

## Do You FTICR?

“FTICR”? Does that roll right off your tongue? Even if you don’t recognize the term now, you may soon get very used to seeing and hearing about it.

Last October, the Mass Spectrometry Center in the Laboratory of Proteomics and Analytical Technologies installed an advanced hybrid linear ion trap-Fourier transform ion cyclotron resonance (LIT-FTICR) mass spectrometer (MS). This state-of-the-art MS instrument operates within a 7-tesla superconducting



*Dr. Thomas Conrads, Director, Mass Spectrometry Center, checks the LIT-FTICR MS instrument.*



*Dr. Thomas Conrads and Brian Hood, Staff Scientist, at work using the new instrument.*

magnet and can make proteomic measurements with great sensitivity and scan speed, measurements that possess mass accuracy and spectral resolution far beyond more common MS

instruments. The segmented linear trap with radial ejection and dual detection system enables the highest overall detection efficiency, resulting in unparalleled sensitivities, down to the attomole level ( $10^{-18}$  moles). These capabilities, combined with rapid scanning available through state-of-the-art electronics, result in information-rich data collecting at breakthrough speed.

The LIT-FTICR MS redefines performance for the metabolic and proteomics arena. Superior sensitivity and fast scanning produce better peak shape, resulting in better quantitation of protein and peptide abundances over a wider linear dynamic range. The enhanced MS/MS affords excellent higher order  $MS^n$  spectra that rapidly facilitate both metabolic and proteomic structural elucidation. 

## Ninth Annual Spring Research Festival Slated for May 18 and 19

One of the most eagerly awaited events on the NCI-Frederick campus will soon take place: the ninth annual NCI-Frederick-Fort Detrick Spring Research Festival, on May 18 and 19. This year, the festival will be held near the junction of Ditto Avenue and Sultan Street.

Look for the big white tent once again, where you’ll find vendors, your colleagues’ research on display in posters, and booths. NCI-Frederick support services employees, Fort Detrick

personnel, and some outside organizations provide fascinating information and handouts to help you with health, wellness, and environmental safety, among other things. Last year for example, among the many booths, were representatives of the National Museum of Civil War Medicine. As in past years, the Technical Sales Association will sponsor a number of awards for posters, and numerous vendors will attend to display and demonstrate their state-of-the-art instruments and equipment.

It has become a Spring Research Festival tradition to choose a plant or animal with some characteristic for fighting or preventing disease. In past years, we have featured the rosy periwinkle of Madagascar, *Catharanthus*

*roseus*, and the marine cone snail, *Conus textile*.



This year’s research mascot is *Xenopus laevis*, the African clawed frog. The common name is a partial misnomer, however. Although the clawed frog has large, webbed hind feet with hard, claw-like tips on its three inside toes, the tips aren’t true claws, but rather, cornified

## Arthur's Corner

### Changes Taking Place

The National Cancer Institute has announced several administrative changes during the past month, some of which will directly affect the National Cancer Institute at Frederick.

Long-time NCI-Frederick researcher Dr. Robert Wilttrout, who has served the past three years as Associate Director of NCI-Frederick and as Center for Cancer Research (CCR) Principal Deputy Director, has been promoted to Deputy Director at NCI. He replaces former CCR director Dr. Carl Barrett, who has left to become global head of oncology biomarkers at the Novartis Institutes for Biomedical Research, Cambridge, MA.

SAIC-Frederick, Inc., has worked closely with Dr. Wilttrout on many projects and will continue our interactions with him in his new role as Deputy Director. Dr. Wilttrout "joined NCI's Laboratory of Experimental Immunology in 1986 and is known for his work in cytokine-mediate immunology," according to *The Cancer Letter* (31[7]:5). He is determined to continue his research activities.

With Dr. Wilttrout now spending his time at the NCI in Bethesda, Dr. Craig Reynolds, Director of the Office of Scientific Operations for NCI-Frederick, becomes the new Associate Director of NCI-Frederick. Dr. Reynolds has also spent most of his scientific career here at NCI-Frederick and will continue to serve as Director of the Office of Scientific Operations.

In addition to Dr. Barrett's leaving, Dr. Karen Antman, NCI deputy director for translational

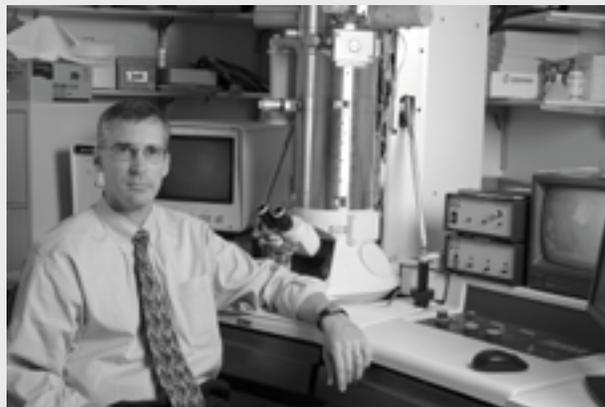
and clinical science, was named provost of the Boston University Medical Campus and dean of medicine of the BU School of Medicine. Dr. Lee Helman has been named as acting scientific director for clinical research in CCR. SAIC-Frederick, Inc., is currently organizing a Clinical Directorate to support the clinical activities of NCI and NIAID.

