



THE NATIONAL CANCER INSTITUTE AT FREDERICK

DECEMBER 2011

Puri and Blumenthal Develop Portable Device to Test for HIV-1

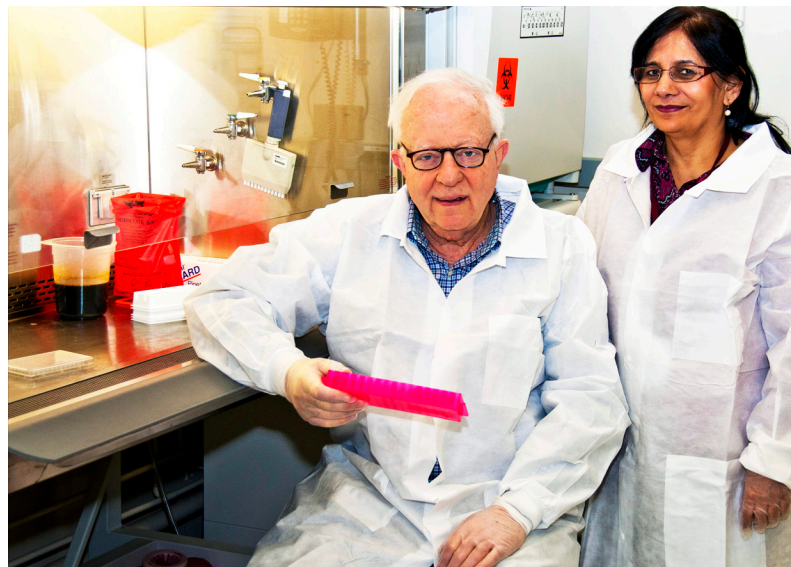
By Maritta Perry Grau, Staff Writer

Scientists at NCI-Frederick are always looking for ways to move their research out of the laboratory and into the hands of doctors to help patients—a part of NCI's mission. Even more to the point, can some aspects of the help to patients be made easily portable and cost-efficient?

One recent effort meets these criteria and has won a grant to further its development. Anu Puri, Ph.D., and Robert Blumenthal, Ph.D., are developing a portable device for use in the field to test for AIDS. This device is a small, handheld electrochemical nanobiosensor unit equipped with a gold nanolayered, nanoporous membrane. The unit will run primarily on batteries, and researchers will detect the presence of HIV-1 in patient blood samples by reading the machine's analysis on a meter. "It's a quick, cost-effective, and user-friendly way to screen pathogens and will be a novel use of nanobiosensors," Puri said.

Intramural-to-India Grant Awarded

Puri and Blumenthal were awarded a \$200,000, two-year grant through the U.S.-India Joint Working Group on Prevention of STDs and HIV/AIDS,



Robert Blumenthal, Ph.D., and Anu Puri, Ph.D., are working with researchers in India to develop a quick, cost-effective way to use nanobiosensors to screen pathogens in blood.

NIH Intramural-to-India (I-to-I) Program under the U.S.-India Collaboration on Prevention of Sexually Transmitted Diseases and HIV/AIDS. Their project, "Rapid Screening of Pathogens in Patient's Sera by Novel Nanobiosensors," was selected through a two-level peer review by NIH Intramural Program scientists and the Indian Council of Medical Research scientists and reviewers.

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Intramural-to-India Grant

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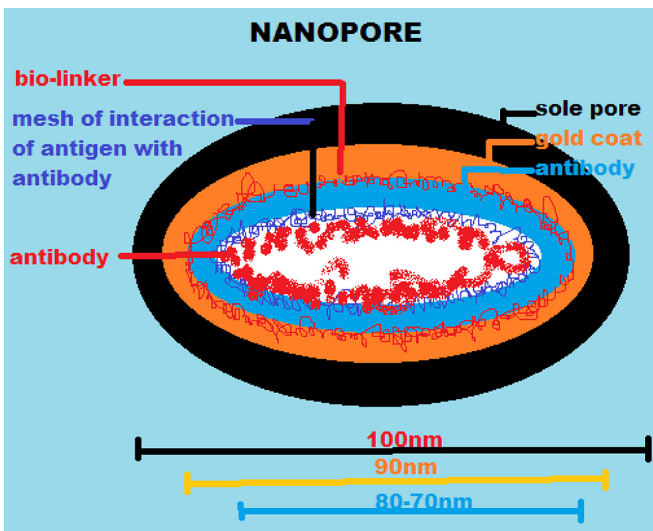
“This project will further develop crucial research infrastructure and capacity building between U.S. and Indian biomedical research communities, and we look forward to continuing to work closely with you in advancing this international AIDS research initiative,” stated Dr. Robert Eisinger, NIH Office of the Director, in the letter notifying Puri and Blumenthal of the acceptance of their project.

The nanobiosensors were developed by Dr. K.P. Singh’s Biophysics and Nanotechnology laboratory, at the G.B. Pant University of Agriculture and Technology, Pantnagar, India.

Reagents to Be Tested

Puri will soon travel to India to help the group there use reagents—unique recombinant proteins and antibody constructs developed in Dimiter Dimitrov’s (Ph.D.) laboratory by Weizao Chen, Ph.D.—to attach the antibodies to nanoparticles. She has already sent the reagents to Singh’s laboratory.

“We’ll have to test various aspects, such as how the differences in temperature control will affect the reagents, equipment, and other materials in the labs there,” she explained.



This schematic shows the basic design of one of the proposed nanopores (part of the nanobiosensor) and was kindly provided by Dr. K.P. Singh (G.B. Pant University, India).

Cooperative Effort

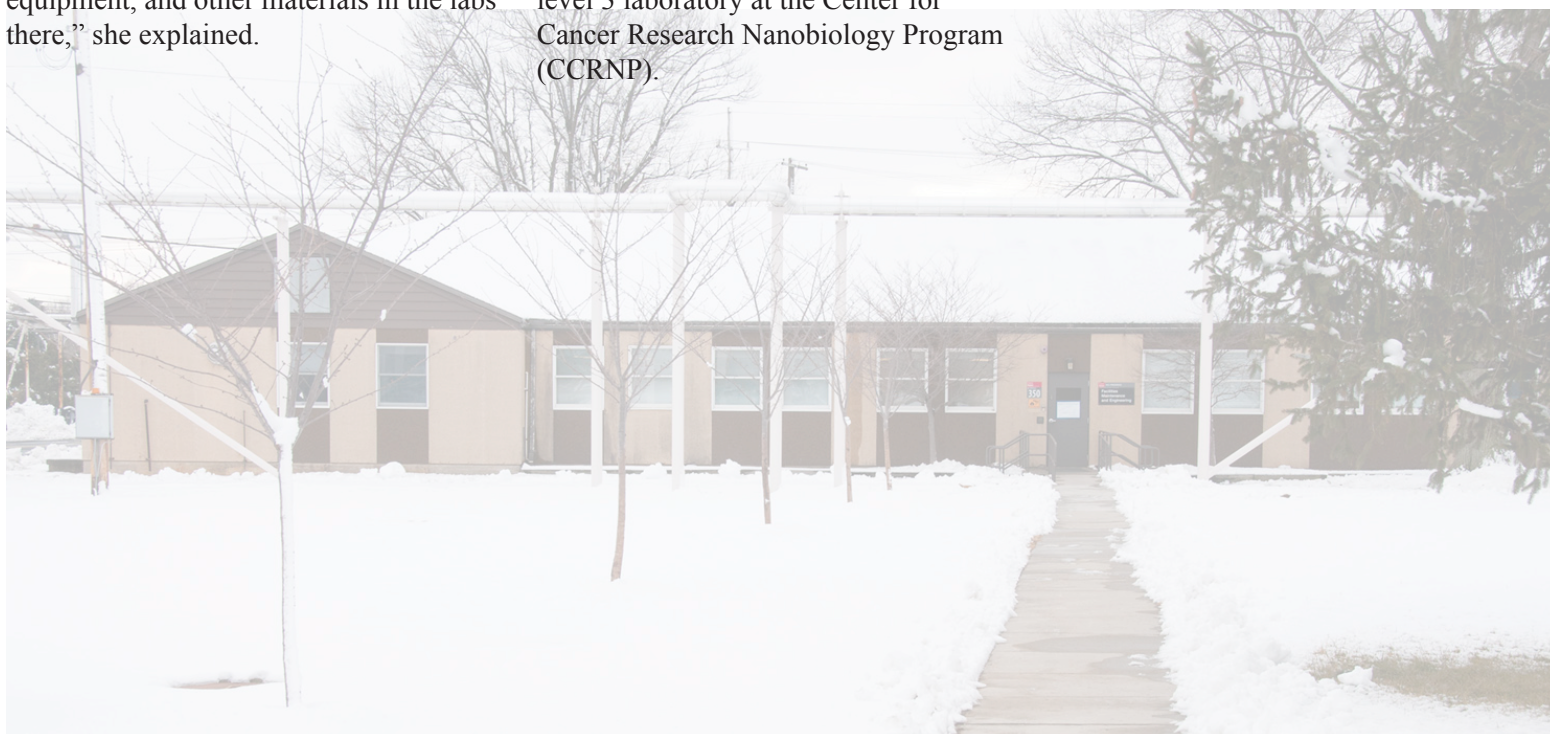
In turn, Singh will come to NCI-Frederick to work with Blumenthal and Puri and train in the techniques needed to handle HIV-1. “They have the expertise in nanobiosensors, we have the expertise in HIV/AIDS research,” Puri said.

They will test these techniques on the patient sera, a first step in translational research to provide drug treatment. This testing will be done in a biosafety level 3 laboratory at the Center for Cancer Research Nanobiology Program (CCRNP).

Technology Could Help People across the World

Puri is working with similar model systems, so she hopes to extend this work to other diseases. “If we succeed, this research will help many people. It will help with global health; it can be applied to India and also to Africa. The HIV strains in India are slightly different than the ones in the U.S. In India, there are many more opportunistic infections—people are already weakened by the disease, and are much more susceptible to other diseases that eventually kill them. They need a simple, core technology that will work for everyone,” Puri said.

“Recognizing NIH’s broad intramural expertise in HIV/AIDS research, the NIH Office of AIDS Research” launched this program in 2007 “to promote collaborations between NIH intramural scientists and co-investigators in Indian research institutions,” according to the 2010–2011 NIH *Call for Proposals for the NIH Intramural-to-India (I-to-I) Program under the U.S.-India Collaboration on Prevention of Sexually Transmitted Diseases and HIV/AIDS*. ■



Emergency Preparedness Exercise

NCI-Frederick Tests Emergency Preparedness Plan with Hurricane Simulation

By Ashley DeVine, Staff Writer

NCI-Frederick conducted an emergency preparedness/continuity of operations exercise in September to simulate how the facility would continue its mission in the event of natural or other disasters. In this exercise, NCI-Frederick and SAIC-Frederick employees tested the facility's ability to recover from a category 3 hurricane.

"We simulated significant destruction of infrastructure at the facility and our ability to operate with emergency power," said Randall Morin, Dr. PH, director, Environment, Health, and Safety (EHS), and emergency coordinator of NCI-Frederick's Emergency Preparedness (EPP) and Continuity of Operations Plans (COOP).

NCI-Frederick's EPP provides guidance for managing emergencies and continuing critical operations. COOP is the part of EPP that is designed to sustain critical operations until no longer feasible, at which time operations are to be shut down in an orderly fashion.

One objective of this exercise was to test the emergency notification plan using Send Word Now, the NIH-approved emergency notification system that alerts employees to power outages, base closings, inclement weather conditions, and other emergencies through e-mail and telephone contact. This objective was achieved by using Send Word Now to notify mission-critical/essential employees about the exercise.

Approximately 35 employees were involved in the exercise, representing the following groups: EHS, Facilities Maintenance and Engineering,

Contract Planning and Administration (CP&A), Clinical Research Program, Laboratory Animal Sciences Program, SAIC-Frederick management, NCI-Frederick management, and Data Management Services.



NCI-Frederick activates the Continuity of Operations Plan and sets up the Emergency Operations Center in Building 426.

Another objective completed during the exercise was to set up and operate the Emergency Operations Center (EOC) in Building 426; this is the location used by the Crisis Response Team during emergencies.

Finally, the exercise tested the group's ability to communicate with limited access to normal communication channels.

"This exercise will help us learn from mistakes and oversights through practice and simulations that force staff to think outside of the box," said Rich Pendleton, director, CP&A, and EOC coordinator during both emergency and COOP events.

