

Tyi from the NHLBI

public interest news
volume 8, issue 3
January 2008

Framingham Study Participants Honored

On November 29th, top U.S. health officials visited Framingham, Massachusetts, to honor thousands of participants from the NHLBI's landmark Framingham Heart Study. Prominent speakers at the event included Dr. Elizabeth Nabel, Director of the NHLBI; Dr. Elias Zerhouni, Director of the National Institutes of Health; and Secretary Michael Leavitt, of the Department of Health and Human Services (DHHS).

Secretary Leavitt's presence made this the first time a Secretary of DHHS has visited a community specifically to thank individuals for their participation in medical research. Secretary Leavitt remarked that "the Framingham Study has given us the knowledge and with it the power to make healthier choices, and to prevent disease, and to treat disease more effectively."

As the study enters its 60th year, it boasts a number of significant accomplishments that have made it widely recognized as one of the most important epidemiological studies. The study elucidated various risk factors for cardiovascular disease, now taken to be common medical knowledge, such as high cholesterol, high blood pressure, diabetes, and overweight and, indeed, developed the concept of risk factors for a chronic disease.

The speakers emphasized important future directions for use of Framingham data. Clinical information acquired from three generations of participants and the corresponding genetic information have been entered into a database, called SHARe (SNP [single nucleotide polymorphism] Health Association Resource). This valuable information is available to researchers through SHARe, subject to appropriate safeguards to protect the privacy of participants. In discussing the importance of this new database, Dr. Nabel said, "[t]hrough Framingham SHARe we hope to unlock genetic mysteries of disease that will open the way to new treatments to improve the health of future generations."

NHLBI Presents New Strategic Plan for the Next Decade

With the extensive involvement of the communities it serves, the NHLBI recently completed development of a scientific working plan to guide its activities and initiatives in the near future. *Shaping the Future of Research: A Strategic Plan for the National Heart, Lung, and Blood Institute* is accessible on the NHLBI Web site at <http://apps.nhlbi.nih.gov/strategicplan/>.

The plan identifies a number of basic research areas of focus with the intent of delineating normal and pathological biological mechanisms and exploiting the emerging understanding of them to identify biomarkers of disease. Such biomarkers—broadly defined as measurable indicators of genotype, biological or pathological processes, or responses to therapeutic intervention—will facilitate identification of disease subtypes and point the way toward new molecular targets for prevention, diagnosis, and treatment.

The plan's clinical and translational research goals emphasizes transmission of knowledge between basic and clinical research so that findings in one arena rapidly inform and stimulate research in the other. More precise methods of risk-stratification and diagnosis are expected to arise from application of new approaches (e.g., noninvasive imaging, biomarkers) from basic science laboratories. A critical challenge will be to develop personalized preventive and therapeutic regimens based on genetic makeup in combination

continued on page 6

Inside

NHLBI Workshops and Working Groups	2
Science Advances from the NHLBI	2, 3, 5
Mark Your Calendar	2
NHLBI Research Initiatives	3
National Heart, Lung, and Blood Advisory Council's September and October Meetings	4
News from Capitol Hill	4
Upcoming Events	5
Constituents' Corner	6
Need More Information?	6

Upcoming NHLBI Workshops and Working Groups*

Workshop or Working Group

Date / Location

Contact for More Information

No Workshops or Working Groups are Scheduled for the Period of January through April 2008.

Science Advance: New Research Shows that Genes Cause Hypoplastic Left Heart Syndrome

Hypoplastic left heart syndrome (HLHS) is a severe cardiovascular malformation that is a leading cause of infant mortality and childhood morbidity. In HLHS, the left side of the heart is underdeveloped and the aortic and mitral valves are narrowed or closed completely, impairing the ability of the heart to supply oxygen-rich blood to the body. Research on whether genetics plays a large or relatively minor role in the development of HLHS has been inconclusive.

