



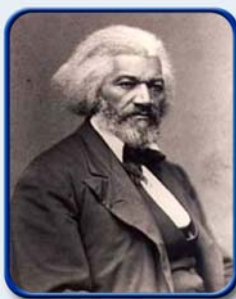
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NIEHS Spotlight

Congressman David Price: Don't Labor Silently

By Colleen Chandler

It is not enough, said Congressman David Price, to labor in silence on the presumption that good research will speak for itself. Rather, Price said, it behooves NIEHS to publicize its work and make sure people understand the importance of research done here.

“Often, good science is out there, but it is not being heard,” Price said. As NIH faces funding cuts, it is more important than ever to focus on interpreting our research so it can be understood in the wider community, he said.

Price, who represents all of Durham and Orange counties and parts of Wake and Chatham counties, was elected to Congress in 1987. He held a forum at NIEHS on March 21.

NIEHS Director David Schwartz introduced Price as “a staunch supporter of biomedical research.” Price, born in Tennessee, came to North Carolina as a Morehead scholar at the University of North Carolina at Chapel Hill, where he earned a bachelor’s degree in 1961.

From UNC, he went to Yale University, where he earned a bachelor of divinity in 1964 and a doctorate in political science in 1969. He taught political science and public policy at Duke before running for and winning a seat in the U.S. House of Representatives in 1987.

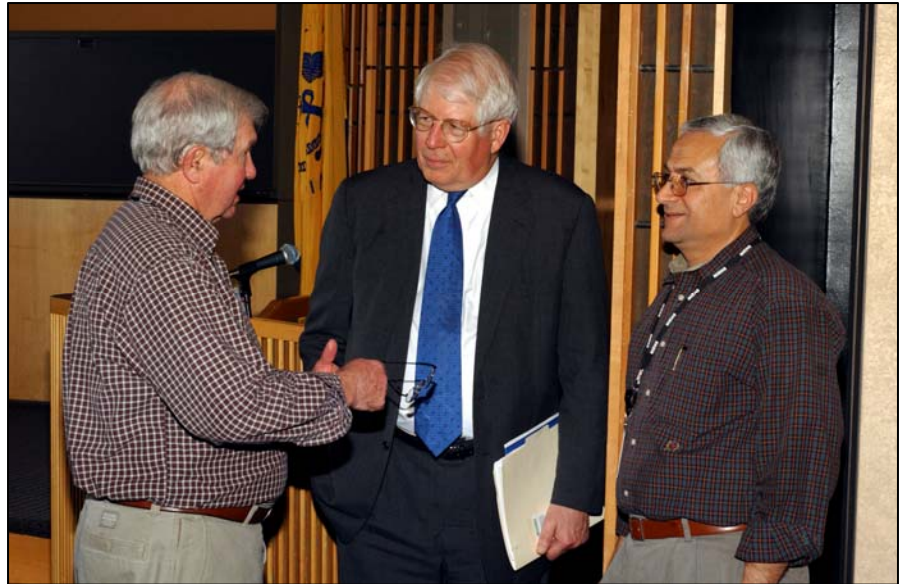


Researchers and administrative staff turned out to hear what Congressman David Price had to say about upcoming budget issues. (Photo by Steve McCaw, Image Associates)

Price serves on the House Appropriations Committee and several of its subcommittees. He serves the House Democratic Caucus as assistant whip and co-chairs the Democratic Budget Group, which focuses on national fiscal policies and priorities.

Price talked about the federal deficit, and cited four sources of political woes that he said contribute to a burgeoning federal deficit:

- Tax cuts,
- The U.S. presence in Iraq and the maintenance of numerous weapons systems, some of which are outdated,
- A sluggish economy, and
- Skyrocketing health-care costs.



Congressman David Price talks with Burhan Ghanayem, a toxicologist in the Laboratory of Pharmacology and Chemistry, left, and Julius Thigpen, a microbiologist in the Comparative Medicine Branch, right. (Photo by Steve McCaw, Image Associates)

With a particularly high level of political pressure to write tight spending bills this year, Price predicts large disparities between House and Senate appropriations, and Price said he expects federal government will operate on an extended series of continuing resolutions while members of the House and Senate battle to reconcile their appropriation packages after the start of the next fiscal year.

Schwartz asked Price what NIEHS could do to deal proactively with unfunded mandates from Congress. In response, Price said an “inside strategy” would work best. He suggested NIEHS leadership work with appropriations committee members, such as Price himself, to ensure committee members understand what can and can’t be done with existing expenditures and what difficulties such mandates present.

NIDA Director Delivers Spirit Lecture

By Colleen Chandler

Drug addiction is a disease of the brain, according to Nora Volkow, director of the National Institute of Drug Abuse. Volkow delivered the fifth annual Spirit Lecture on March 20 at NIEHS. The annual event honors “Women Sustaining the American Spirit.” Volkow’s talk was aimed at changing the way people think about drug abuse to ensure they understand the concept that they are dealing with a medical disease, not a lack of will.

Chronic exposure to drugs creates changes in the brain that causes addiction, which by definition, the person has no control over, she said. While vulnerability to drug addiction is partially genetically determined, exposure at certain stages, such as adolescence, is much more harmful than exposure at other stages. Drug abuse, Volkow said, is a developmental disease that often begins in adolescence, and sometimes in late childhood. In adolescents’ developing brains, the target areas for drugs of abuse are significantly larger than in adults, while the areas that allow a person to inhibit emotion or suppress impulses is not fully developed in adolescence, she said.



Left: NIDA Director Nora Volkow talks with NIEHS Director David Schwartz before she delivered the fifth annual Spirit Lecture. Below: Volkow with NIEHS News Director Robin Mackar. Mackar came to NIEHS from NIDA, where she served as NIDA's lead writer and deputy branch chief in the Science Policy Branch. (Photos by Steve McCaw, Image Associates)

It is extraordinarily important to recognize that the earlier someone begins taking drugs, the more severe the resulting addiction will be. Volkow also said environmental factors such as the availability of drugs, family support, poverty and crime, all play a role in either protecting or putting people at risk for drug abuse.

Animal studies have shown that if you stress an animal, it is more likely to take drugs, therefore, applying stressors is akin to stimulating drug abuse, she said. A primate study conducted by Wake Forest University researchers showed that dominant animals within the social structure had more dopamine receptors, are less likely to experience stress and less susceptible to drug addiction. By contrast, subordinate animals had fewer receptors and were more vulnerable to addiction. While human social structures are more complex, allowing an individual to be dominant in some areas of his or her life while being subordinate to others, the social environment and related stress clearly emerges as an important factor in addiction, Volkow said.



