



# Poster

THE NATIONAL CANCER INSTITUTE AT FREDERICK

JUNE 2009

## Dr. Dean's Compassion Leads Him to Guatemala

By Nancy Parrish

Michael Dean, Ph.D., doesn't use his scientific expertise just in the laboratory at NCI-Frederick. Every year for the last three years, he has taken his knowledge, skills, and compassion on a medical mission trip to Guatemala.

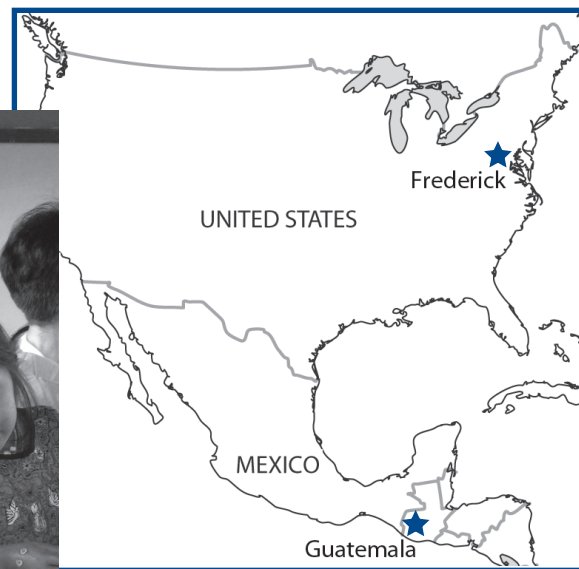
Earlier this year, he led a medical team that spent two weeks in San Pedro Sacatepequez, just outside of Guatemala City. Sponsored by Trinity and Brook Hill United Methodist Churches in Frederick, the mission was to provide construction, teaching, and medical outreach.

Volunteers stayed at Mi Refugio, a school founded by Kari Engen, a Maryland woman whose close connections to the local health professionals ensure that clinical care is provided to those needing it most, Dr. Dean explained. Patients with chronic and severe medical conditions can be referred to proper sources.



Dr. Michael Dean pauses for a photo with a patient at one of the clinics in Guatemala, where he spent two weeks in February on a medical mission trip.

This year, Dr. Dean said, the teams partnered with World Vision to help that organization assess the health of children in several Mayan villages so they may plan future programs. "We visited six of these villages, driving on dirt roads that quickly led into



beautiful mountain landscapes. We passed by fields of corn, often growing on boulder-strewn hills, and got a sense of the connection of the people to the land and their food."

Clinics were set up at local schools to treat the children, "and later mothers came with their families. The women were all dressed in beautiful, traditional clothing, as were their daughters. It was amazing to see everyone waiting patiently for their turn to be seen—the mothers

*continued on page 2*



What is it?  
Where is it?  
Story on page 17.

### IN THIS ISSUE

2•Medical Mission to Guatemala 3•Center for Cancer Research News 4•Science Today  
5•Platinum Publications 7•ATP Mini-Grant 8•Spring Research Festival 9•Outreach and Special Programs 12•Feeling Fine in 2009 13•Then and Now 14•Poster People Profile 15•Write When You Get Work 16•Poster Puzzler Winner 17•The Poster Puzzler 18•Cheryl Parrott Speaks at Hood College 19•Notary Services 20•Discovery Café "Specials" 21•Campus Improvement Committee 22•Occupational Health Services 24•NCI-Frederick Employee Diversity Team 27•New Faces at NCI-Frederick 28•SAIC-Frederick, Inc. 30•Wilson Information Services Corporation 31•On Effective Communication 32•Employment Opportunities

## Medical Mission to Guatemala

*continued from page 1*

lovingly holding or caressing their impeccably behaved children....

Many of the women speak only Kaqchikel, a Mayan dialect and little or no Spanish. So I was in the middle of a three-language conversation from English to Spanish to Kaqchikel and back. But overriding all this was the love of the nurses for the people and no words were needed to communicate that.”

Medical supplies were provided by Medical Assistance Programs International, an organization that forms partnerships to provide medicine and health care to the world’s poorest regions. The teams also gave out soap, dental supplies, and towels provided by the United Methodist Commission on Relief.

Dr. Dean was moved by the medical cases he saw, and, he said, sometimes “it seemed vastly inadequate to hand them

up on, and so could leave with some hope.”

Although he returned to Frederick in March, Dr. Dean’s heart doesn’t get too far away from Guatemala. He described how, during the last two days of the trip, they were presented with a 5-year-old girl named Ana, who had severe scoliosis and whose family cannot afford treatment for her. “Upon my return I identified a

Dr. Dean says the most important thing he has learned from these trips is humility. He feels it especially “when I



Dr. Dean, left, spent a day at the San Pedro Health Center, which is directed by Dr. Ernesto Arrendondo, second from left. Standing with them are Dr. Arrendondo’s wife and son.



A market place near the community of Las Palmas, Guatemala.

see someone walk for miles and wait for hours in line with a neighbor so that they can get medical care. Or when I am at the school that Kari created and see how one person can change the lives of hundreds of children.”

He plans to return in June to visit the children’s cancer hospital in Guatemala City, “where we are working with St. Jude’s Hospital to establish a tissue repository and to study retinoblastoma, a childhood eye tumor that appears to be more common in Central America, for unknown reasons. Scientific Publications, Graphics & Media is helping produce educational posters for this project.”

For Dr. Dean’s complete account of his mission trip to Guatemala, see the online version of the *Poster* page33.

vitamins and a toothbrush for those who are orphaned or have serious medical needs. But we could document these special cases for World Vision to follow

surgeon...that specializes in these cases. So now we are trying to get the X-rays that are needed to assess Ana's condition and plan a strategy.”



## Three Elected as Fellows to American Academy of Microbiology

By Maritta Perry Grau

Drs. Amar Klar, Jeffrey Strathern, and Giorgio Trinchieri, all of the Center for Cancer Research (CCR), were among 72 scientists elected to the American Academy of Microbiology (AAM) in February.

