, respectively. Both searches are now open and taking applications; the DERT Director position closes February 28 and the NIEHS Deputy Director position closes March 31.

NIEHS has made several other key hires in recent months. Bruce Androphy, J.D., has been named to the new supervisory ethics position. Partly as a result of his hiring, the NIH has restored the Deputy Ethics Counselor authority to NIEHS. Another recruitment is nearly completed for an Education and Outreach

Specialist to coordinate and promote and coordinate our education and minority workforce recruitment activities.

In December, Dr. John Balbus joined NIEHS from George Washington University and Environmental Defense Fund. His title is Senior Advisor for Public Health, and he is the first of what will be several new positions in the Bethesda office to expand our ability to work effectively with key partners in the Washington area. This is a critically important facet of NIEHS OD operations and is intended to accomplish two goals: to raise the visibility of NIEHS at NIH and in the Washington area, with partners, stakeholders, and policymakers; and to give us the ability to reach out at a senior scientific level and take part in interagency activities more broadly and more effectively than we can do by relying on participation through staff travel and electronic communications alone. NIEHS's Bethesda office is in many ways the other face of the Institute, and the attrition there over a number of years has hampered our ability to operate effectively in our organizational, program, and policy environment. Two other positions in the Bethesda office will focus on liaison with HHS and with the broader toxicology community. The first of those two recruitments, HHS Liaison, has been offered to and accepted by Dr. Aubrey Miller, currently at FDA; he should be on board by the next Council meeting.

Recent Science Advances

1. Adelman K, Kennedy MA, Nechaev S, Gilchrist DA, Muse GW, Chinenov Y, Rogatsky I. Immediate mediators of the inflammatory response are poised for gene activation through RNA polymerase II stalling. *Proc Natl Acad Sci U S A*. 2009 Oct 27;106(43):18207-12. [HTML](#) [PDF](#) Z01 ES101987 (intramural)
2. Auerbach SS, Shah RR, Mav D, Smith CS, Walker NJ, Vallant MK, Boorman GA, Irwin RD. Predicting the hepatocarcinogenic potential of alkenylbenzene flavoring agents using toxicogenomics and machine learning. *Toxicol Appl Pharmacol*. 2009 Dec 11. [Epub ahead of print] <http://dx.doi.org/10.1016/j.taap.2009.11.021> N01-ES-44436, N01-ES25497 (NTP)
3. Lister R, Pelizzola M, Dowen RH, Hawkins RD, Hon G, Tonti-Filippini J, Nery JR, Lee L, Ye Z, Ngo QM, Edsall L, Antosiewicz-Bourget J, Stewart R, Ruotti V, Millar AH, Thomson JA, Ren B, Ecker JR. Human DNA methylomes at base resolution show widespread epigenomic differences. *Nature*. 2009 Nov 19;462(7271):315-22. <http://www.nature.com/nature/journal/v462/n7271/full/nature08514.html> <http://www.nature.com/nature/journal/v462/n7271/pdf/nature08514.pdf> ES017166 (RM07-013)
4. Lim SH, Feng L, Kemling JW, Musto CJ, Suslick KS. An optoelectronic nose for the detection of toxic gases. *Nature Chemistry*. 2009, Oct;1(7):562-567. <http://www.nature.com/nchem/journal/v1/n7/full/nchem.360.html> <http://www.nature.com/nchem/journal/v1/n7/pdf/nchem.360.pdf> ES016011 (RFA: ES06-011)
5. Ryman-Rasmussen JP, Cesta MF, Brody AR, Shipley-Phillips JK, Everitt JI, Tewksbury EW, Moss OR, Wong BA, Dodd DE, Andersen ME, Bonner JC. Inhaled carbon **nanotubes** reach the subpleural tissue in mice. *Nat Nanotechnol*. 2009 Nov;4(11):747-51. [HTML](#) [PDF](#) R21-ES015801 and Intramural Research Program