She said addressing the problem of addiction requires an approach that considers social factors, behavioral factors, neuronal circuits, protein expression and the genome. Only then can targeted interventions be created to protect people at greater risks for drug addiction, she said.

A physician and psychiatrist, Volkow was appointed director of NIDA in 2003. She pioneered the use of brain imaging to investigate toxic effects of drugs and the effects of drugs responsible for their addictive properties in the human brain.

Before joining NIDA, Volkow was a professor in the Department of Psychiatry and was associate dean of the medical school at the State University of New York – Stony Brook. She is a member of the National Academy of Sciences' Institute of Medicine.

IRB Members: Service on the Sidelines



The NIEHS Institutional Review Board is, perhaps, at the core of the NIEHS intramural mission. Its members provide a service directly related to the NIEHS mission -- taking environmental health research into the arena of human health. Members meet monthly to review proposed research involving human participants. All such studies require IRB approval. Ongoing studies require initial IRB approval, and continuing review is an annual requirement.

The NIEHS IRB meets monthly to review proposed studies involving people. IRB Chair Marian Johnson-Thompson, below left, honored IRB members Stephanie London, a senior investigator in DIR's Epidemiology Branch, and Ernest Kraybill, a retired pediatrician. London was appointed to the board in July 2002, and Kraybill was appointed in January 1999. Both members rotated off the board after the March meeting. (photos by Colleen Chandler)



Researchers with such aspirations submit packets of information containing an application approved by branch chiefs, the Scientific Review Committee and the

NIEHS clinical director, along with the study protocol, informed consent documents, all study questionnaires, brochures, advertisements, press releases and any other printed outreach material that will be given to participants, IRB approvals from cooperating institutions, details about the specific demographics and exclusions for the study, a list of risks and benefits associated with the study, a list of anticipated complications and side effects as well as a plan to address them, and information on how investigators intend to protect study participants.

When reviewing continuing studies, the IRB may request the protocol be rewritten or modified to reflect suggested changes.

Jane Lambert, the IRB administrator, coordinates the meetings and prepares material packets for distribution to IRB members. More information on the IRB and the submission process can be found at http://dir.niehs.nih.gov/dirosd/ocr/irb/irb_help.html.

Postdocs Rank NIEHS Fifth Best

NIEHS fell two slots from number 3 to number 5 on *The Scientist's* list of best places to work for postdocs. Last year, NIEHS ranked third on the list.

The "Best Places to Work 2006," as in preceding years, was based on feedback from postdocs. Each year, *The Scientist* posts an online web survey, inviting participation from readers and registrants of the site who identify themselves as non-tenured scientist working in academia or other non-commercial research organizations. The survey asks about working conditions and 46 different criteria in 11 different areas.

Results for the 2006 report were based on 2,983 usable responses from researchers in the United States, Canada and Western Europe.

According to survey results, postdocs want knowledgeable principal investigators and mentors with a genuine interest in the postdocs' research and personal development. They want clarity, with clearly defined and measurable goals, in their research program.

The report said government agencies often offer better pay and benefits to postdocs than academia or other non-profits. The U.S. Department of Agriculture, for instance, offers the same salaries for postdocs that it offers its regular employees.

The report said NIH recommends starting pay at about \$20,000 less than the Department of Agriculture, however.

The J. David Gladstones Institute in San Francisco got the top spot this year, followed by the Fred Hutchinson Cancer Research Center in Seattle, the Environmental Protection Agency, and Emory University.

9th Annual Biomedical Career Fair

"NIEHS/NTA Scientist: Promote Yourself!" will be the topic for the keynote address to be delivered by Michael Ranney, from the University of California, Berkeley, Graduate School of Education, at the 9th Annual NIEHS/NTA Biomedical Career Fair on April 28.

The day-long event will include career-specific breakout sessions on a variety of topics related to career development for postdocs:

- Medical Communications;
- Scientist to Entrepreneur;
- Tenure Track/Academia;
- Clinical Research;
- Biotechnology and Pharmaceutical Industry;
- Teaching

The fair will be at the Sigma Xi campus, 3106 East Highway 54. To register, go to <http://www.niehs.nih.gov/nta/fair.htm>.

Bill Stokes Honored at SOT

Public Health Service Capt. Bill Stokes, who is the director of the Interagency Center for the Evaluation of Alternative Toxicological Methods, was honored at the 2006 annual Society of Toxicology meeting in San Diego.

Stokes received the Enhancement of Animal Welfare award for his contributions to the “marked reduction in the use of experimental animals for research.” The annual meeting was March 5-9.

Stokes’ previous awards include: PHS outstanding unit citation; PHS unit commendation; PHS citation; two Army achievement medals; and the Army Expert Field Medical Badge. He is a recipient of the NIH Director's Award, the 1999 Outstanding Veterinarian of the Year award from the Massachusetts SPCA and the Russell and Burch Recognition Award from the Humane Society of the United States.

Stokes served from 1998-2004 on the Institute for Laboratory Animal Research at the National Research Council of the National Academy of Sciences. He is the Public Health Service’s chief veterinary officer. In that role, he leads and coordinates PHS veterinary professional affairs for the Office of the Surgeon General and the Department of Health and Human Services. He administers the Interagency Coordinating Committee on the Validations of Alternative Methods, which reviews alternative test methods, and coordinates interagency validation and regulatory acceptance and use of those alternative methods within federal agencies.



Researchers Earn SOT Best Paper for Risk Assessment

Julia Gohlke Wins Student Poster Award

NIEHS research published in *Environmental Health Perspectives* was selected by the Society of Toxicology Risk Assessment Specialty Section as Best Paper for 2005. Dose-Additive Carcinogenicity of a Defined Mixture of “Dioxin-like Compounds” appeared in the January 2005 issue of EHP. NIEHS authors are Nigel Walker, Abraham Nyska, Michael Wyde, John Bucher, Chris Portier, Amy Brix, Michael Easterling, Joe Haseman, Ming Yin, and Pat Crockett. Members of the group were honored at the RASS reception March 8 at the SOT meeting in San Diego.


The award serves as proof of the importance and accuracy of the team’s dioxin work, Nyska told his team members in an e-mail.

The full manuscript can be viewed at <http://www.ehponline.org/members/2004/7351/7351.html>.

Meanwhile, Julia Gohlke, a postdoc in the Environmental Toxicology Program, won one of SOT’s Biological Modeling Specialty Section student poster awards for her presentation, “Bayesian-based quantification of a gene regulatory network for forebrain development using microarray data.”