An AAM press release noted that “Fellows...are elected annually through a highly selective, peer-review process, based on the records of scientific achievement and original contributions that have advanced microbiology. There are now over 2,000 Fellows representing all subspecialties of microbiology, including basic and applied research, teaching, public health, industry, and government service.”

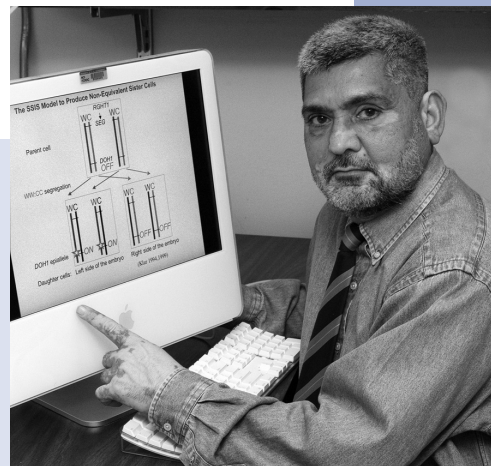
The AAM web site (<http://academy.asm.org/>) cited Dr. Klar as a “key player in discovering the mechanisms of mating-type switching by DNA transposition and gene silencing by epigenetics in budding and fission yeast. Because of his seminal contributions, yeast systems have become a textbook case to study the mechanisms of cellular differentiation in general. This work led him to theorize that vertebrate’s visceral organs, human brain hemispheric laterality, and psychoses disorders result from biased segregation of epigenetically differentiated sister chromatids in mitosis.”

Dr. Klar commented, “It is a good recognition of your work by your peers. It reflects that you must have been at it for a long enough time to be noted.”

The AAM web site also lauded Dr. Strathern’s career achievements, saying that he “is a leader in yeast molecular genetics. He demonstrated that the cassette mechanism of programmed genome rearrangements is a mechanism of yeast differentiation. His research on recombination established new paradigms regarding the fidelity of homologous recombination and the mechanism of formation of DNA palindromes.” Dr. Strathern noted that he would like to “thank the NCI for the

continuing opportunity to pursue the research recognized by this award from the AAM.”

Dr. Trinchieri, a relative newcomer to NCI-Frederick, where he is the director of the Cancer and Inflammation Program, is notable as “the discoverer of Interleukin-12, a molecule that is critically important in the host response to infection. He has been a leader in characterizing the molecular mechanisms of IL-12 production and action. He also identified and characterized plasmacytoid dendritic cells, a key component of the host innate immune response,” the AAM web site stated. ■



Amar Klar, Ph.D., Senior Investigator and Head, Developmental Genetics Section, Gene Regulation and Chromosome Biology Laboratory, CCR.



Jeffrey Strathern, Ph.D., Deputy Director, Center for Cancer Research; Laboratory Chief and Head, Genome Recombination and Regulation Section, Gene Regulation and Chromosome Biology Laboratory, CCR.



Giorgio Trinchieri, M.D., Program Director, Cancer and Inflammation Program; Laboratory Chief, Laboratory of Experimental Immunology, CCR.

## Marine Anti-HIV Protein Produced in Tobacco

By Maritta Perry Grau and Ashley DeVine

NCI-Frederick scientists, working with collaborators at the University of Louisville and the University of London, have shown that an important antiviral protein could be produced easily from an inexpensive and easily reproducible source: tobacco plants. This protein could make it possible to deliver HIV protection to women in poor countries such as sub-Saharan Africa, where the human toll of AIDS is the greatest.

Barry O’Keefe, Ph.D., and fellow researchers in the Molecular Targets Development Program (MTDP), Center for Cancer Research, in collaboration with Dr. Kenneth Palmer at the University of Louisville Owensboro, raised more than 9,000 *Nicotiana benthamiana* (a close relative of tobacco [*N. tabacum*]) plants in greenhouses in Kentucky. They infected the plants with a tobacco mosaic virus genetically engineered to produce the protein griffithsin (GRFT; a protein normally made by red algae) and after 12 days, harvested the protein-laden leaves.

In total, Dr. O’Keefe said, they recovered 60 grams of protein and could have obtained even more, had they processed the leftover roughage of the plants. The 60 grams would be enough to produce more than 100,000 doses of the microbicide from the leaves.

Dr. Palmer, senior author of the article, said in a press release from the University of Louisville’s web site that

manufacturing GRFT in the form of a microbicide gel or film for topical application means the product’s selling price would be comparable to the cost of condoms.

The protein GRFT, originally isolated by Drs. O’Keefe and Toshiyuki Mori (MTDP) from an extract of the algae *Griffithsia sp.* housed in NCI’s Natural

equivalent to that of the material produced in the red algae with sub-nanomolar activity against HIV-1. Dr. O’Keefe hopes that in a few years, the group’s research will result in a film or gel microbicide that women can self-administer. So far, in both human cervical explant studies and rabbit vaginal irritancy tests, the protein has worked effectively

without any side effects. The new expression system for GRFT will allow the low-cost production of this agent to make female-controlled anti-HIV prophylaxis, a glaring worldwide need, possible at a reasonable cost.

