

BDP Releases Ovarian Cancer Product

By Sheryl Ruppel; Ray Harris, Ph.D.; Steven Giardina, Ph.D.; and Kathy Miller

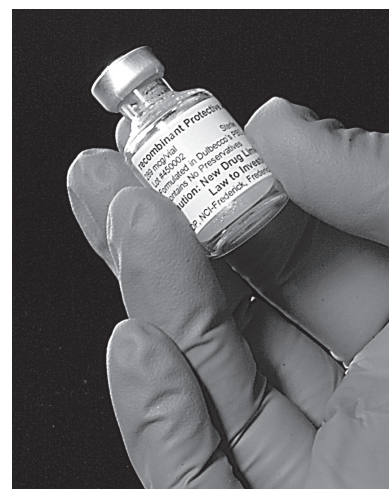
A new treatment for ovarian cancer is headed to clinical trials with the release of the Biopharmaceutical Development Program's (BDP's) adenovirus product, AdDelta24RGD, engineered to selectively infect and kill tumor cells.

The Food and Drug Administration has cleared the product, a recombinant adenovirus designed to attack ovarian tumors that recur and those that form outside of the ovaries, for use in a Phase I

clinical trial to begin in the next few months at the University of Alabama at Birmingham.

AdDelta24RGD is a virus that has been genetically altered to improve its ability to enter and replicate in tumor cells. There the virus copies itself repeatedly until it overtakes and kills the target cell.

The AdDelta24RGD project came to the BDP through NCI's Rapid Access to Intervention Development (RAID) Program. The program allows academic researchers to submit candidate vaccines and



BDP expedites drug development.

drugs for peer review and possible development for clinical studies. NCI's Biological Resources Branch

(continued on page 3)

GeneChip® Studies Run in Minutes, Not Days

Researchers are using the Advanced Biomedical Computing Center to process gene chip analyses up to 200 times faster than before—and without having to learn a new interface. Correlation studies that took more than two days to complete now run in about 15 minutes. Genomic profiling may help researchers better understand genetic risk factors for cancer, develop new procedures for testing the genetic properties of tumors, or identify genetic changes that may result from treatments and therapies.

The Advanced Biomedical Computing Center (ABCC)



As well as the CORR4B software, ABCC uses a "virtual wall" to profile genomic data. Here, ABCC staff, with the Virtual Wall behind them, examine 3-D models.

responded to this challenge by developing new software, CORR4DB (correlation for

database). As its name implies, it enables researchers to determine the correlation between genes in microarray gene expression studies, leading to a better understanding of the relationship of genes, and in turn, furthering genomic research.

Developed with MATLAB® from MathWorks, CORR4DB is an interactive

(continued on page 3)

Arthur's Corner

SAIC-Frederick, Inc., has reason to be proud of all its 10 directorates. Each one is strong and strives not only to meet, but to anticipate the customer's needs. Our sole source negotiation status is indicative of the hard work we all put forth for NCI.

Timothy Harris, Ph.D., Leads ATP:

I am pleased to announce that Timothy Harris, Ph.D., has joined us as director of one of these directorates, the Advanced Technology Program (ATP; formerly the Research Technology Program). Dr. Harris brings with him the expertise of 25 years of biotechnology experience, as well as a very strong background in molecular virology research (see page 5). Dr. Harris was recently featured in the March *Spotlight* on NCI-Frederick's Web site.

RTP Expands and Changes Name:

Over the last few years, we have initiated some very strong biotechnology programs. These include the Core Genotyping Facility (CGF) at Gaithersburg, the Nanotechnology Characterization Laboratory (NCL), and the Viral Oncology Section (VOS), the latter two located at NCI-Frederick.

Since these three programs are highly complimentary to the technology we have developed in RTP, I decided to combine CGF, NCL, and VOS with the Research Technology Program to enhance the scientific communications among the groups. In addition, I renamed RTP as the **Advanced Technology Program** to more accurately reflect its expanded scope. This realignment will foster better scientific exchange, and Dr. Harris has already developed a number of activities to enhance such interactions.

Core Genotyping Facility: With approximately 45 employees, CGF's

goal is to meet the genotyping and DNA sequencing needs of NCI's Division of Cancer Epidemiology and Genetics (DCEG) and Center for Cancer Research (CCR). The facility performs high-throughput genotyping and sequencing to support genetic analysis for a broad range of projects for the intramural research program of the NCI.

Recently, as part of the CGEMS project, CGF completed two whole genome association scans (550,000 SNPs each) in prostate and breast cancers. Replication of the top 28,000 most promising hits is underway. The first major publication from this effort will appear in *Nature Genetics* in May (Yeager et al. Genome-wide association study of prostate cancer identifies a second locus at 8q24).

Nanotechnology Characterization Laboratory:

NCL's mission is to perform preclinical characterization on nanomaterials intended for cancer therapeutics and diagnostics. Since its inception two years ago, NCL's 15 members have characterized 70 types of nanomaterials from more than 20 intra- and extramural investigators. The laboratory is part of the NCI Alliance for Nanotechnology in Cancer.

Viral Oncology Section: Changes have come thick and fast at the Viral Oncology Section (VOS) recently, not the least of which has been a name change. Formerly known as the Viral Epidemiology Section, VOS was established in 1985 as a dedicated support laboratory for DCEG's Viral Epidemiology Branch. VOS performs high-throughput testing for markers of viral infections that relate to cancer, primarily antibody assays, as well as real-time PCR detection and quantification of viral genomic nucleic acid.

Initially, VOS performed mostly commercially available assays, but under the leadership of Denise Whitby, Ph.D., who joined SAIC-Frederick,

Inc., in 1999, the emphasis has shifted toward development of in-house assays. These include serological assays for KSHV and real-time PCR assays for KSHV, EBV, HCV, HBV and HIV. In January 2004 the scope of VOS was extended to support of all of DCEG. In October 2006 VOS became part of the ATP and now provides virological services to all of NCI and beyond. A further change occurred on April 1, 2007, when viral vector production staff members from the Gene Expression Laboratory joined VOS. This consolidation of ATP virology services will provide even better support for the NCI and NIH community. Betty Conde, Ph.D., manages VOS.