NIEHS in the News

NIEHS research made big news in March, with headlines in local and national media. Highlights include:

- The polymorphisms registry kick-off, with interviews and quotes for Pat Chulada, health scientist administrator in the Office of Clinical Research, appeared in the *Raleigh News & Observer*, the *Durham Herald Sun* and local television stations.
- DERT's Sally Tinkle was quoted extensively about nanotech, and was interviewed as part of a National Public Radio program. "Safety of Nano-Cosmetics Questions" aired on Morning Edition. The story can be found at <http://www.npr.org/templates/story/story.php?storyId=5257306>.
- The NTP's Center for the Evaluation of Risks to Human Reproduction got national press with two *USA Today* articles and one in the *Wall Street Journal* on the Expert Panel review of soy formula. *USA Today* articles appeared March 19, http://www.usatoday.com/news/health/2006-03-19-soy-panel_x.htm, and March 14, http://www.usatoday.com/news/health/2006-03-14-soy-panel_x.htm. The local NBC affiliate TV station ran a story (<http://www.nbc17.com/health/8065705/detail.html>) that was picked up and broadcast by other affiliates across the United States. Similar stories were carried on international news sites on the Internet.
- *The Park Guide*, Spring 2006 edition and special supplement to *Business Leader*, contains a feature story on NIEHS research. "Links to Infertility: Uncovering Environmental Causes and Cures for Disease" explains not only the infertility work conducted by John Couse and Ken Korach, but the recently announced Genes and Environment Initiative, a public-private partnership to combine gene analysis and new technology development to generate new, more effective and high-tech tools for biomedical researchers.
- "Science in the News" on Voice of America, carried a story about research done by Pablo Nepomnaschy, a postdoc in the Epidemiology Branch. The research followed pregnant women in Guatemala who experience emotional tension in the first weeks of pregnancy. Results suggest a link between the stress a woman feels and her ability to carry an unborn child. ([Listen to Science in the News](#) )
- New NIEHS Associate Director William J. Martin was interviewed on NIH Radio about translational research. The story ran March 10, and can be accessed from this page: <http://www.nih.gov/news/radio/index.htm>. A story about his appointment also appeared in the March 3 issue of *Research Policy Alert*.
- NIEHS researcher Stephanie London was quoted in the April edition of *Natural Health* in an article on dietary fiber and its effects on respiratory problems that accompany childhood exposure to secondhand smoke.
- NIH Director Elias Zerhouni discussed NIH research March 15 with Diane Rehm on American University Radio, which was carried by National Public Radio stations across the United States. In the interview, Zerhouni referred to NTP research and the NIEHS Genes and the Environment Initiative. The story can be heard from this page: <http://www.wamu.org/programs/dr/06/03/15.php#10705>.



Science Notebook

Panel Review of Soy Formula: No Reason for Concern –For Now

A 14-member panel formed by the Center for the Evaluation of Risks to Human Reproduction convened March 15-17 in Alexandria, Va., under intense media scrutiny, to discuss and evaluate results of toxicity studies of genistein and soy formula.

Genistein is a phytoestrogen found in beans, particularly soybeans. Phytoestrogens are non-steroidal, estrogenic compounds that occur naturally in some plants. Genistein and a genistein-sugar complex called genistin are found in many food products, especially soy-based foods popular with vegetarians and including tofu, soy milk and soy infant formula.

Soy infant formula is used to supplement or replace human or cow milk. Soy formulas have been on the market for a number of years.

The panel, which consisted of independent scientists, reviewed existing scientific data on genistein and soy formula in three primary areas: human exposure, reproductive toxicity, and developmental toxicity. The panel identified data gaps on possible effects and suggested areas for more study.

Their conclusions were as follows:

- Genistein: Even though there is a paucity of available human data on exposure to purified genistein, the panel expresses negligible concern for reproductive and developmental effects from exposure of adults in the general population; the panel expresses negligible concern for adverse effects in neonates and infants who may consume up to 0.01-0.08 mg/kg bw/day of genistein aglycone from soy formula.
- Soy formula: There are insufficient human or experimental animal data available to permit a determination of the developmental or reproductive toxicity of soy infant formula.

The panel's final report will be posted on the CERHR website at <http://cerhr.niehs.nih.gov> and will be available in printed form in May. The CERHR, which is part of the National Toxicology Program, will seek public comments on the report, and will include those comments, along with their final report and an NTP brief in two monographs – one for soy formula and one for genistein.

NIEHS Employees Support Polymorphism Registry

Some 420 people showed up in just one week, each leaving behind a few teaspoons of blood for the NIEHS Environmental Polymorphism Registry and tucking a crisp \$20 bill into their pockets as they left.

But it was not the money alone that lured NIEHS staff in for the donation. Many employees said they felt it was their responsibility to donate to biomedical research, and some recruited family members to donate as well.

Tony Belch is Judy Hanson's 25-year-old son. He said he participated because the research could lead to breakthroughs that could help millions of people, even save lives somewhere down the line. Hanson also donated. She said it is exciting to be part of DNA research, and she thinks it is a great opportunity to help researchers better understand the disease process.

Heather Vahdat, assistant manager of the clinical research program at Integrated Laboratory Systems, which will handle the recruitment, blood sample collection and DNA isolation, said she was impressed with NIEHS participation.

In the Rodbell Auditorium, five recruiting stations performed intake functions: explaining the study, gathering data, and providing and administering consent forms.

When it's all said and done, the registry will have about 20,000 samples that will provide DNA and data for researchers looking for genetic clues to diseases. The registry is being created in collaboration with University of North Carolina investigator Paul Watkins, director of the General Clinical Research Center at UNC.

Participants were recruited at UNC clinics and at corporations in the Research Triangle area and outlying counties. Patricia Chulada, program administrator in the NIEHS clinical program, said recruitment will continue for about five years, or until the 20,000 samples are collected.

According to the consent information, each donor's personal information – name, gender, birthday, address, telephone numbers and e-mail address – will be entered into the registry's database.



Veronica Godfrey, who says she doesn't like needles, braved the phlebotomist to participate in the NIEHS Environmental Polymorphisms Registry. Joan Jacobs, of Constella Health Services, was one of five phlebotomists collecting blood samples at the NIEHS recruitment. Below, Heather Vahdat, the study manager for the NIEHS registry. (Photos by Colleen Chandler)



The DNA will be extracted from the blood sample, processed anonymously and encoded with a secret identification number and placed in the DNA bank.

The DNA in the registry will be archived for up to 25 years. During that time, NIEHS and UNC researchers will use the DNA to look for genetic differences that might be associated with common health conditions like diabetes, heart disease and cancer. Plans are underway to allow Duke researchers access to the DNA as well. Researchers who find a genetic difference of interest may investigate further by asking those donors to participate in a follow-up study, Chulada said.