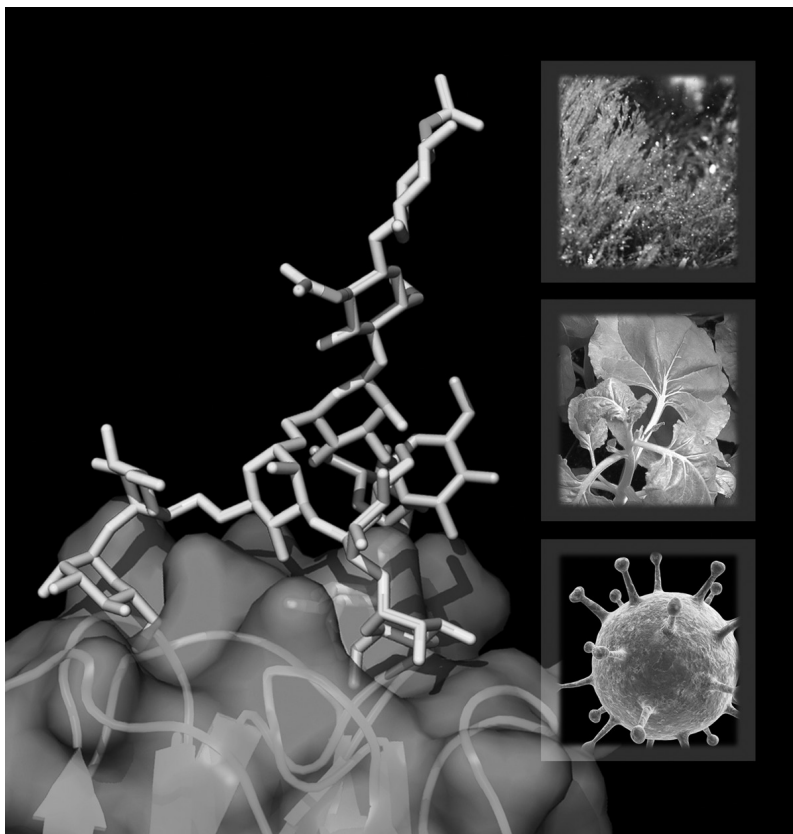
Dr. O’Keefe’s group provided the idea for using GRFT as a topical microbicide and provided the coding sequence, protein, and antibodies necessary to complete the transfection experiments in plants.

“*N. benthamiana* was chosen because it is easily infected with the tobacco mosaic virus which was used to infect the plants. The virus then multiplies in the plant and produces GRFT. Twelve days after infecting the *N. benthamiana* plant, the plant is harvested and processed,” Dr. O’Keefe said.

GRFT has shown activity against other viruses, including the coronavirus,

which is responsible for SARS (with NIAID and Dr. Paul McCray at Iowa State University), and Ebola (with Dr. Gene Olinger, USAMRIID, in studies completed at Fort Detrick).

*Editor’s note: See “Platinum Highlight,” page 5, for information related to Dr. O’Keefe’s published article about this discovery. ■*



A molecular model showing the interaction of the antiviral protein griffithsin and the high-mannose oligosaccharide oligomannose-9 (Courtesy of Drs. A. Wlodawer and T. Moulai [MCL/CCR]). Insets show an underwater photograph of the red algae *Griffithsia sp.* (courtesy of Dr. D. Newman [NPB/DTP/NCI]); a picture of the plant *Nicotiana benthamiana*; and a depiction of HIV. The composite figure is the work of Allen Kane and Jiro Wada (SPGM, SAIC-Frederick).

Products Repository at NCI-Frederick, was already known to be an effective anti-HIV viral entry inhibitor. The scientists reasoned that developing a plant-based product would be much more cost-effective than production using standard *E. coli* expression systems.

The activity of the plant-expressed protein was tested and found to be



### Researchers Report Manufacturing Breakthrough of Anti-HIV Protein

By Ashley DeVine

In 2005, Barry O’Keefe, Ph.D., and fellow researchers in the Molecular Targets Development Program (MTDP), Center for Cancer Research, identified an antiviral protein, griffithsin (GRFT), which restricts HIV entry into cells at an exponentially more potent level than other inhibitors studied. In 2009, the group announced a manufacturing breakthrough of the protein that could potentially provide HIV protection to women in the poorest countries of the world.

GRFT is named after the red algae, *Griffithsia sp.*, from which it was isolated by Drs. Toshiyuki Mori (MTDP) and O’Keefe. After the researchers licensed GRFT for prophylactic use against HIV, they set out to find a more cost-effective, high-yield process of manufacturing the protein, since the standard method of engineering *E. coli* bacteria to produce GRFT did not yield large enough quantities.

In the February 2009 issue of *The Proceedings of the National Academy*

*of Sciences*, Dr. O’Keefe’s group, in collaboration with Dr. Kenneth Palmer at the University of Louisville, reported that they had produced GRFT from *Nicotiana benthamiana* (a plant closely related to tobacco) plants that were infected with a tobacco mosaic virus genetically engineered to produce GRFT.

GRFT was proven effective against HIV clades A, B, and C, and could be used as a microbicide for HIV prevention. It is also a stable protein that can be shipped to many areas without refrigeration, a key advantage in resource-poor areas. It is currently being formulated into a film or gel that women can self-administer. The new expression system for GRFT will allow the low-cost production of this agent to make female-controlled anti-HIV prophylaxis possible at a reasonable cost.

Dr. O’Keefe, Associate Scientist in the MTDP, received his Ph.D. in pharmacognosy (the study of medicinal plants and natural products chemistry) from the University of Illinois at Chicago Health Sciences Center in Chicago, IL.



Barry O’Keefe, Ph.D., Molecular Targets Development Program.

*Editor’s note: Some of the information for this article is taken from “By Land or By Sea: High-Yield Production of a Marine Anti-HIV Protein in Plants,” CCR Connections, 3(1), 2009. See page 4 for a more detailed description of this discovery. ■*

### Scaleable manufacture of HIV-1 entry inhibitor griffithsin and validation of its safety and efficacy as a topical microbicide component

O’Keefe BR, Vojdani F, Buffa V, Shattock RJ, Montefiori DC, Bakke J, Mirsalis J, d’Andrea AL, Hume SD, Bratcher B, Saucedo CJ, McMahon JB, Pogue GP, Palmer KE  
*Proc Natl Acad Sci USA* 1056(15):6099–6104, 2009

To prevent sexually transmitted HIV, the most desirable active ingredients of microbicides are antiretrovirals (ARVs) that directly target viral entry and avert infection at mucosal surfaces. However, most promising ARV entry inhibitors are biologicals, which are costly to manufacture and deliver to resource-poor areas where effective microbicides are urgently needed. Here, we report a manufacturing breakthrough for griffithsin (GRFT), one of the most potent HIV entry inhibitors. This red algal protein was produced in multigram

quantities after extraction from *Nicotiana benthamiana* plants transduced with a tobacco mosaic virus vector expressing GRFT. Plant-produced GRFT (GRFT-P) was shown as active against HIV at picomolar concentrations, directly virucidal via binding to HIV envelope glycoproteins, and capable of blocking cell-to-cell HIV transmission. GRFT-P has broad-spectrum activity against HIV clades A, B, and C, with utility as a microbicide component for HIV prevention in established epidemics in sub-Saharan Africa, South Asia, China,

and the industrialized West. Cognizant of the imperative that microbicides not induce epithelial damage or inflammatory responses, we also show that GRFT-P is nonirritating and noninflammatory in human cervical explants and in vivo in the rabbit vaginal irritation model. Moreover, GRFT-P is potently active in preventing infection of cervical explants by HIV-1 and has no mitogenic activity on cultured human lymphocytes.