Investigators supported by the NHLBI examined 38 individuals with HLHS along with several members of their families from three generations to determine whether HLHS is primarily the result of genes passed from parent to child. Results confirmed that many family members of individuals with HLHS also had either HLHS or various other cardiovascular malformations including bicuspid aortic valve (BAV) defect, a less serious cardiovascular abnormality.

HLHS has been considered a candidate for fetal therapy to preempt progression of the disease from a valve disorder to the irreversible underdevelopment of the left side of the heart. However, given the substantial risks involved in fetal intervention therapies, the ability to predict which fetuses will progress to disease, and to personalize their treatment based on their genetic risk factors, is critical. The study provides a foundation on which to begin to determine the genetic information needed to guide treatment decisions. In addition, the findings will allow better genetic counseling for families with a history of HLHS, including early screening and detection of HLHS, BAV, and other cardiovascular malformations.

Ninth Annual PIO Meeting Scheduled

The ninth Public Interest Organization (PIO) meeting is scheduled to be held on June 9-10, 2008, in Bethesda, MD. The 2008 version of the PIO meeting will feature important health information and the opportunity to network with individuals representing a wide range of public health advocacy groups. The decision to move the meeting to June was made in an effort to alleviate the travel problems that many attendees faced during the two previous meetings due to inclement winter weather. More details, including the exact location and a complete agenda will soon be made available.

Mark Your Calendar . . .

February	American Heart Month (www.americanheart.org)
1st	National Wear Red Day (www.nhlbi.nih.gov/health/hearttruth)
14th	National Donor Day (www.organdonor.gov)
March 3rd-9th	National Sleep Awareness Week (www.sleepfoundation.org)
April	National Sarcoidosis Awareness Month (sarcoidosisfriends2@hotmail.com)
May	National High Blood Pressure Education Month (hp2010.nhlbihin.net/nhbpep_kit/)

NHLBI Research Initiatives

From time to time, the NHLBI invites investigators to submit grant applications or contract proposals for specific research programs. We currently are soliciting applications for the following programs. Please visit the URL listed with each program to obtain information about important application dates and deadlines. For full descriptions of these and other research initiatives, visit www.nhlbi.nih.gov/funding/inits/index.htm.

Proteomics and Glycomics: New Technology (SBIR/STTR) (PA-07-451 and PA-07-452)

<http://grants.nih.gov/grants/guide/pa-files/PA-07-451.html>
Objective: Encourage small business concerns to develop advanced technologies and methods to address biological problems in the field of proteomics and the sub-discipline of glycomics, particularly with respect to quantitative and real-time measurements.

Human Tissue and Organ Research Resource (RR-07-006)

<http://grants.nih.gov/grants/guide/rfa-files/RFA-RR-07-006.html>
Objective: Facilitate the procurement, preservation, and distribution of normal and diseased human tissue and organs to qualified biomedical researchers in the United States through a program that will result in eventual self-sufficiency of the research resource.

Anemia of Inflammation and of Chronic Diseases (PAS-08-019)

<http://grants.nih.gov/grants/guide/pa-files/PAS-08-019.html>
Objective: Conduct research that will lead to a better understanding of the pathophysiology and clinical impact of the anemia of inflammation or the anemia of chronic disease. Research supported by this initiative is expected to lead to improved methods of detection, prevention, and treatment of this common form of anemia.

Science Advance: Teenagers with Sleep Apnea Are at Risk for Heart Disease and Diabetes

Sleep apnea in children is associated with repeated stops and starts in breathing caused by obstruction of the airway by soft tissue in the throat. Loud snoring and excessive daytime sleepiness are common symptoms. Apnea exposes children to recurrent episodes of low blood oxygenation and disturbs the normal pattern of sleep, leading to abnormalities in cortisol and growth hormone secretion, impaired glucose metabolism, and increased appetite for carbohydrates. Current evidence suggests that sleep apnea is strongly associated with overweight and obesity, which affect an estimated 15-45 percent of American teenagers.

