National Cancer Institute

Poster

Frederick National Laboratory for Cancer Research — December 2012

Frederick National Laboratory: Marking the First 40 Years

By Carolynne Keenan, Guest Writer

Forty years ago, a single act by former President Richard Nixon created what we now know as the Frederick National Laboratory for Cancer Research (FNL) at Fort Detrick. What began as a small facility with a staff of about 20 people in the early 1970s grew into the multi-facility, nationally distinguished laboratory for cancer research that it is today.

FNL may have changed names a few times over the years, with the most recent change in March 2012, but even through the changes, the mission has been the same: to speed the translation of laboratory research into new diagnostic tests and treatments for cancer, AIDS, and other infectious diseases.

FNL has spent many of the last 25–30 years "putting its resources into place to serve the nation in general," said Craig Reynolds, Ph.D., director, Office of Scientific Operations, NCI.

Many discoveries have been made over the years in developing treatments for cancer, AIDS, and other infectious diseases. In the early 1980s, FNL (then known as the Frederick Cancer Research Center) played a part in developing a blood test to protect the nation's blood supply from HIV infection.

Significant Programs and Discoveries

The Biopharmaceutical Development Program (BDP), which was established in 1993, produces biological agents for NCI-supported intramural and extramural clinical trials. Since its creation, BDP

This sign (photo taken circa 1991) shows the facility's name when it was the Frederick Cancer Research Facility; this name change occurred in December 1981.

continued on page 2

What is it?
Where is it?
Story on page 15.

In This Issue

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
National Institutes of Health

continued from page 1

has created more than 100 products. Of that, more than 70 have gone into clinical trials. One such example is interleukin-2 (IL-2), which has been used to treat melanomas and kidney cancer, and is being studied to treat other types of cancers, according to the BDP website and staff.

"I have been with the BDP since its inception in 1993 and have been fortunate to be able to see the program fully develop into a great asset for getting biopharmaceuticals into clinical trials," said Beverly Keseling, Ph.D., a scientist in BDP. "Some of the therapeutic proteins we have manufactured have rewarded us in becoming effective cancer treatments."

Fellow scientist Yueqing Xie, Ph.D., agreed. "I am proud to be part of a wonderful team that has successfully made clinical supplies for many first-in-human clinical trials for the treatment of cancer and other diseases."

The Vaccine Pilot Plant (VPP) has significantly increased the nation's capacity to produce vaccines for emerging infectious diseases, including SARS and some strains of the flu, Reynolds explained. VPP opened in 2006 and is a joint collaboration between NCI and the National Institute of Allergy and Infectious Diseases.

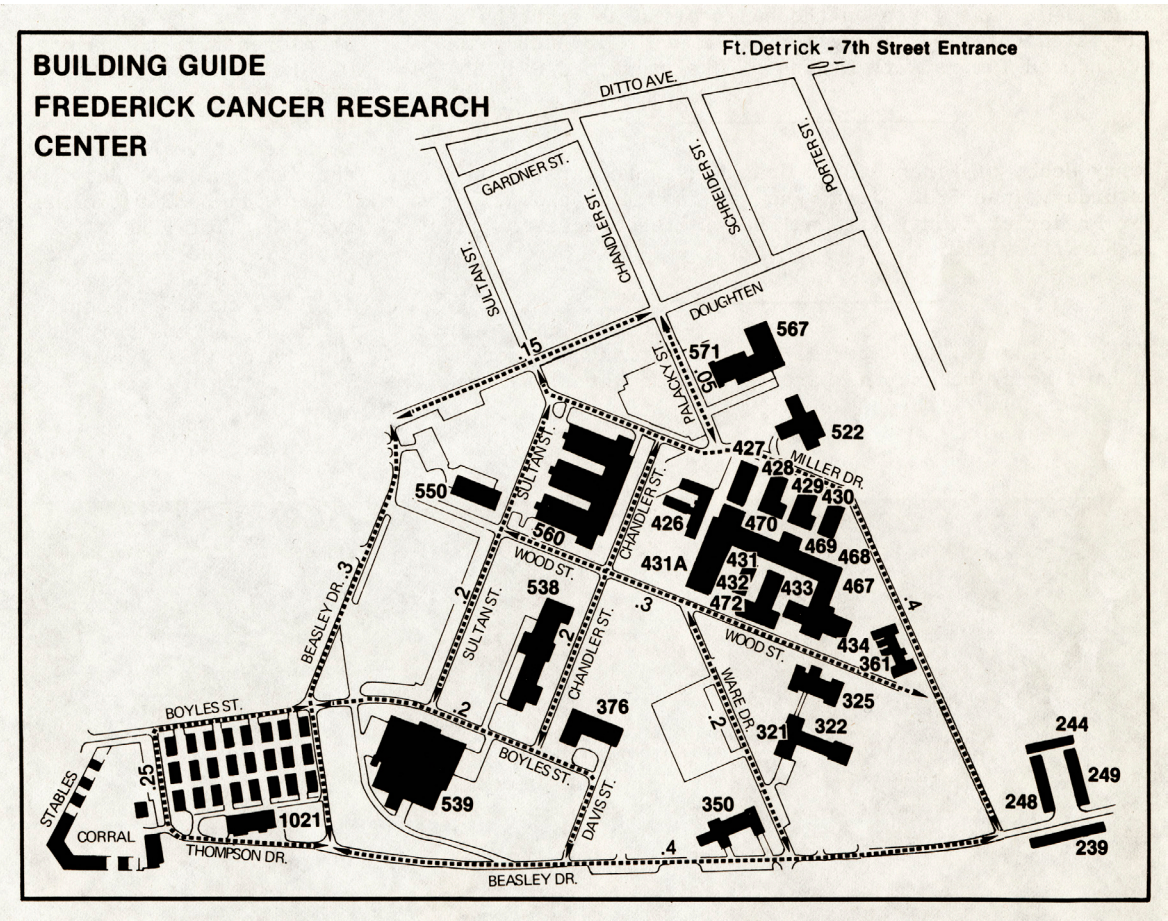
Another highly rated program is the Nanotechnology Characterization Laboratory (NCL). Established in 2004, it is an interagency collaboration between NCI, the National Institutes of Standards and Technology, and the U.S. Food and Drug Administration. NCL's mission is to accelerate the translation and development of new nanotech cancer drugs and diagnostics by performing preclinical characterizations.

Jennifer Grossman, Ph.D., an NCL scientist, explained the role NCL plays in cancer research. "Chemotherapy—treatment with cytotoxic chemicals—is still the cornerstone of most cancer treatment. Nanotechnology—manipulation of matter at the nanoscale size range—is one way scientists are trying to improve chemotherapeutics."

Other scientific discoveries have happened along FNL's 40-year journey. In 2005, Ligia Pinto, Ph.D., and her staff in the HPV Immunology Laboratory developed a cervical cancer vaccine that was tested in Phase III clinical trials and is now available nationwide. In 2011, a patent was issued for human monoclonal antibodies that may treat patients infected with deadly Hendra and Nipah viruses. Scientists in the Nanobiology Program were involved in the research that led to this groundbreaking development.

FNL continues to make history in the search for better treatments for cancer and AIDS. ■

Carolynne Keenan is a public affairs specialist in the Office of Scientific Operations, NCI.



A map of FNL printed in the June 1978 issue of the Frederick Cancer Research Center's *Focus* newsletter.

Mackem's Laboratory Focuses on "Architect" Proteins

By Yuko Tsutsui, Guest Writer

Embryonic development requires complex molecular interactions to occur at the right moment, in the correct space, and in the correct sequence. These molecular communications and regulations are disarrayed in cancer, leading to excessive cellular growth, or a tumor that obstructs the normal physiology.

"The interactions during development have to be robust; not only do signaling molecules have to communicate with each other, but they also have to be regulated and coordinated," said Susan Mackem, M.D., Ph.D., head of the Regulation of Vertebrate and Morphogenesis Section, Cancer and Developmental Biology Laboratory, Center for Cancer Research, at the NCI campus at Frederick.

Creating a "Blueprint" for Organ Shape and Growth

Mackem's laboratory has been studying the roles of the protein known as Sonic hedgehog (Shh) in mouse limb development. According to Mackem, limb development represents a classic model system to investigate the roles of morphogens and growth-promoting molecules (like Shh), and the effects of their molecular interactions on tissue and bone formations.

Her group is investigating how Shh promotes the development of immature cells to form normal, functioning fingers in mice, as well as how the cells know which digit (or finger) to develop.

Previous studies have shown that, like an architect, Shh creates a schematic design of our digits before their actual construction. Other morphogens follow this "blueprint," so they know when to trigger cellular transformation into the type of digits specified. The biological construction is then coordinated, initially under Shh supervision, and relayed to downstream contractors.

Studies Reveal Shh Role in Digit Development

Using "molecular GPS," Mackem's group tracked the formation of digit precursors from undifferentiated cells in normal mice during development. Her laboratory demonstrated that Shh and its downstream morphogens first instruct the region destined to be the "ring finger,"

Susan Mackem, M.D., Ph.D., head of the Regulation of Vertebrate and Morphogenesis Section, Cancer and Developmental Biology Laboratory.

or digit 4, to form. (By convention, in developmental biology, fingers are assigned a number from 1 [thumb] to 5 [pinky].)

Then, Mackem explained, the other digits appear sequentially in the following order: 2→5→3. The amount or length of Shh exposure at earlier time points determines later on how many of the digits will form in this order, she said.

Conversely, removing Shh at different developmental time points resulted in a striking pattern of digit losses: the loss occurred in the sequence 3→5→2→4, coinciding with the order of the late-to-early Shh removal. This pattern represents the reverse sequence of digit appearance during normal development. Fewer normal-looking digits formed when Shh was removed later during development, but when Shh was removed very early, only abnormal (dysmorphic) digits formed, Mackem said.

These observations suggest a model in which digit development is divided into two phases, specification and growth, with Shh dictating the timing of these events by coordinating morphogen and growth activities.

Bat Wing Formation Suggests Link Between Shh and Tissue Survival

In addition to its critical role as a developmental planner, Shh may be involved in regulating the survival as well as the growth of tissues.

Mackem's group is looking into relationships between Shh activity and digit development in various species with unusual digit features, such as bats. They have reasoned that, because bats are the only flying mammals, the development of the long-webbed digits that form their wings uses the same architects, but with modifications in the blueprints.

For example, it was recently discovered that Shh is expressed in the webbing between bats' digits, enabling survival of this tissue; however, in humans, this tissue is degraded to free individual digits during development.

Mackem's group believes that learning how Shh and other morphogens alter the blueprints to enhance survival and growth of the bat's very elongated digits may one day make it possible to harness those mechanisms in cancer patients to control tumor survival and growth. ■

Yuko Tsutsui, Ph.D., is a visiting postdoctoral fellow, Structural Glycobiology Section, Center for Cancer Research Nanobiology Program.

Science Watch Names Pathak's Article "Fast Breaking Paper"

By Nancy Parrish, Staff Writer

A July 2011 article in *Science* by Vinay Pathak, Ph.D., and colleagues was recently designated a Fast Breaking Paper in Microbiology by Thomson Reuters Science Watch. This designation was based on an analysis by Thomson Reuters, which determined that the paper "displayed a higher bimonthly citation increase than any other paper of comparable age and type in its field," according to the Science Watch website.

The article was cited 80 times in Thomson Reuters' Web of Science, as of December 5, 2012.

Pathak, head, Viral Mutation Section, HIV Drug Resistance Program (DRP), Center for Cancer Research (CCR), and his co-authors reported a "de-discovery" of the link between xenotropic murine leukemia virus-related virus (XMRV) and human prostate cancer and chronic fatigue syndrome (CFS).

According to the DRP website, XMRV is a retrovirus that was isolated in 2006 from a human prostate cancer and later reported to be present in 6–27% of human prostate cancers and in the peripheral blood of 67% of CFS patients. In an interview with Science Watch, Pathak explained that these reports "were greeted with much interest from scientists and patients." The scientists, he said, thought the papers suggested that XMRV might be circulating in the human population and therefore contributing to disease (see related article on page 5).

Vinay Pathak, Ph.D., right, with Krista Delviks-Frankenberry, Ph.D., staff scientist, and Tobias Paprotka, Ph.D., former visiting fellow, two of his co-authors in the Viral Mutation Section, HIV Drug Resistance Program. *Photo courtesy of Vinay Pathak.*

However, several studies failed to detect XMRV in multiple samples from prostate cancer and CFS patients or controls. Pathak's research team hypothesized that an understanding of when and how XMRV first arose might help explain the discrepancy in results.

