



September 2006



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NIEHS Spotlight

First Annual Parenting Festival is a Success

By Eddy Ball

Approximately 200 people attended the First Annual NIEHS Parenting Festival on Monday August 7 in the Rodbell Conference Center. With 28 information booths, the event showcased institute and community resources for parents and other interested employees.

Described as “The Ultimate Family Resource,” the festival featured information on parenting, health, nutrition and safety along with NIEHS resources for improving the quality of life for employees at work and at home. Institute personnel and representatives of several community agencies answered questions and provided helpful literature to festival visitors. A Spanish Resources booth was available to provide as much information as possible to Spanish speakers.

Representatives from the Library, Employee Services Office (ESO), the Division of Intramural Research, Office of Communications, and Health & Safety Branch were on hand and presented information about childhood diseases, the Employee Assistance Program, student job opportunities, alternatives for commuters and more. Participating community agencies included the YMCA of the Triangle, Durham Cooperative Extension Service, Durham County Department of Social Services – Adoption and Foster Care, the Natural Learning Initiative, Healthy Families Durham, and Durham Parks and Recreation. Jim Mason and Angela King-Herbert were the winners of a drawing for prizes.

As promised in pre-event announcements, festival topics included something for virtually everyone, from new parents to cycling and boating enthusiasts. Two booths offered advice for coping with the typical problems of children of all ages, including information on managing television viewing habits of young children and handling sibling rivalry among older children. Other booths offered information on recreation, active living, family finances, and safety at home and at play. Festival health topics ranged from asthma and living smoke free to nutrition and mental health.

One of this year’s festival co-coordinators, Office of Management Intern Inés Palacios said, “I thought the turnout was good for a first-time event, and the visitors’ feedback was positive.” Palacios’s hopes for next year’s festival include increasing the participation of various



Public Liaison Specialist Lou Rozier and Biomedical Librarian Stephanie Holmgren swap stories about their busy day working the booths. Both were popular stops for visitors. (Photos courtesy of Steve McCaw)



From 11:00 AM to 2:00 PM, NIEHS people flocked to the booths, learning about programs and filling their blue bags with information.

NIEHS labs and community groups and holding the festival earlier in the summer. Employee Services plans to use feedback from the 85 festival goers who completed evaluations to expand the range of topics for what promises to be an even more successful Second Annual NIEHS Parenting Festival in 2007.

The festival was the brainchild of Employee Services Manager Dona McNeill, whose office presents training and events throughout the year to help improve work life for NIEHS employees. McNeill was especially pleased by the dedication of festival coordinators, the turnout at the festival and the comments she overheard at the booths. “Several times I heard people say, ‘This is just what I was looking for.’ Apparently, we anticipated important needs for many people, addressing difficult situations they were facing at this point in their lives.”

For more information about the Parenting Festival series, contact [Dona McNeill](#) in ESO by phone at 541-0451 or by e-mail. Learn more about NIEHS [work/life programs](#) at work/life programs.



Transshare program coordinator Dick Sloane rarely misses a chance to recruit new converts to SmartCommute. Sloane's table offered bus schedules and information about telecommuting, both great ways to break the habit of driving alone to and from work each day.



With a successful event behind them, Employee Services Manager Dona McNeill and Intern Inés Palacios pose with the Festival poster outside their offices in Nottingham Hall. Already, the two are struggling with how to fit even more into the Rodbell Conference Center for next year's event.

Michael Fessler to Establish Host Defense Group at NIEHS

By Eddy Ball

While most people think all of their organs are pretty special, to Dr. Michael Fessler, the lung is the pivotal organ in the human body's interaction with the environment. In his new position at NIEHS, the physician-researcher with board certification in internal, pulmonary and critical care medicine will serve as Clinical Investigator and head of the new Host Defense Group in the Laboratory of Respiratory Biology.

Combining his education and background as a clinician with his passion for research, Fessler will use a disease-oriented translational approach to develop possible clinical applications out of his group's work on the mechanism of infection, inflammation and induction of the lung's preprogrammed immune system response to the environment. As Fessler describes his translational approach, “The overall strategy will be to use cell and animal models of human lung diseases (e.g., acute lung injury, emphysema) to discover new aspects of disease induction and to test out novel disease interventions.” He is hopeful “that marrying ‘discovery science’ approaches, such as proteomics, to more traditional techniques will provide innovative bench-to-bedside insights, and accelerate their validation.”

While the group will perform animal-based and cell-based studies, its efforts will also include clinical research using human samples, such as lung tissue and fluid from the lung. “Exposed as it is, the lung is a centrally important organ for environmental research,” Fessler explains. “In its physiologic role of providing continuous gas exchange for the body, the lung is also a first line of defense against infection in which the inflammatory process has to be precisely controlled.”

Fessler is convinced that lung-focused research can provide insight into acute respiratory distress syndrome, asthma, and interstitial lung disease, and also into inflammatory responses throughout the body. Combining his research work with the Host Defense Group, anticipated involvement with the work of the new NIEHS Clinical Research Unit and an adjunct clinical appointment at Duke, Fessler intends to keep his team ever-sensitive to the end purpose of its research - to improve patient outcomes.

Medical scientists often use the words “cascade” and “downstream” to describe the mechanisms of metabolic processes, especially harmful ones. The waterfall or flood metaphor is useful because it suggests the domino effect of a succession of biochemical stimulants and responses in the body. In a flood, the ultimate damage, the destruction of buildings for example, may actually result from something the water moved - earth, a rock or a tree - rather than directly from the water itself. Similarly, an environmental exposure will trigger a succession of responses that harm the body “downstream” from the initial environmental exposure. By tracing the pathway, the triggers and responses leading to the end result of inflammation, medical science may be able to short-circuit or ameliorate harm to the body.



*Michael Fessler, M.D.
(Photo courtesy of Steve McCaw)*

Much of Fessler’s recent research has focused in this way on the infection/inflammation cascade in lung tissue and how to impact it. Among his body of original scientific manuscripts and numerous presentations, two studies stand out as especially representative of his current research interests and translational approach. The first (2004) explored the mechanism of lipid raft regulation of inflammation induced by lipopolysaccharide (LPS) or endotoxin, a major component of gram-negative bacteria. Study results suggested the possibility that manipulation of cellular cholesterol content may offer an effective approach to modification of the innate immune response. Growing out of this study, the second (2005) examined the specific impact of lovastatin, a drug prescribed widely to reduce cholesterol levels and cardiovascular risk, in modulating pulmonary inflammation and the lung’s host defense response. By confirming lovastatin’s effects on immune function in the lung, the research team pointed towards possible clinical applications for statins in conditions such as acute respiratory distress syndrome.