<http://www.pnas.org/content/106/15/6099.long>

The following 27 articles have been selected from eight of the most prestigious science journals during the past quarter.

## Apoptosis

**Kitagaki J, Yang Y, Saavedra JE, Colburn NH, Keefer LK, Perantoni AO.** Nitric oxide prodrug JS-K inhibits ubiquitin E1 and kills tumor cells retaining wild-type p53. *Oncogene* 28(4):619–624, 2009.

## Biomolecular Networks

**Roux KJ, Crisp ML, Liu Q, Kim D, Kozlov S, Stewart CL, Burke B.** Nesprin 4 is an outer nuclear membrane protein that can induce kinesin-mediated cell polarization. *Proc Natl Acad Sci USA* 106(7):2194–2199, 2009.

## Cell, Tumor, and Stem Cell Biology

**Kuznetsov SG, Haines DC, Martin BK, Sharan SK.** Loss of Rad51c leads to embryonic lethality and modulation of Trp53-dependent tumorigenesis in mice. *Cancer Res* 69(3):863–872, 2009.

**Jin CY, Yang YA, Anver MR, Morris N, Wang XC, Zhang YE.** Smad ubiquitination regulatory factor 2 promotes metastasis of breast cancer cells by enhancing migration and invasiveness. *Cancer Res* 69(3):735–740, 2009.

**Starr TK, Allaei R, Silverstein KAT, Staggs RA, Sarver AL, Bergemann TL, Gupta M, O'Sullivan MG, Matise I, Dupuy AJ, Collier LS, Powers S, Oberg AL, Asmann YW, Thibodeau SN, Tessarollo L, Copeland NG, Jenkins NA, Cormier RT, Largaespada DA.** A transposon-based genetic screen in mice identifies genes altered in colorectal cancer. *Science* 323(5922):1747–1750, 2009.

**Venteicher AS, Abreu EB, Meng ZJ, McCann KE, Terns RM, Veenstra TD, Terns MP, Artandi SE.** A human telomerase holoenzyme protein required for Cajal body localization and telomere synthesis. *Science* 323(5914):644–648, 2009.

**Nishijo K, Chen QR, Zhang L, McCleish AT, Rodriguez A, Cho MJ, Prajapati SI, Gelfond JAL, Chisholm GB, Michalek JE, Aronow BJ, Barr FG, Randall RL, Ladanyi M, Qualman SJ, Rubin BP, LeGallo RD, Wang CY, Khan J, Keller C.** Credentialing a preclinical mouse model of alveolar rhabdomyosarcoma. *Cancer Res* 69(7):2902–2911, 2009.

## Cellular Immunology and Immune Regulation

**Eberly MD, Kader M, Hassan W, Rogers KA, Zhou JZ, Mueller YM, Mattapallil MJ, Piatak M, Lifson JD, Katsikis PD, Roederer M, Villinger F, Mattapallil JJ.** Increased IL-15 production is associated with higher susceptibility of memory CD4 T cells to simian immunodeficiency virus during acute infection. *J Immunol* 182(3):1439–1448, 2009.

## Clinical Immunology

**Garcia-Pineros AJ, Hildesheim A, Dodd L, Kemp TJ, Yang J, Fuller B, Harro C, Lowy DR, Lempicki RA, Pinto LA.** Gene expression patterns induced by HPV-16 L1 virus-like particles in leukocytes from vaccine recipients. *J Immunol* 182(3):1706–1729, 2009.

## DNA Dynamics and Chromosome Structure

**Rausch JW, Chelico L, Goodman MF, Le Grice SFJ.** Dissecting APOBEC3G substrate specificity by nucleoside analog interference. *J Biol Chem* 284(11):7047–7058, 2009.

**Lou H, Yeager M, Li H, Bosquet JG, Hayes RB, Orr N, Yu K, Hutchinson A, Jacobs KB, Kraft P, Wacholder S, Chatterjee N, Feigelson HS, Thun MJ, Diver WR, Albanes D, Virtamo J, Weinstein S, Ma J, Gaziano JM, Stampfer M, Schumacher FR, Giovannucci E, Cancel-Tassin G, Cussenot O, Valeri A, Andriole GL, Crawford ED, Anderson SK, Tucker M, Hoover RN, Fraumeni JF, Jr., Thomas G, Hunter DJ, Dean M, Chanock SJ.** Fine mapping and functional analysis of a common variant in MSMB on chromosome 10q11.2 associated with prostate cancer susceptibility. *Proc Natl Acad Sci USA* 2009.

## Enzyme Catalysis and Regulation

**Wilkinson TA, Januszyk K, Phillips ML, Tekeste SS, Zhang M, Miller JT, Le Grice SFJ, Clubb RT, Chow SA.** Identifying and characterizing a functional HIV-1 reverse transcriptase-binding site on integrase. *J Biol Chem* 284(12):7931–7939, 2009.

**Padmakumar VC, Aleem E, Berthet C, Hilton MB, Kaldis P.** Cdk2 and Cdk4 activities are dispensable for tumorigenesis caused by the loss of p53. *Mol Cell Biol* 29(10):2582–2593, 2009.

## Glycobiology and Extracellular Matrices

**Brown JR, Yang F, Sinha A, Ramakrishnan B, Tor Y, Qasba PK, Esko JD.** Deoxygenated disaccharide analogs as specific inhibitors of beta 1-4-galactosyltransferase 1 and selectin-mediated tumor metastasis. *J Biol Chem* 284(8):4952–4959, 2009.