His group showed that XMRV is "most likely a laboratory-derived mouse virus" that was generated during an experiment in the mid-1990s, Pathak said. "Since prostate cancer has been around for decades, and chronic fatigue syndrome has been described at least since the mid-1980s, our results strongly imply that XMRV is not associated with these human diseases." Instead, he explained, reports of XMRV in human tissue are a result of contamination in laboratory samples.

The research findings were highlighted in news features in the *New York Times*, *Washington Post*, and *Nature*. The study was also selected as one of the top two CCR Science Advances of the year in Virology. Further, as a result of his work on XMRV, the first author, Tobias Paprotka, won the 2011 Norman P. Salzman Memorial Award in Virology.

"Scientists Can Now Redirect Their Efforts"

"The major significance of the paper," Pathak said, "is that scientists interested in prostate cancer and chronic fatigue syndrome can now redirect their efforts towards identifying the real causes of these diseases."

Pathak attributes the success of the findings to the teamwork of his colleagues. "The success and impact of these studies was in large part due to collaboration with all of my colleagues who are co-authors on this paper," he said. Collaborators in the research included John Coffin, Ph.D. (Tufts University, and special advisor to the director of CCR); Wei-Shau Hu, Ph.D. (head, Viral Recombination Section, DRP); Hsing-Jien Kung, Ph.D., and Clifford Tepper, Ph.D. (University of California, Davis).

The full article (Paprotka et al., Recombinant origin of the retrovirus XMRV, *Science* 333 [6038]: 97–101, 1 July 2011) may be viewed at: http://www.sciencemag.org/content/333/6038/97.full.pdf. ■

Editor's note: The information for this article was drawn from the following sources: *Science Watch*, at http://archive.sciencewatch.com/dr/fbp/2012/parthak-vinay; HIV Drug Resistance Program website, http://home.ncifcrf.gov/hivdrp/news.html#Advance2011.

NIH Director's Award Recognizes Rapid Response to Avert Potential Health Crisis

By Stuart Le Grice, Guest Writer, and Nancy Parrish, Staff Writer

In July 2012, members of a multidisciplinary research team of both SAIC-Frederick and NCI Center for Cancer Research scientists were recognized with the NIH Director's Award for their outstanding work to rapidly evaluate a potential threat to the nation's blood supply.

The IRP XMRV Working Group, from left: Vineet KewalRamani, Ph.D., head, Model Development Section, DRP (NCI); Rachel Bagni, Ph.D., Molecular Detection and Viral Technology, PEL (SAIC-Frederick); Jeffrey Lifson, M.D., director, ACVP (SAIC-Frederick); Alan Rein, Ph.D., head, Retrovirus Assembly Section, DRP (NCI); James Hartley, Ph.D., head, Technology Development, PEL (SAIC-Frederick); Mary Kearney, Ph.D., head, Translational Research, DRP (NCI); and Stuart Le Grice, Ph.D., head, RT Biochemistry Section, DRP (NCI).

Known as the XMRV Working Group, the researchers came together in response to findings presented at the May 2009 Cold Spring Harbor Retroviruses Meeting that xenotropic murine leukemia virus-related virus, or XMRV, might be present in approximately 3 percent of the U.S. population, raising both public health issues and concern for contamination of the nation's blood supply. XMRV was believed to have a potential link to prostate cancer and chronic fatigue syndrome (see article on page 4).

The findings prompted the NCI Intramural Research Program (IRP) to immediately form the XMRV Working Group to develop, implement, and make available diagnostic reagents for rapid, accurate, and reliable detection of the presence of XMRV in human blood.

The group, comprising scientists from both SAIC-Frederick and NCI, developed an action plan, and by December 2009, the Protein Expression Laboratory reported successful construction and subsequent purification of 40 recombinant clones expressing all XMRV antigens. These clones, then, could function as immunological reagents that would be used to diagnose the presence of XMRV antibodies in patient samples.

Importantly, these reagents were also made available (through the NIH AIDS Reagent Program) to the extramural community to accelerate XMRV research and allow sharing of a common set of reagents.

NCI–SAIC-Frederick Collaboration Ensured Success

At the same time, researchers in the HIV Drug Resistance Program (DRP) developed an assay to detect and quantify XMRV DNA (from tissue) and RNA (from plasma). "This assay would be used, in part, to standardize the method of detection when multiple laboratories might be involved in diagnosis," said Stuart Le Grice, Ph.D., head, Reverse Transcriptase (RT) Biochemistry Section, DRP, who led the XMRV Working Group. Since ultrasensitive XMRV nucleic acid (DNA and RNA) detection methods were not available, DRP researchers developed and standardized the detection methods.

In addition, the Molecular Detection and Viral Technology group developed and standardized the immunological reagents, which required natural viral antigens. In response to this need, the large-scale virus culture facilities of the AIDS and Cancer Virus Program (ACVP) were recruited to produce XMRV. Finally, the DRP researchers developed an assay using the DERSE indicator cell line, which reduced the time needed to detect low levels of replicating XMRV in cell culture from months to a matter of weeks.

"Effective Efforts to Protect Public Health"

The NIH Director's Award recognized the XMRV Working Group's "exceptionally rapid and effective efforts to protect public health in response to a potential widespread viral threat." Although subsequent studies revealed that XMRV does not pose a threat to public health, "this dedicated group of IRP scientists demonstrated an ability to assemble a multidisciplinary team to prepare, standardize, and make available reagents for diagnostic virology," Le Grice said. Reagents were prepared with existing manpower and resources, and without interrupting the normal productivity of each group involved, and the project was completed within a 12-month period.

Le Grice describes the award as recognition of "not only the depth of retrovirology expertise within the National Cancer Institute, but also the ability of the IRP to rapidly re-focus its considerable resources in response to an emerging public health issue." ■

Stuart Le Grice is head, Reverse Transcriptase (RT) Biochemistry Section, HIV Drug Resistance Program.

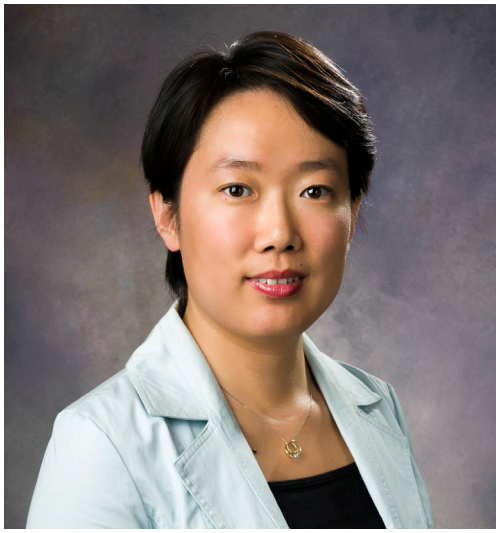
Proline Catabolism May Be a Novel Target for Tumor Therapeutics

By Ashley DeVine, Staff Writer

Proline is one of the most abundant amino acids in the cellular microenvironment, and its catabolism (a form of metabolism) under hypoxic and glucose-deprived conditions may provide a novel target for tumor therapeutics, according to a recent study published in *Cancer Research*.

"Previous work from our lab identified proline oxidase (POX), the first enzyme in proline catabolism, as a mitochondrial metabolic tumor suppressor," said Wei Liu, Ph.D., a research fellow and lead author of the article.

Liu and colleagues in the Metabolism and Cancer Susceptibility Section of the Basic Research Laboratory found that POX switched from a tumor-suppressor to a tumor-survival factor under the conditions of hypoxia and glucose deprivation.



Wei Liu, Ph.D., research fellow, Metabolism and Cancer Susceptibility Section, Basic Research Laboratory

Many oncogenes and tumor suppressors are linked to a cell's metabolism; however, previous studies have focused on core metabolism involving glucose and glutamine.

"Since glucose and glutamine metabolism are indispensable to normal homeostatic physiology, blocking these core metabolic pathways may produce serious side effects," Liu said.

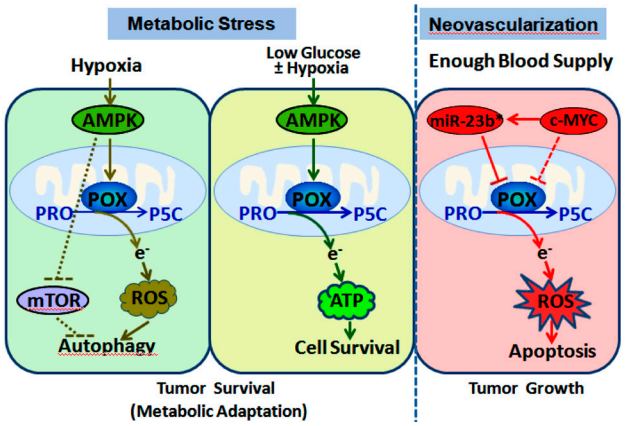
"In our research, we showed that the inhibition of upregulated proline catabolism by POX inhibitor and siRNAs significantly reduced tumor cell growth under stress conditions. The finding provides a novel therapeutic target for cancer treatment, which may avoid the side effects from directly blocking core metabolic pathways involving glucose and glutamine." ■

Proline Oxidase Promotes Tumor Cell Survival in Hypoxic Tumor Microenvironments

Wei Liu, Kristine Glunde, Zaver M. Bhujwalla, Venu Raman, Anit Sharma, and James M. Phang

Cancer Research 72(14):3677–3686

Proline is a readily released stress substrate that can be metabolized by proline oxidase (POX) to generate either reactive oxygen species (ROS) to induce apoptosis or autophagy or ATP during times of nutrient stress. However, the contribution of proline metabolism to tumorigenesis in hypoxic microenvironments has not been explored. In this study, we investigated the different functions of POX under hypoxia and glucose depletion. We found that hypoxia induced POX expression in cancer cells in vitro and that POX upregulation colocalized with hypoxic tissues in vivo. In addition, the combination of hypoxia and low glucose showed additive effects on POX expression. Similar to conditions of low glucose, hypoxia-mediated POX induction was dependent on AMP-activated protein kinase activation but was independent of HIF-1α and HIF-2α. Under low-glucose and combined low-glucose and hypoxic conditions, proline catabolized by POX was used preferentially for ATP production, whereas under hypoxia, POX mediated autophagic signaling for survival by generating ROS. Although the specific mechanism was different for hypoxia and glucose deprivation, POX consistently contributed to tumor cell survival under these conditions. Together, our findings offer new insights into the metabolic reprogramming of tumor cells present within a hostile microenvironment and suggest that proline metabolism is a potential target for cancer therapeutics. ■



POX promotes tumor cell survival under hypoxia and nutrient stress. With enough blood supply, POX is inhibited by onco-miRNA 23b* and oncogenic transcription factor c-MYC, acting as a mitochondrial tumor suppressor, whereas under metabolic stress, POX is induced to function as a tumor survival factor. Hypoxia upregulates POX to induce protective autophagy through the AMP K-POX-ROS pathway. With low glucose, with or without concurrent hypoxia, POX is channeled to produce ATP for cell survival. PRO: proline; P5C, pyrroline-5-carboxylate.

Platinum Publications

The following 49 articles have been selected from 16 of the most prestigious science journals published during the past six months.

Blood

Baba M, Keller JR, Sun HW, Resch W, Kuchen S, Suh HC, et al. The folliculin-FNIP1 pathway deleted in human Birt-Hogg-Dube syndrome is required for murine B-cell development. *Blood* 120(6):1254–1261, 2012.

Browne SK, Zaman R, Sampaio EP, Jutivorakool K, Rosen LB, Ding L, et al. Anti-CD20 (rituximab) therapy for anti-IFN-gamma autoantibody-associated nontuberculous mycobacterial infection. *Blood* 119(17):3933–3939, 2012.

Mendoza D, Johnson SA, Peterson BA, Natarajan V, Salgado M, Dewar RL, et al. Comprehensive analysis of unique cases with extraordinary control over HIV replication. *Blood* 119(20):4645–4655, 2012.

Oakley K, Han YF, Vishwakarma BA, Chu S, Bhatia R, Gudmundsson KO, et al. Setbp1 promotes the self-renewal of murine myeloid progenitors via activation of Hoxa9 and Hoxa10. *Blood* 119(25):6099–6108, 2012.

Tai XG, Van Laethem F, Pobezinsky L, Guinter T, Sharrow SO, Adams A, et al. Basis of CTLA-4 function in regulatory and conventional CD4(+) T cells. *Blood* 119(22):5155–5163, 2012.

Yavlovich A, Viard M, Zhou M, Veenstra TD, Wang JM, Gong WH, et al. Ectopic ATP synthase facilitates transfer of HIV-1 from antigen-presenting cells to CD4(+) target cells. *Blood* 120(6):1246–1253, 2012.