Through this exercise, the group learned that they cannot rely on normal communication channels during emergency situations, that critical infrastructure and utilities can and will

fail during a natural disaster, and that mission-essential programs must have a plan to shut down when their operations can no longer be sustained.

NCI-Frederick's EPP and COOP will be updated and exercised on a recurring basis. For more information about these plans, go to <http://www.ncifcrf.gov/Staff/Emergency/Default.aspx>. ■



Getting Cells in Shape for Research

By Stephen Lockett, Guest Writer

Understanding the molecular mechanisms of anticancer drugs in cells is fundamental to translating new treatments into the clinic, and the Optical Microscopy and Analysis Laboratory (OMAL) investigates these mechanisms using quantitative fluorescence microscopy.

For example, ongoing research with the Center for Cancer Research (CCR) Molecular Targets Laboratory and the CCR Mouse Cancer Genetics Program is uncovering how the natural product, Schweinfurthin A (SA), causes reorganization of the actin cytoskeleton (see Figure 1).

Georg Schweinfurth was a nineteenth century German botanist who traveled extensively in East Africa, devoting himself to the study of the region's plants. As a result, many of the scientific names of plants in the region contain his name. For example, SA is derived from one of these plants, *Macaranga schweinfurthii*, a woody plant found primarily in Cameroon. SA has been shown to specifically inhibit brain and hematopoietic cancer cell lines¹ and is being evaluated for use in creating new cancer treatments.²

Although microscopy is the preferred technique for studying changes in cell shape and underlying structures like the cytoskeleton, studying each individual cell is challenging. OMAL is well under way to solving this limitation by culturing cells on micropatterned arrays. Each micropattern is the size of a cell and consists of the protein fibronectin, which cells readily adhere to, while the shape of the micropattern governs the cell's structure. A non-adherent, hydrophobic surface separates micropatterns (see Figure 2). As OMAL is learning, this technology has profound implications for robust, detailed analysis of individual cells. The technology will facilitate a much deeper understanding of the mechanisms of anticancer drugs and could enable higher-throughput drug screening.

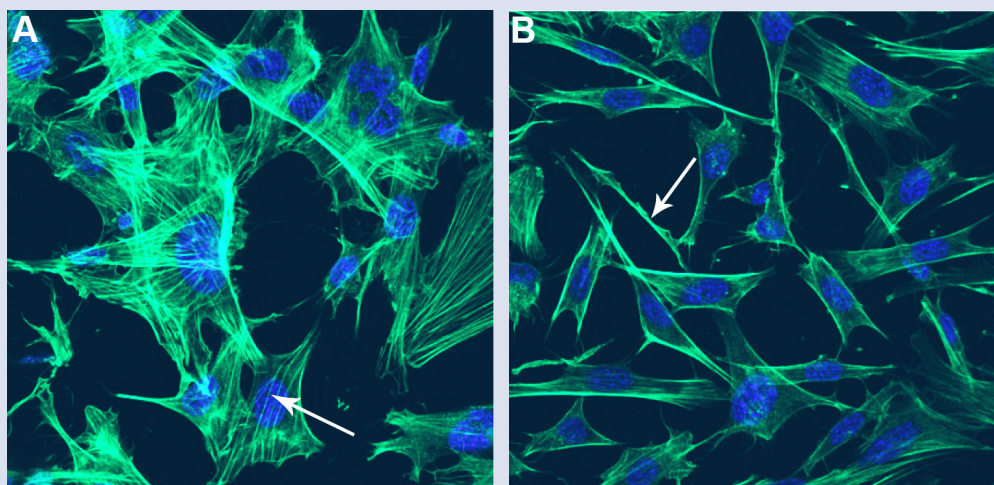
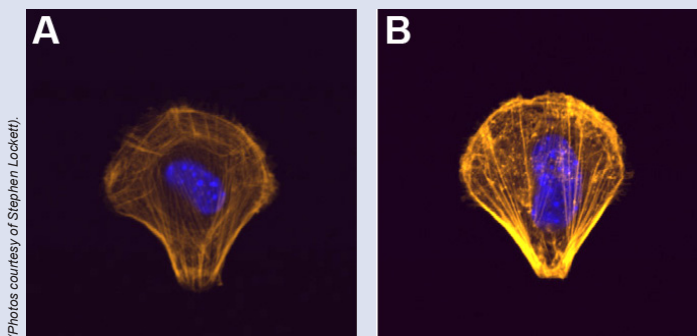


Figure 1: MPNST cells growing in standard cell culture. Cells display highly varied structures. A: Untreated cells show abundant stress fibers (bright lines of staining inside the cells, arrow). B: Cells treated with 100 nM Schweinfurthin A have fewer stress fibers inside the cells and increased cortical actin, as indicated by the brighter long lines at the cell edges (arrow).



Photos courtesy of Stephen Lockett.

Figure 2: Cells stay in shape when grown on crossbow-shaped fibronectin micropatterns. They have tightly defined morphologies and are well separated from each other.

As part of OMAL's SA studies, the laboratory recently compared two malignant peripheral nerve sheath tumor (MPNST) cell lines that have different proliferation rates but look similar in standard cell culture. Using micropatterning, the laboratory discovered quantitative differences between the two lines in terms of the curvature of their cell edges, leading OMAL researchers to ask whether there is a functional relationship between membrane tension and cell growth rate. Ongoing studies are elucidating these findings by integrating molecular biology, fluorescence microscopy, and quantitative mathematical modeling.

Micropatterning opens up a profoundly different way to tackle biological mechanisms. Traditional cell biology and biochemistry experiments ask the question: How do biochemical changes affect physical changes? With micropatterning, OMAL researchers can reverse the question to: How do physical changes in cell shape affect biochemistry and cell processes?

Soon, OMAL will merge micropatterning with living cell image acquisition to understand the dynamics of drug interactions in cells, and with photoactivation localization microscopy (PALM) to visualize cellular changes directly at the molecular scale. This is

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Three-Ring Binders Give Way to E-Notebooks

By Rod Winkler, Guest Writer

Those thick books with the black and white mottled covers and those three-ring notebooks, all crammed with important notes and records of experiments, may soon be a thing of the past, replaced by e-versions.

The Advanced Technology Program (ATP) and Information Systems Program (ISP) have recently launched a project to implement an integrated Laboratory Information Management System (LIMS) with Electronic Lab Notebook (ELN) software for the ATP laboratories.

Staff will use LIMS software to help with data and workflow management, in such routine laboratory operations as tracking and managing samples, tracking workflow and data, and a configurability to extend and enhance existing functionality. They'll use the ELN software, a newer technology, in place of paper laboratory notebooks, where applicable.

Laboratory Assessment

When ATP leaders realized that the laboratories needed a common information system, they sent a Request for Information (RFI) through the SAIC-Frederick Research Contracts Department to seek an independent assessment of ATP needs. Through the RFI selection process, LabAnswer, a noted LIMS assessment and implementation company, was contracted.

The project was managed by a cross-functional SAIC-Frederick team from ATP, ISP, and the Research Contracts Department. After a four-month assessment, the LabAnswer team recommended a modern informatics solution: an integrated LIMS and ELN system that would facilitate workflows and service development activities. The SAIC-Frederick implementation team then developed plans for the most efficient and cost-effective way to meet the identified LIMS and ELN needs.

Implementation of LIMS and ELN

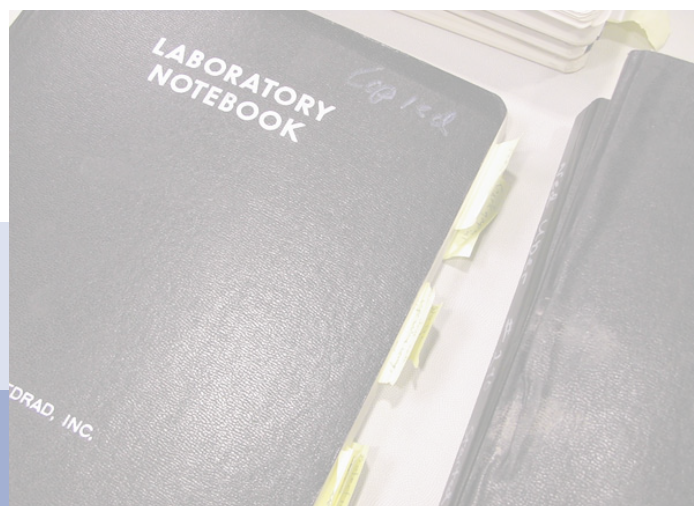
With the extensive set of requirements developed through the assessment process, the Advanced Technology Partnerships Initiative (ATPI) Business Development Office, along with the LIMS implementation team, negotiated a collaborative partnership with an integrated LIMS and ELN provider, RemedyMD. The partnership, termed a Beta Test Agreement, was signed in mid-August, and a team of ATP staff and ISP staff worked together to help lead the implementation, which began in September.

The project goals include:

- Providing an integrated enterprise informatics solution that provides business-wide solutions to common problems and addresses the informatics inefficiencies identified in the LabAnswer assessment;
- Providing reporting functionality for SAIC-Frederick management and laboratory staff and management that improves the availability of business information for laboratory management at all levels;
- Increasing laboratory throughput for high-volume workflows; and
- Increasing cross-laboratory collaboration and innovation.

Release of LIMS and ELN functionality to the ATP laboratories is scheduled for early 2012 and will focus initially on sample management workflows and the new Ion Torrent DNA sequencing technology. ■

Rob Winkler, Ph.D., is a technical project manager in the Advanced Technology Program.



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truly a laboratory-wide effort, involving all members of OMAL: Stephen Lockett, Tommy Turbyville, Prabhakar Gudla, Kaustav Nandy, De Chen, Alla Brafman, Kimberly Peifley, and Rose Bradley; and four students: Jennifer Candee, an undergraduate from Hood College, and local high school seniors Alexis Hott, Joseph Donkor, and Jake Kirkwood.

A discussion about some of this work appears in the May 2010 issue of *Molecular Cancer Therapy*. ■

¹Turbyville TJ, et al. Schweinfurthin A Selectively Inhibits Proliferation and Rho Signaling in Glioma and Neurofibromatosis Type 1 Tumor Cells in a NF1 GRD-dependent Manner. *Molec Cancer Ther*, 9[5]:1234–1243, 2010.

²Beutler JA, et al. The Schweinfurthins: Issues in Development of a Plant-Derived Anticancer Lead, *Medicinal and Aromatic Plants*. Bogers RJ, Craker LE, and Lange D, eds. Springer Publishers: 301–309, 2006.

Stephen Lockett, Ph.D., is director of the Optical Microscopy and Analysis Laboratory.

Classifying High-Frequency Variants of Unknown Clinical Significance in *BRCA2*

By Ashley DeVine, Staff Writer

The breast cancer type 2 susceptibility gene (*BRCA2*) is a tumor suppressor gene that produces a protein involved in repairing chromosomal and DNA damage. Certain mutations or variants of this gene lead to an increased risk of breast cancer. People with two mutated copies of *BRCA2* have Fanconi anemia, a rare, inherited blood disease characterized by defective DNA repair and chromosomal instability.

A study led by Kajal Biswas, Ph.D., a former NCI researcher, and Ranabir Das, Ph.D., a research fellow in the Structural Biophysics Laboratory, CCR, looked at several *BRCA2* mutations associated with Fanconi anemia to determine their clinical significance.

“The functional implications of the mutant *BRCA2* proteins were predicted to be deleterious or neutral by structural analysis, which were then confirmed by Dr. Kajal Biswas ... using a mouse embryonic stem cell–based functional assay,” Das said.

The researchers found that one particular homozygous mutation, *BRCA2*^{Δ105}, retained *BRCA2*’s ability to repair DNA damage, even though patients with this mutation are prone to malignancy. This finding means that some *BRCA2* function other than DNA repair is lost in the *BRCA2*^{Δ105} mutation. Finding out this other function will require further research, Das said. The study also found that three other *BRCA2* mutations were deleterious and two more were neutral.