New findings from an NHLBI-supported urban community-based study of teens indicate that sleep apnea is a risk factor for metabolic syndrome (a constellation of conditions that includes abnormalities in glucose and lipid metabolism). The study assessed obesity, blood pressure, blood sugar, and triglycerides in 270 children ages 13-16 and found that those with sleep apnea were 6.5 times more likely to have metabolic syndrome than those without sleep apnea.

Teenagers with apnea and metabolic syndrome exhibited a greater degree of blood oxygen desaturation and more frequent sleep disturbances than those without metabolic syndrome. They also had higher blood pressures, greater fasting insulin levels indicative of insulin resistance, and elevated levels of low-density lipoprotein cholesterol.

The findings indicate a strong association between metabolic syndrome and sleep apnea in teenagers and underscore the importance of screening for sleep disorders as part of regular healthy-child checkups and as a long-term approach to cardiovascular disease prevention.

National Heart, Lung, and Blood Advisory Council Meetings

September 12, 2007

Dr. Nabel welcomed Council members to the 227th meeting, which was held entirely via teleconference.

The Council concurred on the award of 116 competing research project grants for a total cost of \$69.5 million.

October 30, 2007

Dr. Nabel announced three new Council nominees (final clearance of nominations expected soon): Dr. Andrew Marks, Columbia University; Dr. C. Noel Bairey Merz, Cedar-Sinai Medical Center; and Dr. Marlene Rabinovitch, Stanford University School of Medicine.

Dr. Nabel welcomed representatives of NHLBI Advisory Committees: Dr. Gary Owens and Dr. Ivor Benjamin, representing the NHLBI Board of Scientific Counselors; Dr. F. Daniel Armstrong, Chair of the Sickle Cell Disease Advisory Committee; Dr. Phyllis Zee, Chair of the Sleep Disorders Research Advisory Board; Dr. Louis Dell'Italia, representing the Heart, Lung, and Blood Program Project Review Committee; and Dr. David Guidot, representing the NHLBI Institutional Training Mechanism Review Committee.

Dr. Nabel recognized three Council members who are retiring: Dr. Roberto Bolli, Dr. Richard Boucher, and Dr. Robert Lemanske.

Dr. Nabel announced that Dr. Marvin Konstam will join the Institute (effective January 1, 2008) as Senior Advisor to the Director for Cardiovascular Diseases. He is currently the Chief of Cardiology at Tufts-New England Medical Center and Professor of Medicine and Professor of Radiology at Tufts University School of Medicine.

The NHLBI Strategic Plan — a full scientific version, as well as a summary brochure for public audiences — has been printed and will soon be distributed to participants in the planning process, scientific groups, professional organizations, public interest groups, and the Congress.

The NHLBI continues to maintain its commitment to new investigators and those in the early stages of their research careers. To this end, in Fiscal Year (FY) 2007, the Institute awarded 182 Research Project Grants (R01 mechanism) to new investigators; 7 first-time R01 renewals to new investigators; 1 NIH Director's New Innovator Award; 18 NIH High Priority, Short-Term Project Awards (Bridge Awards; R56 mechanism); and 24 NIH Pathway to Independence Awards (K99/R00 mechanism).

Dr. Lawrence Tabak, Director of the National Institute of Dental and Craniofacial Research and Co-Chair of two NIH Working Groups on Peer Review, summarized recent NIH-led efforts, conducted in partnership with the scientific community, to study the NIH peer review system and determine ways to enhance it.

continued on page 6

News from Capitol Hill

Appropriations

The fiscal year (FY) 2008 appropriations process was completed on December 26, 2007, when the President signed the 2008 Consolidated Appropriations Act (H.R. 2764) into law (Public Law 110-161). The law, which has been referred to as an "omnibus" measure because it includes several bills that typically are discussed and voted on separately, provides \$29.3 billion for the National Institutes of Health, a 1.1 percent increase over the FY 2007 appropriation.