Signing the consent form for the polymorphism registry does not mean a donor will automatically be included in follow-up studies. These studies will require several different levels of review before the samples are decoded and donors are called for follow-up studies. Nobody who participates in the registry will be identified in any report or publication resulting from use of the registry, the consent form said.

To protect the privacy of the donors for the polymorphism registry, study officials obtained a Certificate of Confidentiality from NIH, which is valid for the duration of the study. The certificate means researchers cannot be forced to disclose information that may identify anyone in the study.

Rogan Presents at AAAS Meeting

By Blondell Peterson

Walter Rogan, a senior investigator in the Epidemiology Branch, helped lead a symposium at the American Association for the Advancement of Science meeting in St. Louis, Missouri Feb. 19. The symposium addressed the subject, "Does Blood Lead Affect Child Development at Levels Below 10 Micrograms per Deciliter?" Rogan was one of four speakers for the symposium and also spoke at a press conference on Feb. 18 at the America's Center. His presentation was titled, "Are There Study Approaches to Further Reduce Possible Bias?" Three other speakers discussed the experimental and human behavioral effects, evidence of low-level adverse effects, and the ambiguity in the interpretation of the Intelligence Quotient effect at low blood lead levels.

The AAAS annual meeting drew more than 800 news media representatives and thousands of scientists, exhibitors and attendees to an interdisciplinary blend of nearly 200 symposia, plenary and topical lectures. There were also seminars, poster presentations, career workshops and an exhibit hall.

Rogan said most studies have focused on the effects of lead levels higher than 20 micrograms. However many studies have demonstrated associations between blood lead levels in young children and behavioral and cognitive development. In 1976 the mean blood lead level in the U.S. was 15 micrograms, and scientists thought adverse cognitive effects could only be seen in humans when the lead level reached 25 micrograms. The "level of concern" was 10 micrograms. Scientists are now questioning this level because new studies indicate that the relationship between lead exposure and IQ seems to be even stronger at lead levels below 10 micrograms than at higher levels.

The symposium participants reviewed the animal and epidemiological evidence for effects of blood lead on child development when the exposure level is below 10 micrograms. The speakers also discussed possible future studies.

In regard to study approaches, Rogan said scientists should think about conducting epidemiology studies in places where there is a low lead level yet a variety of lead sources, such as Los Angeles, California. "In that area kids have lower blood lead levels, but there is a mixed exposure from traffic and some paints," Rogan said. "So the tight link between deteriorated housing and blood leads is broken."

Another option, according to Rogan, is to conduct studies in the Ukraine and Poland where there has been a very rapid industrial expansion and factories have distributed lead in the surrounding environment. Those factories provided jobs. Housing is better, so the social class indicator of substandard housing is no longer an indicator of blood lead levels.

Rogan said technical epidemiology studies that identify a source, interrupt it, and then record before and after data could also be considered. Epidemiological studies of this magnitude would be extremely expensive, according to Rogan. Participants would need to be relocated to alternative housing during the study.

Although the adverse affects of lead exposure are permanent, Rogan said the “silver lining” is that there is much less lead in the food supply, and leaded gas is a thing of the past. Subsequently, lead levels in the environment have decreased dramatically. “It’s interesting to me that as lead levels have gone down, we’ve gotten more concerned about the lower lead exposure,” Rogan said.

DuBois Delivers Distinguished Lecture on COX-2 and Cancer

By Blondell Peterson

Raymond DuBois, a professor of Medicine at the Vanderbilt Ingram Cancer Center Professor of Medicine, delivered the first distinguished lecture of 2006 on Feb. 14 at the Rodbell Auditorium. Dubois is also a professor of Cancer Biology, Cell and Developmental Biology at Vanderbilt University. Dubois’ topic was “COX-2 and Cancer: A Complicated Story.”

DuBois received national acclaim for his research on the use of Cyclooxygenase-2 inhibitors Celebrex, Vioxx and Bextra as not only painkillers, but also cancer prevention medications. These drugs were developed to treat arthritis inflammation. They are similar to aspirin and non-steroidal anti-inflammatory drugs like ibuprofen. Aspirin and NSAIDS target Cyclooxygenase-1 and 2. Celebrex, Vioxx and Bextra target only COX-2.



Raymond DuBois was the first distinguished lecturer for 2006. His presentation was entitled, “COX-2 and Cancer: A Complicated Story.” (Photo by Blondell Peterson)

“Everyone is familiar with the controversy concerning the cardiovascular effects of the drugs Celebrex and Vioxx because of the televisions ads, but this story got started in the early 1990s,” said Tom Ehling, a senior investigator in the Laboratory of Molecular Carcinogenesis. In his introduction of the speaker, Eling said he visited Vanderbilt University to give a talk in the early 1990s, and several people told him he needed to talk to Dubois. Eling found Dubois in his small basement office at Vanderbilt working on the hypothesis that COX-2 played a vital role in the development of colorectal cancer.

Eling said over the next several years Dubois produced key papers that supported this hypothesis and led to the conclusion that COX-2 does, in fact, play a role in the development of cancer. This led to the fundamental basis for understanding this process.

“In a more recent study, and more impressively Dubois elucidated how COX-2 interacts with signaling pathways causing cell and tumor growth,” said Eling.

To illustrate the tremendous interest in the subject of his talk, Dubois said he did a computer search with the key words inflammation and cancer and he came up with 17,000 articles that were published on the subject since 1950.

“There are clear links between inflammatory pathways and cancer,” Dubois said. “In a number of different organs chronic inflammation can increase the risk for cancer. We know that even animal models can have a genetic predisposition to cancer. If we overlay some inflammatory condition or stimulate the immune system in certain ways we can accelerate the development of cancer in some of these genetic models.”

According to Dubois, long-term use of anti-inflammatory drugs can decrease cancer risk.

“The way we initially got interested in this COX 2 was that we were simply treating rats with growth factors and using pretty standard coding techniques were able to clone out,” Dubois said. “One of those was the COX-2 gene. We wondered what this gene might be doing in epithelial cells.”

According to Dubois, more than 40 studies have been conducted with people who used anti-inflammatory drugs and then measured their risk for colorectal cancer. The findings showed a 40-50 percent cancer risk reduction in people who used the nonsteroidal anti-inflammatory drugs. “This data in combination with our observation that there was an induction of COX 2 in some of these intestinal epithelial cells led us to formulate the hypothesis that there might be some link to explain this decreased risk,” he said. Dubois said COX-2 levels are increased in 8 out of 10 colon cancers.