The scientific endeavors at NCI-Frederick are world-class, and it has been my experience that providing scientists with a venue to discuss their scientific interests results in a synergy for problem-solving that cannot be achieved in any other manner. Dr. Harris has an enthusiasm for science that is contagious, and I firmly believe that this new Directorate will foster collaborations and exciting scientific discoveries beyond our wildest expectations. ☺



Dr. Larry O. Arthur

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

BDP *(continued from page 1)*

(BRB) manages the recommended biological products that are then transferred to BDP for development and manufacture.

Candidate agents are accepted from the NCI Intramural Program, other government programs, and pharmaceutical companies through NIH Collaborative Research and Development Agreements. Under NCI-Frederick's Federally Funded Research and Development status, BDP services are also publicly available through the Work for Others Program.

“Getting the AdDelta24RGD adenovirus accepted for a clinical trial was a major accomplishment for the BDP.

We are excited about the potential of this drug to help treat ovarian cancer, and we look forward to the trial's results,” said Dr. George Mitra, head of BDP. 🌟

GeneChip® *(continued from page 1)*

desktop application limited by the amount of system memory available and time of execution. ABCC staff thought that the researchers could complete larger correlations more quickly if CORR4DB could be made to run on a parallel high-performance computing system with a larger amount of available memory.

ABCC used the Star-P™ interactive parallel computing platform and the SGI® Altix® 3700 server to enhance the desktop systems. Star-P automates the process of parallelizing models and algorithms developed in MATLAB, adding the computational power of scalable SGI Altix servers. ABCC employee Qingrong Chen, Ph.D., Pediatric Oncology Branch, worked on the original software, while Mark Potts, a consultant from High Performance Computing Applications, made the conversion to Star-P.

Once the systems were in place, researchers quickly saw

a big jump in output. Before, a typical CORR4DB routine might take more than two days to complete. But with the Star-P implementation, the entire correlation was completed in about 15 minutes—about 200 times faster than before. That acceleration is significant to researchers looking to continually extend the reach of their studies. Now, when even the largest problems can be solved in hours or minutes, researchers can run many correlations in a day.

The combination of Star-P and SGI Altix has enabled researchers to run more samples, and opened the way for new approaches and more complex searches.

For more information on the Star-P™ interactive parallel computing platform, call the ABCC helpdesk at 301-846-5555, or contact Jack Collins, Ph.D., at 301-846-1990, collinsj@ncifcrf.gov. 🌟

**FME Safety Awards**

Facilities Management and Engineering (FME) recognized staff for accomplishments in employee safety during calendar year 2006. From left to right are Tim Lenhart, Safety Committee Chairperson; Ralph Dodson, accepting the award for Zero Injuries on behalf of the Support Shop; Gene Gruden, accepting the award for Zero Injuries on behalf of the Telecommunications Shop; Alan Spade, accepting awards for Zero Injuries and Most Improved on behalf of the Instrument Shop; Geoffrey Needham, accepting the individual award for Safety Leadership; and Bill Lonergan, director of FME. 🌟

Behind the Scenes: Getting a Drug to Clinical Trial

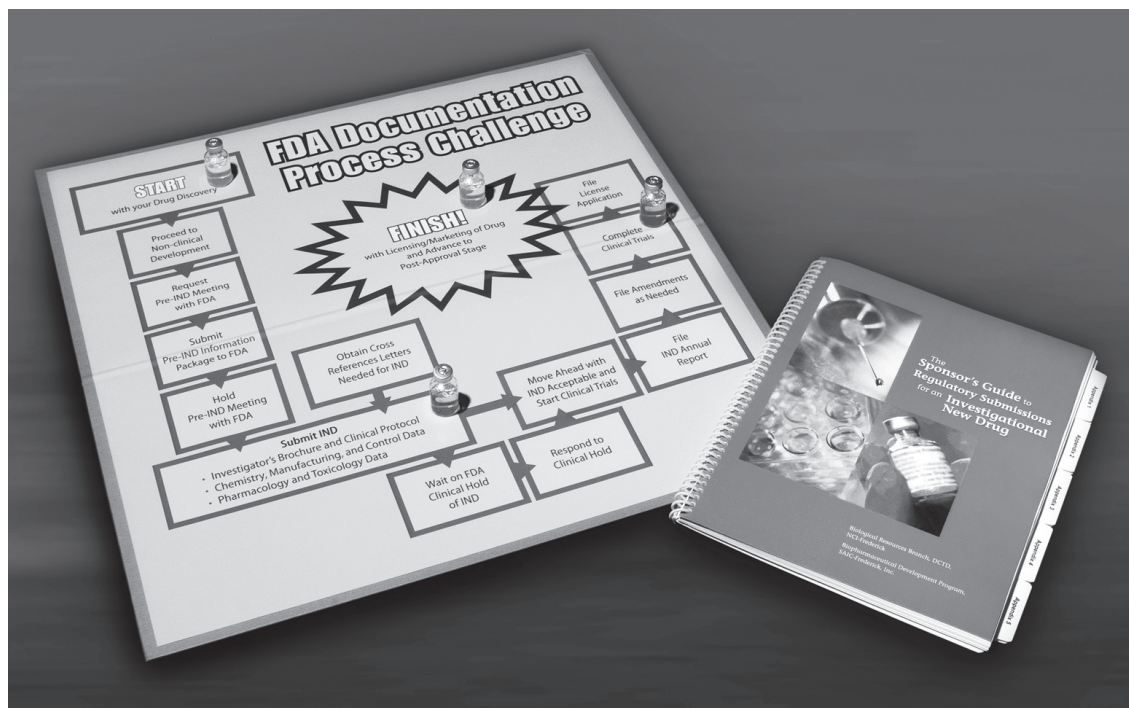
By Sheryl Ruppel; Ray Harris, M.D.; Steven Giardina, Ph.D.; and Kathy Miller

One of the nation's most pressing challenges is how to move more basic research from the laboratory into clinical trials and new treatments. NCI-Frederick is helping to make this happen through its wide reach from basic laboratory investigations to worldwide clinical trials monitoring. The Biopharmaceutical Development Program (BDP) plays a vital role at the center of this effort.

The progress of AdDelta24RGD, BDP's first adenoviral product (see page 1) to reach clinical trials, is one example. First, the potential subcontractor's "current good manufacturing practices" (cGMP) production facilities had to be vetted by BDP Quality Assurance (QA); the BDP project scientist, Raymond Harris, Ph.D.; and the NCI Biological Resources Branch's project director, Rose Aurigemma, Ph.D. Then, once BDP's quality assurance team approved the subcontractor for GMP production of phase 1 gene therapy materials, Dr. Harris coordinated production work with the subcontractor.