## HIV

**Hatzioannou T, Ambrose Z, Chung NPY, Piatak M, Yuan F, Trubey CM, Coalter V, Kiser R, Schneider D, Smedley J, Pung R, Gathuka M, Estes JD, Veazey RS, KewalRamani VN, Lifson JD, Bieniasz PD.** A macaque model of HIV-1 infection. *Proc Natl Acad Sci USA* 106(11):4425–4429, 2009.

**O'Keefe BR, Vojdani F, Buffa V, Shattock RJ, Montefiori DC, Bakke J, Mirsalis J, d'Andrea AL, Hume SD, Bratcher B, Saucedo CJ, McMahon JB, Pogue GP, Palmer KE.** Scalable manufacture of HIV-1 entry inhibitor griffithsin and validation of its safety and efficacy as a topical microbicide component. *Proc Natl Acad Sci USA* 106(15):6099–6104, 2009.

## Host Defense

**Salcedo R, Hixon JA, Stauffer JK, Jalah R, Brooks AD, Khan T, Dai RM, Scheetz L, Lincoln E, Back TC, Powell D, Hurwitz AA, Sayers TJ, Kastelein R, Pavlakis GN, Felber BK, Trinchieri G, Wigginton JM.** Immunologic and therapeutic synergy of IL-27 and IL-2: enhancement of T cell sensitization, tumor-specific CTL reactivity and complete regression of disseminated neuroblastoma metastases in the liver and bone marrow. *J Immunol* 182(7):4328–4338, 2009.

## Immunobiology

**Gong R, Vu BK, Feng Y, Prieto DA, Dyba MA, Walsh JD, Prabakaran P, Veenstra TD, Tarasov SG, Ishima R, Dimitrov DS.** Engineered human antibody constant domains with increased stability. *J Biol Chem* 284(21):14203–14210, 2009.

**Cichocki F, Hanson RJ, Lenvik T, Pitt M, McCullar V, Li H, Anderson SK, Miller JS.** The transcription factor c-Myc enhances KIR gene transcription through direct binding to an upstream distal promoter element. *Blood* 113(14):3245–3253, 2009.

## Immunology

**Kortylewski M, Kujawski M, Herrmann A, Yang CM, Wang L, Liu Y, Salcedo R, Yu H.** Toll-like receptor 9 activation of signal

*continued on page 7*



### ATP Awards \$5K Mini-Grant to Joseph Barchi

By Bruce Crise

Joseph Barchi, Ph.D., Laboratory of Medicinal Chemistry, NCI, earned the first \$5K Research Support Award sponsored by the Advanced Technology Program (ATP). The mini-grant was promoted at the ATP Expo in March to encourage the scientific community to consider how to leverage the unique ATP technologies to advance their research.

The grant proposal from Dr. Barchi focuses on an important factor isolated from patients with a chronic bladder disorder called interstitial cystitis (IC). Discovered and isolated by Dr. Susan Keay at the University of Maryland, this factor was characterized in collaboration with the late Dr. Christopher Michejda, Dr. Barchi, and colleagues at NCI-Frederick.



Dr. Joseph Barchi, winner of the ATP Research Support Award, anticipates using the mini-grant to further his research on antiproliferative factor.

Aptly named antiproliferative factor, or APF, it is a small glycopeptide that potently inhibits proliferation of bladder epithelial cells and causes some of the telltale signs of IC. In addition, APF can inhibit proliferation of several tumor cell lines.

In collaboration with the ATP, the Keay lab recently identified cytoskeletal-associated protein 4 (CKAP4) as a receptor for APF in bladder cells. According to Dr. Barchi, the award will be used to help with work on cloning and expressing various forms of CKAP4 to study its interaction with APF. He aims to identify the domains of CKAP4 that bind to APF and characterize the structural features of this binding event. This work will be extremely important in the design of APF mimics as potential cancer therapeutics, as well as inhibitors of APF action that can be used as drug agents against IC. ■

## Platinum Publications

continued from page 6

transducer and activator of transcription 3 constrains its agonist-based immunotherapy. *Cancer Res* 69(6):2497–2505, 2009.

**Hodge DL, Yang J, Buschman MD, Schaughency PM, Dang H, Bere W, Yang Y, Savan R, Subleski JJ, Yin XM, Loughran TP, Jr., Young HA.** Interleukin-15 enhances proteasomal degradation of bid in normal lymphocytes: implications for large granular lymphocyte leukemias. *Cancer Res* 69(9):3986–3994, 2009.

### Mechanisms of Signal Transduction

**Panchal RG, Ulrich RL, Bradfute SB, Lane D, Ruthel G, Kenny TA, Iversen PL, Anderson AO, Gussio R, Raschke WC, Bavari S.** Reduced expression of CD45 protein tyrosine phosphatase provides protection against anthrax pathogenesis. *J Biol Chem* 2009.

### Molecular Basis of Cell and Developmental Biology

**Perkovic M, Schmidt S, Marino D, Russell RA, Stauch B, Hofmann H, Kopietz F, Kloke BP, Zielonka J, Strover H, Hermle J, Lindemann D, Pathak VK, Schneider G, Lochelt M, Cichutek K, Munk C.** Species-specific inhibition of APOBEC3C by the prototype foamy virus protein bet. *J Biol Chem* 284(9):5819–5826, 2009.

### Microbiology, Biology, Pathology, and Genetics

**Sebastian T, Johnson PF.** Ras(V12)-mediated down-regulation of CCAAT/enhancer binding protein beta in immortalized fibroblasts requires loss of p19(Arf) and facilitates bypass of oncogene-induced senescence. *Cancer Res* 69(6):2588–2598, 2009.

### Protein Function, Structure, and Folding

**Sakamoto K, Ito Y, Hatanaka T, Soni PB, Mori T, Sugimura K.** Discovery and characterization of a peptide motif that specifically recognizes a non-native conformation of human IgG induced by acidic pH conditions. *J Biol Chem* 284(15):9986–9993, 2009.