Resolutions

On October 15, the House expressed support for research on Diamond-Blackfan anemia (DBA) with the passage of H. Res. 524, a resolution introduced by Representative Carolyn McCarthy (D-NY). The House recognized that research in this area may advance the understanding of DBA, identify implica-

tions of cancer predisposition, and serve as an important model for understanding human development and the molecular basis for certain birth defects. The House also commended the Daniella Maria Arturi Foundation and the Diamond-Blackfan Anemia Foundation for their work with the National Institutes of Health and the Centers for Disease Control and Prevention.

NHLBI Director Briefs COPD Congressional Caucus

NHLBI Director Elizabeth G. Nabel, M.D., was honored to provide an update on COPD research and awareness-building activities to the Congressional COPD Caucus at a Capitol Hill briefing sponsored by the U.S. COPD Coalition. Dr. Nabel shared the dais with Senator Mike Crapo (R-ID) and Representative Cliff Stearns (R-FL), two members of the COPD Caucus, as well as Grace Anne Dorney Koppel, patient advocate and spokesperson for the NHLBI's COPD Learn More Breathe Better campaign.

Upcoming Events

Activity	Date/Location	More Information
American Autoimmune Related Diseases Association Sixth Annual Conference on Cytokines & Inflammation	January 28-29, 2008 Orlando, FL	http://gtcbio.com/conferenceDetails.aspx?id=115
National Heart, Lung, and Blood Advisory Council 229th Meeting	February 13, 2008 Bethesda, MD	http://www.nhlbi.nih.gov/meetings/nhlbac/index.htm
Molecular Mechanisms in Lymphatic Function & Disease	March 2-7, 2008 Ventura, CA	http://www.grc.org/programs.aspx?year=2008&program=-molecmech
American Autoimmune Related Diseases Association Tenth International Workshop on Autoantibodies and Autoimmunity	March 6-8, 2008 Guadalajara Mexico	http://www.iwaa.com.mx/
Daniella Maria Arturi Foundation: Diamond Blackfan Anemia Ninth Annual International Diamond Blackfan Anemia Consensus Conference	March 8-10, 2008 New York, NY	http://www.dmaf.org/News.asp
LAM Foundation Lymphangiomyomatosis International Research Conference	April 4-6, 2008 Cincinnati, OH	http://www.thelamfoundation.org/pdfs/AbstractsandLetter08.pdf
Adult Congenital Heart Association Fifth National Conference	May 1-4, 2008 Philadelphia, PA	http://www.achaheart.org/news/conferences.php
American Society of Hypertension 23rd Annual Meeting	May 14-17, 2008 New Orleans, LA	http://www.ash-us.org/annual_meeting/index.htm
American Thoracic Society 2008 International Conference	May 16-21, 2008 Toronto, Canada	http://www.thoracic.org/sections/meetings-and-courses/international-conference/2008/index.html
Mended Hearts Annual Convention	May 24-28, 2008 Hartford, CT	http://www.mendedhearts.org/frame-events.htm

Science Advance: COPD May Have Origins in Infancy

Chronic obstructive pulmonary disease (COPD) is a highly prevalent condition and the fourth most common cause of death in the United States. Cigarette smoking is the most significant risk factor for developing COPD, but the level of lung function attained in young adulthood is also a strong predictor and researchers have speculated that a predisposition to COPD may develop even earlier in life.

Results from the NHLBI-funded Tucson Children's Respiratory Study indicate that low lung function in infancy is correlated with impaired lung function in young adulthood. The study enrolled newborns between 1980 and 1984 and followed them for more than 20 years. It found that participants in the lowest quartile of lung function at 2 months of age had persistently lower lung function values through 22 years of age than participants in the upper three quartiles. The study also found that infants in the lowest quartile of lung function had an increased risk of developing respiratory illnesses in the first three years of life relative to the infants with better lung function.

These findings suggest that examination of the mechanisms of low lung function in early life might reveal promising targets for preventive interventions. This work also offers a potentially useful predictive measure for identifying individuals at risk for COPD who might benefit from early preventive and therapeutic interventions.