Fessler comes to NIEHS with an impressive background in medical science, a sizable body of research, and experience with pulmonary and critical care medicine in clinical settings. After finishing his undergraduate work at Princeton University, the New Jersey native completed his medical training at Harvard and residency at Massachusetts General. From Boston, he moved west in 1999 for a Fellowship in Pulmonary Sciences and Critical Care Medicine at the University of Colorado Health Sciences Center. Teaching appointments followed at the University’s School of Medicine, and in 2002, Fessler accepted an appointment at the National Jewish Medical and Research Center. He served as an Instructor and, later, Assistant Professor of Medicine at the Center prior to joining the Respiratory Biology Branch in August.

Fessler and his family have settled into their new home in Cary, where he and his wife spend much of their free time with their three-and-a-half-year-old son. When he can get away from his research, Fessler enjoys cycling. “Unfortunately, tenure-track academic positions are not very conducive to avid cycling,” he laments.

His new home is located in a neighborhood with many younger children and convenient to NIEHS and cycling routes. Living in Cary also puts the Fesslers over two thousand miles closer to family back east in the Washington, DC/Baltimore area.

Ebony Bookman Appointed Director's Chief of Staff

By Eddy Ball

Just a few weeks into her new job, Ebony Bookman may still be one of the newest faces at NIEHS. Even so, she has already had plenty of time to experience the challenges of her new position as Chief of Staff for NIEHS Director David A. Schwartz. After several long days filled with careful attention to details, she says she is just as happy with her new work as she looks in her photograph. For Bookman, apparently life is best lived full speed ahead, working for the ideals she values.

With Bookman's education and career experiences, she seems almost destined from the outset to eventually land at NIEHS. After finishing her undergraduate work at the University of North Carolina – Chapel Hill, the Charlotte native completed her masters in genetic counseling and her doctorate in human genetics with a concentration in pharmaco-genetics at Howard University in Washington, DC. It was at Howard that she developed her interest in integrated research through her work with Howard's Alcohol Research Center and National Human Genome Center. She combined her interests in a dissertation analyzing associations among gene sequence variants, race, personality, population genetics and addiction. Her most recent position as a research geneticist at the National Heart, Lung, and Blood Institute offered her an opportunity to serve as a project officer and helped her realize that she had major strengths as an administrator as well as a scientist. NIEHS thought the combination was a perfect match for the job, and Bookman accepted the offer to come back home to her native North Carolina.



*Ebony Bookman, Ph.D.
(Photo courtesy of Steve McCaw)*

According to Bookman, Schwartz sums up her position in three words, “my right hand.” In addition to directing Office of Director (OD), she coordinates the efforts of senior staff to realize the goals of NIEHS Strategic Plan, and she tracks staff assignments, biomedical research programs and program management initiatives. Bookman plays a key role in advising the director on the implications of NIEHS-wide activities, often assists the director with his various publics and helps the director implement executive policies and decisions.

During her time away from the fast-paced environment of the OD, Bookman stays in shape by running, sometimes ten miles or more when time permits. She also has remained active in her sorority, Alpha Kappa Alpha, and gives back to her community by volunteering in the schools, and tutoring and mentoring with Big Brothers and Sisters of America. She has always valued her family ties and frequently visits relatives in Charlotte and elsewhere in North Carolina.

NIEHS Volunteers Support Delta Sisters' Science Day Camp

By Eddy Ball

Thanks to members of the NIEHS Science Education Committee (SEC) and other NIEHS volunteers, along with the Durham Alumnae Chapter of Delta Sigma Theta Sorority, 39 area African-American children between the ages of 5 and 13 had an opportunity to experience the fun side of science and mathematics this summer at a special free event. On July 15, the Durham Alumnae Chapter held the first Annual Durham Science and Everyday Experiences (SEE) Science Day Camp, "Blast into Scientific Exploration for the 21st Century," at the Durham Alumnae Delta House.

NIEHS provided activity materials and volunteer participation, while the Burroughs Wellcome Fund contributed financial support for the event. SEE is a national effort initiated among the 435 chapters of Delta Sigma Theta by a five-year grant from the National Science Foundation. Like other SEE events throughout the country, this summer's camp in Durham brought science and math to life for children as volunteer instructors combined humor and novelty with the mystique surrounding the tools of science.



Campers and instructors gather outside Delta House in Durham. Standing behind the campers are (from left) UNC's Lenis Chin and Science Education Committee members Joan Packenham, Marian Johnson-Thompson, Durham Alumnae Chapter President Deloris Hargrow and Sharon Beard. (Photos courtesy of Durham Alumnae Chapter)



Many of the campers had never seen a pipette before Lenis Chin taught them how to use one.

Campers in grades K-3 were involved in three hands-on sessions: "Genetic Inheritance and Family Traits," "Healthy Heart" and "How to Filter Indoor Air Pollution Using Air Purifying Plants." In the first session, students engaged in activities to help them understand that the way they look is determined by their genes and that genes hold the instructions their bodies follow to shape features and traits. The lesson on genetic traits allowed students to make their own genetic inheritance bracelets, combining different colored beads to represent genetic characteristics. The second session included "Find Your Heart Quick" and "Smile for Physical Activity." Students learned about their hearts and how to keep them healthy. They were able to view, remove and manipulate the heart and other organs of a full-scale anatomical model. Indoor air pollution was the topic of a session on environmental health, and students learned that the quality of the air inside homes, schools and workplaces is important to health and that certain plants, such as the spider plant, can filter harmful pollutants from indoor air.

Students in the fourth to sixth grade group participated in six to eight different activities. They used pieces of string cut to their height for a practical lesson in ratio and perspective, witnessed firsthand the differences in diffusion as

they mixed food color with oil, vinegar and water, and felt for themselves the way manipulation of air pressure can alter the demands of lifting and moving objects. They also engaged in the “Guess the Object Games,” “12 Spot,” “Better Buy” and “Air Pressure Power.” In the “12 Spot” activity, exposure to different physical stressors taught campers what types of stressors cause an individual to work slower or faster. In the “Better Buy” exercise, students used simple multiplication and division to calculate unit price and determine the better buy among items at a market. Using something as simple as a ruler and newspaper, campers observed how air exerts pressure on its surroundings because it has weight and mass.