BDP's Virology Research and Development Laboratory evaluated starting material provided by the principal investigator, Ronald Alvarez, M.D., the University of Alabama at Birmingham. Subsequently, the starting material was used to produce a virus seed with a fully qualified human cell line. This cell line, A549, had been previously manufactured by the BDP Cell Culture Production Laboratory. The seed stock and the qualified cell bank were provided to the approved subcontractor,

final fill into vials. Once vialled, a portion of the product vials was sent to BDP Quality Control (QC) for release testing. BDP's quality control team tested the product for identity, purity, safety, content, and other critical attributes. QC then completed a Certificate of Analysis for the product, which the Quality Control and Assurance staff, Dr. Harris, and the Biological Resources Branch staff reviewed and approved. In parallel with the certificate completion, QA reviewed and approved the manufacturing



For academic researchers, government scientists, and others who use BDP services, this game board and Sponsor's Guide for Regulatory Submissions for an Investigational New Drug give step-by-step instructions for getting a new drug into a clinical trial.

who, following cGMP regulations, generated a Master Virus Bank (MVB). The MVB was then tested and released for clinical production.

After the subcontractor manufactured the bulk-purified clinical-grade product, it was shipped to BDP for filtration and

Batch Production Records. With these final approvals, QA released the product.

The BDP Regulatory Affairs group also provided critical regulatory support throughout the project. This included providing guidance

(continued on page 5)

Behind the Scenes *(continued from page 4)*

and documentation to Dr. Alvarez on requesting and conducting a Pre-IND (Investigational New Drug) meeting with the FDA, providing a Chemistry, Manufacturing, and Controls (CMC) section for the Pre-IND meeting and the principal investigator-sponsored IND Application, and assisting with FDA reviewer issues to gain FDA clearance to start the clinical trial.

Finally, Dr. Alvarez filed his IND application to conduct a clinical trial with AdDelta24RGD in early January 2007. By February 2, the FDA Center for Biologics Evaluation and Research, Office of Cell, Tissue and Gene Therapy, had completed its review and decided the clinical trial could proceed.

BDP and the Biological Resources Branch have also published a comprehensive book, the *Sponsor's Guide to Regulatory Submissions for an Investigational New Drug*, to help researchers with the step-by-step procedures involved in submissions. The book is available online at <http://wwwbdbp.ncifcrf.gov/pdf/GuidetoRegSubs.pdf>. ↻

Appointments Support Expanding Public–Private Sponsorships, WFO

*By Frank Blanchard
and Maritta Perry Grau*

To support the National Cancer Institute's expansion of public–private partnerships and to expand its own Work for Others program, SAIC-Frederick, Inc., has made key appointments.

Timothy J. Harris, Ph.D., has joined SAIC-Frederick, Inc., as Director of the Advanced Technology Program (ATP), formerly the Research Technology Program. **John A. Gilly, Ph.D.**, has been named Deputy Director of the Biopharmaceutical Development Program (BDP) headed by George Mitra, Ph.D., and Steve Harshman has been named Quality Assurance Officer.

Tim Harris, Ph.D.

Dr. Harris is reorganizing the ATP to enhance interactions among NCI-Frederick scientists working on cutting-edge biotechnology.



Tim Harris, Ph.D.

The ATP operates a range of advanced technologies supporting NCI research and development. These include high-performance computing, genetics, genomics,

protein expression, nanotechnology, and cellular imaging.

The reorganization will support the NCI's expansion of public–private partnerships with the academic, nonprofit, and commercial sectors. These partnerships will be instrumental in accelerating the delivery of new technologies and treatments to patients.

Dr. Harris has more than 25 years of experience in the biotechnology industry, most recently as president and CEO of Novasite Pharmaceuticals in San Diego. He received his Ph.D. in molecular virology in 1974 from the University of Birmingham, United Kingdom.

John Gilly, Ph.D.

Dr. Gilly received his doctorate in molecular biology from Lehigh University in 1990. Formerly chief operating officer of Premier Research Group and an advisor to the BDP since 2001, he will extend SAIC-Frederick, Inc.'s advanced research and development technologies to a broader range of university and corporate customers



John Gilly, Ph.D.

(continued on page 6)

Appointments *(continued from page 5)*

through the government's Work for Others program.

BDP works with academic researchers, government scientists, and others to accelerate the development of promising new concepts for drugs and vaccines. It is a cGMP-compliant facility for drugs and biologics that provides complete support from feasibility through development and manufacturing to filing regulatory documentation.

Under the Work for Others program, SAIC-Frederick, Inc., can offer its unique, cutting-edge technologies to organizations other than NCI if these organizations' work falls within the purpose and mission of SAIC-Frederick, Inc.'s primary contract and if it does not compete with services available on the open market.

Steve Harshman

In the past two years, SAIC-Frederick, Inc., has added several new positions, both to anticipate and to meet NCI's needs: Charmaine Richman, Ph.D., Intellectual Property Officer; Frank Blanchard, Director, Public Affairs;



Steve Harshman

and now, Steve Harshman, Quality Assurance Officer.

Mr. Harshman helps lab managers and directors with processes and customer service issues, and in developing quality assurance (QA) programs. "I'm focused on quality assurance that relates to meeting customer requirements and delivering good customer service. While I have a background in cGMPs [current good manufacturing practices] and GLP [good laboratory practices], my 20 years in contract services, dealing with customers and understanding customer requirements, putting in place the resources and processes to meet those requirements—that's what really helps me in my current role," he said.

He has been developing a plan based on the International Organization of Standards (ISO) 9000 quality management principles (see Web site <http://www.iso.org/iso/en/iso9000-14000/understand/qmp.html>), which specify requirements for state-of-the-art products, services, processes, materials and systems; for good conformity assessment; and for managerial and organizational practices.

Mr. Harshman pointed out that some of the key components include having appropriately trained personnel; making sure that equipment is calibrated and performing according to specifications; and that standard operating procedures (SOPs) are followed consistently "so that you know you can consistently provide a certain level of service."

Mr. Harshman takes an active approach to preventing quality

assurance issues, such as lack of resources or problems with personnel, from developing. "I want to establish parameters for how we operate, to focus more on planning and execution than on auditing and correcting," he said. "Directorates will need to spend time and energy putting systems in place. But doing so will improve and streamline their operations and improve their ability to satisfy their customer," he said.