6. Crawford JM, Korman TP, Labonte JW, Vagstad AL, Hill EA, Kamari-Bidkorpheh O, Tsai SC, Townsend CA. Structural basis for biosynthetic programming of fungal aromatic polyketide cyclization. *Nature*. 2009 Oct 22;461(7267):1139-43.
<http://www.nature.com/nature/journal/v461/n7267/full/nature08475.html>
<http://www.nature.com/nature/journal/v461/n7267/pdf/nature08475.pdf> ES001670
7. Caldwell KA, Tucci ML, Armagost J, Hodges TW, Chen J, Memon SB, Blalock JE, DeLeon SM, Findlay RH, Ruan Q, Webber PJ, Standaert DG, Olson JB, Caldwell GA. Investigating bacterial sources of toxicity as an environmental contributor to dopaminergic neurodegeneration. *PLoS One*. 2009 Oct 6;4(10):e7227. [HTML](#) [PDF](#) ES014426 (PAS03-160)
8. Park EJ, Lee JH, Yu G-Y, He G, Ali SR, Holzer RG, Osterreicher CH, Takahashi H, and Karin M (2010). Dietary and genetic obesity promote liver inflammation and tumorigenesis by enhancing IL-6 and TNF expression. *Cell* 140(2):197-208 <http://dx.doi.org/10.1016/j.cell.2009.12.052> P42-ES010337 and R01-ES006376
9. Weisskopf MG, Jain N, Nie H, Sparrow D, Vokonas P, Schwartz J, and Hu H. A prospective study of bone lead concentration and death from all causes, cardiovascular diseases, and cancer in the Department of Veterans Affairs Normative Aging Study. *Circulation*. 2009 Sep 22;120(12):1056-64.
<http://circ.ahajournals.org/cgi/content/full/120/12/1056>
<http://circ.ahajournals.org/cgi/reprint/120/12/1056.pdf> ES03918-02, ES012653 (PAR99-027), ES00002, ES05947, ES05257
10. D'Aloisio AA, Baird DD, DeRoo LA, and Sandler, DP. Association of intrauterine and early life exposures with diagnosis of uterine leiomyomata by age 35 in the Sister Study. *Environ Health Perspect* doi: 10.1289/ehp.0901423 (available at <http://dx.doi.org/>) Online 3 December 2009
 Intramural Research Program

Institute Highlights and Milestones

- NIEHS/NTP Director elected as a fellow of the Collegium Ramazzini, the international society of environmental health sciences and toxicology, comprising 180 fellows in 30 countries, and headquartered in Carpi, Italy.
- NIEHS/NTP Director testified at two hearings related to the Toxic Substances Control Act by the Senate Committee on Environment and Public Works Subcommittee on Superfund, Toxics and Environmental Health: December 2, 2009, and February 4, 2010.
- NIEHS' Allen Dearry, Ph.D., represented the Institute at the United Nations Climate Change Conference in Copenhagen, Dec. 7-18. Dr. Dearry also spoke at the National Academy of Sciences on Nov. 17 at the One Health Commission summit.
- Allen Wilcox, M.D., Ph.D., is the recipient of the 2009 Greg Alexander Award for Advancing Knowledge by the Coalition for Excellence in Maternal and Child Health (MCH) Epidemiology, Dec. (9-11) in Tampa, FL. Dr. Wilcox is a senior member of the Epidemiology Branch and one of its former Branch Chiefs.