Cancer Research

Liu W, Glunde K, Bhujwalla ZM, Raman V, Sharma A, Phang JM. Proline oxidase promotes tumor cell survival in hypoxic tumor microenvironments. *Cancer Res* 72(14): 3677–3686, 2012.

Sarsour EH, Kalen AL, Xiao Z, Veenstra TD, Chaudhuri L, Venkataraman S, et al. Manganese superoxide dismutase regulates a metabolic switch during the mammalian cell cycle. *Cancer Res* 72(15):3807–3816, 2012.

Szabova L, Yin CY, Bupp S, Guerin TM, Schlomer JJ, Householder DB, et al. Perturbation of Rb, p53, and Brca1 or Brca2 cooperate in inducing metastatic serous epithelial ovarian cancer. *Cancer Res* 72(16):4141–4153, 2012.

Weaver Z, Difilippantonio S, Carretero J, Martin PL, El Meskini R, Iacovelli AJ, et al. Temporal molecular and biological assessment of an erlotinib-resistant lung adenocarcinoma model reveals markers of tumor progression and treatment response. *Cancer Res* 2012. [Epub ahead of print]

Wu J, Li JQ, Salcedo R, Mivechi NF, Trinchieri G, Horuzsko A. The proinflammatory myeloid cell receptor TREM-1 controls Kupffer cell activation and development of hepatocellular carcinoma. *Cancer Res* 72(16):3977–3986, 2012.

Journal of Biological Chemistry

Aghazadeh Y, Rone MB, Blonder J, Ye XY, Veenstra TD, Hales DB, et al. Hormone-induced 14-3-3 gamma adaptor protein regulates steroidogenic acute regulatory protein activity and steroid biosynthesis in MA-10 Leydig cells. *J Biol Chem* 287(19):15380–15394, 2012.

Bena S, Brancaleone V, Wang JM, Perretti M, Flower RJ. Annexin A1 interaction with the FPR2/ALX receptor: identification of distinct domains and downstream associated signaling. *J Biol Chem* 287(29):24690–24697, 2012.

Cerna D, Li HY, Flaherty S, Takebe N, Coleman CN, Yoo SS. Inhibition of nicotinamide phosphoribosyltransferase (NAMPT) activity by small molecule GMX1778 regulates reactive oxygen species (ROS)-mediated cytotoxicity in a p53-and nicotinic acid phosphoribosyltransferase1 (NAPRT1)-dependent manner. *J Biol Chem* 287(26): 22408–22417, 2012.

Cui HT, Thomas JD, Burke TR, Rader C. Chemically programmed bispecific antibodies that recruit and activate T cells. *J Biol Chem* 287(34):28206–28214, 2012.

Geczy T, Peach ML, El Kazzouli S, Sigano DM, Kang JH, Valle CJ, et al. Molecular basis for failure of "atypical" C1 domain of Vav1 to bind diacylglycerol/phorbol ester. *J Biol Chem* 287(16):13137–13158, 2012.

Kessl JJ, Jena N, Koh Y, Taskent-Sezgin H, Slaughter A, Feng L, et al. Multimode, cooperative mechanism of action of allosteric HIV-1 integrase inhibitors. *J Biol Chem* 287(20):16801–16811, 2012.

Le Grice SF. Human immunodeficiency virus reverse transcriptase: 25 years of research, drug discovery, and promise. *J Biol Chem* 2012. [Epub ahead of print]

Pazgier M, Wei G, Ericksen B, Jung G, Wu ZB, de Leeuw E, et al. Sometimes it takes two to tango: contributions of dimerization to functions of human alpha-defensin HNP1 peptide. *J Biol Chem* 287(12):8944–8953, 2012.

Ramakrishnan B, Boeggeman E, Qasba PK. Binding of N-acetylglucosamine (GlcNAc) beta1-6-branched oligosaccharide acceptors to beta4-galactosyltransferase I reveals a new ligand binding mode. *J Biol Chem* 287(34):28666–28674, 2012.

Timofeeva OA, Chasovskikh S, Lonskaya I, Tarasova NI, Khavrutskii L, Tarasov SG, et al. Mechanisms of unphosphorylated STAT3 transcription actor binding to DNA. *J Biol Chem* 287(17):14192–14200, 2012.

Ying TL, Chen WZ, Gong R, Feng Y, Dimitrov DS. Soluble monomeric IgG1 Fc. *J Biol Chem* 287(23):19399–19408, 2012.

Yu X, Luo Y, Dinkel P, Zheng J, Wei GH, Margittai M, et al. Cross-seeding and conformational selection between three- and four-repeat human Tau proteins. *J Biol Chem* 287(18):14950–14959, 2012.

Journal of Cell Biology

Daniel JA, Pellegrini M, Lee BS, Guo Z, Filsuf D, Belkina NV, et al. Loss of ATM kinase activity leads to embryonic lethality in mice. *J Cell Biol* 198(3):295–304, 2012.

Journal of Clinical Investigation

Bibollet-Ruche F, Heigele A, Keele BF, Easlick JL, Decker JM, Takehisa J, et al. Efficient SIVcpz replication in human lymphoid tissue requires viral matrix protein adaptation. *J Clin Invest* 122(5):1644–1652, 2012.

Chan JK, Roth J, Oppenheim JJ, Tracey KJ, Vogl T, Feldmann M, et al. Alarmins: awaiting a clinical response. *J Clin Invest* 122(8):2711–2719, 2012.

Estes JD. Enhancing immune responses to limit chronic immune activation during SIV. *J Clin Invest* 122(5):1611–1614, 2012.

Journal of Experimental Medicine

Cataisson C, Salcedo R, Hakim S, Moffitt BA, Wright L, Yi M, et al. IL-1R-MyD88 signaling in keratinocyte transformation and carcinogenesis. *J Exp Med* 209(9):1689–1702, 2012.

Journal of Immunology

Derive M, Bouazza Y, Sennoun N, Marchionni S, Quigley L, Washington V, et al. Soluble TREM-like transcript-1 regulates leukocyte activation and controls microbial sepsis. *J Immunol* 188(11):5585–5592, 2012.

continued on page 8

Platinum Publications

continued from page 7

Sonder SU, Paun A, Ha HL, Johnson PF, Siebenlist U. CIKS/Act1-mediated signaling by IL-17 cytokines in context: implications for how a CIKS gene variant may predispose to psoriasis. *J Immunol* 188(12):5906–5914, 2012.

Yan CG, Wu M, Cao J, Tang HF, Zhu M, Johnson PF, Gao HW. Critical role for CCAAT/enhancer-binding protein beta in immune complex-induced acute lung injury. *J Immunol* 189(3):1480–1490, 2012.

Zhang ML, Ju W, Yao ZS, Yu P, Wei BR, Simpson RM, et al. Augmented IL-15R alpha expression by CD40 activation is critical in synergistic CD8 T cell-mediated antitumor activity of anti-CD40 antibody with IL-15 in TRAMP-C2 tumors in mice. *J Immunol* 188(12):6156–6164, 2012.

Journal of the American Chemical Society

Ketkar A, Zafar MK, Banerjee S, Marquez VE, Egli M, Eoff RL. A nucleotide-analogue-induced gain of function corrects the error-prone nature of human DNA polymerase iota. *J Am Chem Soc* 134(25):10698–10705, 2012.

Siddiqua A, Luo Y, Meyer V, Swanson MA, Yu X, Wei GH, et al. Conformational basis for asymmetric seeding barrier in filaments of three- and four-repeat Tau. *J Am Chem Soc* 134(24):10271–10278, 2012.

Journal of the National Cancer Institute

Marshall JC, Collins JW, Nakayama J, Horak CE, Liewehr DJ, Steinberg SM, et al. Effect of inhibition of the lysophosphatidic acid receptor 1 on metastasis and metastatic dormancy in breast cancer. *J Natl Cancer Inst* 104(17):1306–1319, 2012.

Edwards HM, Taplin SH, Chollette V, Clauser SB, Prabhu Das I, Kaluzny AD. Summary of the multilevel interventions in health care conference. *J Natl Cancer Inst* Monogr 2012(44):123–126, 2012.

Molecular and Cellular Biology

Bhatt S, Xiao Z, Meng ZJ, Katzenellenbogen BS. Phosphorylation by p38 mitogen-activated protein kinase promotes estrogen receptor alpha turnover and functional activity via the SCFSkp2 proteasomal complex. *Mol Cell Biol* 32(10):1928–1943, 2012.

Gegonne A, Tai XG, Zhang JH, Wu G, Zhu JJ, Yoshimoto A, et al. The general transcription factor TAF7 is essential for embryonic development but not essential for the survival or differentiation of mature T cells. *Mol Cell Biol* 32(10):1984–1997, 2012.

Postnikov YV, Kurahashi T, Zhou M, Bustin M. The nucleosome binding protein HMGN1 interacts with PCNA and facilitates its binding to chromatin. *Mol Cell Biol* 32(10):1844–1854, 2012.

Nature

Archin NM, Liberty AL, Kashuba AD, Choudhary SK, Kuruc JD, Crooks AM, et al. Administration of vorinostat disrupts HIV-1 latency in patients on antiretroviral therapy. *Nature* 487(7408):482–485, 2012.

Nature Genetics

Jacobs KB, Yeager M, Zhou WY, Wacholder S, Wang ZM, Rodriguez-Santiago B, et al. Detectable clonal mosaicism and its relationship to aging and cancer. *Nat Genet* 44(6):651–658, 2012.

Nature Immunology

Goldszmid RS, Trinchieri G. The price of immunity. *Nat Immunol* 13(10):932–938, 2012.

Pobezinsky LA, Angelov GS, Tai XG, Jeurling S, Van Laethem F, Feigenbaum L, Park JH, Singer A. Clonal deletion and the fate of autoreactive thymocytes that survive negative selection. *Nature Immunol* 13(6):569–578, 2012.

Nature Medicine

Zhu Q, Talton J, Zhang GF, Cunningham T, Wang ZJ, Waters RC, et al. Large intestine-targeted, nanoparticle-releasing oral vaccine to control genitorectal viral infection. *Nat Med* 18(8):1291–1296, 2012.

Proceedings of the National Academy of Sciences

Archin NM, Vaidya NK, Kuruc JD, Liberty AL, Wiegand A, Kearney MF, et al. Immediate antiviral therapy appears to restrict resting CD4(+) cell HIV-1 infection without accelerating the decay of latent infection. *Proc Natl Acad Sci U S A* 109(24):9523–9528, 2012.

Liu W, Le A, Hancock C, Lane AN, Dang CV, Fan TWM, Phang JM. Reprogramming of proline and glutamine metabolism contributes to the proliferative and metabolic responses regulated by oncogenic transcription factor c-MYC. *Proc Natl Acad Sci U S A* 109(23):8983–8988, 2012.

Wei H, Xiang LM, Wayne AS, Chertov O, FitzGerald DJ, Bera TK, Pastan I. Immunotoxin resistance via reversible methylation of the DPH4 promoter is a unique survival strategy. *Proc Natl Acad Sci U S A* 109(18):6898–6903, 2012.

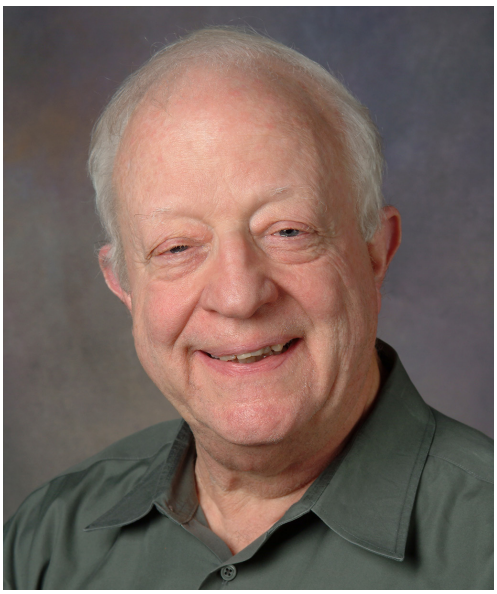
Yu P, Steel JC, Zhang ML, Morris JC, Waitz R, Fasso M, Allison JP, Waldmann TA. Simultaneous inhibition of two regulatory T-cell subsets enhanced Interleukin-15 efficacy in a prostate tumor model. *Proc Natl Acad Sci U S A* 109(16):6187–6192, 2012.