He sees his role as one of providing "cross-pollination as I meet with various people," and he has been working with several committees and some project teams. "One of the things I hope we can achieve, and which ties into the internal customer service concept, is to think more horizontally to help each other achieve our goals. One of the nice things about some of the committees I've been working on, is that they have representation from each of the directorates."

While Mr. Harshman is new to SAIC-Frederick, Inc., he isn't new to NCI-Frederick. Having worked here in the 1970s, he was instrumental in starting early softball and bowling teams to compete with Fort Detrick's teams and has continued to play on the post bowling league (ten-pins) for nearly 30 years.

"One of my fondest memories is one year both teams played for the championship; no army teams were left. We had a 3-hour contest one night, and a lot of NCI-Frederick employees came out to cheer us on. It was a big event for FCRDC at that time."

Reiterating his comments about his new role at SAIC-Frederick,

(continued on page 7)

Appointments *(continued from page 6)*

Inc., Mr. Harshman said, “I want to help everybody do their jobs better. Sometimes a fresh pair of eyes can help you look at things differently and help improve the way you carry out your business. I hope that everyone will see me as a resource they can come to. I can help them.” ☞

Electron Microscopy

By Maritta Perry Grau

If you need high magnification of the structure you're studying, you may want to use the Image Analysis Laboratory's (IAL's) electron microscopy services.

Dr. Stephen Lockett, head of IAL, oversees both confocal microscopy [see *News & Views* “Where Unconventional Thinking Is the Norm,” July 2006] and electron microscopy, the latter headed by Kunio Nagashima. “Electron microscopy's major strength is its incredibly high resolution; you can see almost down to the molecular level,” Dr. Lockett said.

The electron microscopy lab has many users from NCI-Frederick, NCI-Bethesda, and other NIH agencies. A researcher may use one of two types of electron microscope: transmission electron microscope (TEM), or scanning electron microscope (SEM). “TEM shows you a slice of a thin sample at magnifications of up to 600,000 times, while SEM shows surface structure of the sample at high magnification,” said Mr. Nagashima.

In addition to acquiring digital images on the electron

microscopes, researchers can do further analysis on their samples. One of the many techniques involves the use of the energy-dispersed x-ray spectroscopy (EDX) detector for identifying the elements which make up the sample. This is useful in characterizing nanoparticles, particularly in biomedical samples. Negative-staining is another technique for the TEM, where a drop of sample is placed and dried on a TEM grid, stained with

film developed, and making prints in the darkroom. Now we can take a picture and send it digitally wherever we want it to go. It can be used for publication-quality materials,” Mr. Nagashima said.

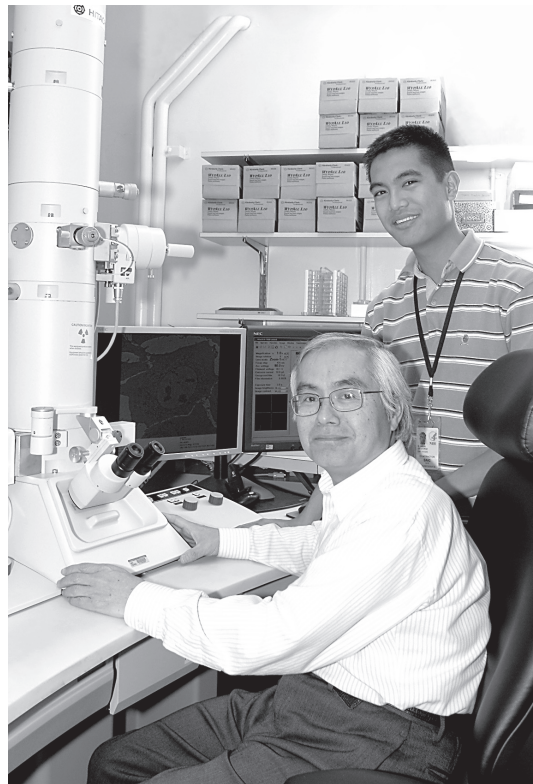
Looking at a sample on-screen from the TEM, it's hard to imagine that the specimen could be taken from a single opening in a 200-space copper grid smaller than a pencil eraser.

Mr. Nagashima noted he could fit “about 30–40 cells or lymphocytes on each grid opening.

Bacteria are even smaller than lymphocytes; and viruses even smaller than bacteria,” he said.

Explaining the workings of the EM, Mr. Nagashima said that its interior is kept under very high vacuum, almost like outer space. Unlike the confocal microscope, which uses a light beam or laser to analyze samples, the electron microscope forms an image from the sample by either projecting high-voltage electrons (80,000 V and up) through a thin sample (TEM), or scanning an electron beam up to 30,000 V across a rectangular area of a three-dimensional sample to reveal surface data (SEM).

Tim Harris, Ph.D., director of the Advanced Technology Program, commented, “Apart from genetics and genomics, one of the key areas for the NCI is imaging both for therapy and for diagnostics, from subcellular imaging in the electron microscope to cellular imaging using confocal microscopy through to nanoparticle characterization.” ☞



Kunio Nagashima (seated) demonstrates the new, user-friendly transmission electron microscope (TEM) to his assistant, Jason de la Cruz. The TEM is a Windows-based, digital instrument.

heavy metals to build contrast, and imaged inside the microscope.

The TEM, equipped with a digital CCD camera, has greatly streamlined traditional EM work. “It's much quicker than the old method of taking pictures, getting

Fire!

By Peter Boving

Quick! Without looking around, can you say where the nearest fire extinguisher is located in your office? Do you know how to use it? Do you know its limitations?

Environment, Health, and Safety will offer its annual fire extinguisher training May 7, 9, and 10 at 1:00 p.m. The course will begin with classroom training in Building 549, Conference Room B. Vans will then take participants to the Festival Field on Sultan Street for hands-on practice using a fire extinguisher to extinguish a small fire.

Space is limited, so contact Sherry Shaner at 301-846-1451 by April 30 to sign up for the class.

Fight or Flight?

What should you do in case of a fire? Because fire can spread rapidly, the number one priority for building occupants is to **get out safely**. Before attempting to fight a fire with an extinguisher, activate the fire alarm, and notify everyone in the area by shouting **"FIRE!"** Then notify the Fort Detrick Fire and Emergency Services by dialing 911 from any NCI-Frederick telephone or from your cell phone.