*The Cancer Letter* quotes Dr. von Eschenbach as saying, "We are going to lose two very key, very critical members of our senior leadership team, but we are celebrating that loss, painful as it is, [because] these two individuals are going on to positions of enormous importance and responsibility that will also change the world and contribute to our ultimate goal." An example of some of the initiatives we receive from Dr. von Eschenbach's office is the Nanotechnology project described below.

### Nanotechnology and Proteomics

Prominent among the direct support we supply to the Office of the NCI Director is the work being done in nanotechnology.

The physical plant of the Nanotechnology Characterization Laboratory has been completed (see the October 2004 *News & Views* [[http://web/campus/publications/online\\_newsletter/pdf\\_download/NV\\_October\\_2004.pdf](http://web/campus/publications/online_newsletter/pdf_download/NV_October_2004.pdf)] for a discussion of the state-of-the-art materials being put in place in the NCL); Dr. Scott McNeil directs a staff of eight, including a toxicologist, an immunologist, a chemist, and technical personnel. An enclosure is being added to Building 550 to



Dr. Scott McNeil, head of the Nanotechnology Characterization Laboratory

house an animal imaging facility, which they hope to have operational by September. To image animals that have been injected with nanoparticles in vivo, they will use an MRI with coils inserted to get a better resolution for smaller animals.

The NCL does both therapeutic (drug delivery) studies, as well as diagnostic (imaging) studies. The NCL will study what the nanoparticles do in vivo and look at binding toxicity and specific targeting of tumors. In the first phase of characterization, NCL staff examine the physical characteristics, such as size and aggregation. This is being done in collaboration with the National Institute of Standards and Technology. In the second phase, they will do in vitro characterization, with such things as targeting and binding studies, and examining blood contact properties. In the third phase, they will inject rats with nanoparticles.

We congratulate Dr. Wilttrout, Dr. Reynolds, and the other NCI directors on their promotions and look forward to working closely with them to achieve NCI's mission.

Dr. Larry O. Arthur

*Principal Investigator of the Operations and Technical Support Contract and Associate Director of the AIDS Vaccine Program, SAIC-Frederick, Inc.*

## Dr. Joseph Kates, Head of RTP, Retires

As announced in the January issue of *News & Views* and the March issue of *The Poster*, Dr. Joseph Kates recently retired from his position as Director of the Research Technology Program. Although he is moving to Vancouver, BC, he will continue working with SAIC-Frederick, Inc., as a consultant in biotechnology.

Dr. Kates earned his doctoral degree from Princeton, making important contributions in DNA replication, transcription, and neuroscience. According to Dr. Paul Nisson in the March *Poster's* "Science Today" column, in 1988, Dr. Kates began work as Director of Research and Development at Bayer Pharmaceuticals, focusing on biological therapeutic development and helping to develop strategic collaborations and business relationships with colleagues at companies such as Millenium Pharmaceuticals. In addition, Dr. Kates was involved in the development of Factor VIII, a successfully marketed drug for the treatment of hemophilia.

Dr. Nisson also noted that "While at Princeton, Dr. Kates confirmed the model of semi-conservative replication of DNA in eukaryotes, which had recently been shown in prokaryotes by Meselson and Stahl. Semi-conservative replication, one of the tenets of molecular biology, is when the parental DNA is used as a template to produce the next generation of nucleic acid: if you think of DNA as a zipper, it copies itself by separating its strands, and each strand becomes a template for a daughter strand. Each round of semi-conservative replication results in two copies of the original genome."

Dr. Kates made "a seminal discovery in the field of virology, where he

showed that the viral genome encodes the enzyme that replicates its RNA genome, the so-called RNA-dependent DNA reverse transcriptase. This work was cited by the 1975 Nobel Prize-winning trio of David Baltimore, Renato Dulbecco, and Howard Temin and resulted in Dr. Kates receiving the prestigious Eli Lilly Award for Microbiology and Immunology in 1974."



*Dr. Joseph Kates*



*Dr. Larry Arthur and Barbara McElroy present Dr. Kates with parting gifts at a reception in honor of his retirement March 11.*

In 1998, Dr. Kates came to SAIC-Frederick, Inc. Working closely with NCI leaders, Dr. Kates began building and directing what is now known as the Research Technology Program (RTP). "He put together an NCI resource that enabled NCI principal investigators to perform twenty-first century research by using RTP platforms and expertise," said Dr. Gary Muschik, assistant director of the RTP. Some of the programs, their missions evolving to better meet NCI's needs, were blended from what in 1996 had been grouped under "Investigator-initiated Basic Research Programs" and "Technical Resources"; others were new.

Charged with providing senior leadership for SAIC-Frederick, Inc., Dr. Kates recruited Dr. Hendrick Bedigian from The Jackson Laboratories, Bar Harbor, Maine, to lead the Laboratory Animal Sciences Program. In addition, Dr. Kates was instrumental in recruiting and hiring Dr. George Mitra, Biopharmaceutical Development Program; Dr. David Munroe, Laboratory of Molecular Technology; Dr. Timothy Veenstra, Laboratory of Proteomics and Analytical Technologies; Ken Michaels, Visual Communications; Dr. Stephen Lockett, Image Analysis Laboratory; Drs. Jim Hartley and

Deb Chatterjee, Gene Expression Laboratory; and other staff members.