A graduate of the Indian Institute of Science in Bangalore, India, with a Ph.D. in physics, Das’ research focuses on using structural biology to understand the atomic basis of molecular recognition and the relationships between protein structure and function. “I chose



Ranabir Das, Ph.D., Structural Biophysics Laboratory, Center for Cancer Research, NCI-Frederick, stands beside a nuclear magnetic resonance machine used to study the interactions of biological macromolecules, such as proteins, DNA, and RNA.

this field because I can apply my skills to perform research that directly impacts human health,” Das said. ■

A Comprehensive Functional Characterization of *BRCA2* Variants Associated with Fanconi Anemia Using Mouse ES Cell–Based Assay

Kajal Biswas, Ranabir Das, Blanche P. Alter, Sergey G. Kuznetsov, Stacey Stauffer, Susan L. North, Sandra Burkett, Lawrence C. Brody, Stefan Meyer, R. Andrew Byrd, and Shyam K. Sharan
Blood 118(9):2430–2442

Biallelic mutations in the human breast cancer susceptibility gene, *BRCA2*, are associated with Fanconi anemia, implying that some persons who inherit 2 deleterious variants of *BRCA2* are able to survive even though it is well established that *BRCA2* is indispensable for viability in mice. One such variant, IVS7 + 2T > G, results in premature protein truncation because of skipping

of exon 7. Surprisingly, the persons who are either IVS7 + 2T > G homozygous or compound heterozygous are born alive but die of malignancy associated with Fanconi anemia. Using a mouse embryonic stem cell–based functional assay, we found that the IVS7 + 2T > G allele produces an alternatively spliced transcript lacking exons 4-7, encoding an in-frame *BRCA2* protein with an internal

deletion of 105 amino acids (*BRCA2*^{Δ105}). We demonstrate that *BRCA2*^{Δ105} is proficient in homologous recombination-mediated DNA repair as measured by different functional assays. Evaluation of this transcript in normal and leukemia cells suggests that *BRCA2*^{Δ105} may contribute to the viability of persons inheriting this mutation. In this study, we have also characterized 5 other *BRCA2* variants and found 3 of these (p.L2510P, p.R2336H, and p.W2626C) to be deleterious and 2 (p.I2490T and p.K2729N) probably neutral. Such studies are important to understand the functional significance of unclassified *BRCA2* variants. ■

Platinum Publications

The following 25 articles have been selected from 9 of the most prestigious science journals published during the past quarter.

Cell and Tumor Biology

Dorjbal B, Derse D, Lloyd P, Soheilian F, Nagashima K, Heidecker G. The role of ITC protein in human T-cell leukemia virus type 1 release. *J Biol Chem* 286(36):31092–31104, 2011.

Clinical Trials and Observations

Cuellar-Rodriguez J, Gea-Banacloche J, Freeman AF, Hsu AP, Zerbe CS, Calvo KR, Wilder J, Kurlander R, Olivier KN, Holland SM, Hickstein DD. Successful allogeneic hematopoietic stem cell transplantation for GATA2 deficiency. *Blood* 118(13):3715–3720, 2011.

Jain A, Kovacs JA, Nelson DL, Migueles SA, Pittaluga S, Fanslow W, Fan XY, Wong DW, Massey J, Hornung R, Brown MR, Spinner JJ, Liu SY, Davey V, Hill HA, Ochs H, Fleisher TA. Partial immune reconstitution of X-linked hyper IgM syndrome with recombinant CD40 ligand. *Blood* 118(14):3811–3817, 2011.

Kummar S, Chen A, Ji JP, Zhang YP, Reid JM, Ames M, Jia L, Weil M, Speranza G, Murgo AJ, Kinders R, Wang LH, Parchment RE, Carter J, Stotler H, Rubinstein L, Hollingshead M, Melillo G, Pommier Y, Bonner W, Tomaszewski JE, Doroshov JH. Phase I study of PARP inhibitor ABT-888 in combination with topotecan in adults with refractory solid tumors and lymphomas. *Cancer Res* 71(17):5626–5634, 2011.

Computational Biology

Ma BY, Nussinov R. Polymorphic triple beta-sheet structures contribute to amide hydrogen/deuterium (H/D) exchange protection in the Alzheimer amyloid beta₄₂ peptide. *J Biol Chem* 286(39):34244–34253, 2011.

Enzyme Catalysis and Regulation

Kireeva ML, Domecq C, Coulombe B, Burton ZF, Kashlev M. Interaction of RNA polymerase II fork loop 2 with downstream non-template DNA regulates transcription elongation. *J Biol Chem* 286(35):30898–30910, 2011.

Genetic Diversity

Hinch AG, Tandon A, Patterson N, Song YL, Rohland N, Palmer CD, Chen GK, Wang K, Buxbaum SG, Akylbekova EL, Aldrich MC, Ambrosone CB, Amos C, Bandera EV, Berndt SI, Bernstein L, Blot WJ, Bock CH, Boerwinkle E, Cai QY, Caporaso N, Casey G, Cupples LA, Deming SL, Diver WR, Divers J, Fornage M, Gil-

landers EM, Glessner J, Harris CC, Hu JJ, Ingles SA, Isaacs W, John EM, Kao WHL, Keating B, Kittles RA, Kolonel LN, Larkin E, Le Marchand L, McNeill LH, Millikan RC, Murphy A, Musani S, Neslund-Dudas C, Nyante S, Papanicolaou GJ, Press MF, Psaty BM, Reiner AP, Rich SS, Rodriguez-Gil JL, Rotter JI, Rybicki BA, Schwartz AG, Signorello LB, Spitz M, Strom SS, Thun MJ, Tucker MA, Wang ZM, Wiencke JK, Witte JS, Wrensch M, Wu XF, Yamamura Y, Zanetti KA, Zheng W, Ziegler RG, Zhu XF, Redline S, Hirschhorn JN, Henderson BE, Taylor HA Jr, Price AL, Hakonarson H, Chanock SJ, Haiman CA, Wilson JG, Reich D, Myers SR. The landscape of recombination in African Americans. *Nature* 476(7359):170–175, 2011.

Genomics, Proteomics, and Bioinformatics

Gui YT, Guo GW, Huang Y, Hu XD, Tang AF, Gao SJ, Wu RH, Chen C, Li XX, Zhou L, He MH, Li ZS, Sun XJ, Jia WL, Chen JN, Yang SM, Zhou FJ, Zhao XK, Wan SQ, Ye R, Liang CZ, Liu ZS, Huang PD, Liu CX, Jiang H, Wang Y, Zheng HC, Sun L, Liu XW, Jiang ZM, Feng DF, Chen J, Wu S, Zou J, Zhang ZF, Yang RL, Zhao J, Xu CJ, Yin WH, Guan ZC, Ye JX, Zhang H, Li JX, Kristiansen K, Nickerson ML, Theodorescu D, Li YR, Zhang XQ, Li SG, Wang J, Yang HM, Cai ZM. Frequent mutations of chromatin remodeling genes in transitional cell carcinoma of the bladder. *Nat Genet* 43(9):875–878, 2011.

Hematopoiesis and Stem Cell

Hsu AP, Sampaio EP, Khan J, Calvo KR, Lemieux JE, Patel SY, Frucht DM, Vinh DC, Auth RD, Freeman AF, Olivier KN, Uzel G, Zerbe CS, Spalding C, Pittaluga S, Raffeld M, Kuhns DB, Ding L, Paulson ML, Marciano BE, Gea-Banacloche JC, Orange JS, Cuellar-Rodriguez J, Hickstein DD, Holland SM. Mutations in GATA2 are associated with the autosomal dominant and sporadic monocytopenia and mycobacterial infection (MonoMAC) syndrome. *Blood* 118(10):2653–2655, 2011.

HIV

Alter G, Heckerman D, Schneidewind A, Fadda L, Kadie CM, Carlson JM, Onian-gue-Ndza C, Martin M, Li B, Khakoo SI, Carrington M, Allen TM, Altfeld M. HIV-1 adaptation to NK-cell-mediated immune pressure. *Nature* 476(7358):96–100, 2011.

Immunobiology

Gong R, Wang YP, Feng Y, Zhao Q, Dimitrov DS. Shortened engineered human antibody CH2 domains: increased stability

and binding to the human neonatal Fc receptor. *J Biol Chem* 286(31):27288–27293, 2011.

Hodge JN, Srinivasula S, Hu ZH, Read SW, Porter BO, Kim I, Mican JM, Paik C, DeGrange P, Di Mascio M, Sereti I. Decreases in IL-7 levels during antiretroviral treatment of HIV infection suggest a primary mechanism of receptor-mediated clearance. *Blood* 118(12):3244–3253, 2011.

Keele BF, Estes JD. Barriers to mucosal transmission of immunodeficiency viruses. *Blood* 118(4):839–846, 2011.

Immunotherapy

Zhang YJ, Chertov O, Zhang JL, Hassan R, Pastan I. Cytotoxic activity of immunotoxin SSIP is modulated by TACE-dependent mesothelin shedding. *Cancer Res* 71(17):5915–5922, 2011.

Pharmacology

Reisz JA, Zink CN, King SB. Rapid and selective nitroxyl (HNO) trapping by phosphines: kinetics and new aqueous ligations for HNO detection and quantitation. *J Am Chem Soc* 133(30):11675–11685, 2011.

Protein Function, Structure, and Folding

Bryksa BC, Bhaumik P, Magracheva E, De Moura DC, Kurylowicz M, Zdanov A, Dutcher JR, Wlodawer A, Yada RY. Structure and mechanism of the saposin-like domain of a plant aspartic protease. *J Biol Chem* 286(32):28265–28275, 2011.

Nagy KJ, Giano MC, Jin A, Pochan DJ, Schneider JP. Enhanced mechanical rigidity of hydrogels formed from enantiomeric peptide assemblies. *J Am Chem Soc* 133(38):14975–14977, 2011.

Oncogenes

Zenatti PP, Ribeiro D, Li WQ, Zuurbier L, Silva MC, Paganin M, Tritapoe J, Hixon JA, Silveira AB, Cardoso BA, Sarmiento LM, Correia N, Toribio ML, Kobarg J, Horstmann M, Pieters R, Brandalise SR, Ferrando AA, Meijerink JP, Durum SK, Yunes JA, Barata JT. Oncogenic IL7R gain-of-function mutations in childhood T-cell acute lymphoblastic leukemia. *Nat Genet* 43(10):932–939, 2011.

Retrovirus Biology

Joshi A, Garg H, Ablan SD, Freed EO. Evidence of a role for soluble N-ethylmaleimide-sensitive factor attachment protein receptor (SNARE) machinery in HIV-1 assembly and release. *J Biol Chem* 286(34):29861–29871, 2011.

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Federal Law Requires Plain Writing

By Maritta Perry Grau, Staff Writer

We often walk a fine line between using language that is specific to our field and language that makes the findings of that field more easily understood. We don't want to "dumb down" our language, but at the same time we want to make sure we're understood. We need to write plainly and clearly.

What Is "Plain Writing"?

Plain writing means that you use the vocabulary best suited for the audience—that also means you have to know the people for whom you're writing; so if you're writing about the latest research on breast cancer for a general audience, you'll use simpler terms, perhaps use more analogies and shorter sentences, explain terms likely to be unfamiliar to many people. On the other hand, if you're writing about that research for the *Journal of Molecular Biology*, you will use many more terms specific to your field and may not need to define them; sentences may be longer and more complex than for a general audience. Most often, you'll use second person, addressing the reader as "you," as in this article.

Just a year ago, President Barack Obama signed into law the Plain Writing Act of 2010. This law requires that federal agencies use "clear government

communication that the public can understand and use."

But it's not really a new thing: in a Presidential Memorandum, former President Bill Clinton in 1998 mandated that the federal government write all public-facing documents in what was called "plain language." And NIH has been advocating plain writing ever since.

In fact, each fall, NIH sponsors a "plain writing" contest in which employees (but not contractors) submit new or extensively revised documents, everything from brochures to seminal papers, which fit the criteria for plain language.

What Documents Are Covered under This Ruling?

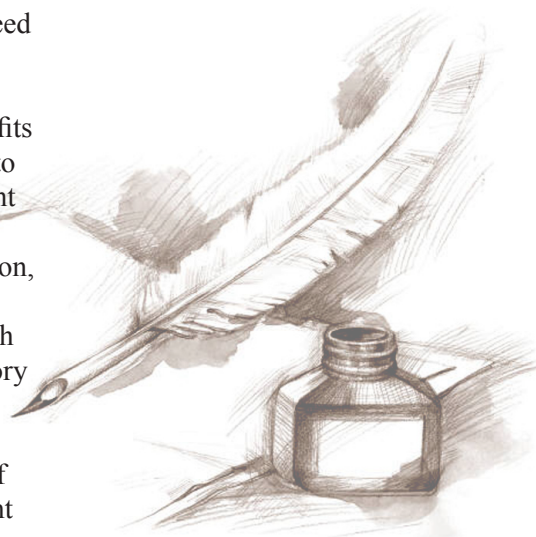
Basically, it's still public-facing documents, such as those you might need to obtain federal government benefits services, or for filing taxes; those that give you information about those benefits or services; or those that tell you how to comply with certain federal government requirements. The ruling also includes any paper or electronic letter, publication, form, notice, or instruction that you write. Regulations are exempt, although the Office of Information and Regulatory Affairs encourages plain writing in the preambles of regulations, according to a global e-mail from the Department of Health and Human Services (HHS) sent last summer.