EPA Science Forum

The 2006 EPA Science Forum will highlight the relationship between our environment and public health, and will include discussions on issues as diverse as the impact of understanding the human genome and the impacts of the built environment. The forum will also highlight the complementary roles of EPA and other Federal public health agencies. NIEHS is a collaborator agency for the event.

The event will be May 16-18 at the Ronald Reagan Building and International Trade Center in Washington, D.C.

Begun in May of 2002 as a demonstration of EPA’s commitment to quality science, the Science Forum has rapidly grown into an EPA tradition. It allows scientists, staff members, researchers, communicators, and stakeholders to share ideas, demonstrate their latest research, and explore opportunities to collaborate.

This year, the plenary sessions, poster platform sessions, poster presentations, and a number of exhibits will explore three tracks:

- Disease Susceptibility and the Environment
- Global Challenges
- The Built Environment

To attend the forum, register at <http://www.epa.gov/scienceforum>.

Papers of the Month

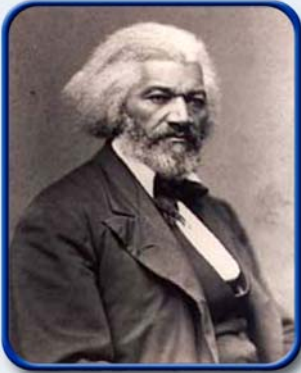
By Jerry Phelps

- 1) Inhibition of RLIP76 Causes Complete Regression of Melanoma in Mice Yogesh C. Awasthi, Ph.D., Department of Human Biological Chemistry and Genetics, University of Texas Medical Branch NIEHS Grant R01ES12171:
Implications: These findings provide strong evidence that inhibition of RLIP76 through genetic techniques or by administration of antibodies may be a clinically relevant approach to treating cancer, especially melanoma. The dramatic results suggest advancing this technique to clinical practice. Further studies in melanoma and other cancer models and other susceptible cancer cell-lines would be needed to show the general applicability of these results prior to human clinical applications.

- 2) Identification of a Potent Chemoprotective Agent for Aflatoxin-Induced Liver Cancer John D. Groopman, Ph.D. and Thomas W. Kensler, Ph.D. Department of Environmental Health Sciences; Johns Hopkins University Bloomberg School of Public Health NIEHS Grant P01ES06052:
Implications: According to the authors, “The striking protection achieved in this model indicates that triterpenoids warrant further examination as chemopreventive agents against hepatocarcinogenesis in humans.” The potent CDDO-Im and/or other related compounds in the triterpenoid family could be effective agents to fight cancers with strong links to inflammation such as colon or prostate cancer.

- 3) Mutation in a Skeletal Muscle Calcium Channel Confers Susceptibility to Heat and Anesthetic-Induced Malignant Hyperthermia Isaac N. Pessah, Ph.D., Center for Children’s Environmental Health and Disease Prevention, University of California Davis NIEHS Grant P01ES11269:
Implications: This new mouse model of the human condition of MH will continue to provide insight into the condition. Having a research tool to study the condition in controlled laboratory experiments will be essential in developing new treatments or screening tools for people susceptible for MH.

- 4) Diabetes Drug Inhibits Insulin-like Growth Factor-I Promoted Skin Tumors John DiGiovanni, Ph.D. Department of Carcinogenesis, University of Texas M.D. Anderson Cancer Center NIEHS Grant P30ES07784:
Implication: These studies show possible mechanisms for the anti-carcinogenic activity of thiazolidinediones. Insulin resistance, the cause of type-2 diabetes and other metabolic disorders, is associated with an increased risk of tumor development which is believed to be caused by an increase in IGF-I activity. These findings show that thiazolidinediones are capable of directly inhibiting the tumor-promoting activity of IGF-I and may provide additional benefits to type-2 diabetic patients by reducing their risk of cancer.



Black History Month

EPA Legacy Luncheon

By Blondell Peterson



Randy Harrison, BIG Vice President, presents an award to Freddie Parker, the guest speaker at the EPA Legacy Luncheon. Parker is a history professor at NCCU. Photo by Blondell Peterson)

Freddie Parker, a North Carolina Central University history professor, was the featured speaker at the EPA Legacy Luncheon on Feb. 18 at the Radisson Hotel in Research Triangle Park. Parker, a graduate of North Carolina Central University, also earned a PhD in history from the University of North Carolina at Chapel Hill. He received the UNC Board of Governor's Excellence in Teaching award and was appointed to the North Carolina Historical Commission in 2001 by Governor Mike Easley. Parker has also participated in several PBS television programs about slavery in North Carolina.

In keeping with the national Black History Month theme, "Celebrating Community: A Tribute to Black Fraternal, Social and Civic

Institutions," Parker talked about the impact these organizations have had on African American life and history.

Before beginning his speech, Parker encouraged African Americans to work together to gain ownership in businesses and real estate. He reminded attendees of how the historic Hayti area in Durham was once predominantly owned by Blacks. Today, in comparison, there are few African American business owners in the area. He admonished African Americans to work together more, rather than separately, to accomplish common goals.

In regards to the birth of many Black fraternal and social organizations, Parker said they were created because of necessity due to exclusion. For example, in 1787 Richard Allen and Absalom Jones founded the African Methodist Episcopal Church in Philadelphia, Pennsylvania. Although Blacks were allowed to attend the Joy Street Methodist Church, they were only allowed to pray and worship in the gallery. Rather than be

segregated in worship, Allen founded the AME church. The AME Zion churches were founded in 1796 when Blacks left the St. John Methodist Church in New York. Peter William decided to break away when church officials refused to christen a Black child under the name "George Washington. The AMEZ church has approximately 2 million members today.

Parker pointed out that many historically Black colleges and universities have law schools because Whites did not want Blacks to attend their schools. Rather than integrate, Whites chose to build separate facilities at Black schools.

Although Parker paid tribute to everyone for taking time out to celebrate Black History Month, and to examine the contributions, achievements and life experiences of Blacks in this country, he said people ought to be looking at the future of Black History. "We often concentrate our energies on looking at the past, but if we are to be around in 40, 50 or 100 years, it is important that we take care of our bodies," Parker said. "We really need to eat right. It's tragic that 66% of Black females, and 50% of Black males are overweight and obese."

Also in regards to preserving Black history, Parker said Blacks earn 600 billion dollars a year, yet very little of that money stays in the Black community. "We need to keep those dollars in the Black community," Parker said. "Rather than being primary consumers, we need to create [businesses]. That's the future of Black history."

Parker said the infrastructure for support has always been present. "There has always been a free Black community in the U.S.," he said. "In 1860 there were 500,000 free Blacks in the U.S. and 4 million slaves. The fraternal and civic organizations were created in the Black community because Black folks, for the most part, could not be a part of the general organizations. So we began doing for ourselves."