Once the fire alarm has been activated and the fire department has been notified, you may choose to fight the fire with a portable extinguisher. Fire extinguishers are usually located close to an exit, so you can get out quickly if the fire cannot be extinguished. If the fire grows out of control or the room fills with smoke, leave immediately and close the door behind you.



Former employee Chuck Galloway practices good fire-fighting techniques at last year's Fire Safety Training class.

PASS?

To operate a fire extinguisher, remember the word PASS:

- **P**ull the pin. Hold the extinguisher with the nozzle pointing away from you. Twist the locking pin in the handle to break the plastic seal. Remove the locking pin.
- **A**im the hose nozzle at the base of the fire.
- **S**queeze the lever at the top of the extinguisher. Start about 8 feet back from the fire and move in closer if needed.
- **S**weep the nozzle slowly from side-to-side, aiming at the base of the fire, until the fire is extinguished.

Knowledge Is the Key!

Read the instructions on the fire extinguisher and become familiar with its operation before a fire breaks out. Also, be sure the extinguisher will be effective on the types of fires anticipated in the area. With few exceptions, NCI-Frederick extinguishers are

dry chemical ABC-type and are effective on wood and paper fires, flammable liquid fires, and fires involving energized electrical equipment.



If you have any questions about the fire extinguishers in your area, contact fire prevention inspector Peter Boving, 301-846-5212. ☞

2007 Fitness Challenge Success Stories

By Lisa Simpson

February 2007 Fitness Challenge winners Wayne Helm, Terri McLellan, and Corina May were recently recognized for their accomplishments in the three fitness categories: most miles traveled, most hours spent performing other fitness activities, and most pounds lost. Mr. Helm, of the Facilities Maintenance and Engineering Directorate, received a leather gym bag for walking 143 miles in February. He says the walking he does at work and home, often over



Wayne Helm, Terri McLellan, and Corina May (L to R), February winners in the 2007 Fitness Challenge, display the prizes they were awarded for their achievements.

6 miles a day, is “invigorating” and increases his energy level.

Ms. McLellan, of the Laboratory Animal Sciences Program, won a fitness mat after logging in nearly 60 fitness hours in February by exercising at Curves or the Fort Detrick Fitness Center five days a week, as well as by working with her horse, Scout. Ms. May, of the Clinical Research Directorate, lost 9 pounds in February by cutting snacks out of her diet and selecting healthier foods. Her prize was a subscription to *Cooking Light* magazine. She now enjoys better sleep and “wearing smaller jeans.” She encourages others who are thinking of changing to healthier habits to “make the choice to just do it!”

Accidental Biological Exposure? Know What to Do

By Lisa Simpson and Robin Pickens

If you become injured while working with biological agents, do you know what to do? Needlesticks, sharps cuts, splashes, inhalation of aerosols, and animal bites can occur during the most carefully planned and executed laboratory procedure. Remember, all work with human pathogens, toxins, oncogenic viruses, and recombinant DNA needs to be registered with the NCI-Frederick Institutional Biosafety Committee (IBC). Registration with the IBC is critical for evaluating potential biological exposures.

Emergency 1-2-3

When an injury involves exposure to a biological agent, a quick and appropriate response is vital to a positive outcome, according to Lois Minchoff, Senior

Occupational Nurse Practitioner with Occupational Health Services (OHS). Ms. Minchoff is spearheading the “Emergency 1-2-3” campaign, which will launch at the 2007 Spring Research Festival. The campaign will focus on education and training and will include instructional posters posted around NCI-Frederick, review of “Emergency 1-2-3” during annual employee physicals, and an introduction to the campaign during New Employee Safety Orientation training. OHS will also go out into the NCI-Frederick community to train small groups of workers.

When an accidental biological exposure occurs, “Emergency 1-2-3” outlines three steps to follow:

- **One:** Wash contaminated skin and wounds thoroughly for 15 minutes with water and povidone-iodine, chlorhexidine, or soap. If the eyes or mucous membranes are contaminated, irrigate with water for 15 minutes.
- **Two:** Notify your supervisor, if he or she is immediately available.
- **Three:** Report the exposure to Occupational Health Services in building 426 between 8:15 a.m.

1
Immediately perform first aid at the worksite. Flush wound for 15 minutes.

2
Notify your supervisor, if immediately available.

(continued on page 10)

Accidental *(continued from page 9)*

and 5:00 p.m. If the exposure occurs after clinic hours, call Protective Services (301-846-1091) and they will contact an OHS clinician. The OHS clinician will then contact you as soon as possible.

Off-site employees should review information in the article “EHS Reference for Off-Site Employees” at http://home.ncifcrf.gov/ehs/uploadedFiles/EHS_Reference_for_Off-Site_Employees_031606.pdf.

Fast Response Needed

Alberta Peugeot, OHS Manager, emphasizes the need for urgency in treating an exposure. “We want to reduce the time between exposure and treatment,” she said. Treatment within two hours of an exposure is OHS’s goal.

Often, employees report to the clinic days after experiencing an

3

After performing first aid procedures, report to Occupational Health Services, Bldg. 426. (Monday - Friday) 8:15 a.m. - 5:00 p.m. Off-hours: Call Protective Services at 1091 and they will alert OHS.

accidental biological exposure.

“We repeatedly hear that employees have ‘thought about it for a couple of days’ before coming in,” said Ms. Minchoff. The fact that these types of wounds are often small adds to the mindset that it is “not really important” to deal with right away. In addition, when patients are asked if they washed their contaminated

skin or wounds for 15 minutes immediately after the event, the answer is often negative. According to Ms. Minchoff, current scientific research indicates that prompt post-exposure flushing of contaminated skin, mucous membranes, and wounds is paramount to a good outcome.

Unique Resources

Certainly, many employees do seek immediate medical attention after a biological exposure. “If there is a potential biological exposure, we want to be contacted first,” Ms. Minchoff said. Since the biomedical research performed by NCI-Frederick employees is unique, the needs of an employee who

experiences an accidental biological exposure are also unique. “We want to speak with patients quickly and use our resources so that treatment can be offered within a two-hour window,” said Ms. Minchoff. OHS clinicians have the expertise and resources to deal with exposure situations, and they can quickly contact experts at the National Institute of Health or Centers for Disease Control and Prevention (CDC) if needed.

Safety Is a Coat You Put on Every Day

Ms. Peugeot noted that an employee’s response to a biological exposure should be an automatic one. “We want employees to know immediately what to do, to not even have to think about it.”