On March 11, Dr. Larry Arthur and the RTP administrative staff and lab chiefs staged a surprise sendoff luncheon for Dr. Kates at Dutch's

Daughter. Drs. Arthur, Stan Burt, Jim Hartley, David Munroe, and Gordon Whiteley spoke on behalf of the entire Research Technology Program, thanking Dr. Kates and wishing him well. A framed Barry Richardson print, signed by friends and colleagues on the back, was presented to Dr. Kates as a farewell gift. ☺

## SAIC-Frederick, Inc., Lends a Helping Hand

### Community Involvement

Over the years, SAIC-Frederick, Inc., has quietly contributed much to the Frederick community, reaching beyond the tax base which it strengthens by being the Operations and Technical Support contractor for NCI-Frederick, the fifth largest employer in the county.

You may be familiar with the Community Outreach Program that SAIC-Frederick, Inc., supports. However, did you also realize that your company generously donates to various individuals and charitable events each year?

- \$25,000 has been presented to Frederick Memorial Hospital.



*Dr. Larry Arthur presents a check to Dr. Patricia Stanley, president of Frederick Community College. From left are: David Bufter, Dr. Stanley, Dr. Arthur, and Marilyn Young, Executive Director, FCC Foundation.*

- \$50,000 was recently donated to the scholarship fund at Frederick Community College.
- \$2,500 has been given for the Frederick marathon to be run Sunday, May 1. See the Frederick marathon Web site for details <<http://www.frederickmarathon.org/>>.

In addition, discretionary funds are given to the directors each year to contribute to community activities or

charitable projects. For example, more than \$7,000 has been donated to the American Red Cross to support the Tsunami Relief Fund, and \$2,000 has been donated to Volunteer Frederick to help local volunteer organizations.

### Tsunami Relief Efforts

Peter Gorelick, Animal Health Diagnostic Laboratory (LASP), traveled to Thailand with fellow members of the Gear Up Foundation (GUF) in mid-March to help with fund-raising as part of the tsunami relief effort. SAIC-Frederick, Inc., made a financial contribution to this cause.

The group worked in collaboration with Airline Ambassadors International (AAI), who sponsored runners from the University of North Carolina, Chapel Hill, NC. All participated in the Fourth International Thailand Temple Run, a 26.2-mile marathon in Bangkok, Thailand. After running the marathon, the four members of GUF and several members from AAI then went to Phuket, Thailand, to donate a fire engine and equipment.

Mr. Gorelick said, "I would like to thank SAIC-Frederick for their contribution. While GUF does not indicate on their current Web site that funds donated will go to the Thailand trip, potential contributors that have

PayPal accounts can simply earmark the contribution for the tsunami relief/recovery efforts or earmark checks with the same information."

AAI and the UNC will divide their contributions between AAI and the American Red Cross. Gear Up is not receiving any of those funds, Mr. Gorelick said.

You can view the GUF and AAI mission goals at their Web sites: <<http://www.gear-up.org/main.htm>> and <<http://www.airlineamb.org/>>. ↻

## SAIC-Frederick, Inc., a Sponsor of the Frederick Marathon

SAIC-Frederick, Inc., is one of the corporate sponsors of the 3<sup>rd</sup> Annual Frederick Marathon, an all-volunteer event on May 1st to benefit local charities, including Hospice of Frederick County. Approximately 1,500 runners from several states are expected to participate.

Festivities for this weekend-long event begin on Saturday, April 30, with a Sports Expo beginning at 2:00 p.m. at Harry Grove Stadium. Later in the day there's a pasta picnic for runners and friends, and a Twilight 5K race followed by live entertainment and fireworks. The marathon begins at 7:30 a.m. Sunday at the stadium, winding through historic downtown Frederick, extending throughout much of the city, and ending back at the stadium. The first runners are expected to cross the finish line at about 9:50 (that's a little over a 5-minute mile).

As a corporate sponsor, SAIC-Frederick, Inc.'s name will appear the back of the runners' tee-shirts, on signage at one of the water stations, the Web site, and the race program.

For more information on this community event, log on to the marathon's Web site, [www.frederickmarathon.org](http://www.frederickmarathon.org). ↻

## SAIC-Frederick, Inc., Gaining Prominence in Corporate Publications

*News & Views* frequently profiles the state-of-the-art research going on at NCI-Frederick, as well as prestigious awards that honor employees here. Now our corporate parent company is also recognizing the significance and contributions of the work done here and giving SAIC-Frederick, Inc., employees international exposure through its Web site (<http://www.saic.com>); the online magazine, *SolutionOne* (<https://issaic.saic.com/peck/solutionone.html>); and other forums.

Donna Bell, Group Communications Manager, Enterprise and Infrastructure Solutions Group for SAIC Corporate, noted in a recent e-mail, "SolutionOne is designed to showcase SAIC's commitment to achieving excellence for our customers. In each issue we highlight significant Group projects and accomplishments and feature projects representing the work of each business unit."

### Dr. Larry Arthur Featured at SAIC.com

In a recent feature article, now archived at <http://www.saic.com/cover-archive/healthcare/aids-day.html>, Dr. Larry Arthur and the AIDS Vaccine Program (AVP) were profiled. Dr. Arthur is the president of SAIC-Frederick, Inc., and the OTS Contract principal investigator.

The article delineated the AVP's "program of basic and applied studies aimed at the development of effective vaccines for the prevention of HIV-1 infection and AIDS." The authors explained that AVP studies focus on "understanding of the aspects relevant to the development and evaluation of an effective vaccine. The work emphasizes both studies to evaluate

candidate vaccines and studies aimed at characterizing basic processes that could be relevant to vaccine development. As part of this work, scientists are gaining a better understanding of the chemical properties of a protein found in HIV. This understanding has allowed them to begin devising procedures to inactivate the ability of the virus to infect."

