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March 2005

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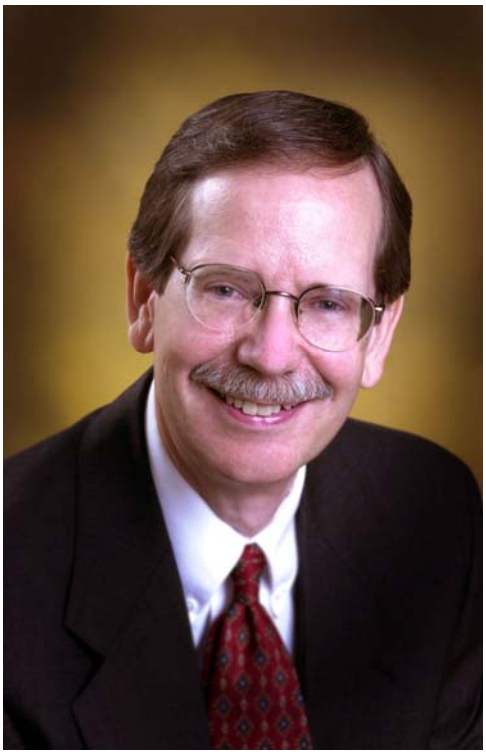
Did You Know?

NIEHS Spotlight

Dav Robertson: SLA Fellow

Chief NIEHS librarian Dav Robertson is among the 22 people recognized as "Info Heroes" by the Special Library Association.



SLA honorees will be saluted June 5 at the SLA 2205 Annual Conference in Toronto. They were chosen because they "consistently deliver value for their organizations and the profession" and "set the standard for information professional worldwide," according to an SLA press release.

The SLA web site said this about Robertson:

"Dav is active in a number of professional organizations, but his devotion belongs to SLA, where he has become a leader. His success in SLA is the result of success in his career. Dav is the quintessential information professional: talented, dedicated, kind, supportive. He has a remarkable record as a mentor to dozens of library and information science students and mid-career information professionals. He's been honored by employers, the SLA North Carolina Chapter and, most recently, his alma mater. In 2004, Dav received the Distinguished Alumni Award from the University of North Carolina School of Information and Library Science. With his SLA leadership experience at the chapter, division, and association level, Dav is poised to do even greater things."

The SLA is a nonprofit global organization with more than 12,000 members in 83 countries.

Schwartz Speaks at NIEHS Lecture Series

David Schwartz, who will assume leadership of NIEHS in April, was the headline speaker in two – yes two – new lecture series in February.

Schwartz is currently the chief of the Division of Pulmonary, Allergy, and Critical Care Medicine at Duke University Medical School, but came to NIEHS Feb. 22 to deliver the first in these new lecture series:

- The NIEHS Assembly of Scientists Annual Leadership Lecture. Schwartz's presentation: "Novel Gene Discovery in Innate Immunity."

- The Clinical Research Seminar Series. Schwartz's presentation: "Genetic Basis of Pulmonary Fibrosis."

Perry Blackshear, director of clinical research at NIEHS, said the new series on clinical research will consist of monthly educational seminars and presentations on translational and other science-related clinical research. The lectures will be held on Tuesdays at 1 p.m. in the Rodbell Conference Center.

Every two weeks, the clinical research lecture series will conduct programs featuring trainees. Look for these items in the NIEHS master calendar.

Once Again, NIEHS Ranks Third Best Place for Postdocs

NIEHS held its third-best place ranking for postdocs at U.S. institutions. The recognition comes from *The Scientist's* online survey to determine where the most satisfying postdoctoral experiences are occurring.

Last year NIEHS also ranked third on the list.

"This kind of recognition is important to the Institute since it acknowledges the hard work that so many people here do to provide a rewarding training experience to our fellows," said Deborah Swope, director of the NIEHS fellows career development office. "More importantly, that recognition came from our fellows through their participation in this survey. It also increases our visibility nationally as a quality place to obtain postdoctoral training."