By 1890 Parker said the common theme for Blacks was "self help." That year Black teachers who were educated in the South established the NC Association of Educators because they could not join the White teachers association. In 1970 they merged with the general organization. Likewise, the Association of Black Nurses and the Black Bar Association were formed and later merged with general organizations.

In 1896 the Plessey versus Ferguson court case established that it was legal for Blacks to be separate from Whites as long as the facilities were equal. "We got the separate, but not the equality," Parker said.

"As a result of the segregated system, Blacks began to create," Parker said. "By 1907 there were 14,000 Black businesses in the U.S." Insurance companies, for example, were created because as early as 1885 Prudential Life Insurance Company would not insure Blacks, according to Parker. Prudential officials reasoned that based on their research all Blacks in the U.S. would be dead by 1920, and that would decrease profits for the insurance companies. Consequently, Blacks created fraternal organizations that grew into regional benefit societies whose purpose was to bury Blacks.

The number of Black businesses in the U.S. grew to 40,000 by 1914, according to Parker. "Even in the Hayti area, then known as 'Black Wall Street,' businesses from banks, to insurance companies, to bakeries and tailors flourished," he said.

One of the most popular Black organizations, the National Association for the Advancement of Colored People was established in 1909 to get rid of segregation and to deal with the phenomenon of lynching, Parker said. By 1910 a Black, White or other was being lynched every other day.

At the same time, the National Urban League was founded in New York to address the great migration of Blacks to the North. “By the thousands, Blacks moved west and north,” Parker said. “The tragedy was that they left hundreds of thousands of acres of land behind, in some cases selling for a penny an acre.”

“We know that land is the basis of freedom,” Parker said. “Wars are fought because of land. Up until the 19th century, you could not become governor unless you owned 500 acres of land, and you could not vote unless you had 50 acres of land.”

While the NAACP whacked away at the system of segregation, the Congress on Racial Equality was formed in 1941 to address problems of inequality and racism, according to Parker. “We talk about the march on Washington in 1963, but we don’t talk about the planned march in 1941,” he said. “Some of the same people who planned the march in 1941 also marched in 1963. When CORE notified President Franklin D. Roosevelt that 100,000 Blacks would march on Washington, he issued an executive order in June of 1941 that was designed to create harmony between the federal government and businesses. Contractors were required to hire and give subcontracts to Blacks.

According to Parker, the killing of Emmett Till marked a pivotal year in the American civil rights movement. “It was a watershed year,” he said. “Till became the catalyst for many people even in death. Muhammad Ali said he joined the civil rights movement and became a Muslim because of Emmett Till. Organizations sprang up around the country and people gave money as a result of this killing.”

The Southern Christian Leadership Conference was born out of the Montgomery Bus Boycott in Alabama. Martin Luther King, Jr. decided that the youth needed to get involved, according to Parker. Four years after the bus boycott, the Student Nonviolent Coordinating Committee was established at Shaw University.

“We should never forget that the real civil rights movement occurred at the grass roots level,” Parker said. “The grandmothers and grandfathers whose names will never reach the history book pages are the ones we need to focus on when writing about our history.

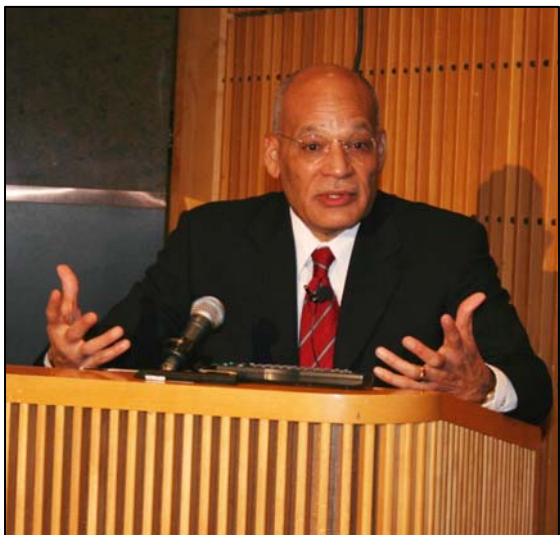
Parker, who was born and raised in Hillsborough, North Carolina, told the audience that history is everywhere, and the best place to start recording history is locally. He suggested that people begin ancestral searches by recording the recollections of older family members. “People think history is always out yonder somewhere, but it’s right here,” he said. “Your history is just as important as anyone else’s.”

Parker continued to stress the importance of civic institutions and organizations. “For example, Blacks in Government is a very powerful organization in its own right,” he said. “You need to hold on to as many of these organizations as you can--those that have some meat. This is what we need in the Black community. When I say Black community, I am talking about the community at large because Black history is American history. To isolate it or separate it should be only for reasons of study. Whether it’s Black history, women’s history—all of that is part of the American pie.”

Schering Plough Vice President Featured at Black History Month Presentation

By Blondell Peterson

Cecil Pickett, Senior Vice President of Schering Plough Corporation and President of Schering Plough Research Institute, was the guest speaker at the NIEHS Black History Month observance on Feb. 23 at the Rodbell auditorium. Schering Plough Research Institute is the pharmaceutical arm of Schering Plough. Pickett’s topic was “Drug Discovery in the 21st Century.”



Cecil Pickett, the senior vice president of Schering-Plough Corporation and president of Schering-Plough Research, speaks at the NIEHS Black History Month observance. His topic was, "Drug Discover in the Twenty-First Century." (Photo by Blondell Peterson.)

Pickett is no stranger to NIEHS or NIH. He was a member of the National Advisory Environmental Health Sciences Council from 1994-1997. He also served on the advisory committee to the NIH Director from 2000-2004. Well known for contributions in the private corporate sector, Fortune Magazine named Pickett one of 50 most powerful Black executives in America in 2002. Black Enterprise recognized him as one of 75 most powerful Blacks in Corporate America In 2005. He was lauded for being a role model for all African Americans aspiring to a career in science.

Pickett talked about his research experiences in the last 29 years and how technology has changed within the industry. During a question and answer session he outlined some things that have been important to him in his own career progression.

Pickett said drug discovery was at a very different state when he joined the pharmaceutical industry in 1978. All assays used in vivo models using whole animals, and all chemicals were assayed one by one.

"Today, we are seeing a number of new technologies that, in my opinion, really are accelerating significantly the overall pace of drug discovery," Pickett said. He specifically cited the sequence of the human genome and also the sequence of model organisms that are used in the drug discovery process. "Based on that we really know almost every single molecular target that could be intervened with to create new antibiotics as well as in certain fungal species," he said. "That's an extremely powerful technology to have."