**Yang YW, Wang XX, Hawkins CA, Chen K, Vaynberg J, Mao X, Tu YZ, Zuo XB, Wang JB, Wang YX, Wu CY, Tjandra N, Qin J.** Structural basis of focal adhesion localization of LIM-only adaptor PINCH by integrin-linked kinase. *J Biol Chem* 284(9):5836–5844, 2009.

**Pazgiera M, Liu M, Zou GZ, Yuan WR, Li CQ, Li C, Li J, Monbo J, Zella D, Tarasov SG, Lu W.** Structural basis for high-affinity peptide inhibition of p53 interactions with MDM2 and MDMX. *Proc Natl Acad Sci USA* 106(12):4665–4670, 2009. ■

# Spring Research Festival

## The 13<sup>th</sup> Annual SRF: The Best Yet

By Ashley DeVine

The 13th annual NCI-Frederick and Fort Detrick Spring Research Festival, held April 29 and 30 on the corner of Ditto Avenue and Porter Street, was one of the best festivals so far, according to Julie Hartman, chairperson of the event.

“The weather held off, there was good participation, and we had very few logistical problems,” Ms. Hartman said. “I believe that there were a significant number of attendees this year.”

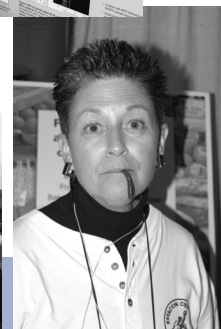
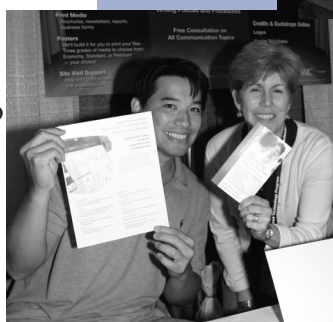
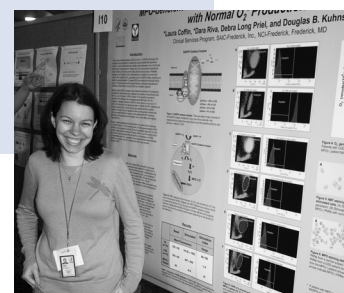
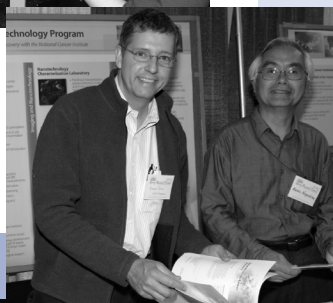
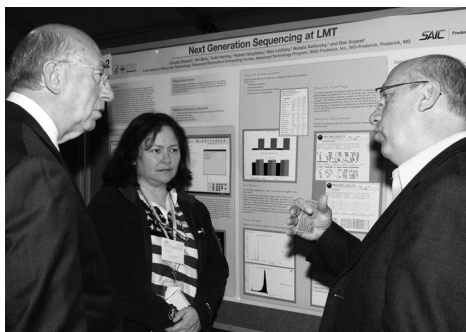
She also said some of the highlights of the festival were the number of student poster presenters, the participation from agencies on base, and the postdoctoral symposium.

The number of student poster presenters was 38 this year, compared to 26 in 2008, Ms. Hartman said.

The number of poster presenters and exhibitors was about the same as last year, Ms. Hartman said. There were 190 poster presentations, 31 Health Education and Community Services exhibits, and about 170 Biomedical Research Equipment and Supplies exhibits, sponsored by the Technical Sales Association.

This year marks the bicentennial of Charles Darwin’s birth and the 150th anniversary of the publication of his seminal work, *Origin of Species by Means of Natural Selection*. The SRF honored Darwin for his contributions to many scientific fields.

The postdoctoral symposium included a keynote address from Dr. Xinhua Ji, Chief of the Biomolecular Structure Section, Macromolecular Crystallography Laboratory, CCR, titled “Structure and mechanism of an RNA polymerase-associated Swi2/Snf2 protein: How RapA completes the transcription cycle.” Dr. Ji’s address was followed by presentations from postdoctoral and postbaccalaureate fellows. Ms. Hartman noted that the symposium was well attended. ■





## Outreach and Special Programs

### Students Recognized for Scientific Achievements

By Nancy Parrish

Congratulations are in order for six of our Werner H. Kirsten student interns.

**Kelly Ramsburg** (Urbana High School; mentor Susan Mertins, Ph.D.) and

**Katharina Yandrofski**

(Frederick; mentors Anne Monks, Ph.D., and Nicole Fer) took home overall grand prize and runner-up awards, respectively, in the Frederick County Science and Engineering Fair held March 27 and 28.

Ms. Ramsburg also won first place in the category of Cellular and Molecular Biology, and Ms. Yandrofski tied with **Marvin Gee**

(Tuscarora; mentors Yih-Horng Shiao, Ph.D., and Lucy M. Anderson, Ph.D.) for second place in the same category. **Amy**

**Chen** (Governor Thomas Johnson; mentor Warren Johnson, Ph.D.) earned first place in the Animal Sciences category.

The four students also earned specialty awards from the U.S. Army at the

Frederick County Science and Engineering Fair, as did **Matthew Cox** (Middletown; mentors Catriona Miller, Ph.D., and Howard Young, Ph.D.); Ms. Yandrofski also won awards from MedImmune and the NIST Sigma Xi chapter.

As the top two winners in Frederick, Ms. Ramsburg and Ms. Yandrofski represented Frederick County in the Intel

In addition, Mr. Gee and **Danielle Berk** (Smithsburg, mentor Dr. Mertins) were invited to participate in the 2009 Maryland Junior Science and Humanities Symposium (JSHS), held in early April. Selection for this symposium is based on written and oral presentations of original research carried out by the student, and the student must demonstrate an



Student interns recognized at scientific events held in the spring. L to R: Matthew Cox, Katharina Yandrofski, Kelly Ramsburg, Danielle Berk, Marvin Gee, and Amy Chen.