The seventh and eighth grade students participated in learning modules sponsored by IBM, the UNC Destiny Program and City of Durham. These activities involved learning about robotics, genetics and molecular biology. In one session, for example, the teenagers extracted DNA from their cheek cells and then placed that DNA into glass vials, which they used in making their own DNA necklaces, a string of colored beads representing genetic traits. In addition, they engaged in a science scavenger hunt, participated in a demonstration about water pollution, learned how water is treated and, finally, learned how to write a computer program. All of these activities offered campers the opportunity to witness the workings of science and math in their everyday lives.



Campers dressed in their anatomy lab coats work on everyday math problems as Sharon Beard looks on.



Science Education Committee Chair Liam O’Fallon works the group, helping kids understand the lesson behind the experiments.

According to Sharon Beard, NIEHS Industrial Hygienist and chairperson of the Delta committee in charge of the event, “The purpose of the camp is to help young people explore science and math in everyday age-appropriate activities. SEE is informal education to help kids discover their talents in science and mathematics and to help them figure out how to channel those talents.” SEE connected the campers with several different types of scientists who can mentor and serve as role models. The success of this year’s event ensures that this camp will continue as an annual event, one that organizers hope will serve a growing number of children in years to come.

Along with Beard, NIEHS Program Director Joan Pakenham co-chaired the committee in charge of organizing the event. Beard, Pakenham and NIEHS Director of Education and Biomedical Research Development Marian Johnson-Thompson performed initial planning of the camp and worked closely with other

NIEHS volunteers, including Undi Hoffler, Elena Braithwaite, Mark Melton, and Marva Wood. SEC Chair Liam O’Fallon also came out on the day of the event to volunteer. The SEC realizes that one way to effectively engage in local outreach efforts is to collaborate with community organizations, and the Science Day Camp demonstrated how this can be accomplished. In addition to the impressive NIEHS contribution and participation by UNC’s Lenis Chin and City of Durham’s Vickie Westbrook, the American Association for the Advancement of Science, Delta Research & Educational Foundation, Thomas Johnson Catering and Fisher Funeral Home supported the event.

Delta Sigma Theta, a service-oriented sorority, was founded in 1913 at Howard University and is dedicated to promoting academic excellence and to providing assistance to persons in need. The Durham Alumnae Chapter was organized in 1931 and, like its sister chapters, emphasizes educational development through a range of programs as an important component of the organization's mission.

For more information about SEE and other Delta programs, contact [Sharon Beard](#) or [Joan Pakenham](#). Visit the [chapter's web site](#). To participate in or learn more about the NIEHS SEC's community service activities, contact Chair [Liam O'Fallon](#). Visit the [committee's web page](#).

Blacks in Government Feeds Crowd at Annual Fish Fry

By Eddy Ball

What would summer be without a traditional fish fry outdoors in the park? That's what members and officers of Blacks in Government (BIG) seemed to be thinking as they bent over hot pans of cooking oil watching as trout, whiting, and French fries turned a perfect golden brown. The cooks and servers were getting ready for the hungry crowds expected at the 2006 Annual Fish Fry on August 10th at the ball field picnic shelter on the NIEHS main campus. Every year around this time people from NIEHS, Environmental Protection Agency (EPA), and National Center for Health Statistics (NCHS), along with spouses and friends from the community, take a break from their usual lunchtime routines to enjoy traditional Southern fare and fellowship.

Over 200 people purchased \$6.00 tickets to attend this year's fish fry, the group's major fundraiser for community activities. The local chapter began hosting the annual event a few years after the group was formed



*Annette Rice doesn't let the hot sun and even hotter cooking oil get in the way of making great French fries.
(Photos courtesy of Steve McCaw)*



Inventory Management Officer Dennis Taylor and BIG President Kim Peterson take a much needed break from frying fish.

in 1987. Annette Rice, second vice president of Region 4 BIG, and a stem cell biologist at NIEHS, described the group's motivation. "We like to come out each year to teach people how we celebrate and to cook Southern food," she said. "The fish fry is also a great way to socialize and recruit new members." As many as 300 people have attended the Annual Fish Fry in past years.

As Rice and others continued to cook under a hot sun, servers packed plate after plate with fried fish, hush puppies, French fries, coleslaw, baked beans and homemade desserts. Before long the tables in the shelter filled as more hungry people arrived to wait for a place to sit. When the end of the lunch hour approached and the crowd began to dwindle, the warm work continued, and the exhausted members of the Triangle Chapter faced the prospect of cleaning up oily pots, gathering the trash and breaking down the serving line before getting back to their day jobs.

BIG is a national professional and service organization established in 1975 and incorporated as a non-profit organization under District of Columbia jurisdiction in 1976. BIG has served as a national response to the need for African Americans in public service to organize and use their collective strength to confront workplace and community issues. BIG's goals are to promote equity in all aspects of American life, excellence in public service and opportunity for all Americans. Triangle Chapter Vice-President Randy Harrison, an analytic chemist at EPA, extended an invitation for all area government employees who are committed to equal opportunity in the workplace to become part of the organization.

The local chapter's community service efforts focus on preparing area young people for the future by mentoring and tutoring in the schools, developing oratory skills and providing cutting-edge training in such areas as web page design. Some of the funds raised this year by the Triangle Chapter were used to support travel by young people to the group's Annual National Training Conference, held this year August 21 through 25 in New York.



The shelter was filled with people by 12:15 as people lined up for the good food. The crowds kept coming until the serving line closed at 1:00.



BIG cooks show off their outdoor kitchen. Shown are (left to right) Pinckney Wilder (NIEHS), Janice Harris (EPA), Percy Harris (EPA), Lorena Bobbitt (NCHS), Margaret George (NIEHS), Veronica Godfrey (NIEHS), Annette Rice (NIEHS), James Copeland (EPA), Michael George (EPA), Randy Harrison (EPA), Kim Peterson (NIEHS) and David Sanders (EPA).

To learn more about the Triangle Chapter of BIG, contact any of the organization's officers: President Kimberley Peterson, 541-7629 (NIEHS); Vice-President Randy Harrison, 541-0596 (EPA); or Annette Rice, 541-4410 (NIEHS). Find out about BIG at the [Triangle Chapter page](#), and the [national website](#).



Science Notebook

Intramural Researchers Streamline Free Radical Investigation

By Eddy Ball

In a recently published study, two NIEHS researchers demonstrated the performance of a creative shortcut for medical investigators to open new possibilities in their research of the “dark side” of oxygen utilization by the human body. Biologist Marilyn Ehrenshaft and physical chemist Ronald Mason have developed an elegantly simple and “clean” methodology, known as immuno-spin trapping, that offers researchers in free radical biology important advantages over the methodology currently employed. As a result, this achievement could open the way in an effort to understand why the body turns against its own products in autoimmune responses involving the thyroid gland.