Where Can You Go for Help?

Scientific Publications, Graphics & Media (SPGM) offers Lunch 'n' Learn classes in business writing, persuasive business writing, editing and proofing documents, writing effective e-mail, and writing policies and procedures; and the three-morning (9:00 a.m. to 12:00 p.m.) Scientific Writing Workshop. While each seminar or workshop has its own emphasis, all of them cover ways to help you write more clearly and succinctly.

For more information and to view the HHS Plain Writing Plan, go to: <http://www.hhs.gov/open/recordsandreports/plainwritingact/index.html>.

Learn more about plain writing at the Plain Language website: <http://www.plainlanguage.gov>. ■



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Kaczmarczyk SJ, Sitaraman K, Young HA, Hughes SH, Chatterjee DK. Protein delivery using engineered virus-like particles. *Proc Natl Acad Sci USA* 108(41):16998–17003, 2011.

Shen W, Gorelick RJ, Bambara RA. HIV-1 nucleocapsid protein increases strand transfer recombination by promoting dimeric G-quartet formation. *J Biol Chem* 286(34):29838–29847, 2011.

RNA-Mediated Regulation and Non-Coding RNAs

Lubkowska L, Maharjan AS, Komissarova N. RNA folding in transcription elongation complex: implication for transcription termination. *J Biol Chem* 286(36):31576–31585, 2011.

Transcription, Chromatin, and Epigenetics

Chang S, Wang RH, Akagi K, Kim KA, Martin BK, Cavallone L, Kathleen Cunningham Foundation Consortium for Research into Familial Breast Cancer (kConFab), Haines DC, Basik M, Mai P, Poggi E, Isaacs C, Looi LM, Mun KS, Greene MH, Byers SW, Teo SH, Deng CX, Sharan SK. Tumor suppressor BRCA1 epigenetically controls oncogenic microRNA-155. *Nat Med* 17(10):1275–1282, 2011.

Signal Transduction

Roysarkar T, Sharan S, Wang J, Pawar SA, Cantwell CA, Johnson PF, Morrison DK, Wang JM, Sterneck E. Identification

of a Src tyrosine kinase/SIAH2 E3 ubiquitin ligase pathway that regulates C/EBP δ expression and contributes to transformation of breast tumor cells. *Mol Cell Biol*, doi:10.1128/MCB.05790-11; published online ahead of print October 28, 2011.

Shukla S, Kavak E, Gregory M, Imashimizu M, Shutinoski B, Kashlev M, Oberdoerffer P, Sandberg R, Oberdoerffer S. CTCF-promoted RNA polymerase II pausing links DNA methylation to splicing. *Nature* 479(7371):74–79, 2011. ■

Miller Retirement

Paul Miller, Executive Editor of the *Poster*, Retires

By Nancy Parrish, Staff Writer

Paul Miller, M.S., M.B.A., program analyst in the Office of Scientific Operations (OSO), executive editor of the *Poster* newsletter, chairman of the Diversity Team, chairman of the Campus Improvement Committee, chairman of six users' committees (Scientific Library, Purchasing, Protective Services and Safety, Occupational Health Services, Conference Center, and the Discovery Café), and member of the Radiation Safety Committee, is retiring on December 31, after 30 years with NCI-Frederick.

Anyone who has had the privilege of working with Miller knows he is not only quick to smile, but he is also quick to offer a kind word or a helping hand, no matter the task.

From Biology to Business

Miller began his career as a hematology laboratory technician in the Building 10 Clinical Center at NIH. In 1981, he came to Frederick to work as a biologist in the Human Monocyte Laboratory as part of the new Biological Response Modifiers Program (BRMP). "It was an exciting time to be in the lab," he said. "We were doing what was then considered to be cutting-edge work, and to be working with human cells, dissecting the human immune system, just made it all the more interesting." While there, he earned a master's in microbiology and began a Ph.D. program.

In 1988, in the wake of a serious illness involving one of his children, Miller left the laboratory to work as a program analyst in the Biological Resources Branch. "My science background was a real benefit to me there as it allowed me to

assist the program directors with managing their grant portfolios. I started working with the head administrative officer and he introduced me to working with contracts and how we used them to provide the NCI scientists with goods and services."



As executive editor, Miller was photographed with the winner of the *Poster* Puzzler contest each quarter, earning him the nickname of "the *Poster* Puzzler guy."



He enjoyed working with contracts so much that in 1998, he became a contracts specialist in the NCI-Frederick Office of Research Contracts. Intrigued with the business and management end of research science, he went back to school to earn his master's in business administration.

In 2002, he joined the OSO as a program analyst, under Director Craig Reynolds, Ph.D., associate director of the National Cancer Institute.

"The Greatest Feeling"

One of Miller's first major accomplishments after joining the OSO was to help launch the *Poster* newsletter in 2003. "First and foremost, I was extremely fortunate to have the group from Scientific Publications, Graphics & Media as the lead on this. They are all

so talented that my main job was to act as a facilitator and assist them. From the onset, we wanted to create a publication that would appeal to everybody that worked here. I think we never lost that focus of being a facility newsletter."

He recalled a time that, when driving through Fort Detrick's gate, the guards recognized him as "the *Poster* Puzzler guy" and gleefully told him that they had found the *Poster* Puzzler. "And to me, that's the greatest feeling, as executive editor, when people tell you or ask you about the newsletter," he said, "because it means they're reading it."

He said he is also happy with the evolution of the users' committees he instituted. "I like the format where constructive discussions can take place in a non-adversarial environment ... I think some of the committees have been very useful in providing safe forums for both users and service providers to share ideas and get input."

When asked what he will miss the most, Miller said, "Beyond a doubt, it'll be the people and the relationships I made over the course of my career. While the focus and sophistication of the

science has indeed changed over the last 30 years, and my time in the lab was as challenging and rewarding as anything I could want, when I look back over my time here, it's all the different people I've had the opportunity to interact with that I'll always remember."

Blending Life and Work

Miller has always believed in striving to achieve a successful blend of work and family. "Work is important and it should have its place—but it isn't your life. Your life is what happens when you pull out of the gate and when you walk in the door at home," he said. "That's where your life is; [your work] is what you do to support that. And I think if you can keep that in perspective, then I think everything else will fall into line." Then he smiled. ■

Recruiters Write the Darnedest Things

By Maritta Perry Grau, Staff Writer

Kids say the darnedest things. So said Art Linkletter many years ago in the early days of TV, when he recorded children's comments and responses to questions he asked.

Some time ago, Kathy Burke was struck by the darnedest thing her granddaughter said: When Burke told her a Halloween story, her granddaughter repeated the phrase "wicked witch," but turned it into "wicka wits"—the same pronunciation Burke's children had used when they were small.

And thus was born *Wixi-Lou Wicka Wits*, a children's story Burke wrote and illustrated. The first in a projected series of five, this 32-page book tells how Wixi-Lou acquires the traditional black cat. Many of the names Wixi-Lou considers are names of cats that Burke has had. But with a name like "Wixi-Lou," what will she name the cat? You'll have to read the book to find out.

Usually, publishers prefer to have their own illustrators do the storyboard for a book, but when Burke's editor at Halo Publishing (a vanity press) saw a sample of Burke's drawings, the editor was excited and agreed to let Burke do the illustrations.

"The illustrations took much longer than writing the book did," Burke said.

First, she makes a pencil sketch to get the dynamic flow she wants; then she makes a pen and ink drawing, which she fills in with color. She generally uses acrylic paints, but for this book she used Prismacolor pencils. Burke likes Prismacolor pencils because "they have soft leading, and the colors are bright, especially nice for children's books."

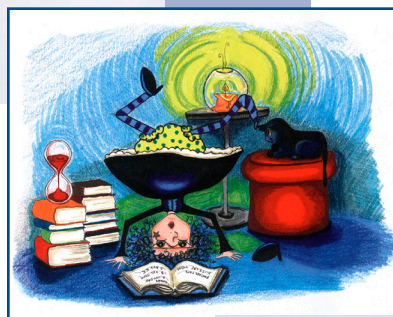
Burke has always been interested in painting and writing. She's thought about writing a novel, but "first I have to get through this five-book series."

She belongs to the Maryland Writers' Association (MWA). A self-taught writer, she follows the MWA blog for tips and ideas.

Although MWA and most professionals advise against writing children's books in rhyme, Burke used couplets in this book. Even the name of Wixi-Lou's village has a rhythm to it: Wick-Swickity-Twitch. Every child or group of children she has read the book to has loved it.



NCI-Frederick has had an unusual impact on one employee: SAIC-Frederick Human Resources recruiter Kathy Burke has written a children's book whose main character, a witch, has a lab and mice.



"Working for a scientific company probably has influenced my writing. My story character appears in a lab and a recurring theme is the 'Wixi-twixed mousies'—I have recruited for LASP for years," Burke said.

Burke has worked for SAIC-Frederick in Human Resources (HR) since 2001. Spending her first year-and-a-half on the front desk, she gradually moved into recruitment and is now a recruiter specialist. She has continued her HR training over the years, earning a Professional in Human Resources certification (see "HR Recruitment Team

Gains Coveted PHR Certification," *News & Views* 16[April]:14, 2010) and, most recently, Alliance of Information and Referral Systems certification. Both are professional credentialing programs for HR employees.

Her writing skills have come in handy as an HR employee, too. "My roles as recruiter and immigration specialist require me to do some writing. I edit requisitions and write descriptions of jobs for immigration when submitting visa packages. I also write advertisements for job postings," Burke said.

HR recruits through various avenues, such as websites like Monster.com; Linked-In, a social network for business professionals; and job fairs. Burke noted that job fairs that focus on one field, such as biotechnology, can be very intense, with "long lines that stretch out the door; I start talking when I arrive and talk the entire time." The more generalized job fairs are a bit more relaxed; the recruiters may see only a handful of people during the fair.

"We attend eight to ten job fairs a year. Fall and spring seem to be busier seasons. Depending upon the size of the job fair, we may all go, or maybe only one person," Burke said. She explained that the November BioCapital/Biospace job fair, was quite large, and all three recruiters attended.

Burke can be reached at the SAIC-Frederick HR offices in Building 372, 301-846-6074, burkeka@mail.nih.gov. ■

Former Postbacc Student Says Internship Motivated Her to Pursue Ph.D.

By Ashley DeVine, Staff Writer

When Teresa Ramirez began her two-year postbaccalaureate internship at NCI-Frederick in June 2004, she had just graduated from California State University, Dominguez Hills (CSUDH), and had aspirations of becoming a pediatrician and contributing to cancer research.

A Young Girl Eager to Learn

Ever since she was a young girl, Ramirez had known she wanted to pursue a higher education. Growing up in Compton, Calif., she said science was never emphasized in school, but support from her parents and mentors motivated her to participate in science fairs, take summer courses, and ultimately attend college. Eager to further her knowledge, Ramirez joined the Mathematics Engineering Science Achievement Program

in high school, where she “explored scientific innovations, received advice on scientific careers and professional development, and learned the importance of teamwork.” She also participated in the National Institutes of Health (NIH) Drew University Research Partnership Program. “I had the opportunity to interview and measure the blood pressure of pregnant women who suffered from either hypertension or high levels of lead,” Ramirez said.

As an undergraduate at CSUDH, Ramirez joined the Minority Biomedical Research Support Program, which allowed her to “investigate the localization and difference in expression of cytoskeletal proteins, and how the

morphology changed in light- and dark-adapted octopus retinas.” In her biomedical research seminar class, Ramirez met Dr. Alfred Johnson, an NCI researcher at the time, when he visited her class as a guest speaker.