Science

Naik S, Bouladoux N, Wilhelm C, Molloy MJ, Salcedo R, Kastenmuller W, et al. Compartmentalized control of skin immunity by resident commensals. *Science* 337(6098):1115–1119, 2012. ■

Robert Blumenthal: More than 40 Years at NCI

By Carolynne Keenan, Guest Writer



Robert Blumenthal, Ph.D., retired in May 2012 after more than 40 years at NCI; he served as director of the NCI Center for Cancer Research (CCR) Nanobiology Program during his last seven years at the NCI campus at Frederick.

Robert Blumenthal, Ph.D., is a nanotechnology and cell membrane expert at the NCI Center for Cancer Research (CCR)—just as you would imagine someone with more than 40 years of experience in biomedical research would be.

Blumenthal started his career as a principal investigator (PI) at NCI in Bethesda, but since 1997, he has called the NCI campus at Frederick (formerly NCI-Frederick) his home.

Over the years, Blumenthal has worked with a number of world-renowned scientists, either academically or at NIH. He began his career at the National Institute of Diabetes and Digestive and Kidney Diseases working under the tutelage of Terrell Hill, Ph.D., a well-known theoretical physical chemist.

After a year stint with Hill, Blumenthal was recruited into NCI's Mathematical Biology Laboratory, led in succession by Mones Berman, Ph.D., and Jacob Maizel, Jr., Ph.D., who both pioneered the use of computers in biology. Maizel, who foresaw the information explosion that arose as a result of gene sequencing, was instrumental in setting up the Advanced Biomedical Computing Center at FNL. "At that point we became the Lab of Experimental and Computational Biology since we had PIs join us who bridged both disciplines," Blumenthal said.

Blumenthal, who, from the outset of his career, studied cell membranes both theoretically and experimentally, then set up his laboratory at the NCI campus at Frederick, which focused on viral entry—particularly HIV entry—into cells.

The Beginning of the Nanobiology Program

In 2005, Maizel retired and leadership changed. Blumenthal took the initiative to create the Nanobiology Program at NCI, "with the aim to study structure, function, and design of biomolecules, and their assemblies at the nanoscale," Blumenthal wrote in an e-mail. "To make progress in the understanding of biological processes, in particular HIV fusion/entry, we need to develop more advanced nanoscale methodologies."

He was given the potentially daunting task of bridging the gap between pure theoretical models and the experimental aspect. The Nanobiology Program comprises a variety of science research experts with varying years of experience in their fields, bringing diverse backgrounds and knowledge. "Many of these [researchers] have made their mark on their own fields of endeavor," Blumenthal said.

Blumenthal explained how he combined his interest in cell membranes with investigating on the nano level. "My interest is in figuring [out] how lipid-based nanoparticles can deliver a payload by the process of fusing the membranes with that of a cell."

His laboratory in CCR works closely with several of the newly expanded laboratories at the Advanced Technology Research Facility (ATRF), and he credits NCI and CCR leadership for encouraging the development of the Nanobiology Program. "Everybody recognizes its potential," Blumenthal explained. "NCI has grabbed hold of the potential to see how nanotechnology can be applied to the field of biomedical research."

With all of the cutting-edge research Blumenthal has been involved in, you might think he would not have time for much else. He retired on May 31 but was rehired on a part-time basis to help the Nanobiology Program transition under its new leadership.

Spending Time with Family

When he's not at the forefront of groundbreaking research, you can find Blumenthal spending time with his family—including nine grandchildren. "It's, of course, fun to spend time with them because you can go back to being a child yourself," he said.

It's no surprise that one of Blumenthal's three children would end up in science. His son Gideon, Ph.D., an oncologist/hematologist, is employed at the U.S. Food and Drug Administration but does spend time working at the Clinical Center in Bethesda. Both Blumenthals were at NCI when Gideon was a clinical fellow in the Medical Oncology Branch.

Also in his free time, Blumenthal enjoys researching his genealogy. He was born in Indonesia and has lived, studied, and traveled all over the world. During a recent trip to Indonesia, Blumenthal's other son, Daniel, who works in Southeast Asian policy, found his father's childhood home.

Eventually, Blumenthal would like to create a documentary based on photos and memories of his family. His daughter, Daphne, an expert in web design, could help with this living history project. ■

Carolynne Keenan is a public affairs specialist in the Office of Scientific Operations, NCI.

Senator Mikulski Notes "Exciting Endeavors" at ATRF

By Andrea Frydl and Kristine Jones, Guest Writers, and Ken Michaels, Staff Writer

On October 10, U.S. Senator Barbara Mikulski and Congressman Chris Van Hollen, both from Maryland, toured the Advanced Technology Research Facility (ATRF), accompanied by NCI Director Harold Varmus, Chief Technology Officer Atsuo Kuki, and other FNL leaders.

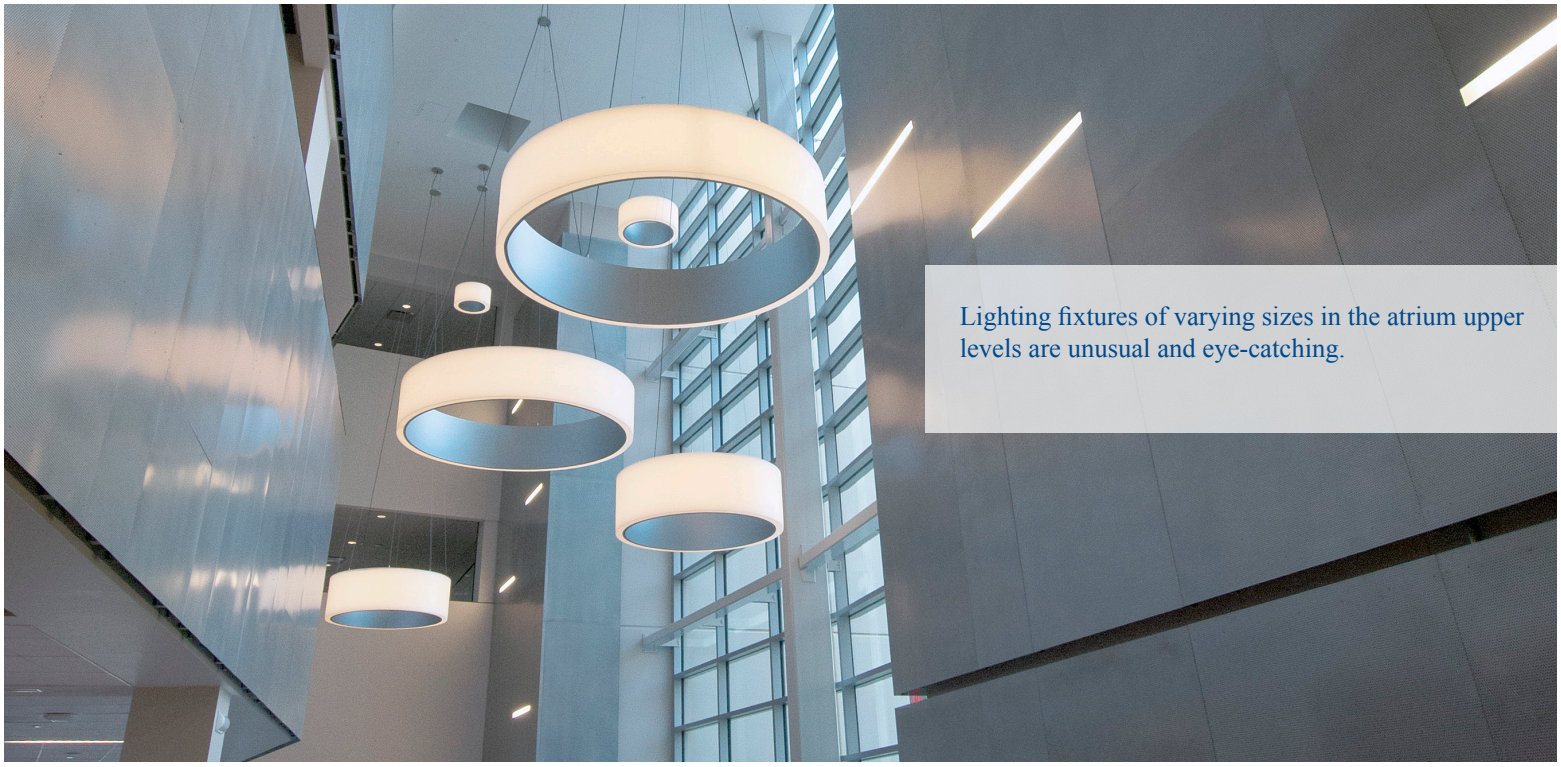
Mikulski toured several Maryland scientific and biotechnology organizations recently, and the ATRF was on her list of places to visit.

Mikulski and Van Hollen kicked off the afternoon's event by attending an informal briefing with NCI leadership to discuss the ATRF as it relates to the Frederick National Laboratory. Mikulski light-heartedly said that she was there to "hear about what NCI was doing up in Frederick, see a little bit of it, not get a Ph.D."

Following the tour, Mikulski repeatedly praised the facility and noted that "there are some very exciting endeavors taking place here that the American public will be excited to hear about." She added that she wants to help "you, the scientists, do what you do best." ■

Andrea Frydl is a public affairs specialist in the Office of Scientific Operations, NCI. Kristine Jones is an associate scientist in the CCR Sequencing Facility.

The tour group takes a break for conversation at the ATRF. From Left: Barry Gause, M.D., Dave Bufter, Atsuo Kuki, Ph.D., Harold Varmus, M.D., and Senator Barbara Mikulski.



Lighting fixtures of varying sizes in the atrium upper levels are unusual and eye-catching.

OHS Clinic at ATRF Is Open

By Ken Michaels, Staff Writer

An Occupational Health Services (OHS) clinic is now open and operating from 9:30 a.m. to 1:00 p.m., every Monday, Wednesday, and Friday at the Advanced Technology Research Facility (ATRF) in Riverside Research Park.

It is staffed by a registered nurse or nurse practitioner, who can provide an evaluation of work-related injuries or illness; vaccinations; wellness exams; blood pressure screening; first aid for strains, sprains, headaches, and gastrointestinal illnesses; and occupation-related annual exams, including blood collection.

Employees can also enroll for use of the Wellness Center at the clinic. Please call 301-846-1096 for more information or to schedule an appointment. ■

Nurse practitioner Debbie Schuchardt performs a blood pressure check on John Studea at the OHS clinic at the ATRF.

Scientific Library Provides Full Service at ATRF

By Robin Meckley, Contributing Writer

Are you now working at the Advanced Technology Research Facility (ATRF)? Are you wondering what to do when you need library support in your new location?

The Scientific Library staff at the ATRF. From left: Steve Jones, Robin Meckley, Tracie Frederick, Hungyune Chao, and Alan Doss.

The ATRF Scientific Library staff is available to help. The library is located on the second floor of E Wing, Room E2003, near the Wellness Center. Physically, the library looks different from what you're used to, because it does not have any print books or journals. Computers are available for your use, where you can search electronic resources and locate journal articles online.

The ATRF Library provides the same level of service as on the main campus. Professional librarians are on staff Monday through Friday, 8:30 a.m. until 5:00 p.m. Librarians can help you locate journal articles, search online databases, learn to use various kinds of software, and provide other kinds of informational support.

If you do not have time to visit the ATRF Library, staff can make "office calls" to help you at your desktop, at meetings, or elsewhere. If you prefer a group approach, the ATRF Library staff offers hands-on, group training on many of the library's electronic resources, including databases, online journals, and EndNote, in the ATRF computer lab.

If you need print resources, the ATRF Library staff will obtain any needed materials from the main campus, or in some cases, may mail materials to you. You can return print materials to the ATRF Library or mail them back to the main library.

Please visit the ATRF Library for your reference needs, or call 301-228-4942. ■

CCR Sequencing Facility Moves from Gaithersburg

By Ken Michaels, Staff Writer

The CCR Sequencing Facility (CCR-SF), a high-throughput sequencing core laboratory established by the Center for Cancer Research (CCR), moved from the Advanced Technology Center (ATC) in Gaithersburg, Md., to the ATRF in Frederick, Md., in October. The CCR-SF offers sequencing services on both the Illumina and Pacific Biosciences sequencing platforms. These two platforms have complementary strengths and can be used separately or in a combined approach to answer many genomics questions.

The CCR-SF provides many sequencing applications, some of which are whole-genome sequencing, exome and transcriptome sequencing, targeted amplicon resequencing, ChIP-seq, and sequencing complex repeats, secondary structures, and AT- and GC-rich sections of DNA. ■

Moving the PacBio sequencer from the ATC.