Remember “Emergency 1-2-3”: wash right away, notify your supervisor, and report to OHS as soon as possible. This will help OHS to provide the best care they possibly can. Ms. Peugeot said, “I equate safety to a coat you put on every day—it becomes a habit.”

OHS can be reached at 301-846-1096. ☞

SPGM Increases Poster Production Capacity

By Nancy Parrish

Scientific Publications, Graphics & Media (SPGM) recently increased its capacity for producing one-piece scientific posters with the addition of a new wide-format printer.

With a second printer, SPGM can produce more posters in less time, according to Ken Michaels,

manager. “This will be especially helpful in handling peak workloads, such as the Spring Research Festival,” he said.

Preparing for the Spring Research Festival

SPGM staff can assist with all aspects of modular and one-piece poster production. Whether you’re preparing your own poster and need to have it printed, need help finishing a design you started,

or need a complete design, SPGM is ready to help. ☞



Scientific Publications, Graphics & Media

Give us a call—we can help. Building 362, Room 8
301-846-1055, 301-846-6563 (fax), spgm@ncifcrf.gov

Opportunity Knocks! Certified Employee Owner Program Launched at SAIC-Frederick, Inc.

Opportunity Knocks! And it knocked at SAIC-Frederick, Inc., on April 17-18, when Anthony Vigo, Manager, SAIC Employee Owner Relations, launched a Certified Employee Owner (C.E.O.) program by that name to help both new and existing employees understand the company vision, mission, values, business model, strategic objectives, and financials, including the stock.

In addition to increasing company awareness and providing valuable information to current employees, SAIC's CEO **Ken Dahlberg** has set a goal for all new employees to complete the C.E.O. program within their first year. Mr.

Dahlberg said, "One of the reasons that employees join our company is because of our values and employee ownership heritage. New employees need to understand our culture and the entrepreneurial spirit that drives it on Day One, and feel a part of our unique business model. This is key to sustaining our robust stock ownership with the new generation of employees."

Opportunity Knocks! consists of three 35- to 45-minute segments:

1. **Opportunity for Success:** SAIC's ownership culture, values, strategic objectives, and how they're evolving under our CEO and business model today.

2. **Opportunity to Own:** Our stock ownership programs, including the Employee Stock Purchase Plan (ESPP), which gives employees a 15 percent discount on SAIC stock when they purchase through regular payroll deductions.

3. **Opportunity to Understand SAIC Financials and Performance Metrics:** Our three major financial statements, cash flow and performance metrics, as well as actions you can take to build shareholder value.

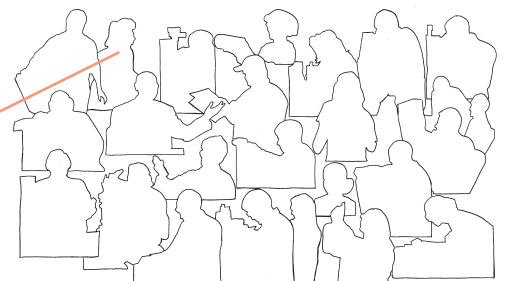
If you need more information about the program, please e-mail Sukanya Bora at sbora@ncifcrf.gov. ↻

Supergraphics Profile

By Lisa Simpson

Diane Simmons, administrative assistant to the president, SAIC-Frederick, Inc., has the challenging task of managing the office of Larry Arthur, Ph.D., president of SAIC-Frederick, Inc., and keeping his schedule current. Though the pace is often hectic, Ms. Simmons says that she enjoys the diversity of the job and "meeting and interacting with different people."

Her activities outside the office revolve around helping others. As a pastor's wife, she visits nursing homes, participates in church events, and is a community volunteer. She also enjoys looking for "treasures" at yard sales with her mother and attending monthly get-togethers with a group of high



school girlfriends, where they enjoy breakfast and a day of shopping and laughter.

Aside from a brief stint at IBM in 1977, Ms. Simmons has been keeping offices running smoothly at the NCI-Frederick campus since she arrived in 1972 to work with Dr. Roman Pienta as a senior secretary in the In Vitro Carcinogenesis

Section under Litton Bionetics. In her many years of service, she has worked with laboratory chiefs, principal investigators, and executive officers, handling everything from payroll and travel arrangements to budgets and training sessions for new secretaries. She began her appointment with Dr. Arthur in March 2000. ↻

Hanna Poffenbarger: Outspoken on Global Warming

By Nancy Parrish



*Hannah Poffenbarger,
Werner H. Kirsten student intern
and environmental activist.*

When she saw a movie in fourth grade on the deforestation of the rain forests, something resonated with Hanna Poffenbarger. “I remember going home and talking to my family and getting all worked up about it,” she recalled. Today this Werner H. Kirsten student intern and Walkersville High School senior is an environmental activist.

In March Ms. Poffenbarger gave a presentation to the NCI-Frederick community on global warming based on Al Gore’s documentary, *An Inconvenient Truth* (see article in the *NCI-Frederick Poster*, March 2007, page 22). However, this was not the first time she spoke out about the environment.

Putting Passion into Action

In eleventh grade, she joined the Environment Club at Walkersville High, where she spoke to science classes about global warming. With other club

members, she persuaded the town commissioners of Walkersville to sign the U.S. Mayors Climate Protection Agreement. She also helped begin a schoolyard habitat project to function as an outdoor classroom and home to butterflies and other organisms at Walkersville Elementary School. For her graduation project she developed and wrote a monthly environmental newsletter based on the habitat project.

Last fall, with a grant from Youth Service America, she organized a recycling demonstration for the “In The Streets” celebration in Frederick. She also organized a County Commissioners Candidates’ Forum on environmental issues, which, according to one of the commissioners, was one of the best-attended events of the campaign.

Becoming a Climate Change Messenger

In December, Ms. Poffenbarger was selected to be a “Climate Change Messenger” for The Climate Project sponsored by Mr. Gore. One of 1,000 volunteers chosen from across the country, she trained for two days in Nashville, Tenn., to learn the issues surrounding global warming. Of the 200 people in her training session, she said, she was one of only three high school students. As part of her commitment, she will give the presentation at least 10 times.