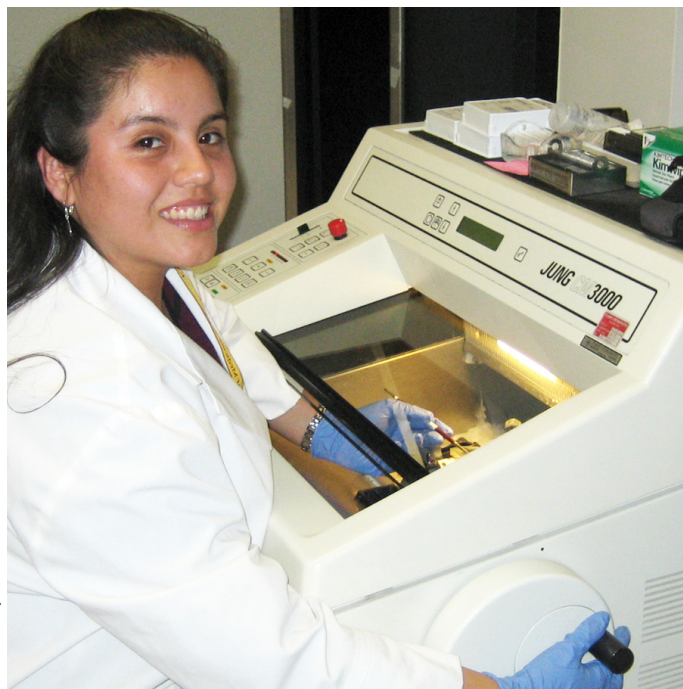


Photo courtesy of Teresa Ramirez.

Teresa Ramirez uses a cryostat machine to cut frozen sections of mouse retinal tissue at the Mary D. Allen Laboratory for Vision Research, University of Southern California, under the mentorship of Dr. Cheryl M. Craft.

“After speaking with him, my eagerness of going to NCI grew tremendously, as well as my goal to contribute to cancer research,” she said. “I also became very interested in learning more about the different approaches to study cancer because I have had many relatives pass away due to cancer.”

An Opportunity to Contribute to Cancer Research

While attending a meeting of the Society for Advancement of Chicanos and Native Americans in Science in 2003, Ramirez received information about the postbaccalaureate program at NIH and decided to apply. “I applied to the Introduction to Cancer Research

Careers Program, which gave students the opportunity to do either a summer research program or a postbaccalaureate program at NCI,” she said. After interviews with several NIH and NCI-Frederick laboratories, Ramirez was offered a position with Dr. Thomas Sayers, Laboratory of Experimental Immunology (LEI), NCI-Frederick.

“At first I was very scared because I thought I was going to be expected to know everything, but that was not the case,” Ramirez said. Her research at NCI-Frederick involved identifying the molecular events that lead to tumor cell death in breast and colon cancer cell lines. “I feel very happy to have contributed to breast and colon cancer research and I feel that I learned a lot from my mentor and colleagues at NCI-Frederick,” she said. One of Ramirez’s proudest moments during her internship was when she was listed as an author on her first publication (Brooks AD, Ramirez T, et al. The proteasome inhibitor bortezomib [Velcade] sensitizes some human tumor cells to Apo2L/TRAIL-mediated apoptosis. *Ann N Y Acad Sci* 1059:160–167, 2005).

“After conducting research in cancer, I developed a stronger interest in science that motivated me to pursue a doctoral degree rather than pursuing a medical career,” Ramirez said. She is currently a Ph.D. candidate in the Molecular Pharmacology, Physiology, and Biotechnology program at Brown University. She is studying the effects of alcohol and how it contributes to ER stress and insulin resistance in rat livers. “Medicine depends on research and I think that through my research I can touch more lives,” she said.

“The advice that I would give to students interested in the sciences is to always ask questions and be proactive about getting information about different summer research internship opportunities. One thing that I have learned is to make the best of an opportunity and never give up,” Ramirez said. ■

Tons of Food, Hours of Walking and Running: NCI-Frederick Helps Those in Need

By Maritta Perry Grau, Staff Writer

How much food do you have in your kitchen cupboards? Probably not anywhere near a ton, even if you count the dog food and cat food. But this fall, the larders of those Frederick countians in need were richer by more than 3,300 pounds. And the coffers for breast cancer and diabetes research were richer by thousands of dollars, thanks to the generous support of NCI-Frederick employees.

Feds Feeding Families

NCI-Frederick employees worked with the U.S. Army Garrison (USAG) at Fort Detrick to contribute to the “Feds Feeding Families” program. According to USAG spokesperson Michelle Hewitt, more than a ton (3,332 pounds) of food was collected, much of it from NCI-Frederick, and sent to the local food bank.

Pink Ribbon Run

The fall months were active ones for SAIC-Frederick employees, who were training and then running in back-to-

back races during “Healthy Frederick Week” held in early October.

Kim Iman, Lori Keisling, and Maureen Wilson, “Team for Hope,” ran in the 5K Pink Ribbon Run, raising funds to assist in detecting and treating breast cancer. The 674 runners and walkers raised more than \$28,000 during the event. SAIC-Frederick was a silver sponsor of the event.

Walk to Stop Diabetes

The next day, more SAIC-Frederick employees participated in the 2011 Step Out: Walk to Stop Diabetes event. Victoria Barron headed up the three-mile diabetes walk for SAIC-Frederick.

Team awards were presented to the most successful fundraisers. The Sunday event featured live music by The Kelly Bell Band, and a family fun zone with face painting, moon bounces, pumpkin painting, food, and more. SAIC-Frederick was a corporate sponsor of the event. ■



Photos courtesy of Maureen Wilson

SAIC-Frederick employees (from left) Lori Keisling, Kim Iman, and Maureen Walker pause before their October 8 5K Pink Ribbon Run. Iman is a five-year breast cancer survivor.

NCI-Frederick Spreads the Word

By Frank Blanchard, Staff Writer

NCI-Frederick took the message into the streets—literally.

The message: Here are four things you can do to stay healthy and limit your risk of getting sick.

1. Exercise and be active. Just get moving. Take the stairs, dance, do yoga, walk, bike. You don't have to run a marathon.
2. Eat foods that promote good health: vegetables, fruits, whole grains.
3. Get regular checkups and screenings.
4. Quit or never start using tobacco.

The streets: NCI-Frederick put up a booth on Market Street in downtown Frederick as part of the annual “In the Streets” festival on September 10. There was a bean bag game, there were flyers on healthy habits, and prizes like yo-yos and hackie sacks that encouraged exercise and good health.

Kids stepped up. Adults stepped up. All were challenged because the bean bag toss was more difficult than it appeared. One young girl kept inching closer until she was practically stuffing the bean bag into the target. Several adults scoffed at the simple game, but fell silent as the bean bags veered wildly this way and that. As the game went on, we heard people talking about making healthy choices. One woman reached for a brochure: “Can I take one of these? I’m trying to get my guys to eat better. Maybe this’ll help.” Some told personal stories about cancer. Booth staffers talked about advances in research and care. More than 1,000 people, young and old from all walks of life, passed through the booth.

It was the third consecutive year that NCI-Frederick staff participated in the event. For those who staffed the booth, the experience drove home the value of our work and what it means for people. This year’s volunteers were Barbara Birnman, public affairs specialist,



While children at the annual “In the Streets” festival in Frederick tried the bean bag toss, NCI-Frederick staffers shared information on healthy living and advances in cancer and AIDS research.

Office of the Director, NCI-Frederick; Frank Blanchard, director of public affairs, SAIC-Frederick; Walter Hubert, Ph.D., assistant project officer, contracting officer’s technical representative, NCI-Frederick; Cheryl Parrott, director of public affairs, NCI-Frederick; and Maureen Wilson, subcontracts specialist, Research Subcontracts, SAIC-Frederick. ■

Poster Puzzler



Congratulations to the September 2011 Poster Puzzler winner!

Lisa Dodge, senior lab technician, Laboratory Animal Sciences Program, SAIC-Frederick, is pictured with Paul Miller, executive editor of the *Poster*.

The Poster Puzzler:

Exhausted

By Ashley DeVine, Staff Writer, and Travis Gaydos, Contributing Writer

The September Poster Puzzler shows the roof of Building 539, which contains stacks for the building's supply and exhaust air handlers. The two square ducts pictured to the right and the stacks on the left are building exhausts. The half circle in the middle of the picture (called a goose neck) is an air intake for the air handling unit. These stacks allow Building 539 to receive 100 percent fresh air from the outside, rather than recirculated air as in an office or residential ventilation system. ■



THE NATIONAL CANCER INSTITUTE AT FREDERICK

SEPTEMBER 2011

Puzzler



Exhausted

What Is It? Where Is It?

Your challenge, should you decide to accept it, is to correctly identify the item and its location from the picture to the right. Clue: It's somewhere at Fort Detrick/NCI-Frederick. Win a framed photograph of the Poster Puzzler and an NCI-Frederick tee shirt by e-mailing your guess, along with your name, e-mail address, and daytime phone number, to Poster Puzzler at poster@mail.nih.gov. Alternatively, you can send us your guess, along with your name and daytime phone number, on one of the *Poster* forms found on the front of the *Poster* stands in the lobbies of Buildings 426 and 549. All entries must be received by **Friday, January 20, 2012**, and the winner will be drawn from all correct answers received by that date.

Good luck and good hunting! ■



Have Poster, Will Travel

The *Poster* Traveled to Florence, Italy

By Maritta Perry Grau, Staff Writer

In October, the *Poster* traveled with Howard Young, Ph.D., deputy chief, Laboratory of Experimental Immunology, to Florence, Italy. While in Italy, Young attended the Cytokines 2011 Meeting and an Interferon-Induced Genes Meeting in Prato. He also lectured at the Humanitas Institute in Milan, where a former NCI-Frederick fellow (Antonio Sica) now has his own laboratory.

“The highlight of my trip was hearing about the latest biology and biochemistry of cytokine and interferon research, as well as discussions with colleagues from around the world who work in these areas of biomedical research,” Young said.

Where Will the *Poster* Go Next?

Afghanistan, Australia, Canada, France, Greece, Israel, Italy, South Africa, the U.S.A... The *Poster*, your NCI-Frederick newsletter, is making its way around the world, as readers grab the latest issue to take with them and read on the plane or train. Next time you're at a conference, have someone snap a digital of you with a copy of the *Poster*, and send it to us at poster@mail.nih.gov. You just might be featured in *your* newsletter. ■



Photo courtesy of Howard Young

Different Takes on Stress Management

By Selden Cooper, Contributing Writer

[Editor's note: This is Mr. Cooper's final column. We will miss his insights and valuable advice. However, help is still available through Business Health Solutions. See sidebar.]

In today's world, many of us live in a chronically heightened level of physiological arousal, as if we were facing a potential predator at every turn.

Some research indicates that as stress increases, well-being and performance are enhanced to a certain level (different for each individual), after which health and performance degrade. So, our challenge is to keep our level of stress neither too low nor too high.

While we know that major stressors, such as traumatic events, can affect our health, research suggests that the "daily hassles" may account for between 50 and 80 percent of all visits to primary care providers.

Don't Let Stress Be Your Undoing

Robert Sapolsky, one of the pre-eminent researchers and writers on stress, notes in *Why Zebras Don't Get Ulcers* that the ancient human stress response can be our undoing, when stressors are predominately psychological and interpersonal. Thus, we must consciously teach ourselves other adaptive responses.

How? We may be able to alter the stressful circumstances; we may need to remove ourselves from the stressful situation; or, we can focus on changing our relationship to our stressors. And we may want to incorporate meditation or the relaxation response into our daily health routines.

Mindfulness Meditation

In 1979, Jon Kabat-Zinn, Ph.D., developed Mindfulness-Based Stress Reduction (MBSR) at the University of Massachusetts Medical Center. His patients were afflicted with chronic, debilitating diseases and chronic pain.



Selden Cooper notes that research suggests daily stress may account for up to 80 percent of visits to the doctor.

Kabat-Zinn and his colleagues developed an eight-session model within which participants were taught mindfulness meditation, which emphasizes awareness of whatever one is experiencing in the present moment, with unconditional acceptance. Participants in the program reported significant alleviation of physical and psychological suffering; patients with chronic pain indicated that their pain no longer bothered them as much as before.

Since then, MBSR has spread worldwide, has been applied to an increasing array of disorders, and has been extensively researched, showing that MBSR practitioners have significant and enduring health benefits. Kabat-Zinn described how MBSR works in his 1990 book, *Full Catastrophe Living*.

Relaxation Response

Another well-known meditative-oriented approach is that of cardiologist Herbert Benson, M.D. In the early 1970s, Benson theorized that there might be a link between stress and heart disease. He developed the "Relaxation Response," a simple technique that combines stress reduction (diaphragmatic) breathing with a simple meditative device, such as saying silently, on the out-breath, the word "one." Benson and his colleagues documented significant physiological benefits associated with this practice.

In 2010, Benson, with William Proctor, published *Relaxation Revolution: Enhancing Your Personal Health through the Science and Genetics of Mind-Body Healing*. Here, he describes using visualization in the relaxation response "to engage healing belief and expectation and to take advantage of 'remembered wellness.'"

In the book, Benson and Proctor describe the application of these techniques to a wide variety of medical disorders.

To Learn More About How to Handle Stress...