The AVP is also studying the genes involved in the human immune response, "discovering how certain molecules are involved in activating and inhibiting important immune cells. This information may lead to the discovery of more effective drugs to fight HIV and cancer, with fewer incidents of developing drug resistance," the article stated.

### SAIC-Frederick, Inc., Team Honored for Novel Research

The August/September issue of *SolutionOne* included an article about a team of SAIC-Frederick, Inc., researchers who received the prestigious SAIC Executive Science and Technology Council 2003 Publication Prize in the Biochemistry/Molecular Biology area.

Drs. Lihua Wang, Xiaoyi Yang, Xiaohu Zhang, Weihua Xiao, and Kelly Mihalic wrote the incisive paper, "Suppression of Breast Cancer by Chemical Modulation of Vulnerable Zinc Fingers in Estrogen Receptor," which was published in *Nature Medicine* (10[1]:40-47, 2004), one of the most prestigious scientific journals in the biomedical field. The team also included non-SAIC-Frederick, Inc., authors Drs. Ying-Xin Fan, O. M. Zack Howard, Ettore Appella, Andrew T. Maynard, and William L. Farrar.

This is the fifth time in the last seven years that SAIC-Frederick, Inc., has won the award. Prize determinants include originality, significance of results, and effectiveness of presentation. A \$2,500 cash award was given for each winning paper and book. Twenty-one peer-reviewed papers were submitted in

the highly competitive Biochemistry/Molecular Biology section.

You can access the *SolutionOne* article at <https://issaic.saic.com/peck/solutionone.html>. Have your ISSAIC user name and password ready. Or read the *News & Views* article in our January 2005 issue online at [http://web.ncifcrf.gov/campus/publications/online\\_newsletter/pdf\\_download/NV\\_January\\_2005.pdf](http://web.ncifcrf.gov/campus/publications/online_newsletter/pdf_download/NV_January_2005.pdf).

### Giving Women the Power to Prevent AIDS

The October/December 2004 issue of *SolutionOne* profiled SAIC-Frederick, Inc., AIDS Vaccine Program (AVP) researchers. Dr. Jeff Lifson, Director of AVP, wrote the article that focused on researchers' desire to find a way to use microbicides to help women block HIV transmissions. Dr. Lifson noted that researchers in the AVP contributed to an important study demonstrating the feasibility of such an approach involving the use of compounds that interfere with the ability of HIV to bind to receptor molecules on the surface of the cells it infects. Interfering with this obligatory process prevents infection. The study used a nonhuman primate model of HIV transmission.

Dr. Lifson explained that microbicides are "drugs or treatments, often used topically, to block or inactivate a microorganism so as to prevent infection." Further, he said, "Microbicide research is a critical area receiving increased emphasis in ongoing efforts to combat AIDS."

### The Art of Science

In addition, the *SolutionOne* October/December issue featured SAIC-Frederick, Inc., photographer Jon Summers' award-winning image, *Fungi Squared*. The article noted, "The image was awarded Best of Show in the Still Media division at BioComm 2003, the annual competition of the Biocommunications Association (BCA). BCA is made up of professionals who

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## Gaining Prominence (continued from page 5)

create and use the highest quality images and presentations in visual communications media for teaching and documentation in the life sciences and medicine. The images are fungi isolated from soil samples as part of the Anti-Cancer Drug Discovery Program at the National Cancer Institute.”

Do you have news to share with other SAIC Corporate employees? *SolutionOne's* Ms. Bell said that you may submit article ideas or news by filling out the “SolutionOneStory Submission Form,” also found at <https://issaic.saic.com/peck/solutionone.html>, or e-mail her at [donna.bell@saic.com](mailto:donna.bell@saic.com). ↻

## New Safety Officer Joins EHS

Paul Stokely has joined EHS as the new Environmental Safety Officer. He comes to SAIC-Frederick, Inc., from Ecology Services, a health physics and radioactive waste contractor, where he was the operations manager. Mr. Stokely has also worked with Laidlaw Environmental Services as a field chemist and project manager for generators of hazardous waste, and with the Engineering and Architecture Department at the University of Maryland College Park, where he reviewed budgets and outside contractors for asbestos removal and equipment installation projects.

Mr. Stokely has a BS in chemistry from the University of Maryland and an MS in environmental engineering from Johns Hopkins University. He and his wife live in Mt. Airy. Please be sure to welcome Mr. Stokely to SAIC-Frederick, Inc. ↻



## Ninth Annual Spring Research Festival (continued from page 1)

skin. Some naturalists believe that the frogs’ tipped toes help them gain traction in the slimy, stagnant pools where they make their homes, originally in Africa. Males weigh about two ounces and are about 2½ inches long, about the length of an average person’s forefinger, while females are usually twice that weight and length. And that brings us to the other part of our 2005 emblem’s name: African. *Xenopus* species are native to the Great Rift Valley south of the Sahara, and also in Namibia, Angola, and South Africa.

Because of its characteristics—carnivorous, voracious and highly aggressive, and now also found in freshwater areas around the world—the African clawed frog is not considered threatened or endangered. On the contrary, many ecologists have dubbed them invasive pests. In the United States, presumably because of pet release, they are now found in California, Virginia, and Delaware, where they devour native species of frogs and fish who share their freshwater habitats.