Because laboratories typically have the necessary equipment and trained personnel on hand, immuno-spin trapping permits many more investigators to engage in this kind of research. The sensitivity of the methodology also substantially impacts the costs of studying protein radical formation on thyroid peroxidase (TPO) by reducing the amount of compounds required in experiments. The more sensitive detection of protein-derived radicals allows many more scientists to perform bench top experiments that more closely approximate the biological environment in thyroid metabolism in the human body.

The study appeared in the August 1, 2006 issue of *Free Radical Biology and Medicine*. In it the investigators employed enzyme-linked immunosorbent assay (ELISA), gel electrophoresis and Western blotting, relatively economical testing platforms widely used and easily performed in most laboratories, in the place of direct-electron or spin-trapping electron spin resonance (ESR). The former, more accessible, methodology known as immuno-spin trapping, was developed previously in Mason’s laboratory and has been subsequently employed in the Mason lab as well as others. The use of immuno-spin trapping, instead of ESR, reduces the costs of investigating protein radical formation dramatically, as much as ten-fold or more. It also eliminates the need for laboratories to employ highly specialized chemists to perform ESR analysis for free radical research, helping to make this kind of research more practical for investigators in a variety of disciplines.

By boosting sensitivity so remarkably (100 to 1000 times), the new methodology also impacts what are, for many labs, prohibitive costs of the principal compounds used in this type of research. According to the researchers, “The advent of immuno-spin trapping...reduces the amount of protein needed for radical detection experiments from milligram to microgram quantities” (423). As a result, investigators can now perform far more wide-ranging analyses on the very expensive, but very important, human enzyme, thyroid peroxidase.

The methodology also permits researchers to replicate - in the more controlled setting available in laboratory experiments - conditions that more closely resemble what actually occurs in human beings. According to Mason, “The methodology and its exquisite sensitivity [allowed us to use] concentrations of hydrogen-peroxide low enough to make them physiologically plausible, which is not usually the case. Many hydrogen-peroxide experiments are done with a thousand times more hydrogen-peroxide.” By using biologically plausible levels of compounds researchers can eliminate one of the big “ifs” that hinder accurate descriptions of the importance of their work.

In the same issue of the journal, the breakthrough study was recognized in commentary written by Society for Free Radical Biology and Medicine President-Elect Rafael Radi, M.D., Ph.D., a member of the Faculty of Medicine at Universidad de la Republica – Montevideo, Uruguay and International Research Scholar of the

Howard Hughes Medical Institute. The methodology developed at NIEHS, Radi observed, “is proving to be a potent, sensitive, and accessible method to detect low levels (e.g., greater than nanomolar) of protein-derived radicals produced *in vitro* and potentially, and yet to be established, *in vivo*.”

With their original research, Ehrenshaft and Mason have demonstrated very poignantly the values of integrated research methods, divergent thinking and the practical application of the scientific principle of “parsimony,” seeking the least complicated approach to a phenomenon. Their methodological breakthrough may prove to be a critical step in the long process ahead of discovering how to prevent, delay or treat autoimmune thyroid disorders, such as Hashimoto’s disease, pointing the way to effective clinical interventions.

Citations: [Ehrenshaft M, Mason RP](#). 2006. Protein radical formation on thyroid peroxidase during turnover. *Free Radic Biol Med* 41:422-430.

Radi R. 2006. Immuno-spin trapping: A breakthrough for the sensitive detection of protein-derived radicals, a commentary on “Protein radical formation on thyroid peroxidase during turnover.” *Free Radic Biol Med* 41:416-17.

New Study Explores Nicotine’s Potential as Protection against Parkinson’s

By Eddy Ball

Researchers at the Parkinson’s Institute in Sunnyvale, CA, have demonstrated that nicotine, a compound that is dangerous and addicting for most people, could prove to help some patients delay or avoid onset of Parkinson’s, one of the most feared crippling conditions of our time. The five-year study found that in laboratory animals, systematic administration of controlled dosages of nicotine in sweetened drinking water significantly reduced the effects of experimentally induced Parkinson’s syndrome. Published in July as an early release from the *Journal of Neurochemistry*, the study reports that nicotine-treated animals suffered 25 percent less damage than animals that had not received the intervention.

Because the study results appear inconsistent with public health warnings about the serious health consequences of tobacco use, medical experts have been eager to help the public put the findings into perspective. “While we would never recommend that people smoke, these results suggest that nicotine promotes the survival of dopamine-producing cells in animals with no overt Parkinson’s symptoms,” commented David Schwartz, director of NIEHS, which funded the study. “These findings also have implications for its use in slowing the progression of Parkinson’s,” he said.

Most of the research on tobacco has focused on its detrimental health effects. However, several studies conducted over the last 40 years have shown that the incidence of Parkinson’s disease is about 50 percent less in smokers than in the general population. “These studies were giving us clues that something in the smoke was reducing the incidence of Parkinson’s,” explained Maryka Quik, Ph.D., a senior research scientist with the Parkinson’s Institute and lead author on the study.

Researchers used MPTP, a known industrial toxin and a common contaminant resulting from street-lab synthesis of designer drugs, to stimulate development of Parkinson symptoms in lab animals. A rash of Parkinson-like symptoms among users of these drugs in the early 1980’s pointed medical researchers to a model for studying the course of Parkinson’s. Using experimental animals exposed to MPTP, Quik and her colleagues were able to isolate critical markers of physical changes in the bodies of Parkinson’s patients, including nicotine receptor activity (subject of a 2004 study led by Quik) and synthesis of the neurotransmitter dopamine. Measures of these two markers showed significant differences between the test and control groups.

Neurotransmitters, such as dopamine, are the “communicators” in the body’s nervous system. Disruption in the synthesis and reuptake of these important chemicals can produce serious health effects. Several medications target reuptake of the neurotransmitters serotonin and norepinephrine in patients with depression. One of the principal medications developed for Parkinson’s patients acts on dopamine synthesis, but it is not effective for as many as half of the patients treated and may produce significant physical and psychological side effects for many who take it. Medical researchers continue to look for additional ways to regulate neurotransmitter activity to treat the disease more effectively.

While Parkinson’s Institute investigators called for further study with larger experimental populations and acknowledged the limitations of animal studies, they emphasized the significance of the study’s results. “Nicotine [may be effective] as a therapeutic agent for Parkinson’s disease, because nicotine or selective neuronal nicotinic receptor agonists ... may counteract disease progression particularly if given during the early stages.”