Read:

Benson H and Proctor W. *Relaxation Revolution: Enhancing Your Personal Health through the Science and Genetics of Mind-Body Healing*. Simon & Schuster, 2010.

Kabat-Zinn J. *Full Catastrophe Living*. Random House, 1990.

Sapolsky R. *Why Zebras Don't Get Ulcers*, Holt, Henry & Co., Inc., 1998 (updated in 2004).

Visit websites:

Relaxation response:

<http://www.massgeneral.org/bhi>.

Mindfulness-based stress reduction:

<http://www.umassmed.edu/cfm>. ■

Need Help Handling Stress?

**Call BHS:
1-800-765-3277**

As of October 28, the Employee Assistance Program became available only through the Business Health Solutions toll-free number, where you can talk to a care coordinator.



NCI-Frederick Protective Services staff flushes many “shared” eyewash stations, such as those located in laboratory hallways. You can help by checking frequently that your stations are in good working order and by documenting the times you flush the eyewash stations. When performing an eyewash station flush, it is important that you check the following:

Access: Make sure the eyewash station is easily identifiable and accessible. Obstructions such as carts, chairs, laboratory glassware, and equipment can slow your chances of quickly getting to the station to wash out your eyes in an emergency. Remember, if you have to use an eyewash station, you won’t be able to see very well.

Operation: Make sure the eyewash station works easily, the flow of water removes the eyepiece covers from the faucet, and the water flows evenly and steadily. Make sure you know where the water drains are. Sometimes a bucket or similar item must be positioned under the unit’s drain to collect the water. Have a roll of paper towels on hand, just in case of water leakage.

Water: At least once a month, and preferably once a week, run the eyewash station faucet for several minutes to flush any stagnant water from the line.

Documentation: Document the routine flushing on an affixed eyewash station tag. Call EHS (301-846-1451) if you need additional tags.

EHS manages a comprehensive Safety Inspection Program. Through the performance of annual work-site safety evaluations of laboratories, animal facilities, production facilities, shops, and offices, EHS helps to ensure that the NCI-Frederick community enjoys a safe and healthy workplace. ■

J.T. Moore is a safety officer in the Environment, Health, and Safety Program.

Do You Know the Proper Care and Feeding of Emergency Eyewash Stations?

By J.T. Moore, Guest Writer

Not long ago, a colleague tilted her head back to put some drops in her dry eyes. Within milliseconds, the strong burning in her eyes told her she had grabbed the wrong bottle. She raced to the eyewash station and rinsed out her eyes. Luckily, the liquid didn’t permanently damage her eyes.

Is there an eyewash station near your work area? Do you know how to “care” for it? How to “feed” it?

Each year, EHS staff works with individuals throughout the Facility to identify areas in need of corrective action. An essential piece of safety equipment is the emergency eyewash station.

Why the Eyewash Station Is Important

Proper eyewash facilities are imperative for any environment that exposes people to hazardous materials. The Occupational Safety and Health Administration (OSHA), under the *Code of Federal Regulations* §29:1910.151, states that proper facilities for quick drenching or flushing of the eyes must be immediately available to people who are exposed to those materials.

The American National Standards Institute (ANSI) has elaborated on OSHA’s regulations and has put forth guidelines for “Safety in the Workplace.” ANSI Z358.1-2009 is the guidance document for emergency eyewash stations. While ANSI Z358.1 is considered a voluntary standard, OSHA often uses it as a guide when inspecting facilities.

In addition, NCI-Frederick follows NIH policy to ensure that, when new laboratories are being designed, emergency eyewash stations are located no more than 55 feet (17 meters) from any point in the laboratory. This policy ensures that as facilities grow, important safety-related features, such as emergency eyewash stations, are not overlooked.

Care and Feeding of the Eyewash Station

To ensure that an eyewash station is properly functioning in an emergency, it must be routinely flushed with clean water. ANSI Z358.1 recommends weekly flushing.

Technology Transfer Center Emphasizes Technology Commercialization with a Variety of Partners

By Charles Salahuddin, Contributing Writer, and Kashif Haque, Guest Writer



Technology Transfer Center staff members at their new location. Back row, left to right: Kevin Brand, Christopher Sappington, Tom Stackhouse, Charles Salahuddin, and Mike Currens; middle row: Jeffrey Thomas, Kashif Haque, and Joseph Miles; front row: Donna Bialozor, Heidi Bowman, Kathy Higinbotham, and Karen Surabian.

The federal government provides support for early-stage basic and developmental research that provides a framework of knowledge to facilitate technology commercialization by outside parties.

On September 13, the Federal Laboratory Consortium's Mid-Atlantic Region (FLC-MAR), with assistance from a number of groups, including NCI's Technology Transfer Center (NCI-TTC) and the NIH Office of Technology Transfer (OTT), organized the 2011 Commercializing Innovation: Attracting Investors and Entrepreneurs Forum at Marymount University in Arlington, Va. FLC-MAR is an organization designed to maximize the impact of federal technology resources in the region. The forum brought together financial experts and technology development professionals from federal labs, academia, economic development organizations, and industry to facilitate

technology-based economic development in the Washington, DC, metro area.

The first part of the event featured presentations relevant to all technology disciplines, including information about what typically attracts investors, funding resources available from various sectors, and strategies for thriving during a challenging economic climate. The event also included a poster session with exhibits from various organizations, including NCI-TTC and other NCI laboratories. The meeting concluded with smaller, discipline-specific breakout sessions featuring experienced entrepreneurs describing their efforts at starting new businesses in the life science, energy, advanced material, and information technology sectors. The theme of the event was that regardless of an individual's technology discipline or entrepreneurial level, numerous resources are available from a variety of sectors at

all steps of the commercialization process.

NCI-TTC's involvement in the commercialization forum and similar events illustrates how the role of the federal government is evolving, placing greater emphasis on building bridges among the many groups needed to bring NCI's new and promising technologies to the market.

TTC Relocates to Riverside Five

After nearly 20 years of conducting operations at the Fairview Center on 7th Street, the NCI-TTC has moved to the new Riverside Five Building, located off Monocacy Boulevard in Frederick, approximately four miles from Fort Detrick. At the new location, NCI-TTC remains dedicated to ensuring that its relationship with the NCI-Frederick community is as strong as ever. NCI-Frederick employees interested in collaborating with outside parties, marketing their technologies, sending or receiving materials, or touring the new facility can contact NCI-TTC at its new location.

8490 Progress Drive, Suite 400
Frederick, MD 21701
Phone: 301-624-8775
Fax: 301-631-3033 ■

Kashif Haque is a technology transfer fellow at the Technology Transfer Center.

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Attention! Attention!
New EIR Form Now Available

- Effective immediately, NCI-TTC has a new "Employee Discovery and Invention Report (EIR)" form that NCI scientists must use to document new inventions. The form can be downloaded at http://www.ott.nih.gov/forms_model_agreements/forms_model_agreements.aspx.
- Please contact your technology transfer specialist with any questions.

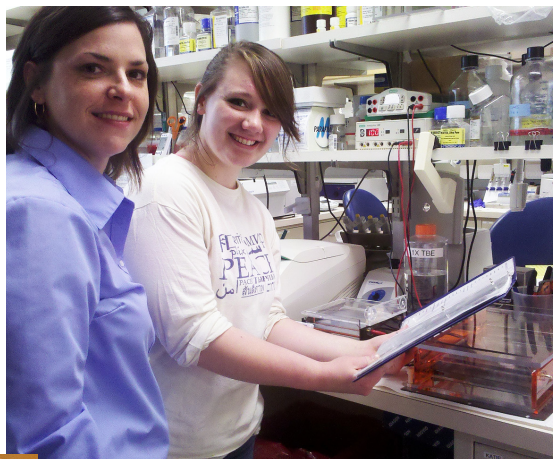
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Outreach and Special Programs

“Every year, I feel that I’ve had the ‘best intern ever.’”

By Nancy Parrish, Staff Writer

So said Katie Stagliano, laboratory manager for Andy Hurwitz, Ph.D., in the Laboratory of Molecular Immunoregulation, when asked to describe what she likes about being a mentor in the Werner H. Kirsten Student Intern Program.



Above: Stagliano (left) and intern Bonnie Douglas, a senior at Francis Scott Key High School, review genotyping data that Bonnie generated by PCR. “Her data is usually 100 percent correct,” Stagliano said, “but we always review it together, just in case.” Left: Marshall watches as intern Ben Holdridge, prepares to load a quantitative assay plate onto a Vii7 real-time PCR system. “I just really enjoy the process of seeing a student learn something new and get excited about their project,” Marshall said. Holdridge is a senior at Century High School and also attends Carroll County Career and Technology Center.



Now in her third year as a mentor, Stagliano appreciates the opportunity to teach a young person about the real-life world of scientific research. “The most satisfying aspect for me,” she said, “is seeing my students present their research and answer questions independently. It also makes me very proud to watch my senior interns teaching new students that have just joined the lab.”

Mentor Vickie Marshall agrees. A research associate in the Viral Oncology Laboratory headed by Denise Whitby, Ph.D., AIDS and Cancer Virus Program, Marshall says she enjoys “the process of seeing a student learn something new and get excited about their project. It is also rewarding to hear that what they have learned has helped them in school or prepared them for college.”

Big Investment, Bigger Payoff

Designing an appropriate project takes some thought, but once the interns are trained, Stagliano says, “that initial investment... really does pay off throughout the year.” Marshall notes that students frequently work on projects that no one has sufficient time to do, and such projects “often benefit the entire laboratory and lead to other ideas for future work.”

To be a mentor, you must be able—and willing—to invest a lot of time up front to develop a project for the students and then train the students. “Mentoring is a huge time commitment,” said Marshall. Although it takes a bit of shuffling of schedules, she said, being available to the interns is critical to a successful experience.

“Setting aside time to give my intern focused attention is really important to me,” said Stagliano.

That’s because she wants to ensure that her intern has a solid understanding of her research as well as a strong skill base when she or he leaves the facility.

In spite of the time commitment, Marshall notes, the time invested reaps substantial rewards. “When you find a student with both interest and enthusiasm,” she said, “working with them can be the best part of your day.” ■

Want to Be a Mentor?

The Werner H. Kirsten Student Intern Program (WHK SIP) is a year-long program (June–May) designed to encourage students to pursue a career in biomedical research. You will interview high school juniors in the spring and select students to begin working full time in June (40 hours a week for eight consecutive weeks) under the NCI Summer Cancer Research Training Award (SCRTA). The SCRTA stipend

is funded by the Office of Scientific Operations, NCI-Frederick.

When school resumes at the end of August, students are transferred to the NCI Special Volunteer Program (at no stipend) and work three hours each school day during the school year.

Mentors develop a project or training plan for their student and provide guidance and supervision to the student throughout the research project.

Help train our future scientists as well

as give back to the community. For more information, please access the WHK SIP website at http://ncifrederick.cancer.gov/careers/student_programs/internships/SIP/Default.aspx.

If you have any questions regarding the WHK SIP or the required information, please contact Julie Hartman at hartmanjb@mail.nih.gov or James Cherry, Ph.D., at jim.cherry@nih.gov.

Ronald H. Defelice Golf Tournament



SAIC-Frederick Evens the Score in Annual Golf Tournament

By Nancy Parrish, Staff Writer

For the third year in a row, the coveted Ronald H. Defelice cup and plaque will hang in the office of SAIC-Frederick's Chief Executive Officer, Dave Heimbrook. These awards go to the winner of the annual Columbus Day golf tournament between NCI-Frederick (NCI) and SAIC-Frederick (SAIC).

After losing in the first three years of this annual government-contractor competition, SAIC has now drawn even in the series, 3-3. Next year's match should be intense, as each side seeks to break the tie.

Held at West Winds Golf Club in New Market, Md., the tournament is named in honor of Ronald H. Defelice, retired chief of the Management Operations and Support Branch, NCI-Frederick. Defelice hits the ceremonial first drive of the competition.

Most Valuable Player (MVP) for this year NCI was Jack Greiner, group leader, Laboratory of Tumor Immunology and Biology, CCR; Barry Neun, research associate, Nanotechnology Characterization Laboratory, was named MVP for SAIC. Jim Cherry, scientific program director, who was NCI's team captain, received the Bob Moschel Sportsmanship Award. ■



Competition will be fierce in 2012, as SAIC's win brings standings to a 3-3 tie. From left, Craig Reynolds, NCI-Frederick associate director; Dave Heimbrook, SAIC team captain; Dennis Dougherty, senior subcontracts advisor (retired), SAIC assistant captain; Barry Neun; and Jim Cherry.