- Sister Study, the work of the NIEHS Epidemiology Branch under Dr. Dale Sandler, reached and exceeded its recruitment goal of 50,000 sisters of women with breast cancer, in October.
- NIEHS hosted a press conference Oct. 27 at the National Press Club unveiling the NIEHS co-sponsored study published in Lancet on the health impacts of reducing greenhouse gas emissions.
- NIEHS' Division of Extramural Research and Training achieved a monumental effort in awarding grants funded by the ARRA recovery act money, including grants to expand research on screening technologies, health disparities, and health effects of nanotechnology, BPA, and climate change, plus many other areas.
- The Center for Evaluation of Risks to Human Reproduction convened an independent panel to evaluate the potential health effects of soy infant formula, Dec. 16-18, and the outcomes were presented at a press availability at the host hotel in Alexandria, Va.
- The Superfund Research Program is proceeding with the development of a strategic plan, with a series of open meetings, including one here at NIEHS on Jan. 5. SRP Director William Suk, Ph.D., is coordinating this effort.
- The Worker Education and Training Program introduced *The NIEHS Earthquake Response Training Tool: Protecting Yourself While Responding to Earthquakes* and made it available online in Creole, in response to the Haiti earthquake.
- NIEHS held a Town Meeting in Milwaukee at the University of Wisconsin Milwaukee on October 1, at which the NIEHS/NTP Director was the keynote speaker, and which attracted a full house.
- Another Town Meeting was held on November 18 in Sausalito, CA, in connection with the Breast Cancer and the Environment grantees meeting. The Town Meeting was co-hosted by NIEHS, Zero Breast Cancer advocacy group, and University of California at San Francisco.
- The NIEHS booth at the 137th annual meeting of the American Public Health Association won first place honors for its staffing and excellence as an exhibit.
- The NIEHS Centers for Neurodegeneration Science held its first meeting at NIEHS Oct. 8-9, to bring together center senior staff for scientific presentations and discussion.
- The Third Annual Grantee's Meeting of the Exposure Biology Program of the NIH Genes, Environment and Health Initiative took place at the Natcher Auditorium on the NIH Campus in Bethesda, January 26-27, 2010.

Legislative Report

FY 2010 and FY 2011 Appropriations

See the following table for details.

National Institute of Environmental Health Sciences
1 February 2010
FY 2009 - FY 2011

	<u>FY 2009 Omnibus</u>	<u>FY 2009-2010 Stimulus</u>	<u>FY 2010 Appropriation</u>	<u>Percent Increase</u>	<u>FY 2011 President's Request</u>	<u>Percent Increase</u>
NIEHS¹	\$ 662,820,000	\$ 168,057,000	\$ 689,781,000	4.1	\$ 707,339,000	2.5
NIH¹	\$ 30,317,024,000	\$ 10,380,703,000	\$ 31,008,788,000	2.3	\$ 32,007,237,000	3.2
Common Fund¹	\$ 541,133,000	\$ 136,837,000	\$ 544,109,000	.5	\$ 561,629,000	3.2
Superfund²	\$ 78,074,000 ³	\$ 19,297,000	\$ 79,212,000 ⁴	1.5	\$ 81,763,000 ⁵	3.2
NIEHS/DOE Training⁶	\$ 10,000,000		\$ 10,000,000	0.0		

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

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

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

⁴The 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.

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

⁶The 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, Legislative Liaison

NIH/Building 1 Information and Updates

Research Agenda: Opportunities for Research and NIH

In *Science* magazine (Science 1 January 2010: Vol. 327. no. 5961, pp. 36 – 37 DOI: 10.1126/science.1185055) NIH Director Francis Collins provides five research areas that are ripe for major advances that could reap substantial downstream benefits.

1. High-Throughput Technologies
2. Translational Medicine
3. Benefiting Health Care Reform
 - *Comparative effectiveness research*
 - *Prevention and personalized medicine*
 - *Health disparities research*
 - *Pharmacogenomics*
 - *Health research economics*
4. Focusing More on Global Health
5. Reinvigorating and Empowering the Biomedical Research Community

NIH Governance

NIH Human Embryonic Stem Cell Registry Continues to Grow

NIH Director Francis Collins has approved more new human embryonic stem cell lines (hESCs) as eligible for use by NIH grantees in NIH-funded research. A total of 40 hESC lines now appear on the new NIH hESC Registry; another 89 lines are currently pending review by the NIH.

Some of the more recently approved lines include restrictions. NIH clarified that grantees must honor all restrictions when using these lines, see more in NIH Guide Notice NOT-OD-10-029.