Citation: [Quik M, Parameswaran N, McCallum SE, Bordia T, Bao S, McCormack, A, Kim A, Tyndale RF, Langston JW, Di Monte DA.](#) 2006. Chronic oral nicotine treatment protects against striatal degeneration in MPTP-treated primates. *J Neurochem* on-line early release doi:10.1111/j.1471-4159.2006.04078.x



DETR Papers of the Month

By Jerry Phelps

Polymorphisms in Nucleotide Excision Repair Genes Modify Breast Cancer Risk in Smokers

Breast cancer occurs at different rates in different racial groups. NIEHS-supported researchers at the University of North Carolina determined that African-American women smokers with specific combinations of polymorphisms in nucleotide excision repair genes are more susceptible to breast cancer than white women who smoke.

Nucleotide excision repair is the primary means by which smoking-induced DNA damage is repaired. Smoking is a recognized risk factor for lung, head and neck and other cancers, but the relationship between smoking and breast cancer is unclear. There are several known polymorphisms in genes involved in nucleotide excision repair. These investigators conducted a genetic epidemiologic study aimed at determining whether genetic polymorphisms alter the association between smoking and breast cancer.

They found that, in general, smoking was a stronger risk factor for breast cancer in African-American women than white women. The risks increased even more for African-American women with particular patterns of polymorphisms when combined with different smoking characteristics such as amount of smoking, duration, and age at smoking initiation.

The investigators claim that this is the first study to examine nucleotide excision repair polymorphisms as susceptibility factors for breast cancer in combination with smoking. Further studies with larger numbers of participants are needed to confirm these results.

Citation: [Mechanic LE, Millikan RC, Player J, de Cotret AR, Winkel S, Worley K, Heard K, Heard K, Tse CK, Keku T.](#) 2006. Polymorphisms in nucleotide excision repair genes, smoking and breast cancer in African Americans and whites: a population-based case-control study. *Carcinogenesis* 27(7):1377-1385.

Identification of Lung Tumor Susceptibility Genes

Ming You of the Washington University School of Medicine reports in the August edition of *Nature Genetics* the discovery of new lung cancer susceptibility genes along with advances in the technique of whole-genome association analyses to identify candidate genes. Whole-genome association studies are a comprehensive approach to testing the hypothesis that common alleles contribute to genetically inherited diseases.

Using inbred mice, You and his research team reproduced the pulmonary adenoma susceptibility 1 (Pas1) locus previously identified in other studies. Their efforts narrowed this locus to a region of DNA of less than 500,000 bases, which contains at least two genes that are strong lung-cancer susceptibility gene candidates. Then using knock-out mice, transgenic mice missing these genes, the team found that cancer susceptibility candidate 1 (Casc1) knock-out mice are susceptible to chemical induction of lung-tumors. They also identified three other locations for possible lung cancer genes. One of these genes, named lung adenoma susceptibility candidate 1 (Lasc1), was previously unknown. They also determined that a specific allele of this gene “preferentially promotes lung tumor cell growth.”

These findings are significant because they represent progress in identifying genes whose human forms may predispose some individuals to lung cancer. They also demonstrate that as new resources and denser single nucleotide polymorphism maps become available, mouse models of human diseases will be central to disease susceptibility gene discovery in whole-genome association analyses.

Citation: [Liu P, Wang Y, Vikis H, Maciag A, Wang D, Lu Y, Liu Y, You M.](#) 2006. Candidate lung tumor susceptibility genes identified through whole-genome association analyses in inbred mice. *Nat Genet* 38(8):888-895.

Protecting Human Melanocytes from UV-Induced DNA Damage

Researchers at the University of Cincinnati developed three peptides that mimic a naturally occurring hormone that results in tanning and enhances the DNA repair capacity in pigment producing cells known as melanocytes. The natural hormone is alpha melanocyte stimulating hormone (α -MSH), which is a peptide hormone made up of 13 amino acids. It is released from the pituitary gland and stimulates melanocytes to produce the pigment melanin which causes tanning after exposure to the sun. The synthetic peptides, or analogs, are each four amino acids in length and share a common sequence with the natural hormone. Two of the analogs were found to be more potent than α -MSH in stimulating production of melanin, reducing apoptosis and release of hydrogen peroxide, and repairing UV-induced DNA damage in cultured human melanocytes.

The authors believe that these analogs could be developed into topically applied creams that would protect the skin from UV-induced cancers. This could be especially important for individuals at high risk of melanoma such as those with a family history of the disease or life-styles or occupations that cause extended sun exposure.

Melanoma results when melanocytes in the skin develop DNA damage that overwhelms their inherent DNA repair capacity. Melanoma is the deadliest form of skin cancer. Since there is no known cure, limiting sun exposure and the use of sunscreens, has become the primary focus of preventing the disease. Melanoma incidence is increasing, especially in parts of the world where sun exposure is high. For instance in Australia, 1 in 35 women and 1 in 25 men will have at least one melanoma during their lifetime.

Citation: [Abdel-Malek ZA, Kadarko AL, Kavanagh RJ, Todorovic A, Koikov LN, McNulty JC, Jackson PJ, Millhauser GL, Schwemberger S, Babcock G, Haskell-Luevano C, Knittel JJ.](#) 2006. Melanoma prevention strategy based on using tetrapeptide alpha-MSH analogs that protect human melanocytes from UV-induced DNA damage and cytotoxicity. *FASEB J* 20(9):1561-1563.

Loss of Liver NF-κB Activity Boosts Chemical Carcinogenesis

New research findings from the University of California at San Diego shed light on the link between chronic inflammation and development of liver cancer. Michael Karin and colleagues have been studying a transcription factor known as NF-κB; previous research has identified it as an important component in the inflammation/cancer connection. Using a transgenic mouse strain lacking an enzyme that activates NF-κB, they have determined that chemically-induced liver cancer occurs through prolonged activation of another enzyme known as c-Jun N-terminal kinase 1 (JNK1).

The most common form of liver cancer is hepatocellular carcinoma (HCC), which is the third leading cause of cancer deaths worldwide. HCC has been linked to chronic infections of hepatitis B and C virus. Although HCC is relatively rare in the U.S., its incidence is growing rapidly due to the increase in cases of hepatitis C. HCC has also been linked to exposure to genotoxic and cytotoxic factors such as high alcohol consumption and aflatoxin, which cause chronic inflammation and liver injury.

Karin and colleagues point out that “the exact cellular and molecular mechanism through which JNK1 promotes tumor growth, progression, and angiogenesis requires further investigation.” However they conclude that despite the uncertainties in the mechanism, these results “strongly suggest that JNK1 is an important target for the development of chemopreventive and therapeutic measures for reducing the emergence of HCC in the context of chronic liver injury and slowing the progression of preexisting tumors.”