The biggest challenge, Ms. Poffenbarger said, has been “the logistics of organizing the presentations. It takes a lot of time. It took a while to practice

and memorize everything.” She feels good about trying to change people’s minds on the issues and trying to be a leader because she believes it’s important “not just to talk about it, but make changes in my life that people can follow.” Her commitment won’t stop there, however. “I don’t really want to do just the presentations,” she said. “I want to stay involved with what’s going on with the movement.”

Thinking Like a Scientist

As an intern in the Purification Development Laboratory, she assists mentors Man-Shiow Jiang and Dennis Michiel in experiments to purify the protein IL-15. She appreciates working at NCI-Frederick because, she said, “I think that knowing how to think like a scientist is important, how to execute experiments, how to analyze data, [and] have an analytical mind.”

When She’s Not in the Lab

When not in the laboratory or at the podium, Ms. Poffenbarger is likely to be found on a tennis court. Captain of her school tennis team, she was a Frederick County high school mixed doubles champion last year. She is also on the county’s Student Service Learning Advisory Board, serving as its secretary. Later this year, she’ll represent Walkersville High in a team competition known as the Envirothon. To relax, she likes to read and spend time with friends.

Ms. Poffenbarger wants to study environmental science in college but is keeping career options open.

(continued on page 13)

Hanna (continued from page 12)

“I haven’t decided whether I want to continue with the scientific research side of it or the policy-making/political side, being more of a messenger of change.” Whatever she decides, she’s sure to make an impact. ↻

Louis E. Henderson, Ph.D., Retires after Rewarding Career

By Lisa Simpson

Louis E. Henderson, Ph.D., Senior Principal Scientist and Scientist Emeritus at the Center for Cancer Research (CCR) AIDS Vaccine Program (AVP) has retired after more than 30 years of notable research achievements at NCI-Frederick (see related article in the *NCI-Frederick Poster*, March 2007).

Dr. Henderson’s work with retroviruses included many groundbreaking discoveries, such as a chemical treatment to inactivate retroviruses without changing their external shape, leading to the development of a killed-virus HIV vaccine for use in human clinical trials, and the discovery that most retroviruses must add myristic acid to their proteins to be infectious, which opened up the study of myristylation inhibitors as potential antiretroviral therapeutic agents. Working with Raymond Sowder, longtime research colleague, he also revolutionized the process for purifying whole retroviral proteins by modifying reversed-phase, high-pressure

liquid chromatography (HPLC), a technique previously considered unsuitable for this task. Today his modification is a standard laboratory protocol.

A Respected Colleague and Admired Mentor

Regarded with great respect by friends and colleagues alike, Dr. Henderson is described as an inspiration for other scientists. Alan Rein, Ph.D., head, Retrovirus Assembly Section, HIV Drug Resistance Program, CCR, noted that many of his most important papers “describe experiments that



Dr. Lou Henderson accepts a commemorative plaque from Dr. Larry Arthur, Principal Investigator of the OTS contract and president of SAIC-Frederick, Inc.

were really suggested by Lou or Lou’s earlier results,” and George Pavlakis, Ph.D., head, Human Retrovirus Section, Basic Research Laboratory, CCR, described Dr. Henderson’s deep knowledge of retroviral proteins as “a valuable resource to us.”

Robert Gorelick, Ph.D., head, AVP Retroviral Mutagenesis Section, CCR, who joined Dr. Henderson as a postdoctoral fellow in 1985, recalls that his passion about

virology and protein chemistry was contagious and that he always made time to teach. “He always had many ways of viewing a particular problem or project and really took the time to make sure you completely understood what it was about.”

Dr. Henderson obtained his Ph.D. from the University of Colorado, Boulder, followed by research fellow stints at Harvard, Chalmers University in Sweden, and Yale. He joined the Basic Research Program in 1976 to work with Stephen Oroszlan, Ph.D., in the Protein Chemistry Section. In 1989, he

began to work with the then-director of the AIDS Vaccine Program (AVP), Larry Arthur, Ph.D. (now president of SAIC-Frederick, Inc.).

Grateful for His Time “in the Sandbox”

Described by Dr. Arthur as “a scientific driving force” for the AVP, Dr. Henderson is grateful for the opportunity to pursue his passion for solving scientific puzzles. “I feel

like the taxpayers of this country have let me spend my life making a living playing in a sandbox. I can only hope that in time some of it will prove beneficial and help to repay my debt.” When asked what new pursuits he will take on in retirement, Dr. Henderson said that he may write about his experiences “to describe to others how much fun I had.” ↻

Reflections

By Maritta Perry Grau

*Where were you in 1976? In school? Working? Or perhaps you were still a gleam in your father's eye. Last fall, in preparation for the 2006 Winter Staff Meeting, we asked SAIC-Frederick, Inc., employees who had been working here since 1976 to reflect upon some of their early experiences—research and otherwise—with NCI-Frederick, then known as the **Frederick Cancer Research and Development Center**. Unfortunately, we didn't have space to include all of their answers in the January issue of News & Views. So, we decided to share a few with you during the April, July, and October issues.*

In 1976, Litton Bionetics was the NCI contractor. Building 470 had been decontaminated and stood empty since 1971; it would not be transferred to NCI's jurisdiction until 1988, according to an NCI-Frederick Web site article, <http://web.ncifcrf.gov/campus/470update/question.asp>.

Russ Hanson was working in the Biological Carcinogenesis Program's Viral Genetics Section, surveying the extent of bovine leukemia in U.S. cattle.

Ashok A. Desai was an electrical engineer in the Facility Engineering and Construction Group. Since NCI had only established the Frederick Cancer Research and Development Center five years earlier, a lot of work was still going on to reconfigure some of Fort Detrick's biological warfare laboratories into those suitable for cancer research. Mr. Desai focused on infrastructures, preparing designs, drawings, and specifications for electrical lighting and power distribution, fire alarm systems, and scientific equipment alarm systems. He also monitored the installation work that contractors and in-house operating personnel performed.

As NCI managers developed the Frederick facility, they decided to consolidate at Frederick several small

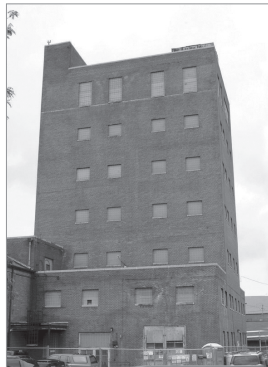
research contracts from around the Beltway. Thus, the Flow Labs, a small, pioneering research group in Rockville that believed viruses cause various cancers, was closed and brought to Frederick to become the Viral Oncology program.