Pickett predicted that the impact of technology in the area of genomics probably won't happen for another 10 years because it takes as much as 10 years to capitalize on the initial observation stage. This is due to the long research and discovery process for each drug. However, he feels that the technology will have a major impact on the discovery of new classes of drugs.

Pickett said genomics has also been useful in predicting the structure and function of proteins. Scientists also use genomics to predict expression of genes or proteins in normal versus diseased tissue. This gives researchers an idea of what might be therapeutically relevant in terms of a molecular target.

Chemistry is another area Pickett said has changed dramatically within the industry with relation to the ability to create small molecules. With the advent of High Throughput Screening, scientists can make several thousands of chemicals at once rather than one. Compounds are no longer screened one by one. It's all done by microbotics. Pickett said the chemical library is the most important intellectual property a company can have. The diversity and complexity of that library is tremendously valuable because that's where chemical leads come from that go on to become drugs.

"Over the last 10 years since 1994 we went from a collection of about 500,000 compounds to about 5 million," Pickett said. "In the past, it would have taken us about 30 years to build a library like that."

Drug metabolism has undergone a tremendous difference over the last 15 years. "We now know how our compounds are metabolized by humans, so we can predict or eliminate significant drug interactions before we introduce a compound into the clinic," Pickett said.

“I think the next 10 years will be the golden age of drug discovery,” Pickett said. “Innovation in our industry has always been driven by advances in biology, and that’s what will drive the creation of new products. We will see major advances in the treatment of some diseases such as various types cancer particularly solid tumors and some of the neurodegenerative diseases like Alzheimer’s.”

Pickett’s recipe for success is to focus on scientific excellence, within any company, to stay engaged in science and maintain a research laboratory. “It provides breadth, and you stay contemporary in science, and that allows you to judge scientific programs better outside of your particular interest on a scientific basis,” he said. Equally important, according to Pickett, is the development of good oral and written communication skills.

“Set high goals and don’t let people tell you what you can’t do,” he said. “I’m from the Midwest, so I believe you have to work hard, be honest and treat people with respect and dignity. I think if you do those types of things you are going to be successful.”

After Pickett’s presentation, the NIEHS Diversity Choir sang a medley of songs by two African American composers, Jester Hairston and Moses George Hogan. Terry Lewis led the audience in singing the Negro National Anthem, “Lift Every Voice and Sing.”

Kimberly Jackson’s Dancer’s Corner of Knightdale provided entertainment during a reception in the cafeteria. Five-year-old J’aniah Peterson, daughter of Kimberly Peterson an administrative specialist in the Laboratory of Signal Transduction, is a member of the dance group.

Black History Month Obesity Forum

By Blondell Peterson



Deputy Scientific Director William Schrader was the moderator for the Obesity Forum. (Photo by Steve McCaw, Image Associates)

The NIEHS Diversity Council and the Triangle Chapter of Blacks in Government sponsored the annual Black History Month Health Disparities Education Program at the Rodbell Auditorium on Feb. 14 from 2-4 p.m. The theme was, “Obesity: A Continuing Issue in our Community.”

Obesity has been described as a 21st century epidemic that is more prevalent in the African American community, but statistics show that it is increasing in all racial and ethnic groups. The Diversity Council and BIG invited everyone who was concerned about this growing problem to attend and participate in the program.

In previous years, educational programs on prostate cancer, lupus erythematosus and uterine fibroids have been presented.

The objective of the health disparities series is to inform the

NIEHS community, in particular African Americans, about these issues, to encourage preventative strategies, to provide intervention strategies, and where relevant, to encourage participation in clinical trials.

Deputy Scientific Director William Schrader moderated the discussion that featured three speakers:

- Nadine Goodwin-Blake, executive director of Child Nutrition Services for Durham Public Schools,
- Carmen Samuel-Hodge, a researcher in the Department of Nutrition at the UNC Chapel Hill School of Public Health and
- Colette Wallace, an obesity clinical trial participant.

Schrader started the discussion by telling the audience that obesity is not a Black problem or a White problem. He cited his own challenge with weight as an example. Schrader said 61% of North Carolina adults are overweight or obese and 27 % of high school children are overweight or borderline.

“The reason we are here during Black History month is that the Diversity Council and BIG decided to target a condition that adversely affects Blacks,” Schrader said. “This is by no means a Blacks only situation, and it’s not a pretty picture. Today, 36% of non-Hispanic Black adults are obese, and 22% of white adults are obese. Everybody’s porking up, and the trends don’t look good. But Blacks are leading the pack.”

Goodwin-Blake cited solutions the school system has instituted like pricing ala carte lunch items higher so that students are deterred from creating meals consisting of cookies, cakes, chips and soda. “Meal participation increased because students could see that it was more economical to purchase a meal rather than separate ala carte items,” she said. In a 2-year period, schools moved to serving only 1% milk and eliminating frying foods in elementary schools, Goodwin Blake said. In addition to this, French fries are not available every day in middle schools. In High Schools more expensive ala carte items are placed in combo meals to take the focus off separate items rather than more balanced meals.

Samuel-Hodge stressed the importance of African Americans participating in clinical trials. “Everyone is getting heavier, and African American women have higher rates of obesity than women of other races,” she said. “Girls of color, not just African American, but Latino and Native American, are getting heavier and they are getting diabetes as early as 10 years old. Not only that, but they are getting diseases associated with obesity like kidney and heart disease.”

Samuel-Hodge asked everyone in the audience to think of three things they would do to solve the problem of obesity if money was no object. Rosemarie Ramos, a post doctoral fellow in the Laboratory of Molecular Carcinogenesis, said more education might be a solution so that people will know that they are in the danger zone or at risk to develop a disease related to obesity. “Previous studies have shown that the most improvement occurs in people who have clinical symptoms such as asthma, diabetes or angina,” Ramos said. “I think there is very little emphasis on tracking for pre-clinical morbidity for things that you would need an examination to know about. But, if you ask for these tests a doctor will do them to find out if you are at risk for a disease even though you might not have overt symptoms.”

Changing eating habits and exercising more equals better health, according to Samuel-Hodge, even when no weight is lost. “Weight and lifestyle work synergistically, and you can still be healthier just by making lifestyle changes,” she said. “Losing 10 or 20 pounds can also improve your health although you might still be considered obese.”

Wallace lost 50 pounds in a clinical trial sponsored by the Atkins Foundation at Duke Hospital three years ago. “I’ve only gained 10 pounds back,” Wallace. “That’s the hard part—keeping it off. I understand now that it’s not so much the pounds, but it’s what I’m doing.”