<http://grants.nih.gov/grants/guide/notice-files/NOT-OD-10-029.html>

Division of Program Coordination, Planning, and Strategic Initiatives (DPCPSI)

Transformative R01 (T-R01) Awards

The Roadmap Transformative Research Projects Program (R01) was specifically created under the NIH Roadmap for Medical Research to support exceptionally innovative, high risk, original and/or unconventional research projects that have the potential to create or overturn fundamental paradigms. These projects tend to be inherently risky, but if successful can profoundly impact a broad area of biomedical research. To facilitate submission and review of the most bold, creative and high impact proposals, the Roadmap Transformative Research Projects Program is also piloting novel approaches to peer

review and program management. In 2008, the NIH made 42 awards for exceptionally innovative, high-risk, original, and unconventional research projects that have the potential to transform a field of science.

The Genotype-Tissue Expression (GTEx) project

The GTEx project is a 2-year pilot with the primary goal of testing the feasibility of collecting high-quality RNA and DNA from multiple tissues from approximately 160 donors. The GTEx project aims to provide to the scientific community a resource with which to study human gene expression and regulation and its relationship to genetic variation. This project will collect and analyze multiple human tissues from donors who are also densely genotyped, to assess genetic variation within their genomes.

Office of Extramural Research (OER)

New ARRA Funding Opportunities

Several new ARRA Funding Opportunity announcements (FOAs) with 2010 receipt dates are in progress in a variety of areas. The Office of the Director will be making awards under the "Recovery Act Limited Competition: NIH Director's Opportunity for Research in Five Thematic Areas" (RC4) to support research directly related to Dr. Collins' five themes for NIH. See this page for more details, <http://grants.nih.gov/recovery/index.html#foas>

New Application Forms and Instructions Now Available

New instructions for electronic SF 424 (R&R) and paper-based PHS 398 applications are now available on the NIH Forms and Applications Web site for use with submissions intended for due dates on or after January 25, 2010.

With this information, you can begin writing your application. But make sure you return to the updated Funding Opportunity Announcement (FOA) or reissued Parent Announcement to read the new language and ensure a successful submission. Updated FOAs will be available at least one month before the due date: FOAs with due dates of January 25, 2010 will be updated in early December, and FOAs with later due dates will be updated by early 2010. A Guide notice will be issued when all the FOA updates are complete.

Ensuring Successful Submission of Newly Restructured Applications

The transition to new application forms and instructions, including shorter page limits, is fast approaching. The link below has important information about electronic application, including the latest news and announcements, training, registration information, tips for successful submission and more. <http://era.nih.gov/ElectronicReceipt/index.htm>

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

Other Items of Interest

8th INTERNATIONAL SYMPOSIUM ON TARGETED ANTICANCER THERAPIES

Bethesda, MD, March 4-6, 2010

The 8th International Symposium on Targeted Anticancer Therapies (TAT 2010) will cover the most promising new drug targets and drugs affecting these targets. TAT 2010 will provide overviews - in keynotes and expert reviews - of drug development by molecular target but also presentations of recent results of early-phase clinical studies with particular targeted agents.

http://www.nddo.org/page_include_tat2010.shtml

NIH State-of-the-Science Conference: Preventing Alzheimer's Disease and Cognitive Decline

Bethesda, MD, April 26–28, 2010

This conference is intended for physicians, researchers, and allied health personnel interested in preventing Alzheimer's disease and cognitive decline as well as interested members of the public.

<http://consensus.nih.gov/2009/2009FamilyHistorySOS031main.htm>

NIH Offers New and Faster Ways to Track Funding Opportunities

NIH funding opportunities are now available through Twitter and XML. 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> .

NIH Research Radio and Podcasts

NIH Research Radio features in-depth interviews with NIH scientists and grantees discussing the latest research findings, educational campaigns, consumer-orientated features, and results from Consensus and State of the Science conferences. Each program runs approximately 30 minutes. NIH Research Radio, which is currently ranked among iTunes Top 100 Medicine Podcasts, is updated every other Friday. Go to <http://www.nih.gov/news/radio/nihpodcast.htm> to subscribe to the RSS news feed or listen to podcast via your computer. For more information, contact Joseph Balintfy at 301-496-7246.