Constituents' Corner

We invite you to use this space that we reserve for you to share your successes and opinions. You may submit your ideas and articles to nhlbi.listens@nih.gov or Public Interest News, Office of Science and Technology, Building 31, Room 5A03, 31 Center Drive, MSC-2482, Bethesda, MD 20892-2482.

Please send your Constituents' Corner submissions no later than the second week of April, August, or December for inclusion in the May, September, or January issues of FYI from the NHLBI, respectively.

NHLBI Strategic Plan

Continued from page 1

with developmental and environmental exposures. Insights are already emerging, but robust and efficient means of validating both individualized and population-based treatments will be needed to establish an evidence base to guide medical practice.

The plan acknowledges the need to enhance understanding of the processes involved in translating research into practice and to use that understanding to enable improvements in public health and stimulate further scientific discovery. It places particular emphasis on conducting research in primary prevention and identifying interventions that work in the practice communities that will ultimately constitute the targets for translation and education. Development and evaluation of new approaches to communicate research advances to the public will remain an important priority.

The plan is intended to provide the NHLBI with a guide for its research and training programs over the next 5 to 10 years. It presents broad strategies that the NHLBI will

employ to facilitate the conduct of research; enhance interdisciplinary work; speed early-stage translation of basic discoveries; ensure cross-fertilization of basic, clinical, and epidemiologic discoveries, and maximize the resultant public health benefit of the information created. Specific measures to implement the plan will now be developed in consultation with the National Heart, Lung, and Blood Advisory Council (NHLBAC) and the scientific community. Investigator-initiated research has long constituted the largest share of the NHLBI research portfolio, and we fully expect that much of the plan will be realized through the Institute's continued support for it. Institute-initiated investments guided by the plan will be directed largely toward programs that either enable or complement investigator-initiated activities.

As the challenges identified in the plan are met and as new ones emerge, the NHLBI will identify and embrace new strategies. The Institute also will continue to look to the NHLBAC and to the larger research community for guidance to ensure that its strategies and goals are updated as needed to reflect the rapidly changing environments of research and public health issues.

October 2007 Advisory Council Meeting

Continued from page 4

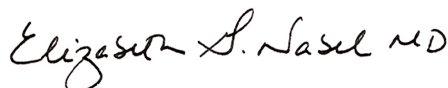
Suggestions that emerged from the study include improving review criteria, incorporating new models of review, enhancing the quality of review and reviewers, modifying review mechanics and improving feedback to applicants, modifying approaches for scoring applications, and improving other aspects of the system used to support research. Council members offered additional suggestions for improving the peer review system.

Dr. Clare Waterman, Senior Investigator, Cell Biology and Physiology Center, NHLBI Intramural Program, discussed both her research related to cell migration and the technology used to detect and track molecules involved in cell migration.

NHLBI staff presented 11 new initiatives and 5 renewals, all of which had been reviewed in September by the Board of External Experts. The Council was mostly supportive of the initiatives presented, but made a number of specific recommendations for consideration prior to their release.

Need More Information?

We are always interested in receiving comments and suggestions from the community. If you or your organization have questions for me or for the Institute, please contact me at nabele@nhlbi.nih.gov or Dr. Carl Roth at rothc@nhlbi.nih.gov.



Elizabeth G. Nabel, M.D.
Director, NHLBI

For information on specific issues, the following contacts may be helpful:

- For health-related questions and publications, please contact the trained information specialists at the NHLBI Information Center (NHLBIinfo@nhlbi.nih.gov) or write to the Information Center at P.O. Box 30105, Bethesda, MD 20824-0105.
- For communications pertaining to NHLBI policies and priorities, contact the NHLBI Office of Public Liaison (nhlbi.listens@nih.gov).
- For additional information regarding NHLBI events, consult the references provided or www.nhlbi.nih.gov/calendar/nhcal.htm. Most other NIH Institutes and Centers also maintain calendars on their Web sites. Links to their Web pages are at www.nih.gov/icd.