The Feb. 14 issue of *The Scientist* quotes Paige Adams, NIEHS postdoc, who cited the beauty of the NIEHS campus setting, the interaction among departments, the availability of reagents and equipment, and "my great PI and lab coworkers" as reasons why NIEHS is "an especially great place to work."

Topping the list of U.S. institutions is NIEHS neighbor, the Environmental Protection Agency. Second on the list is the Fred Hutchinson Cancer Research Center in Seattle. NCI ranked eighth, and NIDDK ranked fifteenth.

Swope said the fact that NIEHS ranked high on the list for two consecutive years likely reflects a "coming together" of many institute programs in a cooperative spirit to make the NIEHS postdoc program stand apart from other programs.

The survey was conducted on the publication's web site from Dec. 8 through Jan. 4. Slightly more than 3,500 usable responses were received from self-identified non-tenured scientists working in 929 non-commercial organizations. Respondents were asked to assess 46 criteria in 11 areas of their working environment.

Becky Klein, a two-year member of the NIEHS Trainees Assembly and co-chair of the 2004 NIEHS/NTA Career Fair, said the ranking ensures the postdoc community is heard within NIH. "It is obvious that we are on the right track, but improvement can always be made. Through the work of the NIEHS Trainees Assembly and the Office of Fellows Career Development, postdocs are able to communicate effectively with the administration to further implement ideas that will improve the post-doctoral training experiences, and in turn, create a productive work environment. It is this type of cooperative effort between postdocs and senior level personnel that will continue to make NIEHS a paragon of research excellence in the years ahead," she said.

NIEHS and the NTA sponsor an annual career fair that is well attended by postdocs from nearby universities and industry as well as postdocs from other government agencies.

"Working at the NIEHS offers fellows the chance to learn about an amazing array of research topics, and the chance to participate in studies that frequently cross disciplinary lines. This rich background of science, as well as the strong support of institute administration and staff, combine to provide unusual opportunities for our postdocs to do excellent science, meet numerous mentors and explore different career prospects," Swope said.

NIEHS Director Ken Olden chats with a potential postdoc at the 2004 NIEHS/NTA Career Fair held at Sigma Xi.

Day Care Center Set to Open in July

The new 26,000-square-foot daycare center that NIEHS will share with EPA is expected to open for business after the July 4th weekend, an EPA official told NIEHS parents.

EPA engineer Luis Lluberas briefs parents on the status of the new day care center that NIEHS will share with EPA.

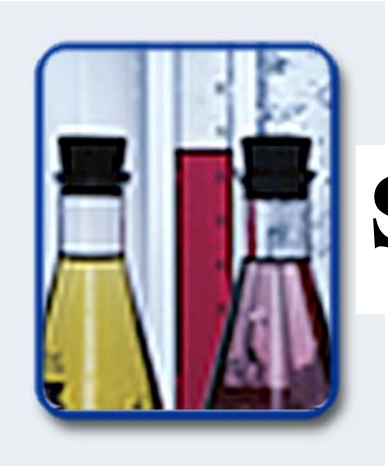
Luis Lluberas, an EPA engineer in charge of the project, met with parents Feb. 15. He presented floor plans, photos, and other information for parents who already have children at First Environments Early Learning Center and parents who hope to place their children there.

The daycare center currently operates near the old North Campus off Alexander Drive, but is expected to move into the new facility located near the EPA National Computer Center over the July 4th weekend.

The $3.6-million facility is scheduled to be completed May 18, when the government will take possession of the building. The current facility has about 134 kids. The new facility will accommodate 188 children, he said.

Lluberas said the building is shaped like an “H” to allow functional areas with direct access to outside play space. The building uses many “green” design elements such as the placement of the buildings and roof angles to allow maximum use of natural lighting. Before the new facility opens, it will undergo a series of indoor air-quality testing that will include chamber tests of furniture and flooring materials, which can contain formaldehyde and other chemicals detrimental to human health.

Lluberas said the facility follows EPA’s “cutting-edge standards” that exceeds minimum requirements.