Citation: [Sakurai T, Maeda S, Chang L, Karin M.](#) 2006. Loss of hepatic NF-kappaB activity enhances chemical hepatocarcinogenesis through sustained c-Jun N-terminal kinase 1 activation. *Proc Natl Acad Sci U S A* 103(28):10544-10551.



DIR Papers of the Month

By Eddy Ball

Occupational Exposures Linked to Adult-Onset Asthma and Chronic Respiratory Problems

In an NIEHS-funded study published in the *American Journal of Epidemiology* in June, researchers evaluated the role of specific occupational exposures in asthma, chronic bronchitis and respiratory symptoms in the Singapore Chinese Health Study. Study results added to a growing body of evidence for a role of cleaning agents in asthma and made a significant contribution to the body of data on occupational exposure in a large general population in Asia.

The study investigated respiratory outcomes in a follow-up examination of a population-based cohort of adults aged 45-74 years at enrollment in 1993-1998. Information on occupations and occupational exposures was collected at enrollment for 52,325 subjects for whom respiratory outcomes were obtained via follow-up interviews between 1999 and 2004.

Investigators found significant associations between exposures to dusts from cotton, wood, metal, minerals, and/or asbestos and non-chronic cough and/or phlegm, chronic bronchitis and adult-onset asthma. Participants with occupational exposure to smoke showed increased odds of non-chronic cough or phlegm. Vapor exposure from chemical solvents, dyes, cooling oils, paints, wood preservatives and/or pesticides was associated with non-chronic

cough or phlegm, chronic dry cough and adult-onset asthma. Chemical solvents, cooling oils and pesticides were major contributors to respiratory symptoms.

Study results supported the contribution of occupational exposures to respiratory illness in a population-based cohort in Singapore with a low prevalence of illness caused by allergens. The average age of the study population (over 62) suggested that occupational exposure can have long-lasting effects on respiratory health. Because of the tropical climate and the high proportion of never smokers in Singapore, the study was able to minimize confounding by exposures to smoking and coal or wood heating fumes.

Citation: [LeVan, TD, Koh WP, Lee HP, Koh D, Yu MC, London SJ](#). 2006. Vapor, dust, and smoke exposure in relation to adult-onset asthma and chronic respiratory symptoms - The Singapore Chinese Health Study. *Am J Epidemiol* 163(12):1118-1128.

Specific Pesticide Exposures Associated with Wheeze among Workers

Researchers supported by NIEHS and the National Cancer Institute (NCI) have identified specific commonly used herbicides and insecticides associated with wheeze in a large population of workers without prolonged exposure to other farm irritants, such as animals and grains. Published in the June issue of the *American Journal of Epidemiology*, the study analyzed data from 2,255 Iowa commercial pesticide applicators enrolled between 1993 and 1997 in the Agricultural Health Study (AHS). Study results add to the emerging literature linking organophosphate insecticides and respiratory health and suggest a role for the frequently used compound chlorimuron-ethyl in wheeze in these workers.

Controlling for age, smoking status, asthma and atopy history, and body mass index, the authors examined the relationship between wheeze and 36 individual pesticides used by the participants during the year before enrollment. Eight of 16 herbicides were associated with wheeze in single-agent models; however, the risk was almost exclusively associated with the herbicide chlorimuron-ethyl. Inclusion of chlorimuron-ethyl in models for the other herbicides virtually eliminated the associations.

The odds ratios for four organophosphate insecticides (terbufos, fonofos, chlorpyrifos and phorate) were elevated when these chemicals were modeled individually. Odds ratios remained elevated, though attenuated somewhat, when chlorimuron-ethyl was included. The association for dichlorvos, another organophosphate insecticide, was not attenuated by chlorimuron-ethyl. Dose-response trends were observed for chlorimuron-ethyl, chlorpyrifos and phorate; the strongest association existed among workers applying chlorpyrifos on more than 40 days per year.

NIEHS scientists collaborated with researchers from the University of Iowa and NCI. To the knowledge of the researchers, the participants of the AHS constituted the largest group of commercial pesticide applicators ever studied in this way. The study also provided specific information that could be useful to applicators about individual chemicals.

Citation: [Hoppin JA, Umbach DM, London SJ, Lynch CF, Alavanja MC, Sandler DP](#). 2006. Pesticides associated with wheeze among commercial pesticide applicators in the Agricultural Health Study. *Am J Epidemiol* 163(12):1129-1137.

Gender Differences in Mouse Airway Responsiveness to Lung Injury

In a study published July 1 in *The Journal of Immunology*, an NIEHS research team discovered significant gender differences in the airway responsiveness of naïve mice. Male mice showed exaggerated airway inflammatory and functional responses to lipopolysaccharide (LPS) compared with females. The study presented strong evidence that androgens promoted airway inflammation and hyperresponsiveness induced by LPS.

The researchers analyzed male and female mice using invasive and non-invasive measures under five conditions: at baseline, after administration of LPS, following stimulation with a bronchoconstrictive agent, three weeks after gonadectomy and three to four weeks following implantation of androgen (females) or anti-androgen (males) pellets.

Sham-treated mice received placebo pellets or saline aspiration. Researchers carried out experiments on C57BL/6 and BALB/c mice strains to determine any effect strain might have on results.

The study found evidence that androgen in males at physiologic levels or in females receiving exogenous hormone significantly affected airway response as determined by analysis of lung function, assessment of LPS-induced airway inflammation, lung histopathology and immunoblotting. Castrated males, males receiving anti-androgen pellets and intact females were less responsive to lung injury than intact males and androgen-treated females. Ovariectomized females responded to lung injury in ways similar to those shown by sham-operated females. Researchers also demonstrated that the severity of hypothermia in response to LPS was affected by gender. There were no significant differences found attributable to mouse strain.

The NIEHS researchers stated that their data suggest the importance of carefully considering gender in the design of murine studies of the pulmonary effects of LPS. An important contribution of this study is its in-depth investigation of the role of androgens, a factor not addressed in earlier studies. Based on the results of their study, the NIEHS researchers concluded that sex hormones may provide novel targets for therapeutic intervention in inflammatory lung disease.

Citation: [Card JW, Carey MA, Bradbury JA, DeGraff LM, Morgan DL, Moorman MP, Flake GP, Zeldin DC.](#) 2006. Gender differences in murine airway responsiveness and lipopolysaccharide-induced inflammation. *J Immunol* 177(1):621-630.