Despite its invasiveness, voracity, and aggression, *Xenopus laevis* does have redeeming qualities that have caught the attention of the biomedical research community worldwide. In fact, we might think of these little frogs as swimming, leaping, highly efficient miniaturized biopharmaceutical production plants. It is from the African clawed frog that scientists first learned of a peptide called magainin, a valuable antimicrobial and anticancer substance present in the frog’s skin. Magainin is but one type of molecule in a group known as defensins, components of an organism’s innate immune system.

Defensins are abundant in nature: present in plants, insects, marine invertebrates, amphibians, reptiles, and mammals, including humans. These small but powerful molecules have

shown themselves to be battle-hardened against bacteria, fungi, viruses, and some tumor cells. They owe their success to a simple, yet highly effective strategy: they are amphiphilic. One property of the magainin attracts water, while the other repels it. Thus any cell, whether autonomous, such as a bacterium, or dependent on a host organism, such as a tumor cell, is vulnerable to the magainin’s push-pull tactic of membrane rupture.

So impressive are the magainins that their attributes are listed as anti-cancer, anti-inflammatory, immune modulatory, endotoxin-neutralizing, anti-apoptosis, angiogenic, wound-healing, and drug-carrying. Altogether, not a bad résumé for a compound made by a diminutive invasive pest.

Watch for e-mails and check the Spring Research Festival Web site for more detailed information: <http://web/events/springfest/>. To learn more about African clawed frogs, visit the Smithsonian Museum’s National Zoo Web site: <http://nationalzoo.si.edu>. ↻

## OHS Helps Maintain Our Tobacco-Free Workplace

OHS has been helping us keep our workplace tobacco free, by developing and implementing a tobacco cessation program for all employees at the NCI-Frederick. Fifty-nine employees have enrolled in the program, and significant progress is being seen in reducing the use of tobacco products. An open house featuring alternative cessation methods and aids, counseling sessions, and widespread media have been used. For more information, contact OHS at 301-846-1096 or [ohs@ncifcrf.gov](mailto:ohs@ncifcrf.gov). ↻

## Theresa Duley Named Biological Safety Officer

Ms. Theresa Duley, former EHS construction safety officer, was named biological safety officer in February 2005. As a construction safety officer, Ms. Duley provided safety oversight for the Vaccine Pilot Plant (VPP) and NCI construction-related activities, including lead and asbestos programs. Her new duties include conducting facility audits and biosafety risk assessments, and providing recommendations for biocontainment laboratory construction design and renovation, in accordance with regulatory requirements.

Ms. Duley brings several years' experience in the biological safety field to her new role. At Southern Research Institute, she was the environmental health and safety program manager for the Infectious Disease Research Division. There she served on the Animal Care and Use Committee and

the Institutional Biosafety Committee as biological safety officer. She was also the responsible facility official for The Centers for Disease Control and Prevention Select Agent Registration program, and she assisted in the initial construction and final commissioning activities of a biological safety level 3 containment facility. Ms. Duley has also been involved with the successful development and management of *Bacillus anthracis* environmental analysis projects.

Additionally, Ms. Duley helped develop standard operating procedures for working in containment facilities to ensure regulatory compliance, and she is qualified to participate in Good Laboratory Practice (GLP) studies by performing GLP audits.



After transferring to Southern Research Institute's Medical Countermeasures Department in the Chemical and Biological Defense Division, she performed biosafety consultant functions as health and safety project manager.

In that capacity, she served as the site safety representative and project manager for the dismantlement of NCI-Frederick's Building 470, site of the former U.S. Offensive Biological Warfare Pilot Production Plant.

Ms. Duley earned a BS in biology from the University of Maryland College Park and a master's degree in public health (occupational health and safety management) from Tulane University.

Ms. Duley may be reached at 301-846-5038, or at [duleyt@ncicrf.gov](mailto:duleyt@ncicrf.gov). ↻

## Pilot Experiments Aid in Evaluating Specimen Collection, Processing, and Storage

The BioProcessing Laboratory (BPL), headed by Dr. Mark Cosentino, is part of the Clinical Services Program (CSP) in the Applied/Developmental Research Support Directorate. Part of its mission is to investigate processes that could improve or optimize specimen collection, processing, and storage for studies conducted by the Division of Cancer Epidemiology and Genetics (DCEG) of the National Cancer Institute (NCI).

For example, the BPL collaborates with DCEG investigators to develop small pilot experiments related to the

researchers' current or future studies. SAIC-Frederick, Inc.'s Occupational Health Services' (OHS) staff collects relevant specimens that the BPL then processes and stores according to the pilot experiment protocol. Where possible, the BPL, CSP, or external collaborators perform any necessary analyte testing.

### Specimen Collections

Pilot experiments typically encompass one or more of the following: investigating the suitability/feasibility of using a traditionally processed and stored specimen in a new assay; modifying an existing specimen processing procedure to maximize/optimize the quantity and/or quality of testable specimen materials; and/or performing analyte recovery/stability testing after a specimen has been processed and placed at a specific storage condition, especially

if the stored specimens are not to be tested for several years.

Usually, when recommending a change based on the results obtained in the pilot experiments, the researcher must consider: how much the change in protocol will cost the overall project; whether the change in collecting or processing a sample will cause the resulting specimen to perform differently than its predecessor; and whether a sample that has been processed and stored will perform equivalently to a freshly processed sample that was immediately analyzed.