Science Notebook

NIEHS-funded Study Links Air Pollution to Chromosome Damage in Newborns

The latest results in the multi-year study of mothers and children in New York City shows a link between prenatal exposure to air pollution and chromosome damage in newborns.

The results are part of the "Mothers & Children Study in New York City" conducted by researchers at the Columbia University Center for Children's Environmental Health. Researchers monitored expectant mothers' exposure to airborne pollutants like vehicle emissions, residential heating, power generation and tobacco smoke, which can cross the placenta and affect the fetus. The study included 60 babies born to non-smoking African-American and Dominican mothers in three poor neighborhoods in New York City: Harlem, Washington Heights and the South Bronx.

Exposure was assessed with the use of questionnaires and portable air monitors worn by the mothers during the last trimester of their pregnancies. Researchers used the data collected to calculate the concentration of air pollution to which each expectant mom was exposed. Chromosomal abnormalities in umbilical cord blood were measured using a "chromosome painting" technique that enables researchers to observe the chromosomal structural changes.

Frederica Perera, director of the Columbia center and senior author of the study, said that although the study was conducted in Manhattan, exhaust is prevalent in all urban areas. Therefore, she said, the results are relevant in other urban areas as well. Results were published in the February issue of *Cancer Epidemiology Biomarkers and Prevention.*

New "Chip" Technology for High-Throughput Toxicity Analyses

By Jerry Phelps

Advance: NIEHS-supported researchers at the University of California, Berkeley and Rensselaer Polytechnic Institute have created a new method that mimics liver metabolism allowing rapid testing of potential drugs. The technology employs P450 enzymes on a glass slide or "chip" and can be used to identify compounds that would be activated by the liver and to "weed out" those that have toxic metabolites. Using the new system, the metabolites produced were applied to human breast cancer cells. The researchers were able to demonstrate that the new technique accurately mimics the activation of the cancer agents Cytoxan (cyclophosphamide) and Tegafur along with producing the toxic metabolites of acetaminophen. This research was supported by the Small Business Technology Transfer Program.

This new technology, dubbed the "MetaChip," could provide a "high-throughput microscale" method for rapid testing of a variety of potential drugs and their P450-derived metabolites. The research team plans to expand the technology for use with other cell types, compounds, and enzymes involved in drug metabolism. Ultimately, this technique could lead to elimination of toxic drug candidates much earlier in the discovery process allowing researchers to focus their efforts on more promising, less toxic alternatives.

Screening for toxicity of potential new drugs presents a bottleneck in the drug discovery process. New technologies have led to a dramatic increase in the number of compounds that have pharmacologic potential, but the slowness of toxicity screening prevents many compounds from ever being tested and therefore slows the process of discovery and bringing new drugs to market. Often, researchers must select drug candidates for studies based on limited information. There is a lack of rapid, in vitro testing methods that can mimic human metabolism and test for cell-specific toxicity of these potential drugs and, just as importantly, their metabolites.

The liver is the primary site of metabolism of the vast number and types of chemicals that humans are exposed to on a daily basis. The most important class of metabolic enzymes in the liver is the cytochrome P450s, which are actively involved in the clearance of drugs. The P450s start the process of breaking down chemicals so they can be excreted, but during metabolism, some active metabolites, which have the desired pharmacologic effects, can be created. The converse is also true; metabolism can produce toxic metabolites, such as in the breakdown of the common analgesic acetaminophen.

The discovery was published in the Proceedings of the *National Academy of Sciences*, January issue.

Exposure to Lead, PCBs Affect Girls' Sexual Development

An NIEHS-funded study of adolescent girls from the Akwesasne Mohawk Nation in New York suggest low levels of common environmental pollutants can affect the timing of sexual maturation.

According to the study, PCB exposure was associated with an earlier first menstrual period, while lead exposure delayed it.