Student Intern Lands Top Prize in National Science Competition

By Ashley DeVine, Staff Writer

Student intern Sam Pritt's interest in improving geolocation led him to develop a project that won a top regional prize at the Siemens Competition in Math, Science, and Technology in November.

Pritt was awarded a $3,000 college scholarship, and he competed in the national competition in early December.

Pritt created an algorithm that uses horizon matching to determine where a photograph was taken. "It matches the horizon visible in the photograph against virtual horizons simulated from terrain elevation data, and it looks for the best match to yield the location," explained Pritt, a homeschooled senior from Walkersville.

Geolocation, the process of identifying the geographic location of an object, is usually a manual procedure that is time-consuming and has limited success, Pritt said, noting that his algorithm is more automated.

Potential Use in Counterterrorism

Pritt believes his algorithm could potentially be used in counterterrorism efforts. "Terrorists take lots of photos and videos, occasionally even posting them online, and intelligence analysts need to know where they were taken," he said.

In one test, Pritt's algorithm correctly identified the locations of 83 places in 100 photographs, he said. This accuracy attracted the attention of an engineer at Lockheed Martin, who was contacted by the Federal Emergency Management Agency (FEMA) with a request to use Pritt's algorithm to map a coastal area affected by Hurricane Sandy.

Sam Pritt, left, with Michael Reitermann, a member of the Siemens Foundation Board of Directors.

Photo courtesy of Sam Pritt

An Early Interest in Computer Programming

Since elementary school, Pritt has had an interest in computer programming and software development. After taking an Advanced Placement Computer Science class in tenth grade, Pritt was looking for a science project, and his father, an engineer at Lockheed Martin, introduced him to the concept of geolocation.

"We started experimenting with satellite imagery and terrain and that was what eventually gave me the idea to use the horizon," said Pritt, who worked on his winning project for 18 months with his father as his mentor.

Internship at FNL

Pritt is currently a Werner H. Kirsten student intern in the Cancer and Inflammation Program, working with mentor Nadya Tarasova, Ph.D., head of the Synthetic Biologics and Drug Discovery Facility.

"Sam loves science, but he also works very hard because he has a very strong sense of responsibility," Tarasova said. "He was able to generate the data that explains the molecular mechanisms of a very potent and promising anti-tumor agent, Wnt pathway inhibitor, generated in the lab."

Pritt hopes to attend Harvard and major in chemical and biomolecular engineering. ■

Editor's note: We recently learned that Sam Pritt was awarded a $40,000 scholarship as a national finalist in the Siemens Competition National Finals, hosted by The George Washington University; the winners were announced on December 4, 2012.

"I think science ROCKS!!!"

By Julie Hartman, Contributing Writer, and Nancy Parrish, Staff Writer

This comment (as well as those in the rest of this article) was received from a third grader in a thank-you note he sent to the elementary outreach volunteers following a visit to his school.

If you'd like to join the volunteers who are helping inspire a love of science in children, you may want to volunteer for the Elementary Outreach Program (EOP) at Frederick National Laboratory for Cancer Research (FNL).

"It was super, awesome, and terrific."

This program gives you the opportunity to do "hands-on" science with small groups of children. The lessons are prepared, the materials are purchased, and all you have to do is commit to two days in the classroom (two to four hours each day).

"I want to be a scientist when I grow up."

It's not too late to become a volunteer for the 2012–2013 school year. The EOP is seeking volunteers for grades 1 through 5. Teams will go to each grade in five schools in Frederick County this year.

"I really like science. What else do you all make?"

The program is supported by NCI and its support contractors, SAIC-Frederick, Wilson Information Services Corporation, and Data Management Services, as well as Fort Detrick.

"Even though it was kinda gross it was really interesting and cool."

The time commitment involved is minimal. As a volunteer, you'll be in the classroom for two days, for no more than four hours each day. Over the ten-month school year, this adds up to eight hours. And, with supervisory approval, your volunteer time is considered part of your work day.

"It was the best day of school so far!"

The payback you will receive is the smiles on the faces of the children when they get to do their experiments with people from a "real" scientific facility. Our volunteers are in every kind of job category, from administrative personnel to principal investigator, demonstrating that supporting scientific investigation requires all kinds of skills.

Gary Krauss, senior subcontracts administrator, SAIC-Frederick, works with fifth-graders at Myersville Elementary on an elementary outreach activity earlier this year.

"I hope you can visit again. I had so much fun."

If you would like to make a difference in a child's school experience and help inspire a new generation of scientists, please sign up on the website at http://ncifrederick.cancer.gov/Programs/General/EOP/Volunteer.aspx.

Be sure to identify which grade level team(s) you would like to join. Once your registration is received, you will be contacted by the coordinator or team leader with further information.

For more information on the program, please visit the EOP web site or contact eop@mail.nih.gov.

Looking for a Full-Time Assistant This Summer?

By Julie Hartman, Contributing Writer, and Nancy Parrish, Staff Writer

Registration is open until January 16 for mentors for the Werner H. Kirsten Student Internship Program (WHK SIP).

This year-long program, designed to expose high school seniors to research and administrative careers in a scientific environment, begins in June and ends the following May. You'll have an enthusiastic intern in your office or lab while you provide valuable training in the "real world" of biomedical research, and possibly inspire a future scientist.

You will interview high school juniors in the spring and select students to work full-time in your lab or office for eight weeks beginning in June. The WHK SIP operates under the NCI Summer Cancer Research Training Award (SCRTA) stipend, which is funded by the Office of Scientific Operations, Frederick National Laboratory for Cancer Research.

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 visit 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. ■

Congratulations to the June 2012 Poster Puzzler winner! Nancy Walsh, Secretary III, Laboratory Animal Sciences Program, SAIC-Frederick, right, is shown with Melissa Porter, executive editor of the *Poster,* next to the Scientific Library book return bin. ■

The Poster Puzzler:

Read a Book

By Ashley DeVine, Staff Writer

The June Poster Puzzler is the National Library symbol (a human figure reading a book) displayed on the Scientific Library's book return bin located in front of Building 549. The symbol was designed by Ralph E. DeVore and became the official library symbol in 1982. It was selected for use on library signs and promotional materials as a way to promote public awareness of libraries.

Special thanks to Robin Meckley, Scientific Library, for providing information for this article.

Source: http://www.ala.org/tools/libfactsheets/alalibraryfactsheet30. ■

Puzzler

Read a Book

Poster Puzzler

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 Frederick National Laboratory or Fort Detrick. Win a framed photograph of the Poster Puzzler by e-mailing your guess, along with your name, e-mail address, and daytime phone number, to poster@mail.nih.gov. Alternatively, you can send us your guess, along with your name and daytime phone number, by interoffice mail to: Melissa Porter, executive editor, Building 427:7. All entries must be received by **Friday, January 25, 2013**, and the winner will be drawn from all correct answers received by that date.

Good luck and good hunting! ■

Have Poster, Will Travel

Photo courtesy of Doug Kuhns.

The *Poster* Just Misses Tsunami in Hawaii

By Nancy Parrish, Staff Writer

Recently Douglas Kuhns, Ph.D., principal scientist and head of the Neutrophil Monitoring Laboratory, attended a meeting of the Society for Leukocyte Biology in Maui, Hawaii. "The presentations at the meeting were excellent and the meeting locale was beautiful, with only one minor snag," Kuhns said.

The night before his presentation, Kuhns said, an earthquake near British Columbia activated tsunami buoys along the Pacific Rim, triggering tsunami sirens all across the Hawaiian Islands. Kuhns had to evacuate his room on the first floor of his hotel, and spent much of the night "lounging and eventually sleeping on the floor of the lobby," on the fourth floor. At 1:00 a.m., guests were allowed to return to their rooms; fortunately, only minor flooding occurred on the north shore of the island. "It certainly added a bit of suspense to a wonderful and exotic setting for a meeting," Kuhns said.

Luckily, he was able to keep his *Poster* high and dry. He's shown here in front of a statue of King Kamehameha I, the warrior, diplomat, and leader who united the Hawaiian Islands into one royal kingdom in 1810.* ■

*http://www.gohawaii.com/statewide/guidebook/king-kamehameha

CRADAs: They're Not Just for NCI Anymore

By Karen Surabian, Thomas Stackhouse, and Jeffrey Thomas, Contributing Writers, and Bruce Crise, Guest Writer

Advancing scientific discovery is increasingly dependent on diverse and innovative partnerships, and the Cooperative Research and Development Agreement (CRADA) is an essential tool for establishing partnerships. CRADAs allow a federal laboratory to enter into collaborative research and development (R&D) projects with outside parties (commercial or nonprofit).

CRADAs have been successfully used at NCI for more than two decades, and they have led to several effective products, including Avastin (for certain types of colorectal, lung, and renal cancer, as well as glioblastoma) and Velcade (for multiple myeloma).

As the contractor operating a government-owned, contractor-operated facility like the Frederick National Laboratory for Cancer Research (FNL), SAIC-Frederick also has the legal authority to engage in CRADAs, but to date has not had an official program for CRADAs.

New c-CRADA Allows Contractor to Partner Independently

Recently, administrative staff from both SAIC-Frederick and NCI received approval for the contractual and policy modifications necessary to launch a contractor CRADA (c-CRADA) program at FNL.

Under the c-CRADA, SAIC-Frederick initiates and manages CRADA projects that do not involve direct participation from NCI staff in the research. Procedures have been established to effectively identify potential c-CRADA partners, develop the prospective c-CRADA project with the partner, review and approve the c-CRADA, and monitor the progress of the R&D project. Under these agreements, NIH CRADA subcommittee approval is not required; instead, c-CRADAs are approved locally by the NCI contracting officer, with input from the NCI technology transfer and program staff.

The new c-CRADA program was established to enhance partnering opportunities highlighting the contractor's unique capabilities at FNL. These unique capabilities and the construction of the Advanced Technology Research Facility (ATRF), whose primary function is to foster partnerships, are the driving forces behind the c-CRADA program.

Two Kinds of Agreements Are in Place

Two c-CRADA "templates," or model agreements, have been developed. The simpler of the two, the Technical Service Agreement (TSA), allows a partner to select from a list of unique FNL services for a set cost. TSAs are most appropriate for projects requiring a quick turnaround from the initial request through the provision of the final data package to the partner.

Second, the "full" c-CRADA is analogous to the NCI CRADA in that it anticipates a larger, joint R&D project with the partner. c-CRADAs are designed to accommodate the development of new technologies that might be used in the broader FNL research community in support of NCI's mission, or by the public to benefit patients.

Both types of c-CRADAs provide access to the extensive scientific and technical expertise of the staff at FNL.

NCI CRADA versus c-CRADA

The type of agreement used (NCI CRADA, TSA, or full c-CRADA) depends on the specific circumstances of the proposed project. For example, all CRADAs enable both parties to provide resources, personnel, and equipment for the joint research. They also allow for external funding to support the research and grant the CRADA partner with a first option to elect an exclusive or non-exclusive commercialization license to inventions made under the CRADA.

However, inventions made by contractor (i.e., SAIC-Frederick) employees under the c-CRADA are managed by the contractor, rather than being assigned to and managed by the government, as required by an NCI CRADA.

In addition, although NCI staff may not directly participate in the research project of a c-CRADA, SAIC-Frederick staff may participate in projects established under NCI CRADAs. The latter remains unchanged from the past, and allows the unique resources and expertise of the SAIC-Frederick programs and labs to be used in collaborative projects between NCI and an outside partner.

Who Benefits?

Adding the TSA and c-CRADA to the expanding toolbox for technology transfer will assist FNL laboratories in streamlining R&D activities. Ultimately, these agreements enable more rapid development of new technologies and treatments for people living with cancer, AIDS, or other infectious disease.

The NCI Technology Transfer Center and the SAIC-Frederick Partnership Development Office can work with you to develop proposed partnership concepts and implement the appropriate agreement. For information, please call the Technology Transfer Center at 301-846-5465. ■

Bruce Crise, Ph.D., is director of the Partnership Development Office, SAIC-Frederick.

Protecting the Science and the Staff in Emergencies

By Siobhan Tierney, Contributing Writer, and Protective Services Staff

No one likes receiving a phone call in the middle of the night with the news that a freezer is down, but a few missed hours of sleep is better than losing irreplaceable research samples.

The Protective Services Department, Environment, Health, and Safety Directorate, ensures a safe and secure working environment for both the science and the personnel at Frederick National Laboratory for Cancer Research (FNL), at its three locations: the Fort Detrick campus, the Advanced Technology Research Facility (ATRF), and the Vaccine Pilot Plant (VPP).

With 20 full-time and 12 part-time officers, Protective Services provides oversight to scientific equipment and utility alarms, and general personnel safety, 24 hours a day, 7 days a week.