Irradiation by Ultraviolet A Rays in Sunshine Induces Malignant Transformation in Human Skin Cells

In an effort to determine the effects of UVA on keratinocytes in human skin, a team of NIEHS and National Cancer Institute researchers have demonstrated that chronic exposures *in vitro* can induce a malignant transformation associated with acquired resistance to apoptosis, or natural cell death. Published in the June 22 issue of *Oncogene*, the study is the first to provide clear evidence of the capability of UVA, at doses people may be exposed to in the environment, to produce this transformation in a cell line analogous to a potential *in vivo* target site of UVA carcinogenesis.

In the study, UVA-long-treated human keratinocyte cell line (HaCaT) cells, referred to in the study as ULTH cells, showed increased secretion of tumor related compounds, altered morphology and anchorage-independent growth – characteristic signs of malignancy. The study found evidence of malignant transformation with the production of aggressive squamous cell carcinomas after inoculation of the treated human cells into nude mice, hairless mutants

with certain immune system deficiencies. ULTH cells were resistant to apoptosis induced by UVA as well as by UVB and arsenite, two other human skin carcinogens. ULTH cells also became chemo-resistant to three drugs used to treat cancer. Researchers also detected chromosome changes in ULTH cells.

The results of this study provide compelling evidence that UVA alone has the potential to be a human skin carcinogen. Researchers also identified mechanisms that may contribute to and reverse this malignant transformation by UVA. Further comparisons between the transformed ULTH and control cells should lead to a better understanding of the mechanism of UVA carcinogenesis and may help to identify biomarkers for UVA-induced skin malignancies. Further studies may provide insights for the development of chemo preventive strategies.

Citation: [He Y-Y, Pi J, Huang J-L, Diwan BA, Waalkes MP, Chignell CF.](#) 2006. Chronic UVA irradiation of human HaCaT keratinocytes induces malignant transformation associated with acquired apoptotic resistance. *Oncogene* 25(26): 3680-3688.



Did You Know?

“North Carolina Now” Airs Segments on Asthma and Nanotech

By Eddy Ball

As its lead story on the August 25 broadcast of “North Carolina Now,” UNC-TV aired a segment on asthma research. The program featured interviews with NIEHS researchers by UNC-TV journalist Kelly McCullen and footage of lab facilities. Asthma has long been a high-priority interest at NIEHS, and public television has showcased NIEHS research into this major threat to respiratory health several times in the past. For this most recent segment, McCullen interviewed NIEHS Director David Schwartz along with Senior Scientists Stephanie London (Epidemiology Branch) and Darryl Zeldin (Clinical Studies Section of the Respiratory Biology Branch) about new developments in the efforts to discover ways to help the increasing number of sufferers with the condition.



(Logo courtesy of WUNC-TV)

A second “North Carolina Now” feature involving NIEHS will air in late September. The show will highlight cutting-edge research by NIEHS scientists into potential health risks posed by release of increasing numbers of nano-, or ultra-fine, particles into the environment as byproducts of nanotechnology manufacturing. Because exposure to nanoparticles is an emerging health concern resulting from the rapid growth of the technology, this program will be the first by “North Carolina Now” on the topic. Grants Administrator Sally Tinkle (Division of Extramural Research and Training) and Senior Scientist Nigel Walker (Toxicology Operations Branch) will join Risk Assessment Liaison Christopher Portier for interviews with Cullen about the possible health problems associated with exposure to nanoparticles.

The segments are the most recent accomplishment in an ongoing collaboration between NIEHS and UNC-TV to inform the public of environmental health issues. Unfortunately for NIEHS and many viewers, these shows

are among the final ones to be aired on “North Carolina Now.” Produced by Shannon Vickery and anchored by Mitchell Lewis, the respected series has fallen victim to a budget and fundraising shortfall for fiscal year 2007. The station intends to release details soon about more limited programming to fill the news gap created by cancellation of the show. “North Carolina Now” has proved especially helpful over the years in informing the public about the important, ground-breaking research performed at NIEHS and funded by NIEHS grant awards.

Dave Mineo Retires, Sort Of...

By Eddy Ball

Long-time NIH Grants Management Officer Dave Mineo plans to leave federal service on October 3 after a career of 33 years, but he says he is not actually retiring. With a joke about his golf game - “too lousy to accept such frustration on a daily basis” - the man known as “Captain” Mineo announced that his post-NIH plans include moving from Bethesda to North Carolina and getting back to work. He’ll be joining the management and technology consulting firm BearingPoint within its Academic Medical Centers practice. He and his wife plan to live in the Raleigh area.

Mineo worked as a permanent employee at several institutes within NIH, including Diabetes and Digestive and Kidney Diseases (NIDDK), Aging, Neurological Disorders and Stroke, Deafness and Other Communication Disorders, and the National Center for Research Resources, as well as in temporary assignments at others. However, the longest tenure of his

career was spent at NIEHS, where many of his colleagues have fond memories of him and his love of golf. After he tried to retire from NIEHS in 1999, Mineo served as director of sponsored programs at the University of Georgia (1999-2001) before returning to federal service at NIDDK (2001-2006).



Dave Mineo poses for a file photo from his years at NIEHS (1989-1999). The twinkle and lines at his eyes are a giveaway: Dave could break into laughter at almost any time.



Ever the optimist, Dave Mineo hits the greens hoping for a triumphant win. Many of his closest friends at NIEHS remember well Dave’s look of tongue-in-cheek competitive determination. (Photo courtesy of Chip Hughes)

One of his close associates, Jerry Phelps of the Analysis Branch in the Division of Extramural Research and Training (DERT), describes Mineo as “a first class guy, a great friend, and a dedicated NIH employee.” Mineo was a hard-working individual who, among a long list of awards and accomplishments, completed his college education with highest honors at American University through the NIH Stride Program after joining the National Institute of Aging in 1979. With his degree, Mineo quickly advanced to upper management at NIEHS, where he worked for 10 years, and his passion for golf became legendary, both at NIEHS and throughout the institute family.

Former NIEHS Director Ken Olden remembers Mineo as being personable, warm and reliable.

“I enjoyed having senior leaders who are good human beings in addition to being capable, and Dave was like that,” Olden commented. “I really hated to see him leave.” Director of DERT Worker Education Program Chip Hughes remembers fondly that he often found himself “letting Dave win a round of golf” and always admired Dave’s willingness to help young people get ahead. “Dave never forgot where he came from, the challenges he faced in advancing his own career. He was always eager to help others the way someone must have helped him.”