The average age for first menstruation is 12.43 years for U.S. girls. The study showed that girls with PCB levels of 0.12 parts per billion averaged 11.67 years of age for their first periods, while girls with twice the PCB levels averaged age 11.07 for their first periods. The median blood lead level for the girls in the study was 1.2 micrograms per deciliter, well below the federal prevention standard of 10 micrograms per deciliter. The average age for first menstruation among girls with lead levels above the median was 10.5 months later than for girls whose lead levels were below the median.

Previous studies have shown that the timing of sexual maturation is critical to an adolescent girl's social and psychological development. Early development has been linked to higher risk for pelvic inflammatory disease and miscarriage, while delayed development has been linked to increased risk for endometriosis.

The study looked at 138 girls ages 10 - 17 from the Akwesasne Mohawk Nation who live along the St. Lawrence River, adjacent to a U.S. National Priority Superfund site. NIEHS funded the research at the University of Albany, State University of New York. The results were published in the February issue of *Pediatrics*.

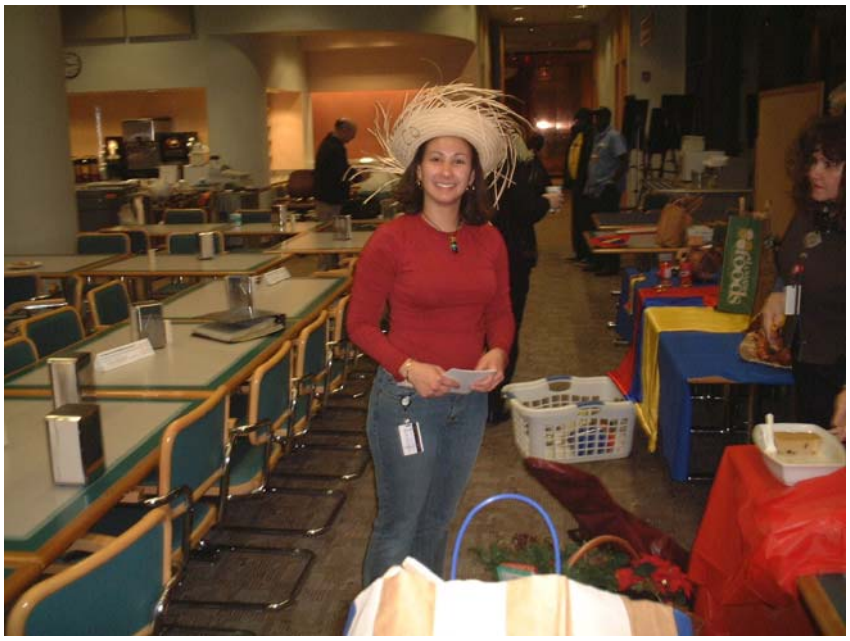
After Hours

Lysandra Castro: NIEHS Diversity Advocate and Artist

Biologist Lysandra Castro is the first person in her family to go to college. Born and raised in Puerto Rico, Castro cultivated her creative talents as well as her analytical, logical side. To those at NIEHS who know her, she is perhaps the artistic best-kept secret around.

In an art school in Puerto Rico, Castro mastered the techniques of drawing, painting, ceramics and sculpture. But, she said, it was old wives tales that launched her interest in science. She began a quest for knowledge that led her to science. However, art is her passion. “For art, your inspiration should not be money,” Castro said. “If it is, you will not have real inspiration.”

Some of Castro’s paintings surrealistically blend elements of nature with elements of science. For example, one painting displays a bouquet of flowers in a beaker. Another one superimposes items on top of each other. She completed more than 50 pieces, which sell as fast as she paints them. Castro set up a booth at the NIEHS craft fair in early December and sold almost everything she had. But that’s not surprising to Colleen Anna, a biologist in the Laboratory of Molecular Carcinogenesis. Anna owns a small, dark landscape of a lighthouse in front of a color-streaked sky. The vibrant colors and appealing subjects in Castro’s landscapes draw you into them, Anna said, making you feel “like you are almost there.”



Lysandra Castro at the 2004 NIEHS International Festival, where she manned a display booth on Puerto Rico.