According to Jim Farling, Protective Services supervisor, maintaining a secure facility includes monitoring alarmed scientific equipment, such as liquid nitrogen freezers and incubators. "If this equipment loses power or malfunctions, valuable research samples could be lost," he said.

Building systems also need monitoring to ensure proper heating, air conditioning, and oxygen levels, Farling added.

Make Sure Your Number Is on the List

To ensure that you are properly notified of a power outage or system failure, be sure you keep your information up to date on the alarm call-in lists for critical equipment, and on the Send Word Now emergency notification system.

Alarm call-in lists are submitted by building managers and updated weekly. Contact your building manager if you wish to make changes to the call-in list.

Send Word Now is an automated telephone calling system that Protective Services initiates to notify affected employees in a matter of minutes in an emergency.

To verify that your name is listed in the Send Word Now system, or to update your contact information, call Tom Gannon-Miller, Protective Services manager, at 301-846-1380.

What to Do When You Need Help

For a personal emergency, dial 911. If you are outdoors on the Fort Detrick campus, you may use one of the many "blue light" emergency telephones located throughout the campus (see box).

These "blue light" phones will provide direct access to Protective Services Central Dispatch.

All Protective Services officers are trained in CPR, first aid, and the use of automatic external defibrillators, so they may provide assistance until emergency medical personnel arrive at the scene.

For other emergencies, you may call the appropriate security desk (see box). The National Institutes of Health police provide additional support to the Protective Services Department on the FNL campus at Fort Detrick, while city or county 911 will respond to calls from the ATRF and VPP, respectively. ■

Where Are the Blue Light Telephones?

Emergency telephones are located near the blue light outside the following buildings on the Fort Detrick campus: 244, 321, 325, 371, 431, 469, 538, 539, 560 (2), 567, 1021, 1040, 1050, 1052, 1066, 1074, 1075

Security Numbers by Location

Advanced Technology Research Facility. 301-228-4901

FNL at Fort Detrick (main campus). 301-846-1091

Vaccine Pilot Plant. . . . 301-228-4083

NCI Recaptures Columbus Day Golf Trophy

By Ken Michaels, Staff Writer

The seventh annual Ronald H. Defelice golf tournament held October 8 resulted in a win for NCI. Defelice himself, as per tradition, opened the tournament with the ceremonial first drive of the day.

Each year since 2006, a volunteer SAIC-Frederick team has gone head-to-head with a similar-sized NCI team. This year's tournament was especially intense, as both sides vied to break the series 3-3 tie and NCI to snap a three-year losing streak, which they did; NCI now leads the series 4 to 3.

The overall score in the day-long event was 14½ to 9½. Former SAIC-Frederick Chief Executive Officer (CEO) Larry Arthur was selected as most valuable player (MVP) for the SAIC-Frederick squad, while Chad Hartman was named MVP for the NCI team. SAIC-Frederick's Jonathan Keller won the Bob Moschel Sportsmanship Award.

Held at West Winds Golf Club in New Market, Md., the Columbus Day tournament is named in honor of Defelice, who is retired chief of the Management Operations and Support Branch at what was NCI-Frederick during his tenure. ■

The competitors enjoyed a light-hearted moment when SAIC surrendered the Defelice trophy to NCI. From left, Craig Reynolds, Jim Cherry, Dave Heimbrook, and Dennis Dougherty.

Former SAIC-Frederick CEO Larry Arthur (left) was voted Most Valuable Player for the SAIC team.

Jonathan Keller (right) won the Bob Moschel Sportsmanship Award.

NCI and SAIC-Frederick each competed with 16-man teams, show at left.

Photos courtesy of Julie Hartman

Business Health Services Offers Comprehensive Work–Life Balance Options

By Doug Nelson, Guest Writer

Many employees are spending more time at work while personal challenges continue to mount. You may be faced with providing care for aging parents, the complexities of parenting teenagers, financial challenges, or marital concerns. Combine those challenges with the expectations to perform at high levels in the workplace, and you can easily feel overworked, stressed, and/or experience a decline in job performance. To help employees overcome personal and professional challenges, the Frederick National Laboratory for Cancer Research (FNL) offers employees and household members the benefits of an Employment Assistance Program (EAP) to manage these burdens.

Business Health Services (BHS), a workplace wellness provider delivering EAP services for the past three decades, provides FNL employees and their dependents with free, confidential assistance to help with family, personal, and work-related problems. The benefit offers short-term counseling services with a local, licensed, professional, legal and financial consultations, an extensive online library, and other problem-solving solutions to you and your household members in need.

More Than a Hotline

BHS is more than a toll-free hotline. You will speak directly with a care coordinator, a master's-degree level counselor who will provide support and guidance, along with connection to the most appropriate local resources to resolve your issue.

BHS has worked with FNL employees and household members to resolve the following problems:

- Concentration difficulties at work due to worries about family matters;
- Teenagers losing academic focus and ceasing extracurricular activities following the end of a dating relationship;
- Decreased coping skills for an ex-spouse whose alcohol abuse was adversely affecting his or her children during scheduled visitations;
- Disagreements over the specifics of a divorce decree;
- Preparing for the death of a parent, and helping the surviving spouse with grieving;
- Uncontrolled spending behaviors in spite of credit card debt and economic hardships;
- Stress associated with supporting a spouse through medical treatment for cancer.

Contacting your EAP is as simple as picking up your phone and dialing 800-327-2251. BHS counselors are available 24 hours a day, seven days a week, to provide confidential assistance for personal or work-related problems of any kind.

Online Resource Library Available

You are also encouraged to access the BHS online resource library for a variety of articles about physical and emotional wellness concerns. Search https://www.bhsonline.com and enter "FNL" as the user name to open the site.

Browse through a variety of resources, including articles, over 650 videos, health assessment tools, quizzes, a listing of thousands of pre-screened childcare and eldercare programs, tax forms, and interactive tools such as financial calculators. ■

Doug Nelson is the BHS representative who handles the contract with Frederick National Laboratory for Cancer Research.

Trick or Treat!

The entire community at Frederick National Laboratory for Cancer Research was "treated" to the bright faces of the children from the Play and Learning Station (PALS) during their annual Halloween parade on October 26. Approximately 30 children participated in the event. "It's a fun time for the adults and teachers, too," said Natasha Fearnow, director of PALS. ■

Immediate Openings: PALS

By Natasha Fearnow, Contributing Writer

We have immediate openings for infants, toddlers, and preschool children at the Play and Learning Station (PALS) at the Frederick National Laboratory for Cancer Research.

We understand that choosing the best child care and child development program is one of the most important decisions you will make as a parent. At PALS, we believe it is essential that your child feels safe, secure, loved, and—most important—that he or she has fun.

We are committed to providing your child with an enriched learning environment that encourages social and emotional growth, and promotes a strong educational foundation for the future.

The PALS Philosophy

We strive to provide a stimulating environment designed to guide children to discover new information, skills, and concepts. Our child development curriculum offers outstanding social, emotional, academic, and cognitive experiences for children.

At PALS, your child will receive a variety of educational experiences that encourage a positive self-image and a joy in the learning process. Your child will be respected as an individual who possesses a unique personality, intelligence, and creativity.

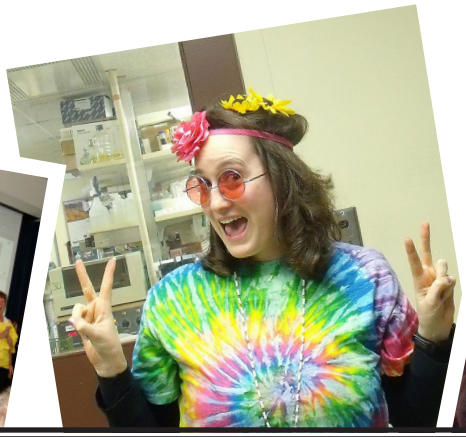
Our highly trained and educated staff members establish child care environments that are clean, fun, creative, and child-centered.

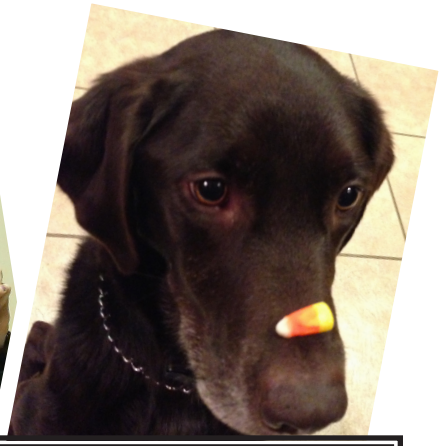
Come for a visit to see for yourself how your child can grow. PALS is located at the corner of Boyles Street and Beasley Drive.

For more information, visit our website, http://ncifrederick.cancer.gov/Programs/General/Pals/, or contact Natasha Fearnow, director, at nfearnow@mail.nih.gov or 301-846-5200. ■

Halloween Photo Contest

Thanks to all who submitted pictures for this year's Halloween photo contest! ■





The winner in the **pet** category was Darth, a domestic Muscovy duck dressed as a pumpkin. Darth's owner is Ashley Denney, postbaccalaureate CRTA fellow in the Gene Regulation and Chromosome Biology Laboratory, Frederick National Laboratory for Cancer Research

In the **children's** category, the winner was a miniature Incredible Hulk, otherwise known as five-year-old Adam Rippeon, Jr., the nephew of Stacey Beachley, a secretary in the Information Systems Program, SAIC-Frederick.

The winning entry for the **adult** category was corpse bride Victoria Burks, a secretary in the Applied and Developmental Research Directorate, SAIC-Frederick. Her costume was inspired by Tim Burton's film of the same name.

How to Have More Fun in 2013

By Carolynne Keenan, Guest Writer

If your new year's resolution includes meeting new people, getting active, learning a new skill, or just having more fun, you should consider joining the NIH Recreation and Welfare (R&W) Club Frederick.

The R&W Club Frederick (also known as Club Frederick) may be in its infancy, but that hasn't stopped the momentum of activities. The club began earlier this year as a chapter of its parent organization, the NIH R&W Association. Anyone, including retirees, can join this nonprofit organization dedicated to enhancing employee welfare and giving back to the community. Membership is $7 for a calendar year (January through December).

"It's a great way to build morale," explained Roxanne Angell, the club's president. "It unifies the Fort Detrick community."

Susie Culler, the club's treasurer, agreed. "We're a family here," she said. "You get to meet new people…you get to know people outside of work. And it's a lot of fun."

Part of the NIH R&W Association's mission is to support local charities, Angell explained. Club Frederick has already donated money to Camp Fantastic, a camp for kids with cancer, and helps support the Werner H. Kirsten student intern activities, added Melissa Porter, vice-chair of the club.

You'll Be Active All Year Long

Plans are under way for activities and events every quarter in 2013. Members can look forward to day trips, outdoor activities, Night Club Card passes at three area ski resorts, cooking classes, special game nights at the Frederick Keys stadium, discount tickets to area events, discounted lunches, and more.

Members also get exclusive discounts at local vendors, including D'Accord Boutique in Shepherdstown, W.Va.; Sweet Memories in Frederick, Md.; and discounted yoga classes at Ananda Shala Yoga & Pilates, also in Frederick. Club Frederick members can score discounts on products and services offered to the Bethesda parent organization as well.

There's no limit to the events, activities, and fundraisers for Club Frederick. If you have an idea, pass it along to any advisory board member (see website), or e-mail RWClubFrederick@nih.gov. Send along any events from the parent organization that you would like to see in Frederick as well.

For More Information

You'll find complete information about the club and its activities on our website at http://ncifrederick.cancer.gov/Staff/RecreationWelfare/Default.aspx.

While there, sign up for the listserve so you'll receive updates, the News & Notes, and more information. Check back weekly because there's always something new going with the R&W Club Frederick. ■

Carolynne Keenan is a public affairs specialist in the Office of Scientific Operations, NCI.

Attention Skiers!

Night Club Card Ski passes are once again available to R&W Club Frederick members. These passes provide unlimited skiing after 4 p.m., Monday through Saturday, and after 3 p.m. on Sunday, beginning January 1, 2013, at three resorts: Ski Liberty, Ski Roundtop, and Whitetail. You can get passes for lift tickets only; lift tickets with lessons; or lift tickets with lessons and rentals. You can also purchase a helmet at reduced prices when you buy your passes. Also available is the Advantage Card, which provides additional discounts before January 1, and for daytime skiing. See instructions on the website on how to order your passes: http://ncifrederick.cancer.gov/Staff/RecreationWelfare/Default.aspx.