Photos courtesy of Deryl Smith.

NCI-Frederick and SAIC-Frederick teams gathered on Columbus Day for the annual Ronald H. Defelice golf tournament. Defelice is shown in foreground to the left, holding the golf club.

Holiday Potpourri

By Maritta Perry Grau, Staff Writer

As this issue goes to press, many of us are getting ready to celebrate winter holidays. To help you get started, here's a dessert adapted from the *Employee Diversity Team 2010 Cookbook*.

Sweet Couscous Dessert (Egypt)

Among the variations of couscous, this recipe from Egypt is unrivaled for the sweet-toothed palate. Serve with a cold glass of milk or a demitasse of heavy Arabic coffee.

You will need:

- 1 cup couscous
- 2 cups fruit juice
- 2 Tbs. rose water
- 7 Tbs. melted sweet butter, divided
- 1/4 cup each finely ground blanched almonds and pistachio nuts
- 1/2 cup powdered sugar
- 1/2 to 1 Tbs. cinnamon
- 1 cup candy-coated almonds
- 1/2 cup pomegranate seeds if available

Steam couscous according to directions, using the fruit juice and rose water.

After the first steaming, stir in 3 Tbs melted butter; after the second steaming, add 4 Tbs of melted butter, almonds, and pistachios.

Mix the sugar and cinnamon.

Mound the couscous on a serving platter and sprinkle with sugar-cinnamon mixture. Edge with 1 cup of candy-coated almonds and pomegranate seeds.

Serves 6.

From Middle Eastern Cookery, by Eva Zane

Submit your recipe to our EDT website (<http://diversity.ncifcrf.gov/>).

NCI Diversity Café

Each month, you can watch a free movie, courtesy of the Diversity Team, while you eat your lunch. After the

showing, you can check it out of the Scientific Library to share with your family at home.

NCI Café movies this year have included *Goodbye Solo*, *The Great Debaters*, *Spinning into Butter*, *Temple Grandin*, *The Kite Runner*, *Latter Days*, *Snow Falling on Cedars*, *School Ties*, *The Color of Paradise*, and *The Fast Runner*. As we went to press, the November and December movies had not yet been scheduled.

The movies are shown over a two-day period in Building 549, usually in Conference Room B, beginning at 12:00 p.m. Check your e-mail for specific dates and places.

Which Women in Your Division Make a Difference in Your Work Life?

Each February, the Diversity team asks you to nominate women that you feel have made a difference at NCI-Frederick for the annual "Women of NCI-Frederick" held during March. Watch your e-mail for announcements of the next nomination period.

Past winners include

2010: Kathy Easterday, Dr. Krista Delviks Frankenberry, Jeanne Warfield, and Amy Huter-Imming;

2009: Kathy Green, Kim Iman, Kathleen Noer, and Dr. Sandra Roscetti;

2003 and earlier: Ranee Baker, Christine Beard, Dr. Nancy Colburn, Demetria Harvin, Debby McCalpin, Della Reynolds, Jami Willette-Brown, and Sue Wilson

Check out the March 2011 *Poster* for the "Diversity" column's partial list of scholarships and informational websites targeted to minority women.

Special Events for 2012:

January 16, 2012, commemorates the birth of Martin Luther King, Jr. The federal holiday honors his work in seeking racial equality and justice for American minorities.

In February, we take special note of the scientists, both past and present,

Thought for the Quarter

"Believe nothing because someone else believes it. But believe only what you yourself judge to be true."

Buddha

Source:

Zen 2011 Daily Calendar, Perfect Timing, Inc., Waukesha, Wisconsin

who have contributed so notably to research. You'll find display boards set up in the 549 lobby with posters about the lives and varied contributions of scientists such as Dr. Patricia Bath (ophthalmology); Julia Bacon-Bercey (meteorology); Dr. Benjamin Carson (pediatric neurosurgery); Dr. Emmett Chappelle (biochemistry); Dr. Mark Dean (computers); Dr. Mary Harris (health care); and Dr. Shirley Ann Jackson (physics). We share these boards with the U.S. Army Garrison at Fort Detrick, so you may not see all of the displays at any one time.

Presidents George Washington's and Abraham Lincoln's birthdays are celebrated on the third Monday in February.

Win Tickets to Local Movie Theaters

Congratulations to **Jason Rausch, Ph.D.**, HIV Drug Resistance Program; and **Robert Koogle**, Mouse Cancer Genetics Program, the winners of free movie tickets from the NCI-Frederick Diversity Team. The tickets, with no expiration date, are good for movies at local Regal theatres.

You, too, can win a free movie ticket! Just answer the questions on the quiz about our display case in the front lobby of Building 549 (directly across from the Scientific Library); submit your answers to Ethel Armstrong, reference librarian, armstroe@mail.nih.gov.

Please note that the correct answers are predicated on what is in the display case and not on information you might find on the Internet. ■

PALS Halloween Parade



“Trick or Treat!”

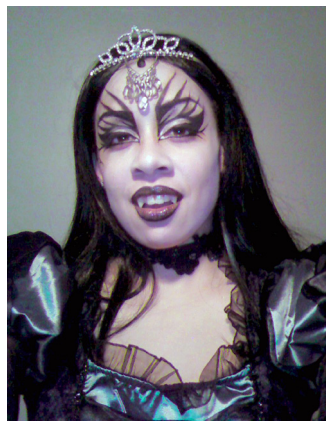
NCI-Frederick was treated to ghosts and goblins (and frogs, butterflies, bats, princesses superheroes, and more) during the Play and Learning Station’s annual Halloween Parade on October 28.



Halloween Photo Contest

Photo Contest Brings Out Pampered Chefs and Vampires

Thanks to all who submitted pictures for this year's Halloween photo contest. We had more entries than ever, but surprisingly, no pet pictures this year (unless you count "Bird Lady" Ashley Denney, and the "Angry Birds" in Claudia Stewart's laboratory). ■



The winner in the **adult** category was vampire Christina Burks, a research associate in the Electron Microscopy Laboratory, SAIC-Frederick.



In the **children's** category, the winner was baby chef Colton Whittington, grandson of Debbie Shores, document processor at Scientific Publications, Graphics & Media, SAIC-Frederick.

Welcoming Newcomers to NCI-Frederick

Eighty-two people joined our facility in July, August, and September 2011.

The National Cancer Institute welcomes...

Hyung Gwan **Bae** ■ Gerd **Bobbe** ■ Jennifer **Candee** ■ Akiko **Chiba** ■ Sudipa **Chowdhury** ■ Nabela **Enam** ■ Jeffery **Gray** ■ Pengfei **Guo** ■ Joseph **Hrabie** ■ Tao **Huang** ■ Irene **Hung** ■ Gila **Kahila Bar-Gal** ■ Yeong Sang **Kim** ■ Vandana **Kumari** ■ Masaki **Kuwabara** ■ Hyunjae **Lee** ■ Jason **Levine** ■ Jeremy **Logue** ■ Jadranka **Loncerek** ■ Phillip **Lowery** ■ Quanlong **Lu** ■ Kristen **Mistichelli** ■ Yan **Pang** ■ Shelby **Payne** ■ Colin **Platt** ■ Peng **Qu** ■ Shimian **Qu** ■ Jacqueline **Robinson** ■ Christina **Ruiz-Rodriguez** ■ Yaroslava **Ruzankina** ■ Srideshikan **Sargur Madabushi** ■ Eric **Sause** ■ John **Schneekloth, Jr.** ■ Jessica **Sine** ■ Joanna **Sztuba-Solinska** ■ Naoko **Takebe** ■ Marc **Vermulst** ■ Vijay **Walia** ■ Chunyan **Wang** ■ Sarah **Watters** ■ Mandie **White** ■ Donn **Wishka** ■ Caitlin **Younts** ■ Nailing **Zhang**

SAIC-Frederick welcomes...

Robert **Alderman** ■ Earl **August** ■ Kelly **Benauer** ■ Debra **Burgan** ■ Monica **Calderon** ■ Margaret **Caplan** ■ Ryan **Clabaugh** ■ Nathan **Cole** ■ John **Collins** ■ Maureen **DeGrange** ■ Alpana **Dongargaonkar** ■ Katherine **Ferry-Galow** ■ Bradley **Gillespie** ■ Trevor **Glaros** ■ Jean **Hammer** ■ Christopher **Hilldrup** ■ Debra **Hope** ■ Anna **Ilinskaya** ■ Lyuba **Khavrutskii** ■ Kimberley **Kieffer** ■ Sunni **Kim** ■ Lois **McKennett** ■ Jennifer **Miesegeaes** ■ Jeannette **Nashed** ■ Ramya **Parthasarathy** ■ Jacqueline **Perodin** ■ Matthew **Reardon** ■ Gloriana **Shelton** ■ Jason **Sinko** ■ Priyanka **Vengurlekar** ■ Allison **Venner** ■ Charlene **Wheeler** ■ Deborah **Wilsker** ■ Denise **Winfield** ■ Megan **Zais** ■ Peng **Zou**

Data Management Services welcomes...

Tyler **Fullmer** ■ Pardeep **Kumar** ■



The Famous NCI-Frederick Golf Tee Shirts

Michael Turnquist, Jeremy Brawner, Christopher Turnquist, Emily Turnquist, and Alison Brawner show off the NCI-Frederick tee shirts (night shirts?) they won after going on the hunt for the Poster Puzzler. Alison and Jeremy's mother is Elizabeth Browner, administrative officer, NCI-Frederick ARC, while the Turnquist triplets belong to Valerie Turnquist, also an administrative officer for the ARC. ■

Expanded Online Books List Now Available

By Debby McCalpin, Guest Writer

A frequent comment by users about online books is that they didn't know a book title was available for them to access online. A major challenge for libraries today is finding a way to improve the visibility of online books that are available to library users.



NCI-Frederick employees browsed the more than 7,000 books and media that the community donated to the Scientific Library's 12th Annual Book and Media Swap, which ran from November 3 to 30.

To meet this challenge, the Scientific Library recently introduced an expanded and more comprehensive list of Online Books, available as a separate tab on the Online Journals page, now known as the Online Journals & Books page. All titles in the library's existing Online Books list (which will be accessible but not updated) will be located under the new tab. Users will be able to search for a title, browse alphabetically, and limit by the National Library of Medicine's Medical Subject Headings (MeSH). In addition, users may choose the Online Journals & Books tab

to search for journals and books together. In the results list, books are denoted with a mini-book icon and journals have a mini-newspaper icon.

Adding the Online Books tab to the library's electronic resources management system provides benefits to users and library staff. As an added function of the same management system platform used to manage the multitude of subscription-based and freely accessible

online journals, the Online Books tab enables library staff to manage larger numbers of online titles. Library staff can now include more than 6,000 online titles for NCI-Frederick employees to access; these titles are freely available or are made available through subscriptions administered by NIH or the Scientific Library. For example, library staff can now include all individual titles in a multi-volume series rather than just the series title; titles available in databases with names that do not reveal much about them, such as Ebrary, Ebscohost,

MDConsult, Credo Reference; and collections of freely available online books such as *NCBI BookShelf* and titles from the National Academies Press. A specific example of a subscription-based online book series is *Methods in Molecular Biology*. All volumes in the series are listed by their individual titles as well as the series title.

To see for yourself, please visit the Scientific Library's Online Journals & Books website at <http://www-library.ncifcrf.gov/onlinejournals.aspx>.

Please note that the online books discussed in this article are not the same as the books that are stored on the Scientific Library's Kindles. For more information about books available on the Kindles, go to <http://www-library.ncifcrf.gov/kindle.aspx>.

Debby McCalpin is library director, Scientific Library.

New Library Hours

By Robin Meckley, Contributing Writer

The Scientific Library's hours have changed. We are now open **Monday through Friday, 8:30 a.m.–5:00 p.m.**

Due to budget constraints, the Scientific Library was asked by the NCI-Frederick Contracting Office to close during non-core hours, which include evening and weekend hours.

We recognize it may be difficult for some NCI-Frederick employees to visit us during our new hours, but we still hope to see you.

For your convenience, we have installed a book drop outside the front doors of Building 549. You may place books in the drop at any time, even when the Scientific Library is closed.