Once the pilot experiments are completed, all relevant data is summarized, financial and performance impacts are evaluated, and all information is shared with the investigators so that they can

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### Pilot Experiments *(continued from page 7)*

make the best-informed scientific and economically based decision about their studies. While on some occasions, there may not be enough time or critical resources available to completely address the investigators' questions, the BPL provides as much guidance as possible. The goal is always to provide the investigators with the appropriate targeted data so that they can perform their study with confidence.



*Dr. Mark Cosentino, Head of the BioProcessing Laboratory*

### “Cocktails” for Specimen Cryopreservation

The other way the BPL works on specimen-related issues for DCEG is in establishing a research program for specimen cryopreservation. Currently, the BPL focuses on improving the cryopreservation “cocktails” used for peripheral blood mononuclear cells (PBMCs) and designing an approach to evaluate in situ the quality of frozen PBMC samples.

PBMCs are frequently collected during many DCEG studies and may be exposed to temperature fluctuation during long-term storage, especially when they are retrieved and shipped. A lot can happen to PBMCs during storage, for which current dimethyl sulfoxide (DMSO)-based cryopreservation cocktails offer little protection. These formulations have not changed much since the 1950s, when DMSO was first used.

To evaluate new freezing cocktails in an attempt to better protect these cells

from the damaging effects of oxidation and apoptosis that occur during cryopreservation and temperature fluctuations in storage, the BPL is collaborating with BioLife Solutions, Inc., to customize a cell-freezing cocktail for PBMCs that contains little or no DMSO. Rather, BioLife's cryopreservation cocktails are based on their research that shows the importance of having balanced salts, antioxidants, and apoptotic inhibitors present when cells are cryopreserved, so the cells are protected while in storage and when they are thawed.

This area of research relates well to BPL's other interest, monitoring the status of frozen PBMCs. Research literature indicates intracellular ice formation can be detrimental to the survival and quality of cells after they are thawed. Therefore, BPL is establishing another collaboration to perform scanning electron microscopy on frozen PBMCs so our standard freezing cocktails can be compared to BioLife's cryopreservation cocktails. In addition, BPL hopes to use scanning electron microscopy to evaluate “sentinel” samples, which are stored with actual samples in freezers. The sentinel samples would be thawed periodically and evaluated for the quantity of intracellular ice formation that occurred during a specific period and whether this would reflect any event that could increase the occurrence of intracellular ice in real samples.

Both issues, finding a new cryopreservation cocktail for PBMCs and performing pilot experiments, require expertise in many different scientific areas. Therefore, success relies on collaborations and on selecting projects that can benefit the largest number of ongoing and planned DCEG studies. BPL hopes that being proactive with specimen collection, processing, and storage will result in DCEG studies being executed more confidently and economically because successful pilot experiments will have already been performed. ☺

## An Easy Day to Plan—A Great Day to Enjoy and Inspire

You probably love your work or you wouldn't be here. One of the most significant things that people often say about NCI-Frederick is that it is an enjoyable place to work, as evidenced by several surveys in the past two years that have named NCI-Frederick among the top ten best places to work.

Perhaps one thing that makes NCI-Frederick so special is that our managers recognize families are an important part of our lives. To that end, with the support of the U.S. Army Medical Research and Materiel Command and Fort Detrick, each year we hold a “Take Your Child to Work Day” that is separate from the nationally recognized April date. July was chosen here because many employees work in restricted areas, and the summer date enables us to set up outdoor programs, as well as indoor areas where children can be allowed. We also offer reduced-price pool passes for participants.

### Joint Planning Committee Oversees Activities

A joint Planning Committee, representing NCI-Frederick, SAIC-Frederick, Inc., Data Management Services, Inc., Wilson Information Services Corporation, Charles River Laboratories, the US Army Garrison, and USAMRIID, oversees the facility-wide activities.

We try to ensure that each child is registered for three sessions—another reason that more programs are needed. During breaks, the children can participate in various activities that will be set up in the “Hub” area near Building 560. While the activities change each year, they often include a chance for children to work with computers and science projects, to see

or possibly handle wild animals such as snakes, to see martial arts demonstrations, to explore (under supervision) military vehicles, and to have their faces painted.

More than 1,000 children have participated in the event to date. TYCTWD 2004 alone hosted more than 300. So popular is the event that many former participants—both teens and young adults—return as volunteers, often receiving community service credit for their time. Through the Directorate of Community Services, Fort Detrick, anyone (civilian or military) volunteering time outside of work may receive credit.

### Tremendous Need for More Program Sponsors

Many parents tell us that their children really look forward to this annual event. Because attendance has increased dramatically over the past several years, we have a tremendous need for additional program sponsors. Have you ever said, “But I don’t have time to plan a program!” or “Our lab is too busy!” or “We don’t have room for many children”? If so, consider the following:

- You need only provide space and staff; the TYCTWD Planning Committee members will help you develop a child-friendly program in a safe environment and will provide supplies needed to conduct the program.
- Your program lasts only 45 minutes; you may choose to have one to three sessions. All are well-spaced: 9:00–9:45 a.m., 10:30–11:15 a.m., and 1:00–1:45 p.m. The children and their parents or guardians come to you, escorted by a volunteer. If necessary, the Logistics Committee will arrange transportation.
- As a program sponsor, you determine the age range and the number of children you can accommodate.

### We Need You!

Please consider sponsoring a program or a Hub activity, or volunteering to help. Sign up through the TYCTWD 2005 Web site (<http://kidsday.ncifcrf.gov>) or call the TYCTWD hotline, 301-846-7400, for more information. You will be contacted by a member of the Planning Committee once your information has been received.