The winners of the 2012 Halloween Costume Contest, sponsored by Club Frederick, were (from left) Kelsey Canizales, dressed as "The Incredible Hulk" (Most Spooktakular); Beth Fair, dressed as "Puss-N-Boots" (Most Creative); and Allison Hazen as "Creepy Lady" (Most Bootiful).

The Employee Diversity Team Needs You!

By Andrea Frydl, Guest Writer

The Employee Diversity Team (EDT) is looking for bright, talented, and committed Frederick National Laboratory for Cancer Research (FNL) employees—both government and contractor—who want to share in the team's mission.

EDT's mission is to create opportunities, sponsor activities, and develop outreach and educational initiatives to:

- Foster respect for all employees on the FNL campus;
- Celebrate the rich diversity that age, race, gender, ability, personality, culture, national origin, beliefs, sexual orientation, veteran status, marital status, job classification, and other personal and organizational characteristics bring to the workplace; and
- Create and maintain a work environment that values differences and similarities in all employees and promotes productivity, work quality, equity, and respectful communication.

Being a member of the team will give you an opportunity to network with your fellow FNL employees and put your skills to use. If you're interested in joining or would like more information, contact Andrea Frydl, public affairs specialist (301-846-5382), or Laura Geil, scientific program analyst (301-846-5437). The EDT meets in Building 549 on the first Thursday of every month from 9 to 10 a.m.

Coming Soon—2013 Women of FNL

The EDT will again be honoring women in scientific, administrative, supervisory, and support capacities who make a difference while contributing to the FNL and NCI missions. The nomination form will be available in January via "List NCI-Events." The winners will be profiled in the *Poster* and featured in the EDT's Building 549 display case during Women's History Month in March.

Display Case Winners

Jerry Alexandratos, technical lab manager, Macromolecular Crystallography Laboratory, and Cheryl Bowman, administrative officer, NCI Office of the Director, were the winners of free movie tickets to Regal theaters for correctly answering questions about EDT's September/October display case exhibit, "Diversity Spices up Our Lives!"

To enter future contests, watch for EDT's "List NCI-Events" e-mail announcements. Then, answer the short quiz in the e-mail about the EDT display case (located in the front lobby of Building 549) and submit your answers in the box next to the display. If you have questions, contact Frydl or Ethel Armstrong, interlibrary loan manager, Scientific Library (301-846-5843). ■

Andrea Frydl is a public affairs specialist, Office of Scientific Operations, NCI.

Porter Takes Reins of the FNL Green Team

By Linda Brandenburg, Guest Writer

Melissa Porter, who recently joined the staff of Craig Reynolds, Ph.D., director, Office of Scientific Operations, as administrative manager, has stepped forward to lead the Frederick National Laboratory for Cancer Research (FNL) Green Team in its efforts to promote a "green" work environment. "I am excited to lead the FNL Green Team and have been impressed by the enthusiasm and commitment of the FNL Green Team," Porter said.

Her extensive involvement and experience with the National Institute of Arthritis and Musculoskeletal and Skin Diseases Green Team will be invaluable to the efforts undertaken at FNL.

The FNL Green Team was previously led by Howard Young, Ph.D., deputy laboratory chief, Laboratory of Experimental Immunology, and Michele Gula Atha, a former Biopharmaceutical Development Program employee. Under their direction, the team did a fantastic job of encouraging the FNL community to **reduce**, **reuse**, and **recycle**. These two volunteers are owed a big thank-you for a great job.

Melissa Porter, Administrative Manager, Office of Scientific Operations

The FNL Green Team includes the following volunteers: Melissa Porter, leader, Linda Brandenburg, Eckart Bindewald, Cheryl Bowman, Chelsey Jahn, Yasmin Lachir, Melissa Lambert, Antonella Pepe, Jamie Rodriguez, Tom Schneider, Denise Shelley, Paul Stokely, Dolores Winterstein, and Howard Young.

The FNL Green Team is looking forward to promoting a "greener" year in 2013. With the team growing, so are the ideas. For example, the team recently organized the Fall Plant Swap and developed a "green" website.

"The team has many wonderful ideas that will help everyone at FNL be more environmentally friendly both at work and at home," Porter noted.

Keep your eyes and ears open to see what is coming next from your FNL Green Team, and remember to **reduce**, **reuse**, and **recycle**.

Linda Brandenburg is a cost analyst, Project Controls, Facilities Maintenance and Engineering, and member of the FNL Green Team.

New Faces at Frederick National Laboratory for Cancer Research

Two-hundred twenty-seven people joined our facility during the months of April through September 2012.

The National Cancer Institute welcomes...

Yadvinder **Ahi** ■ Rabea **Ahmad** ■ Kyveli **Angelou** ■ Maham **Ahmed** ■ Kyveli **Angelou** ■ Sabrina **Arif** ■ Ashley **Babyak** ■ Gabriella **Balaa** ■ Nche **Bayelle** ■ Kelsey **Canizales** ■ Stephanie **Chen** ■ Lindsey Blair Saunders **Coburn** ■ Natalie **Coleman** ■ Brian **Constantine** ■ Sarah **Cramer** ■ Carolyn **Crisp** ■ Steven **Cuss** ■ Frank **Cuttitta** ■ Dalal **Anish** ■ Chi-Ping **Day** ■ Ravi **Desai** ■ Michal **Dyba** ■ Alana **Ebert-Zavos** ■ Anika **Engel** ■ Andrea **Frydl** ■ Aldo **Giaimo** ■ Anish **Gonchigar** ■ Nikhil **Gowda** ■ Nina **Gwatkin** ■ Kenneth **Hall** ■ Maria **Hamscher** ■ Meredith **Harman** ■ Shawn **Hess** ■ Marina **Hoashi** ■ Julien **Homble** ■ Xintao **Hu** ■ Ingold **Huang** ■ Andrew **Huehn** ■ Saadia **Iftikhar** ■ Jana **James** ■ Monika **Kaczmarek** ■ Piotr **Kaczmarek** ■ Gila Kahila **Bar-Gal** ■ Carolynne **Keenan** ■ Saebyeokbyeol **Kim** ■ Youseung **Kim** ■ Dong **Kong** ■ Daniel **Kordella** ■ Dahlia **Kronfli** ■ Yasmin **Lachir** ■ Jinyu **Li** ■ Brian **Lindsay** ■ Gary Lopez **Munoz** ■ Cassandra **Lowell** ■ Scott **MacDonald** ■ Ahmed **Mansoor** ■ Susan **Martinez** ■ Anna **Mason** ■ Ashley **McLenithan** ■ Heather **Meade** ■ Scott **Medina** ■ Joseph **Miles** ■ Ashley **Moses** ■ Sett **Naing** ■ Olivia **O'Keefe** ■ Brian **Ogendi** ■ Matthew **Packard** ■ Hannah **Perez** ■ Stephanie **Perkins** ■ Caroline **Plescia** ■ Sagi **Polani** ■ Melissa **Porter** ■ Alexander **Powell** ■ Samuel **Pritt** ■ Mia **Pulley** ■ Dongfei **Qi** ■ Eros **Quarta** ■ Brittany **Reichelt** ■ Lisa **Ridnour** ■ Thibault **Robert** ■ Kathryn **Romanchuk** ■ Margaret **Rosari** ■ Mavet **Rosas** ■ Alison **Sappe** ■ Minori **Sasakura** ■ Takashi **Sato** ■ Kevin **Sayers** ■ Martin **Schnermann** ■ Mengge **Shan** ■ Rishabh **Sharan** ■ Anil **Shukla** ■ Luke **Smith** ■ Marissa **Stepler** ■ Kandi **Stuller** ■ Suthananda **Sunassee** ■ Elizabeth **Terrell** ■ Grant **Thompson** ■ Fang **Tian** ■ Ashley **Triplett** ■ Shirley **Tsang** ■ Sevilay **Turan** ■ Emiko **Urano** ■ Sicong **Wang** ■ Yan **Wang** ■ Matthew **Weiss** ■ Debbie **Wendland** ■ David **Wink** ■ Madelyne **Xiao** ■ Guangai **Xue** ■ Edward **Yoon** ■ Justen **Zachman-Meister** ■ Fengxia **Zhu** ■ Enrique Zudaire **Ubani**

SAIC-Frederick welcomes...

Rachana **Agarwal** ■ Aian Neil **Alilin** ■ Michael **Banner** ■ Kyle **Beard** ■ Elizabeth **Befekadu** ■ James **Berry** ■ Sandra **Berry** ■ Gillis **Bolden** ■ Theresa **Bowie** ■ Debra **Bradbury** ■ Victoria **Burks** ■ Robert **Burton** ■ Candace **Butler** ■ Jared **Cable** ■ Cirilo **Cabradilla** Jr. ■ Joel **Case** ■ Brenda **Chasteen** ■ Zoila **Chestnut** ■ Rahnuma **Choudhury** ■ Becky **Defelice** ■ Brian **Dillow** ■ Cing **Dim** ■ Dustin **Dixon** ■ Patricia **Donnelly** ■ Lisa **Drewry** ■ Judith **Duears** ■ Wilma **Early** ■ Christine **Fennessey** ■ Sharon **Gaheen** ■ Doreen **Garabedian** ■ Danillo Gardenal **Augusto** ■ Neal **Green** ■ Chloe **Gross** ■ Daniel **Grove** ■ Patricia **Gum** ■ Pushpa **Hariharan** ■ Michael **Harper** ■ Aleta **Harris** ■ Rebecca **Hasley** ■ Tanya **Henderson** ■ Tammy **Himes** ■ Robert **Honec** IV ■ Steven **Hunter** ■ Sumiti **Jain** ■ Elmer L **Jarvis** II ■ Arati B. **Kamath** ■ Rama **Kapoor** ■ Manjula **Kasoji** ■ Karl **Kelly** ■ Sara **Ketterman** ■ Kattie **Khadar** ■ Anita **Kohli** ■ William **Kolb** ■ Stephen **Kovacs** ■ Laura **Kreis** ■ Olga **Kuznetsova** ■ Rhette **Lambert** ■ Brittney **Lambert** ■ SooYoung **Lee** ■ Leslie **Lipkey** ■ Diane **Madey** ■ Donald **McVay** ■ Stephanie **Mellott** ■ Jacquelin **Miller** ■ Tammy **Miller** ■ Timothy **Mills** ■ Bobby **Munday** ■ Michelle **Neville** ■ Douglas **O'Neal** ■ Sue **Pan** ■ Kogila **Pandurangan** ■ Hemaxi **Patel** ■ Rashmika **Patel** ■ Paresma **Patel** ■ Xu Fang **Pei** ■ Quy **Phung** ■ Jabie **Plank** ■ Daniela **Poss** ■ Vincent **Prescimone** ■ Lal **Puia** ■ Elizabeth **Purcell** ■ Megan **Putman** ■ Brian **Reed** ■ Diana **Roame** ■ Karna **Robinson** ■ Vikki **Ropp** ■ McKinley **Roseby** ■ Charles **Salahuddin** ■ Edward **Salinas** ■ Dana **Savage** ■ Deborah **Schuchardt** ■ Charles **Servis** ■ Thor **Sheatz** ■ Alfred **Skoczylas** ■ Jessica **Smith** ■ Sandra **Sorensen** ■ Gordon **Stott** ■ Amelia **Summerell** ■ Keyur **Talsania** ■ Justin **Tessman** ■ Lori **Testerman** ■ Mathangi **Thiagarajan** ■ Joshua **Thomas** ■ Anita **Undale** ■ David **Vanscoy** ■ Negin **Vatanian** ■ Jeffrey **Wallace** ■ Mark **Wance** ■ Rebecca **Wasser** ■ Aisha **Wellington** ■ Robert **Werner** ■ Cynthia **Wirick** ■ Takashi **Yabuki** ■ Mahesh **Yelisetti**

Data Management Services welcomes...

Aaron **Huegel**

Fitness Challenge Winners Respond:

Why Is Fitness a Part of Your Life?