International Science and Engineering Fair in Reno, NV, May 10–15, where Ms. Yandrofski's project earned a First Award from the American Society of Pharmacognosy.

understanding of the underlying scientific principles related to his or her research, according to the JSHS web site ([www.jshs.org/getinvolved.html](http://www.jshs.org/getinvolved.html)). ■



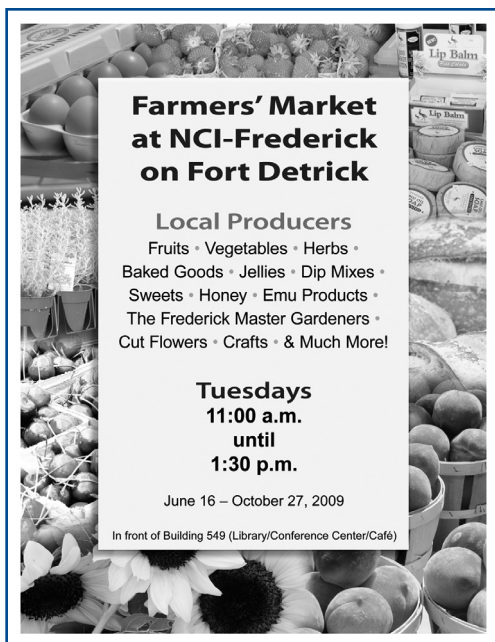
# Outreach and Special Programs

## Farmers' Market 2009 Is Here

By Ashley DeVine and Nancy Parrish

The 2009 Farmers' Market at NCI-Frederick opens on Tuesday, June 16, and runs through Tuesday, October 27. The market is held every Tuesday during the season, from 11:00 a.m. to 1:30 p.m. in front of Building 549.

The market offers a wide range of products from our regular vendors, including fruits and vegetables; angus beef; annuals, perennials, and cut flowers; herbed vinegars, pasta sauces,



**Farmers' Market at NCI-Frederick on Fort Detrick**

**Local Producers**  
Fruits • Vegetables • Herbs •  
Baked Goods • Jellies • Dip Mixes •  
Sweets • Honey • Emu Products •  
The Frederick Master Gardeners •  
Cut Flowers • Crafts • & Much More!

**Tuesdays**  
11:00 a.m.  
until  
1:30 p.m.

June 16 – October 27, 2009

In front of Building 549 (Library/Conference Center/Café)

dip mixes, and salsa; a wide variety of baked goods; emu products; honey; herbs; handmade chocolate truffles; and many interesting gift ideas. Also participating are artisans and crafters who offer a variety of soaps, lotions, baskets, and jewelry; photography; pottery; and many other items.

Come out and support our local farmers, artisans, and crafters who bring so many wonderful items to the market. ■

## TYCTWD Registration Opens June 15

Take Your Child To Work Day (TYCTWD) at NCI-Frederick and Fort Detrick, July 15, is an opportunity to show children the real world of scientific research, from conducting experiments in a laboratory to extracting DNA from mouse cells, caring for animals, using safety equipment properly, and everything in between. For parents, it's a special opportunity to show your children where you spend your days, and for everyone it's a chance to showcase the variety of careers available in both the pursuit and support of science.

You may register your children on-line from June 15 until July 1 by going to the TYCTWD web site: <http://kidsday.ncifcrf.gov/info/default.asp>.



Take Your  
**TO WORK DAY**

Wednesday, July 15, 2009  
Pre-registration  
June 15 – July 1

**National Cancer Institute at Frederick and Fort Detrick**

<http://kidsday.ncifcrf.gov>  
E-mail address: [kidsday@ncifcrf.gov](mailto:kidsday@ncifcrf.gov)  
301-846-7338

**ACTIVITY SPONSORS AND VOLUNTEERS ARE NEEDED!**

If you are interested in sponsoring a program or a Hub activity or in volunteering to help on the event day, please visit the Web site to sign up: <http://kidsday.ncifcrf.gov>.

## Three Ways You Can Support TYCTWD

**1. You can sponsor a Hub activity.** Hub activities, open to everyone registered for TYCTWD, are ongoing throughout the day and consist of educational demonstrations, information booths, and activities that are “just for fun.” It's not too late to sponsor a Hub activity! Check the web site to see what Hub activities are scheduled for this year, and consider sponsoring your own: <http://kidsday.ncifcrf.gov/news/default.asp>.

**2. You can volunteer individually.** This event requires lots of help from individuals who volunteer as escorts, work in the Science Room, or work in the Hub. To register as a volunteer, please visit <http://kidsday.ncifcrf.gov/register/reginfo.asp?path=vol>.

**3. You can sponsor a program next year.** It's never too early to start thinking about next year. The success of this event is entirely dependent on the number of programs offered, and the TYCTWD Committee is ready to assist you in any way possible, from suggesting ideas to providing supplies. For more information about sponsoring your own program, contact Julie Hartman, 301-846-7338. ■



# Outreach and Special Programs

## NCI-Frederick Presents Summer Student Poster Day

Open to All NCI-Frederick and  
Fort Detrick Summer Students  
July 29, 2009  
Building 549 / Lobby



Organized by the Office of Outreach and Special Programs at NCI-Frederick.  
Contact: Julie Hartman, [hartmanjb@mail.nih.gov](mailto:hartmanjb@mail.nih.gov).