Castro attended the Universidad Metropolitana in Puerto Rico, and earned a bachelor’s degree in molecular biology. She would like to focus on experimental pathology for her doctoral work. She first came to the United States in 2001, as part of a summer program. She came to NIEHS after she applied for and was accepted into the Summers of Discovery Program. Teddy Devereux, now retired, hired Castro as a trainee, and Castro soon landed a permanent position in the Laboratory of Experimental Pathology, where her work focuses on fibroids.

Castro enjoys talking about her culture and her experience at NIEHS. She is featured on a recruitment poster for NIEHS that was created last year.

Did You Know?

Condolences

Alvin Wade Jr., 68, personnel officer at NIEHS from 1972 until he retired in 1994, passed away Feb 4 at his Morehead City home. He is survived by three sisters, many nieces and a nephew. Donations can be made in his honor to:

Carteret County Relay for Life
c/o Cathy Wilson
Carteret-Craven Electric Cooperative
P.O. Box 1439
Morehead City NC 28557

Core Sound Waterfowl Museum
P.O. Box 556
Harkers Island NC 28531

NIEHS Changes Pay Systems March 20

On **March 20**, NIH will convert to the Defense Finance and Accounting Service pay system, which means a number of changes related to paychecks. The official payday – now alternating Tuesdays – will be alternating Fridays. The new system enables more pay allotments and contains differences in how taxes are deducted. NIEHS will have three employee sessions to familiarize people with the changes. They will be **March 8** at Nottingham Hall, room 204AB, from 1:30-3:30 p.m., and **March 15 and 17** in the Rodbell Auditorium from 1:30-3:30. The sessions can be viewed electronically by going to http://videocast.nih.gov.

Up and Coming

- A representative from Mail Handlers Benefit Plan will be in the Rall Building, C mall area **March 3** from 10 a.m. until 1 p.m. to answer questions and provide information.
- The NIEHS Work Life Center career counselor will be available **March 8** and **March 22** for private, confidential career consultation. To schedule an appointment, call the NIH Work Life Center at (301) 435-1619.
- A representative from Blue Cross/Blue Shield Federal Employee Program will be at NIEHS **March 9** to answer questions and provide information. She will be at East Campus, on the third floor lobby, from 9-10 a.m.; in the Rall Building C mall from 11 a.m. until 1 p.m.; and at Nottingham Hall from 2:30-3:30 p.m.
- "Networking: The Key to Career Results" will be presented **March 9**, Nottingham Hall, 204AB room 10 a.m. until noon. The workshop is sponsored by the NIEHS Work/Life Center, and will be presented

by Gordon Folger, the NIH career counselor. To register, call A'tondra Carree at 541-7883. Space is limited.

- The Office of Management is offering the course, "Supervision: New Skills and New Challenges" **March 15-17** from 9 a.m. until 4 p.m. It will be presented by HHS University staff, and will focus on the many skills required of managers. Participation in the class requires supervisor approval. Nominations are due by March 14. For more information, contact Cynthia Radford.
- The following NIH Work/Life Center "Faces & Phases of Life" sessions will be available via videocast. To view a session, go to http://videocast.nih.gov.
  - Improving Your Skills as an Interviewer (for supervisors). **March 2** at noon.
  - Investments 201. **March 9** at noon.
  - The Truth about Consequences: Effective Discipline without Punishment. **March 17**, 11:15 a.m. until1:15 p.m.
  - Keeping Sane in the Sandwich Generation. **March 23**, noon until 1:30 p.m.
  - Creating a Great Federal Resume. **March 29**, noon until 2 p.m.
- The NIEHS Spirit Lecture will be **March 31** from 1-2 p.m. in the Rodbell Auditorium. Shirley Malcom, the head of the directorate for Education and Human Resources Programs at the American Association for the Advancement of Science, will deliver the lecture, "Women in Science: Making Choices and Taking Chances." A reception will follow the lecture, and Malcom will meet with students for a question-and-answer session at 2:30 p.m.