By Ashley DeVine, Staff Writer

"Fitness has been an important factor in my life for a long time. It helps me deal with the stresses of life in a more productive manner. The Fitness Challenge makes me try to go the extra mile, put an extra weight on the bar, or try a new exercise."—Amy Blumhardt, Applied and Developmental Research Directorate (ADRD)

"I have been actively involved in half marathons and triathlons for over five years; having an upcoming race to train for is an important motivator for me. The Fitness Challenge is a great tracking tool for all the different kinds of activities that I do."—Heather Gorby, ADRD

"Growing up on a farm not only kept me active as a child, but it also instilled in me the importance of being fit. Everything from eating healthy, organic foods from my parent's garden to playing sports at an early age in school put me on the right track to staying fit in my adult life."—Tammy Miller, Information Systems Program ■

Monthly Fitness Winners

June

Robert Burton ■ Richard Frederickson ■ Tammy Miller ■ Kelli Potter

July

Mei Chen ■ Heather Gorby ■ Tim Stevenson

August

Amy Blumhardt ■ Dayon Dixon ■ Maureen Dyer ■ Cynthia Farling ■ Traci Kenney ■ Jacquelin Miller ■ Lori Smith

September

Heidi Bowman ■ Ken Carpenter ■ Karen Cowden ■ Glenn Gray ■ Erik Harris ■ Leslie Johnston ■ Laurie McMahon ■ Rhona McVicker ■ Scott Schiffhauer ■ Thomas Stackhouse ■ Ester Sudec ■ Lori Testerman ■ Anna Trivett ■ Jeffrey Yuenger

Amy Blumhardt stays in shaping by boxing in her home gym. She says boxing improves her footwork and dexterity.

Photo courtesy of Amy Blumhardt.

Tammy Miller spent time kayaking at the Great Salt Pond in Block Island, RI. She's been kayaking since 2001.

Photo courtesy of Tammy Miller.

400 Walk to Wellness

By Ken Michaels, Staff Writer

As part of the Walking to Wellness program, Occupational Health Services (OHS) distributed more than 400 pedometers to participants who logged their times and distances walked. The purpose of the contest was to help with awareness and encourage activity.

People were encouraged to participate in teams; however, individuals were not excluded from participating. The team names, "The Walking Dead," "The Walking Wounded," "In It to Win It," and the "The Worn-Out Soles" reflect the creativity at the Frederick National Laboratory for Cancer Research (FNL), and some names reflect the FNL and NCI missions, such as "Heart and Sole," and "Hope."

Other names had more of a pop culture reference like, "Tater Trot," "Seasoned Soles," "Duck Family Robinson," and the "Red Hot Chili Steppers."

The 12-week competition began in September 10 and closed December 10.

Watch for e-mail announcements for the next competition, coming this spring. ■

The "In it to Win It" team. From left: Tom Gannon-Miller, Michael Eichelberger, David Johnson, and Thomas Delawter.

Homes at Fort Detrick Now Available for FNL Employees

Courtesy of Balfour Beatty Communities-Fort Detrick

Finding acceptable, safe, and affordable housing in the Frederick area is often not an easy task. However, employees of Frederick National Laboratory for Cancer Research (FNL) and its contractors, Charles River Laboratories, Data Management Services, SAIC-Frederick, and Wilson Information Services Corporation, now have a new option available, one that's literally around the corner.

Fort Detrick Family Housing, professionally managed by Balfour Beatty Communities, is opening homes to those who work on the Fort Detrick campus.

Military housing has traditionally been reserved only for those serving on active duty. However, base realignment activities have reduced the number of military families coming into the Fort Detrick area, creating a surplus of housing on post.

"We welcome those folks who already work on Fort Detrick," said Dawn Hines, community manager, Balfour Beatty Communities-Fort Detrick. "Much like other military housing communities across the nation, we now have a bank of homes available, and we want to offer those homes first to those who are already here. These people work side by side with our military personnel, and we want to keep the camaraderie shared by those folks in place."

This property at 1873B Glick Place is one of the properties recently available for rental.

While active duty families have automatic acceptance into housing, all others must meet certain requirements regarding income, credit, and rental history. A criminal background check is completed on anyone over the age of 18 living in the home. These standards are similar to those required by most rental properties, and few other properties are likely to offer the peace of mind that comes from living in a safely guarded community.

Employees can save money, too. With rental rates that include all utilities, residents can factor their living expenses into their budget with no surprises of unexpectedly high heating bills in winter. Living on post also offers the convenience of being able to walk or ride your bike to work, as well as go home for lunch.

"Of course, the number of available homes is limited," Hines reported. "Our first mission is to house our service members. So, we will continue to maintain some neighborhoods and homes that are reserved for active duty military only."

For more information, you may visit the website, www.fortdetrickhomes.com, or call the leasing office at 240-379-6518. ■

Websites of Note

By Ashley DeVine, Staff Writer

Throughout the newsletter, you'll find websites that provide you with more information than we can put in the articles. In addition, many days, weeks, and months are devoted to the recognition of particular health care issues. Here are a few dates that seem most pertinent to the Frederick National Laboratory.

January

Cervical Health Awareness Month: http://www.nccc-online.org/index.php/january
Healthy Weight Week, January 20–26: http://www.healthyweight.net/hww.htm

February

American Heart Month: http://www.cdc.gov/features/heartmonth
National Wear Red Day, February 3: http://www.nhlbi.nih.gov/educational/hearttruth

March

National Colorectal Cancer Awareness Month: http://preventcancer.org/prevention/preventable-cancers/colorectal-cancer
National Women and Girls HIV/AIDS Awareness Day, March 10: http://www.cdc.gov/Features/WomenGirlsHIVAIDS

It's Eff, En, Ell

By Ken Michaels, Staff Writer

The other day, in a discussion about implementing new branding standards for the name change to Frederick National Laboratory, Frank Blanchard, our public affairs director, related to me that he had recently been asked, "So how exactly do I pronounce FNL?" His answer was, "Eff, en, ell." Why? Because FNL is not an acronym.

Frederick National Laboratory
for Cancer Research

FNL Is NOT an Acronym?

Right. Contrary to popular misconception, a collection of letters that stands for something is not necessarily an acronym. And this is one such case: FNL is an initialism (also sometimes called alphabetism), not an acronym. So what's the difference?

While the term "acronym" is often used to describe any lettered abbreviation, most dictionaries define an acronym as a word, derived from the first letters of a more complex term. True acronyms, therefore, are words, like SCUBA (self-contained underwater breathing apparatus); AIDS (acquired immune deficiency syndrome); and LASER (light amplification by stimulated emission of radiation).

The U.S. armed forces, and the government in particular, generated thousands of acronyms in the 20th century to abbreviate lengthy terminology to more manageable, pronounceable expressions. Agencies were cautioned to make terms "YABA compatible" (YABA is an acronym for "yet another bloody acronym"), meaning to take care that the full term did not abbreviate to an offensive word in its short form.

Say the Letters

Initialisms, on the other hand, are forms of shorthand that are not intended to be regarded as words and thus pronounced. Who would try to pronounce AFL-CIO, CIA, or HTML?

And yet some folks do insist on pronouncing that which ought not to be. For me personally, it's like fingernails on a chalkboard when I hear people making words that ought not to be—calling an uninterruptible power supply an "ups" or a uniform resource locator an "earl."

And especially with the Frederick National Laboratory. We really don't need more invented words. We should no more try to invent a way to pronounce FNL than we would NCI; "en, see, eye" does the job just fine.

So how do we pronounce FNL? "Eff, en, ell."

Please. Say the Letters.

Dates to Note

Christmas Day. . . . . December 25
Frederick National Laboratory closed

New Year's Day . . . . . January 1
Frederick National Laboratory closed

Birthday of Martin Luther King, Jr. . . . . January 21
Frederick National Laboratory closed

Washington's Birthday. . . . . February 18
Frederick National Laboratory closed

The *Poster* Staff

Executive Editor Melissa Porter ■ **Associate Editor** Ken Michaels ■ **Editorial Advisor** Frank Blanchard ■ **Managing Editor** Nancy Parrish ■ **Editor** Ashley DeVine ■ **Production Editor** Kathy Green ■ **Lead Designer** Tammy Schroyer ■ **Photography Editors** Jonathan Summers, Richard Frederickson

Contributing Writers

Administrative Resource Center Erin King, Codi Miller ■ **ATRF** Hoyt Matthai ■ **Community Outreach** Barbara Birnman, Julie Hartman ■ **Data Management Services** Stephanie Halling ■ **Environment, Health, and Safety** Siobhan Tierney ■ **Facilities Maintenance and Engineering** Peggy Pearl ■ **Fisher BioServices** Kathleen Groover ■ **Employee Diversity Team** Laura Geil ■ **Occupational Health Services** Sarah Hooper ■ **PALS** Natasha Fearnow ■ **Poster Puzzler** Travis Gaydos ■ **SAIC-Frederick, Inc.** Frank Blanchard ■ **Science Today** Kristin Komschlies ■ **Technology Transfer Center** Karen Surabian ■ **Wilson Information Services Corporation** Sue Wilson, Robin Meckley

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

The content of this publication does not necessarily reflect the views or policies of the Department of Health and Human Services, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. government.

Reminder: When you have a change in staff, be sure to change the information in the Frederick National Laboratory 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 Frederick National Laboratory 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.

ATRF Earns Three Green Globes, Exceeds NIH Building Standards

By Ashley DeVine, Staff Writer

From project management and energy and water efficiency to emissions and the indoor environment, the Advanced Technology Research Facility (ATRF) was built with sustainability in mind, exceeding the National Institutes of Health's (NIH's) building standards and earning three Green Globes from the Green Building Initiative (GBI).

The ATRF was scored at 72.3% based on GBI's assessments in the categories of project management, site, energy, water, resources and solid waste, emissions, and the indoor environment. This score equated to three Green Globes out of a possible four, meaning that the building's environmental attributes demonstrate "leadership in energy" and environmental efficiency, and "a commitment to continual improvement," according to Green Globes ratings information.

For new construction, NIH requires buildings to be Green Globe or LEED (Leadership in Energy and Environmental Design) certified. The ATRF was designed with a goal of earning at least two Green Globes, even though NIH only requires one.

"We made a conscious effort to get at least two because we knew we could easily get one Green Globe," said Chud Wright, senior designer, Facilities Maintenance and Engineering (FME), SAIC-Frederick. "The way we managed it, we just worked real hard with the architectural and engineering firms to come up with relatively inexpensive ways to make energy and water conservation designs."

The amount of construction waste recycled during the ATRF's construction also exceeded requirements. Green Globes requires 50 percent recycling of construction waste—the ATRF's recycling rate was 88 percent (1,050 tons).

Every rock excavated from the construction site—more than one million pounds—was used in the building's construction or in road beds.

The Green Globes plaque the ATRF received from the Green Building Initiative now hangs near the visitors' entrance of the ATRF.

Sustainability Features: Water Recycling and Energy Savings

The ATRF is positioned to maximize the amount of sunlight it receives. All the rooms have automatic dimmers so that, in the daytime, the lights automatically dim to save energy. "Even when you leave your office, tied into your lighting sensor is your HVAC sensor, so you're not heating and cooling a room when it's not occupied," Wright said.

Two of the building's major sustainability features are water recycling and chilled beams. Active chilled beams heat and cool the laboratories, providing a minimum energy savings of 35% over a standard laboratory. Active chilled beams contain chilled water coils that take outside air induced by air handlers and distribute it evenly across the coils. "As the air passes through the chilled beam, it cools (or heats) the lab air, which falls into the occupied zone," Wright said.

The ATRF's water recovery system is designed to recoup two million gallons of water per year by collecting the condensate from the air handling units and capturing wastewater. The condensate is produced when the air handlers take the moisture out of the air—as a traditional air conditioner does. The water generated from the air handlers is stored in a 3,000-gallon tank. "So we're capturing two water streams that would normally be dumped down the drain, and then we use that for cooling water," Wright said. The cooling water is used to indirectly chill the chilled beams.

Water is also used to cool the data center, where all of the ATRF's computer storage is housed. Cooling the data center is equivalent to cooling more than 1,000 Maryland homes, according to Len Wrona, manager of Engineering, FME. The equipment racks, which can sometimes hold 20 to 30 servers, include in-door chilled water cooling to bring the cooling medium close to the heat source. "In a normal data center, you'd have an air conditioner sitting on the exterior of the walls just dumping cold air, but it doesn't really capture the heat right there where it's being generated," Wright said. ■

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

When Fort Detrick is closed, Frederick National Laboratory is also closed; when Fort Detrick has a delayed opening, Frederick National Laboratory has a delayed opening. Frederick National Laboratory does not follow weather closings or delayed opening advisories for the NIH-Bethesda campus or the Washington metropolitan area.

Early Dismissal

For early dismissals, Frederick National Laboratory operates independently of Fort Detrick; therefore, your supervisor will notify you if Frederick National Laboratory 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

Frederick National Laboratory home page: http://frederick.cancer.gov
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
WTLP FM 103.9
WWEG 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.

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. ■

Coordinated Highways Action Response Team (CHART)

http://www.chart.state.md.us
View current traffic and emergency road conditions across the state. Under "Severe Weather Information," you'll find several links to help you during a weather emergency.