Please feel free to contact the library staff at any time at NCIFredLibrary@mail.nih.gov. If you contact us after hours, we will respond during our next day of operation. You can also access the library's website at <http://www-library.ncifcrf.gov>. ■

An Opening with a “Grabber”

By Ken Michaels, Staff Writer

A number of years ago, I was working with a professor in the College of Pharmacy at the University of Arkansas for Medical Sciences on an upcoming presentation. He had been invited to speak to a prestigious audience—the Chancellor’s Circle, which represents the institution’s major benefactors. The professor, Dr. Kim Light, was—and still is—the Office of Alcohol and Drug Abuse Prevention (OADAP) Professor, and not surprisingly, his topic was drug and substance abuse. We made a lot of slides that conveyed the factual information he wanted to discuss; it was a fairly typical technical presentation aimed at a nonscientific, well-educated audience.

As the presentation took shape, we started talking about the opening. Somewhere in the material, I noted a startling fact, and we discussed it. As our families participated in the same babysitting co-op, we both also knew that each of us had a son of the same approximate age, and an idea germinated.

On the evening of Light’s presentation, he opened with a slide that was pretty much as expected, showing the title of his talk, his name, and affiliation. Naturally, everybody present knew what he would be talking about. But they weren’t expecting the next image that appeared on the screen. It was a



Photo courtesy of Ken Michaels.

A photo of a 10-year-old boy, such as the one above, at the opening of a presentation about drug abuse captivated the audience.

photograph of his son, Adam, who at the time was a youngster and looked just like a typical middle-class kid, with a big smile on his young face.

Light then said something along the lines of “This is my son, Adam. He’s in the fourth grade, he makes good grades, he plays soccer and is learning Karate, and he’s also in the cub scouts—he got his Bear badge last month. I’m showing you his picture because he’s 10 years old—the age at which most kids make their first decision about drug use.” And then he was silent for about 10 seconds.

The stillness that fell over the audience as they took in the picture of an innocent-looking child while Light’s words sunk in is difficult to describe. I can say with confidence, though, that there was not a soul present who didn’t suddenly think a bit differently about society’s problems with harmful substances. He had that audience in the palm of his hand, and they listened attentively to his entire presentation.

I remembered this opening, years later, as one that reached out and really “grabbed” the audience.

Set the Stage, Appeal to Human Element

It’s interesting how often we tend to begin a presentation with the assumption that everybody is up to speed on the topic at hand and doesn’t need to have the stage set for what is to come. But overlooking the introduction—hopefully one that explains why the talk to follow is important and has meaning—is a serious omission.

Most of the time, an audience needs to know not only what the topic is, but why it’s significant, and why they should pay attention. And if you can manage to pique their interest with something held in common—something that all humans share, such as, perhaps, an appeal to the emotion—you’ll have them in the palm of your hand. ■

Fellows and Young Investigators Colloquium Scheduled for Spring 2012

By Jeffrey Zhao, Guest Writer

Are you a new fellow at NCI, trying to get familiar with the rich resources that NCI and NIH offer? Do you crave collaboration opportunities to advance your research? Are you pondering your next career move? Whatever you are looking for to help your research and



your career, you’ll find it at the 12th annual spring 2012 Center for Cancer Research (CCR) Fellows and Young Investigators (FYI) Colloquium, open to all NCI fellows and trainees,

including postdocs, graduate students, and staff scientists.

At this three-day event, generously funded by NCI-CCR, you will be inspired by the top-notch seminars from distinguished keynote speakers, you’ll share ideas and show your research

through oral presentations and eye-catching posters, and you may even be awarded for your research achievements. Step out of the lab for a couple of days and refresh yourself. Let your brilliant ideas flow freely.

As we went to press, the time and date had not yet been decided, so watch for e-mail announcements with a detailed agenda and registration information. ■

Jeffrey Zhao is a visiting postdoctoral fellow in the Center for Cancer Research, NCI.

Upcoming Events and Dates to Note

December 26

Christmas Holiday: NCI-Frederick closed

January 2

New Year's Day Holiday: NCI-Frederick closed

January 12

NCI Intramural Scientific Investigators Retreat

January 16

Martin Luther King, Jr. Day: NCI-Frederick closed

January 20

Poster Puzzler entries due

February 20

Presidents' Day: NCI-Frederick closed

Employment Opportunities

Please contact the individual contractor's human resources representatives or go to the contractor's website for up-to-date, detailed information about jobs or research and training opportunities and requirements.

Charles River Laboratories

<http://www.criver.com>

Data Management Services

<http://css.ncifcrf.gov/services>

National Cancer Institute at Frederick

<http://www.training.nih.gov>

SAIC-Frederick, Inc.

<http://www.saic-frederick.com/>

Wilson Information Services Corporation

<http://www-library.ncifcrf.gov>

NCI-Frederick Programs

NCI-Frederick/Ft. Detrick Fitness Challenge 2011

<http://saic.ncifcrf.gov/fitnesschallenge/>

NCI-Frederick Suggestion Committees

<http://ncifrederick.cancer.gov/campus/committees/>

NCI-Frederick Advanced Technologies to Support Research

web.ncifcrf.gov/research-technologies/default.asp



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Published four times a year by Scientific Publications, Graphics & Media for the National Cancer Institute at Frederick, Frederick, MD 21702.

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Reminder: When you have a change in staff, be sure to change the information in the NCI-Frederick database. You can do this online by logging on to <http://ncifrederick.cancer.gov/campus/phonebook/>, or by contacting your human resources representative. For more information, you may refer to the inside front cover of the NCI-Frederick Telephone & Services Directory.

Comments or suggestions for the *Poster* may be directed to poster@mail.nih.gov.

Need a large-print format of the *Poster*? Call 301-846-1055.

<http://ncifrederick.cancer.gov/ThePoster>

202919

Advanced Technology Research Facility



Photo courtesy of The Matan Companies.

First Bioreactor to Be Moved to ATRF

By Hoyt Matthai, Guest Writer

The first of two bioreactors to be relocated from the Biopharmaceutical Development Program's (BDP's) Fort Detrick location to the A Wing of the Advanced Technology Research Facility is expected to be moved in December. Because of its size, this 1,000-liter bioreactor has to be relocated early so that the cleanroom may be assembled around it.

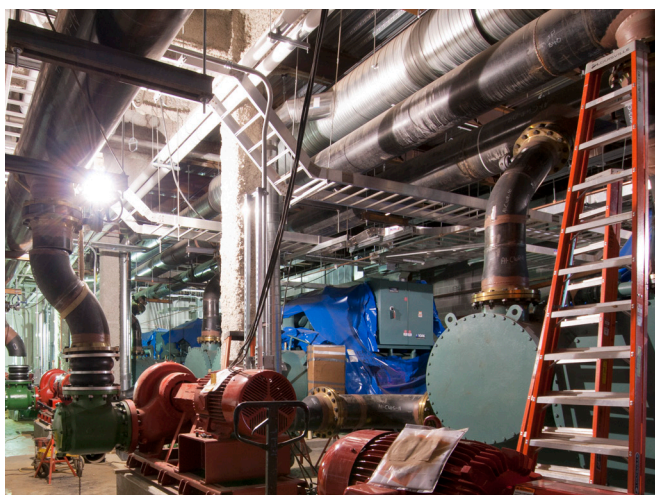
The other, smaller, bioreactor will be moved when BDP relocates to the new facility. The majority of the cGMP manufacturing equipment for BDP is new.

The utility plant in A Wing is also nearing completion. All equipment is in place (including boilers, steam generators, and water chillers), and the lifeline that brings the services to the rest of the facility, known as the utility trench, has been completed.

The other laboratory wings (C and D) are being finished from the third floor down. Flooring and casework have

been installed in many of the third floor laboratories, and other interior finishing is under way.

By the time this article goes to press, the last of five massive heating-ventilation-air conditioning (HVAC) penthouses should be installed or be in position to install on the roof of D Wing.



Above: Utility plant in A Wing, where four chillers have been installed. Chillers are used to cool and dehumidify air as well as cool servers in the data center in what is called "in-rack cooling." Right: Data center under construction. All utility/cables come from the ceiling, which, in concert with the "in-rack cooling," eliminates the need for raised floors.

Interior Construction Begins in Admin Wing

John C. Grimberg Company, Inc., the general contractor for the interior of the administration wing, or E Wing, has begun fitting out the interior space, including hallways, offices, an auditorium, conference rooms, and the data center.

Because of the lead time needed to test and qualify the complex data handling systems and equipment in the data center, Grimberg is projected to complete this area first, by the end of the first quarter of 2012. Accunet Solutions and CTS Services/Liebert were named suppliers for the data center. ■

Hoyt Matthai is director of operations, Advanced Technology Research Facility.



Weather Advisory

You peer out the bedroom window and see softly falling snow or the gleam of ice. Is the base closed? Here's how to find out. Call the Fort Detrick Weather Information Line (301-619-7611) or tune in to local radio/television stations for information.

Closed or Delayed Opening

Remember: When Fort Detrick is closed, NCI-Frederick is also closed; when Fort Detrick has a delayed opening, NCI-Frederick has a delayed opening. NCI-Frederick does not follow weather closing or delayed opening advisories for the NIH-Bethesda campus or the Washington, DC, metropolitan area.

Early Dismissal

For early dismissal, NCI-Frederick operates independently of Fort Detrick; therefore, your supervisor will notify you if NCI-Frederick closes during working hours.

Telephone Numbers

Recorded weather line 301-619-7611
Fort Detrick toll-free number 1-800-256-7621, Press 1
TDD 301-619-2293

Internet

Fort Detrick's home page: <http://www.detrick.army.mil/>
Weather announcements are posted near the top of the page.

Radio/TV

Baltimore, MD
WBAL AM 1090
WCAO AM 600
WPOC FM 93.1
WIYY FM 97.9
WYPR FM 88.1
WCBM AM 680
WLIF FM 101.9
WWMX FM 106.5
WRBS FM 95.1
WERQ FM 92.3
WMAR ABC2 (TV)
WBAL NBC 11 (TV)
WJZ CBS 13 (TV)
WBFF FOX 45 (TV)

Frederick, MD
WAFY FM 103.1
WFMD AM 930
WFRE FM 99.9
WTLF FM 103.9
WWEF FM 106.9
WWFD AM 820
WYPF FM 88.1

Hagerstown, MD
WARK AM 1490
WAYZ FM 104.7

WDLD FM 96.7
WJEJ AM 1240
WHAG NBC 25 (TV)

Thurmont, MD
WTHU AM 1450

Williamsport, MD
WCRH FM 90.5
WICL FM 95.9

Chambersburg, PA
WQCM 94.3
WIKZ FM 95.1
WCHA AM 800

Gettysburg, PA
WGET AM 1320
WGTY FM 107.7

Greencastle, PA
WBHB FM 101.5
WPPT FM 92.1

Martinsburg, WV
WEPM AM 1340
WLTF FM 97.5
WRNR AM 740

Washington, DC
WFED AM 1500
WMZQ FM 98.7
WRXQ FM 107.3
WTOP FM 103.5
WUSA NBC 9 (TV)

Winchester, VA
WINC FM 92.5 ■



Weather Advisory

Winter Driving Safety Tips

Driving in cold weather presents special weather-related driving hazards. As you drive your vehicle this winter, here are some winter driving tips to keep in mind:

- Stopping distance on a snowy/icy surface can be up to 10 times that of a dry road, so drive with extra caution on slick or snowy surfaces.
- Turn your headlights on during periods of low visibility.
- Wear your safety belts. Secure children under age four in child safety seats.
- Allow extra time for winter trips. If you are running late, do not rush.
- It is a Maryland law that all windows and mirrors on vehicles be cleared of snow and ice. Do not go down the road with only a peephole to see through. Fort Detrick police will cite this infraction.
- Clear all snow off the hood and roof of a vehicle so snow does not blow onto the windshield or rear window and obscure your driving vision.
- It is a good idea to carry an emergency kit that may include an ice scraper and brush, jumper cables, a shovel, a tow chain, tire chains, a blanket, gloves, a flashlight, and rock salt or kitty litter for traction.



Make sure that your vehicle is mechanically sound. The following checklist will help to ensure a safe trip each day this winter:

- Cold weather is especially demanding on batteries. Check and replace your battery if needed.
- Install all-weather tires or snow tires and check to see that tire pressure meets the recommendations of your owner's manual.
- Test your antifreeze against the recommendations of your owner's manual.
- Check the integrity of your exhaust system for leaks into the passenger area.
- Be sure your wiper blades are in good condition.

Coordinated Highways Action Response Team (CHART)

<http://www.chart.state.md.us>

View current traffic and emergency road conditions across the state. You'll find several links to help you during a snow emergency: snow emergency plans; weather-related road closures; school closures; area-wide road conditions.

These tips have been provided courtesy of Environment, Health, and Safety (EHS). If you have any questions or would like more information, contact EHS at 301-846-1451. ■