During 1976, **Dr. Leo Lee** was part of the Flow Labs. At NCI-Frederick, Dr. Lee worked with at least 20 viruses, such as HSV (herpes), HPV, HBV, and HCV, all of which have been proven to relate directly to the development of human tumors.

One of Dr. Lee's colleagues in the Flow Labs was Dr. Jeffrey Derge. Dr. Derge noted that more than half of the SAIC-Frederick, Inc., "class of 1976" started work in Building 560, where they sought an elusive link between herpes and cancer. At that time, he said, Building 560 "was a pretty dreary place. About the only renovations

done from its days in biowarfare was the elimination of most of the shower-in locker rooms at the front of every wing. The huge, full-size autoclaves were still at the rear of each half of every wing, on both floors."

Another of the Flow Lab contingent was biochemist **Raymond Sowder II**, a recent college graduate working as a biochemist under Dr. Hans Marquardt, "who taught me a lot about the protein purification methods commonly in use and how to apply them to the purification of retroviral proteins. Since it was suspected that retroviral infections might be a cause of cancer, the directive of the laboratory at the time was to find out everything we could about every retrovirus known to exist, in both animals and humans, in the hope that it would lead to a cure." Dr. Marquardt soon left Fort Detrick and Mr. Sowder began working with Dr. Louis Henderson (see page 13).



By 1976, **Dr. Louis Henderson** had held his Ph.D. for 10 years and had done postdoctoral research at Harvard, Chalmers University (Sweden), and Yale. At NCI-Frederick he worked in the Protein Chemistry Section, headed by Dr. Stephen Oroszlan, developing techniques for the separation and

(continued on page 15)

Reflections *(continued from page 14)*

sequence analysis of proteins, especially retroviral proteins. Dr. Henderson said that he and Mr. Sowder learned “that proteins could be modified by attachment of a myristic acid moiety to N-terminal Glycine residues and that many retroviruses employ this posttranslational modification. The work also revealed that in addition to proteins encoded by the viral genome, mature retroviruses include cellular proteins as components of the infectious virion particle. We also showed that all known alpha retroviruses (including HIV and SIV) have highly conserved ‘zinc fingers’ in their nucleocapsid (NC) proteins.”

Another newcomer to NCI-Frederick in 1976 was **Marty White**. Currently an administrator with the Laboratory of Molecular Technology, he began as a research associate in support of protein chemistry and molecular biology studies directed at the role of viruses in cancer. 🌀



Tribute to JoAnn Garrett

By Cindy Farling

JoAnn Garrett, Purchasing Buyer, Purchasing, passed away in January. She had worked at NCI-Frederick since 1988. Her co-workers spoke highly of her as beloved and well-respected.

“She was by far the most optimistic and pleasant person to be around. Many of us in Purchasing came on board around the same time and have ‘grown up’ together here at the facility. JoAnn epitomizes the

words *team player* and she was an outright joy to work with. Even when she was so ill, she managed to come into work if possible, so as not to burden others with her work,” said Cindy Farling, Purchasing Acquisition Support supervisor.

Co-workers remarked that they sometimes would forget just how ill she was because she didn’t want her illness to be a primary focus. Ms. Garrett was concerned about her friends’ problems and was always supportive of them even when she felt ill. “She was our ‘lunch buddy’ confidante, friend, and such a gentle spirit who will be so missed. Words alone cannot express our grief at losing this special woman,” Ms. Farling said.

She fought valiantly for three years against the cancer that finally claimed her.

Ms. Garrett is survived by her husband, Gary; sons, Steven and Allen; her grandson, Austin (whom she and Mr. Garrett had been raising); her sister, Cynthia; and her brother, Ronald. 🌀

SAIC-Frederick, Inc., Cares

SAIC-Frederick, Inc., donated nearly \$5,000 during the first quarter of 2007 to charitable organizations, both local and national. Recipient organizations devoted to cancer research included the American Cancer Society; Casting for Recovery; the Leukemia & Lymphoma Society; and the National Children’s Cancer Society. Other organizations receiving donations included American

Association of the Deaf-Blind; the Children’s Wish Foundation; Hearts and Homes for Youth; Hospice of Frederick County; Hospice of the Panhandle (in West Virginia); the Mental Health Association; Special Olympics Maryland; St. Jude Children’s Research Hospital;



and the Vanished Children’s Alliance. 🌀

Important Contact Information

Ethics Hotline	1-800-760-4332
Human Resources Department	301-846-1146
Benefits Questions, HR Department	301-846-1146
SAIC Stock Programs	1-800-785-7764 or 858-826-4703
SAIC Stock Price	1-888-245-0104
Employee Assistance Program	1-800-765-3277 www.bhsonline.com

Important Dates

Scientific Writing Workshop	April 16, 18, 20, 2007
Earth Day (U.S.)	April 22, 2007
Spring Research Festival	May 16-17, 2007
Armed Forces Day	May 19, 2007
Memorial Day	May 28, 2007
Flag Day	June 14, 2007
Independence Day	July 4, 2007
Take Your Child To Work Day	July 11, 2007

SAIC Stock

SAIC's common stock is listed on the New York Stock Exchange under the symbol "SAI." For information, visit the Stock Programs Web site by logging onto ISSAIC at <https://issaic.saic.com>, or contact Stock Programs at 1-800-785-7764 or 1-858-826-4703.

News and Views Staff

Executive Editor	Frank Blanchard
Associate Editor	Ken Michaels
Managing Editor	Maritta Grau
Co-Editor	Nancy Parrish
Editorial Assistant	Lisa Simpson
Production Manager	Kathy Green
Lead Designer	Jennifer Brown
Photography Editors	Jon Summers & Marti Welch

Directorate Representatives

Applied/Development Research	Kimberly Shafer-Weaver
Basic Science Program	Tammy Eyler
Biopharmaceutical Development Program	Kathy Miller
Clinical Research Directorate	Laurie Lambert
Contracts & Admin/Human Resources	Kim McLean
Environment, Health, and Safety	Robin Pickens
Facilities Maintenance and Engineering	Debbie Dobbe
Laboratory Animal Sciences Program	Shirley Langley
Advanced Technology Program	Barbara McElroy
Vaccine Clinical Materials Program	Joe Ritz



SAIC-Frederick, Inc.
The National Cancer Institute at Frederick
P.O. Box B
Frederick, MD 21702-1201