To see the events from Take Your Child to Work Day 2004, visit the photo gallery at the TYCTWD Web site. If you have any questions or would like to discuss your participation in the event, e-mail [kidsday@ncifcrf.gov](mailto:kidsday@ncifcrf.gov). 📧

### Patricia Sherman: Running into the Future

While SAIC-Frederick, Inc., is welcoming many new people to its organization, we also reluctantly say goodbye to a few who have retired this spring. One who has been here many years and has seen many changes is Patricia Sherman, a longtime illustrator with Scientific Publications, Graphics & Media (SPGM).

Ms. Sherman started work here in 1974 for the contractor Litton Bionetics, when SPGM was called Technical Illustration and consisted of a staff of two—senior and junior illustrators, with Ms. Sherman the junior. The two worked in 1½ rooms and had one “flat file” (wide, shallow drawers to hold oversized papers) filing cabinet to hold everything. After one year, she decided to free-lance as a vendor. She came

back full time in 1981 and continued working here until February 2005.

Today, SPGM includes 16 staff members and is housed in Building 362. “Illustration has changed from using a drawing board to working on computers. Now we have new technologies... and need technical skills, not just artistry, to perform illustration today,” Ms. Sherman said.

### Dedicated Runner

Ms. Sherman is a small, delicate-appearing woman. But don’t let that seeming fragility fool you! She is a dedicated runner, having begun when she was 42. A few years ago, she participated in the Leukemia & Lymphoma Society Team in Training marathon, a cause close to her heart, having lost a son to leukemia in 1990.

She has run many 5 K (3 miles) and 10 K (6.2 miles) races. Just this past March, she placed in the St. Patrick’s Day 5 K race in Baltimore.

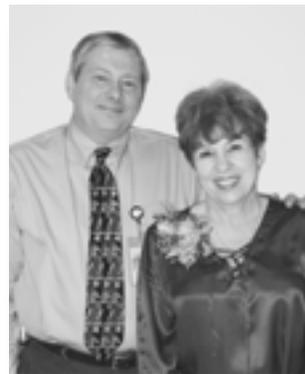
Several years ago, she represented SAIC -Frederick, Inc., at the ESPN “Tuxedos and Sneakers” Sports Banquet in Washington, an event attended by many famous sports personalities.

Ms. Sherman won an OHS Wellness award just two years ago. With continued access to the base, thanks to her husband’s

Air Force affiliation, Ms. Sherman continues to run the trails and use the fitness center.

In a final comment, Ms. Sherman said that she hopes that she “contributed to the NCI mission in some small way.”

Ms. Sherman has indeed contributed through her talent and her dedication to helping the NCI fulfill its mission. We wish Ms. Sherman a joyful retirement. Keep running! 📧



*Pat Sherman, with Ken Michaels, her manager at SPGM.*

## Kenny Thomas: Life in the Fast Lane

By day he's a soft-spoken, polite maintenance electrician at FME. But after he leaves work, he can usually be found under the hood of his race car – building, tweaking, and tuning his 1985 Pontiac Grand Prix for the next race.

Kenny Thomas's passion for racing began about 20 years ago, and 10 years ago, he says, he "got serious." That was when he built his first car and began driving in races at Hagerstown Speedway and Allegany County Speedway in Cumberland, MD. Known at the track as "Krazy Kenny Thomas," he races in the Enduro Dash Series. Reaching speeds of up to 80 miles per hour in the straightaway, Kenny threads



*Kenny Thomas' race car started as a 1985 Pontiac Grand Prix.*

his way through the 35 other stock cars in 30-lap (15-mile) races. And he knows what he's doing—last season, Kenny racked up an impressive record, with one win and top ten finishes in all but one other race.

He has built all 4 of the cars he has owned over the last 10 years. "I do everything but the lettering," he explains. He buys a used car, strips it down, improves or replaces all its moving parts, and rebuilds the interior, including the reinforcing safety bars. In addition to working on his Grand Prix, he's in the process of building

a second car as an alternate, so he won't miss any races because of mechanical downtime.

But car racing isn't cheap, and Kenny has worked hard to obtain sponsors to help defray the cost of owning and operating his high-performance vehicles. When you approach a sponsor, you better come prepared, he says, "with all your i's dotted and t's crossed." The sponsor, in turn, reaps the benefit of the advertising activity around the car. Not only does the car appear at the track, but it is also displayed at various auto shows, malls, special events, and other community activities. So the advertising is far-reaching. SAIC-Frederick, Inc., is currently one of seven sponsors whose logos appear on Kenny's car.

### A Family Affair

Kenny's family is his team and strongest supporters. In his 20 years of racing, he says, his wife has missed only one race, and that was because she had just given birth to their only son. That son seems to be following in Dad's footsteps. Now 12, he has raced in the "quarter midgets," and is looking forward to racing with Kenny two years from now. (Yes, Kenny confirms, you can drive a car around the track at 80 mph at age 14, two years before you can drive on Maryland's roads.) Until then, he'll continue working on Kenny's team. The other member of the team is Kenny's 20-year-old nephew, who doesn't drive the car, but is a great help with everything else.



*Kenny Thomas, second from right, poses with his wife, son, and nephew, after winning at Hagerstown Speedway in 2004. His family is his team.*

### Safety First

Kenny keeps safety uppermost in his mind. His car is fitted with roll bars—"basically, you build a cage around yourself," he says, with reinforcing bars in both doors, overhead, and from the front of the car to the rear of the car. There is no glass in the side windows, and the small back windows and windshields are fitted with a bulletproof-type of glass that resists shattering.