Wallace said the bottom line in any weight loss plan is the less food taken in and the more activity one has the more weight will be lost. Wallace signed up for the six-month low carbohydrate study to find out if the weight loss plan would decrease symptoms of polycystic ovarian syndrome. PCOS is a genetic endocrine disorder. Symptoms of the disease include insulin resistance, infertility, alopecia, acne, excessive hair growth and hyper pigmentation. Testosterone levels are also high in women with PCOS. Wallace said her testosterone levels went down during the trial, and her blood sugar and cholesterol levels measured normal each month.



Did You Know?

Sister Study Includes Sister of Men

No gender bias here: the NIEHS Sister Study, which is studying women who do not have breast cancer but who have a sister with breast cancer, includes in the study those women who have a brother with breast cancer. Dale Sandler, chief of the epidemiology branch at NIEHS and principal investigator for the study, said that recruitment messages focus on women for simplicity's sake, but that women who have a brother with breast cancer are also eligible to join the study.

The Sister Study will follow 50,000 women to get insights into the gene-environment interactions that contribute to breast cancer. Sisters of men with breast cancer may also share a familial risk of getting the disease.

Carolyn Winters Retires

Friends and family alike showed up at East Campus March 2 for Carolyn Winters' retirement party.

DETR Director Anne Sassaman, DETR Chief Grants Management Officer Dorothy Duke and coworkers voiced tributes to Winters for her dedicated service. Winters has 33 years of federal service, and was at NIEHS long before there was a DETR. A festive partygoer referred to her as "older than DETR."

Less like a potluck and more like a grand feast, the tables were laden with goodies in honor of Winters' retirement.

Coworker Michelle Mayo said Carolyn takes with her a lot of knowledge, skills and abilities and will be greatly missed.



As a memory of Winters and her kindness, each guest was presented with a M and M party favor. M and Ms are Winters' favorite treat.

April 20: Earth Day AND Take Your Child to Work Day

As is customary at NIEHS, Earth Day will be coupled with Take Your Child to Work Day April 20.

Earth Day activities include the usual plant exchange. Information booths and displays on recycling, solar power, health and safety, gardening, alternative fuels, the Transshare program, which provides subsidies to offset the cost of using vanpools or buses to get to and from work, and telecommuting will be in the main campus lobby area. Other activities include cell phone collection, campus bird identification, pipette tip box refilling and a NC Green Power solar panel energy display.

Take Your Child to Work Day is limited to 20 participants ages 8-15 who did not participate last year. Selection for participation is determined by lottery. The drawing will be April 14. To enter the lottery, send your name and your child's name to [Dick Sloane](#) by April 7. Confirmed activities include seed planning, vermicomposting, a magnet demonstration, making bags from recycled material, immunohistochemistry and DNA isolation. The event is designed to provide kids a chance to see what NIEHS employees do and offers them a chance to try some activities first hand.

7th Annual Women's Health Research Day

The Center for Women's Health Research will hold a symposium April 4-5 at the Medical Biomolecular Research Building at the University of North Carolina – Chapel Hill's Health Affairs Campus.

An opening reception and poster preview will begin at 4:30 p.m. April 4. NIEHS researchers whose abstracts were selected for presentation at the event: Jane Hoppin, Jennifer Jordan, Alicia Moore, Pablo Nepomnaschy, Silvia Ramos, Tina Saldana and Martin Valcin.

Free registration is required for the event. For more information or to register, go to www.cwhr.unc.edu.

RTP Electronics Recycling Day

The RTP Electronics Recycling Day for employees of companies and organizations in Research Triangle Park will be held April 26 from 7 a.m. to 6 p.m. in the old EPA building parking lot on the corner of T.W. Alexander Drive and Highway 54.

Donations of old or unused cell phones, stereo equipment, computer systems and peripherals will be accepted. However, all donations require a form, which can be downloaded from the web site (<http://www.environmentrtp.org/NewsEvents.html>) and filled out prior to drop-off.

Environment@RTP is conducting this event in partnership with the solid waste divisions from Durham, Orange and Wake counties. Environment@RTP is working with the Triangle United Way, a not-for-profit charitable institution who will repair and refurbish selected computers for reuse by other local organizations. This event is only open to employees of companies and organizations located within the boundaries of Research Triangle Park.


Bridge, Anyone?

The NIEHS Fitness and Wellness Program is offering lessons on duplicate bridge. The first 12 people to sign up get the slots. Classes will be held on Mondays and Tuesdays from noon to 1 p.m. from May 1-June 19. The fee is \$40, and the deadline to sign up is April 3. For more information, call the fitness room at 541-3291.

Up and Coming

- The NIEHS Vendor Show will be **April 3**, from 10 a.m. until 2 p.m. in the Rodbell Conference Room. The annual event features office and lab equipment, the latest technology and industrial advances.
- Peter Agre, vice chancellor for Science and Technology and professor of cell biology at Duke University School of Medicine will deliver the Dr. Martin Rodbell Lecture **April 6**. The presentation, “Water Transport and Aquaporins: From Molecules to Medicine” will be at 2 p.m. in the Rodbell Auditorium.
- Office of Management will offer a training class on preparing and planning foreign travel. The course, NIH Foreign Travel, will be held from 9 a.m. until 4 p.m. **April 10-11** in Nottingham Hall, conference room 204A. Attendance at the course requires supervisory approval and a training nomination. For more information, contact Cynthia Radford at 541-1806.
- The Center for Women’s Health Research will hold a symposium **April 4-5** at the Medical Biomolecular Research Building at the University of North Carolina – Chapel Hill’s Health Affairs Campus. Poster sessions will follow the reception on April 4, and 7th Annual Women’s Health Research Day will be **April 5**.
- The Diversity Council will sponsor a presentation for Clerical, Administrative, Secretarial and Technical, or CAST, employees. The presentation, which will focus on communication and professional etiquette, will be **April 18** in the Rodbell Auditorium, conference room C.
- **April 20** is Earth Day and Take Your Child to Work Day at NIEHS. Both events include activities scheduled throughout the day. For more information, contact Dick Sloane at 541-2947.
- The RTP Electronics Recycling Day for employees of companies and organizations in Research Triangle Park will be held **April 26** from 7 a.m. to 6 p.m. in the old EPA building parking lot on the corner of T.W. Alexander Drive and Highway 54.
- EPA Science Forum 2006: “*Your Health, Your Environment, Your Future*” will be held **May 16-18** at the Ronald Reagan Building and International Trade Center in Washington, D.C. For more information or to register, go to www.epa.gov/scienceforum.

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