Despite his many accomplishments as he rose to the upper ranks of NIH management, Mineo’s most visible legacy for his many friends remains the annual golf excursion to Myrtle Beach, which Chip Hughes describes as “NIEHS against the World.” A tradition for more than fifteen years, the good natured competition pits NIEHS golfers against golfers from the other institutes. Fittingly, when Mineo left NIEHS in 1999, his friends held a roast and golf tournament at Crooked Creek Golf Course in Fuqua-Varina – giving the Captain a chance to win on his home turf as they celebrated his first attempt at retiring from federal service.

Upcoming Events

Noted Clinical Pathologist and Reproductive Specialist Opens Distinguished Lecture Series

NIEHS opens its 2006-07 Distinguished Lecture Series with a talk by Martin M. Matzuk, M.D., Ph.D., on “Genetic Dissection of Ovarian Cancer and Fertility Pathways.” Hosted by Dr. William Schrader of NIEHS, the lecture is scheduled for 11:00 AM September 12 in the Rodbell Conference Center. Matzuk’s talk will be the first of nine in the annual series of lectures by clinical and basic scientists who are each leaders in their respective fields.

Matzuk holds the Stuart A. Wallace Chair and is Professor of Pathology, Molecular and Cellular Biology, and Molecular and Human Genetics at Baylor College of Medicine. He earned his B.A. with Honors from the University of Chicago in 1982 and M.D. and Ph.D. degrees from Washington University in St. Louis in 1989. After completing residency training in Clinical Pathology at the University of Pennsylvania, he joined the faculty at Baylor in 1991. Currently, Matzuk serves as Director of Clinical Chemistry and Co-Director of Diagnostic Immunology at Ben Taub General Hospital in Houston.



*Professor Martin M. Matzuk, M.D., Ph.D.
(Photo courtesy of Baylor College of Medicine)*

Matzuk has co-authored more than 200 scientific articles. His research focuses on the critical proteins involved in normal and abnormal reproductive development. By deleting or over-expressing genes in mice, his laboratory has elucidated the roles played by these gene products in normal reproductive function, female and male infertility, and ovarian cancer. Matzuk has received many honors for his research, including the Ernst Knobil Lecturer at the University of Pittsburgh, the Bruce Stewart Memorial Award Lecturer for the American Society for Reproductive Medicine and the HypoCCS Award from Eli Lilly. He also is the recipient of the 1996 Richard E. Weitzman Memorial Award from the Endocrine Society, the 2002 SSR Research Award from the Society for the Study of Reproduction and the 2002 Pfizer Outstanding Investigator Award from the American Society for Investigative Pathology.

He has been Co-director of Baylor’s Medical Scientist Training Program since 1995, and he serves on many national and international advisory boards and review panels. His NIEHS Distinguished Lecture promises to be an exciting event for regional scientists, not only those who share an interest in his research specialty, but also for those whose interests extend to other areas dealing with genetic modeling of human disease in animals.

Early Registration Advised for Rodent Genetics Conference

The NIEHS Center for Rodent Genetics will host a conference September 26 and 27 for researchers interested in using mouse genetics/genomics in their work. The conference will appeal to those involved in studies of genetic susceptibility to disease and the process of disease development. Titled “Unveiling Genome-Wide DNA Variation in 15 Diverse Mouse Strains: Using Mouse Genetics and Genomics to Understand Human Disease,” the conference offers a hands-on computer tutorial on tools available to analyze sequence data, such as that generated by the NIEHS/Perlegen Resequencing and SNP Discovery Project. In addition, the conference will cover ways to study human disease susceptibility through development of more appropriate mouse models.



(Photo courtesy of Steve McCaw)

The Second Annual Conference has two important goals. Organizers intend to highlight the completion of the Resequencing and SNP Discovery Project, a major effort to sequence the genomes of 15 diverse mouse strains. The meeting also should help foster interaction among scientists interested in bridging the gap between human genetic susceptibility to disease and the design of appropriate mouse models to study it.

Registration is free, but limited. Sponsors encourage interested individuals who want to attend to register as soon as possible – at least five days before the conference begins - at the [conference website](#).

¿Como se dice?

Hispanic co-workers are eager to tell other folks at NIEHS about their culture with special events during Hispanic American Heritage Month, September 15 through October 15. With nations and communities on nearly every continent of the world, people from Spanish-speaking cultures have rich traditions to share.

Co-sponsored by NIEHS Office of Equal Opportunity and Diversity Management (OEODM) and the Diversity Council’s Hispanic Heritage Committee, the big event this year, as in past years, will be a Fiesta with a speaker, featuring samples of Hispanic cuisine, dance, music and crafts. Watch for announcements of upcoming events and join the group for fun, taste sensations and a chance to learn more about how Hispanic contributions are enriching the new American culture of the 21st century.

For more information, contact OEODM Specialist [Ginny Ivanoff](#) or organizer [Maria Sifre](#) or call Ginny Ivanoff at 541-3675.



NIEHS employees of Hispanic American descent gathered for a group photo on August 25. Shown from left to right are (seated) Georgie Pagan, Maria V. Salera de Zurita and Maria I. Sifre; (standing) Lysandra Castro, Sergio Sevilla, Gerard Roman, Adolfo Zurita, Daniel Menendez, Karina Rodriguez, and Danielle Duma and Lisa Banks-Padilla; (knelling behind) Rodrigo Franco and Alejandro Colaneri.

SmartCommute: A Mid-Year Resolution People Can Live With



Commuters fed up with the smell of diesel in the morning need to hear again what Dick Sloane, coordinator of NIEHS Transshare Program, has been advocating for some time. Sloane says commuters have several alternatives

to driving alone to work each day and paying more and more at the pump each week. As part of the Triangle SmartCommute Challenge, the Transshare Program is offering NIEHS commuters an attractive incentive in September at the annual Transportation Expo. Just for making the SmartCommute pledge and investigating the growing number of alternatives, visitors get a chance to win big prizes, including a trip for two anywhere in the United States.

Even commuters who have ignored the message in the past should attend this year's event. Representatives of the Triangle Transit Authority and RTP SmartCommute Committee will be on hand to field questions and provide information at the main event September 7. Sloane and colleagues are also taking the message to East Campus and Nottingham. Commuters should not miss the opportunity to make the big decision this year, take a trial run or pick up information for the next time they feel the squeeze at the Cary bottle neck, or some other equally difficult area of traffic congestion.

All events are scheduled from 11:30 AM to 1:00 PM.

Wednesday, September 6: East Campus, third floor central

Thursday, September 7: 101 Main Campus, cafeteria area

Wednesday, September 13: Nottingham, second floor central

If these times don't work, Dick Sloane is always eager to help commuters kick the single-occupant habit. Contact him at 541-2947 or visit the Employee Services Office [Transshare page](#).



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