Everything he wears—a double-layered suit, gloves, shoes, even underwear and helmet lining—is made from NOMEX®, a special, fire-resistant material that is also used in the protective gear worn by firefighters. He uses a five-point belting system, with a shoulder belt, two lap belts, and a "submarine" belt that wraps under each leg. According to Kenny, if you can't afford good safety equipment, you can't afford to race.

To find out when you can see Kenny race, log on to the Hagerstown Speedway Web site, at <http://www.hagerstownspeedway.com>. Look for the "Enduro Dash" races. 🏁



## Make Your E-Mail Work Harder for You

We all use e-mail. In fact, it's become the primary way we communicate at work. But e-mail can be used in ways you never dreamed of—and now you can learn these ways by taking an e-learning course offered through Skillport, the e-learning Web site on ISSAIC.

You'll find out about the power of e-mail; learn ways to optimize your e-mail use; compose effective e-mail; practice good e-mail management, and more. For example, after you complete the E-mail and Organizational Communication course, you'll be able to:

- Identify the benefits of knowing how to use e-mail as an effective communication tool in the workplace.

- Identify how an individual can use e-mail in information processing.
- Sequence the five steps in planning a meeting.
- Choose appropriate e-mail messages to support the steps for planning a meeting.
- Identify examples of appropriate uses of e-mail to strengthen mentoring relationships.
- Identify three types of information that a business professional should avoid putting in e-mail messages.

Other courses include:

Essentials of Electronic Communication

Optimizing E-mail at Work

E-mail as a Marketing Tool

E-mail Essentials Using Microsoft Outlook

Visit the SkillPort site today for specifics about each of these courses. SkillPort can be used on company time for training that enhances your current job performance and is approved by your supervisor. Each course takes less than 3 hours of your time. All SkillPort courses/books, and ISSAIC, are available to you on your own time with your own equipment, whether they pertain to your job or not.

To take advantage of SkillPort, you must first be a registered ISSAIC user. As most of you know, ISSAIC is the SAIC Intranet Web site.

Please contact Sukanya Bora at [sbora@ncicrf.gov](mailto:sbora@ncicrf.gov) or Etienne Marofsky at [emarofsky@ncicrf.gov](mailto:emarofsky@ncicrf.gov) for ISSAIC registration instructions.

Need a SkillPort demonstration? Please contact Ms. Bora at 301-846-1129 or [sbora@ncicrf.gov](mailto:sbora@ncicrf.gov) to register your group for a SkillPort consult and demonstration. 

## Stock Options

As an SAIC-Frederick, Inc., employee, don't forget that you can take advantage of a number of savings and investment options, including the opportunity to purchase SAIC stock.

### Employee Stock Purchase Plan (ESPP)

Through the ESPP, employees may elect to have between 1% and 10% of their after-tax income withheld from their bi-weekly pay to purchase SAIC stock. Deductions are held in a non-interest-bearing account. In each quarterly stock trade, a purchase is made for the employee at a 15% discount.

### First Time Buyers Program (FTBP)

Through the FTBP, employees receive a match of two vesting stock options for every share purchased in conjunction with their first trade purchase. Employees may purchase a minimum of \$500.00 up to approximately \$2,000.00 (rounded down to the next whole share). Participation in the ESPP does not disqualify an employee from participating in this program.

### Direct Stock Purchases

Employees are pre-approved to make direct stock purchases of up to \$20,000.00 worth of SAIC stock in

each quarterly trade. Stock purchases in excess of \$20,000.00 require SAIC approval. Employees interested in purchasing more than \$20,000.00 worth of SAIC stock should contact Ann Heller, at 301-846-1518, for more information.

To learn more about SAIC stock, log onto "Stock Tools" at <https://issaic.com/stock/> or review the SAIC Prospectus, which you may access online or obtain by calling the Payroll Department at 301-846-1139 or -1518. 

## Special 401(K) Contribution Election Period

This year, the Retirement Committee of the Employee Savings & Retirement Program has approved a Special Election period to permit employees to make adjustments to their 401(k)

contributions to coincide with receipt of annual merit increases. Employees will be permitted to submit changes between April 18 and May 6. Any changes made during this timeframe will be reflected in the May 20th paycheck. The next quarterly enrollment period held during the month of

June for the quarter beginning in July will still occur.

For questions, please contact Human Resources at 301-846-1146, or send an e-mail message to Rebecca Newhall, Benefits Administrator, at [Rnewhall@ncifcrf.gov](mailto:Rnewhall@ncifcrf.gov). ↻

### Important Telephone Numbers

Ethics Hotline. . . . .	1-800-435-4234
Human Resources Department . . . . .	(301) 846-1146
Benefits Questions, HR Department . . . . .	(301) 846-1146
SAIC Stock Programs . . . . .	1-800-785-7764
SAIC Stock Price . . . . .	1-888-245-0104

### Important Dates

Spring Research Festival. . . . .	May 18-19, 2005
Take Your Child to Work Day . . . . .	July 13, 2005

### SAIC Stock

The price for SAIC Class A Common stock was set by the SAIC Board of Directors on April 8, 2005, at \$42.27, up \$1.72 from \$40.55.

Stock price set . . . . .	April 8, 2005
New stock price available . . . . .	April 15, 2005
Future trade dates (subject to change) . . . . .	June 17, 2005
	September 23, 2005
	December 16, 2005

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