Scientific Information/Questions - Please contact:

**Howard A. Young, Ph.D.**  
Laboratory of Experimental Immunology  
NCI-Frederick, NIH  
[youngh@ncifcrf.gov](mailto:youngh@ncifcrf.gov)

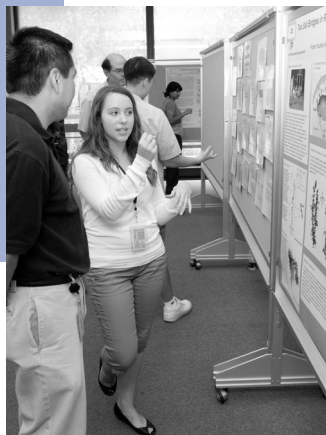
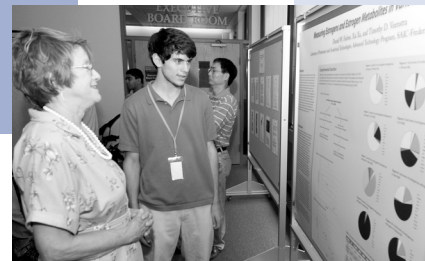
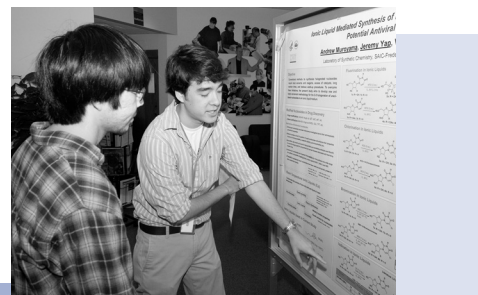
**Anu Puri, Ph.D.**  
CCR Nanobiology Program  
NCI-Frederick, NIH  
[apuri@helix.nih.gov](mailto:apuri@helix.nih.gov)

Purpose: The Summer Student Poster Day is designed to provide an opportunity for our summer interns to present their research to the NCI-Frederick and Fort Detrick scientific community. We hope that the poster day will also provide a platform for students to interact with their peers and learn about interdisciplinary research programs being conducted at NCI-Frederick and Fort Detrick.

Please visit <http://web.ncifcrf.gov/campus/outreach/poster/> to register.  
Registration closes on July 21, 2009  
Poster size: 4' X 6' maximum

## Student Poster Day July 29

Students: here's a chance to present your research to the NCI-Frederick and Fort Detrick scientific communities. Student Poster Day will be held on July 29, in the Conference Center lobby, Building 549. Participating in this event is a unique opportunity to design a poster that communicates your work in a visually appealing way. You'll also interact with your peers and learn about interdisciplinary research programs at NCI-Frederick and Fort Detrick. For more information or to register, contact Julie Hartman, [hartmanjb@mail.nih.gov](mailto:hartmanjb@mail.nih.gov), or 301-846-7338. Registration closes July 17. ■



## Attention Summer Students: Science and Pizza Delivered

Now you can have your science and pizza, too. The 2009 Summer Student Seminar Series provides weekly seminars on topics related to cancer and AIDS research, presented by the scientists at NCI-Frederick and Fort Detrick. The purpose of the series is to acquaint students with such topics as genetic mutations, the role of viruses and microRNA in cancer, *Bacillus anthracis*, animal models, therapeutic antibodies, and more. It's also an opportunity for students to ask questions as well as meet other scientists and fellow students/interns.

The eight-part series begins June 16 and runs through August 4. Seminars are held from 12:00–1:00 p.m., in the Conference Center auditorium. Free pizza will be available (for students only) at every seminar. You should check it out: <http://web.ncifcrf.gov/campus/outreach/seminar/>. ■

June 16 • June 23 • June 30 • July 7 • July 14 • July 21 • July 28 • August 4

# SUMMER

## STUDENT SEMINAR SERIES

# 2009

NCI-FREDERICK • USAMRIID

All seminars are at 12 noon in the Building 549 main auditorium

This seminar series is supported by the TRUE Foundation and is open to all NCI-Frederick and USAMRIID students and employees.  
Students from outside the NCI-FI Detrick community are also welcome.  
Refreshments are for students only.  
<http://web.ncifcrf.gov/campus/outreach/seminar/>

## Monthly Fitness Winners Announced

By Ashley DeVine

Congratulations to the winners of the months of January–April for NCI-Frederick’s fitness program.



### February Winners

**Terri McLellan** (right), LASP, SAIC-Frederick, for miles walked

**Joseph Saavedra** (left), Basic Science Program, SAIC-Frederick, for miles run

**Dwayne Neal** (not pictured), Vaccine Clinical Materials Program (VCMP), SAIC-Frederick, for miles biked

**Cammi Bittner** (not pictured), Advanced Technology Program (ATP), SAIC-Frederick, for hours performing other fitness activities

**Eileen Downey** (not pictured), Applied and Developmental Research Program, SAIC-Frederick, for pounds lost ■



### January Winners

**Wayne Helm** (left center), Facilities Maintenance and Engineering (FME), SAIC-Frederick, for miles walked

**Beth Buckheit** (right), Financial Management, SAIC-Frederick, for miles run

**Deborah Christ** (not pictured), Financial Management, SAIC-Frederick, for miles biked

**Betty Clift** (right center), Laboratory Animal Sciences Program (LASP), SAIC-Frederick, for hours performing other fitness activities

**Carolyn Keilholtz** (left), FME, SAIC-Frederick, for pounds lost ■



### March Winners

**Ann Heller** (not pictured), Financial Management, SAIC-Frederick, for miles walked

**William Adkins** (right), III, FME, SAIC-Frederick, for miles run

**John Beutler** (left), Molecular Targets Development Program, NCI-Frederick, for miles biked

**Terri McLellan** (center), LASP, SAIC-Frederick, for hours performing other fitness activities

**Debra Gilchrist** (not pictured), Clinical Research Program, SAIC-Frederick, for pounds lost ■



## Feeling Fine in 2009



### April Winners

**Kimberly Wesmiller** (not pictured), Clinical Research Program, SAIC-Frederick, for miles walked

**Lisa Riffle** (left), LASP, SAIC-Frederick, for miles run

**Tammie Ford** (not pictured), Environment, Health, and Safety (EHS), SAIC-Frederick, for miles biked

**William Lonergan** (center), FME, SAIC-Frederick, for hours performing other fitness activities

**Ira Kest** (right), EHS, SAIC-Frederick, for pounds lost ■

## Then and Now

### Building 378

*By Ashley DeVine*

The photo from 1989 is Building 378, taken in October of that year, before Building 371 was built to the right.

Building 378 is a one-story, factory-built modular structure with steel stud walls and a thin brick siding system. It was manufactured and transported to NCI-Frederick in 1988. The building was built for and is still occupied by the Developmental Therapeutics Program Computer Center.

Building 371 is also a one-story, factory-built modular structure with the same walls and siding system as Building 378. It was manufactured and transported to NCI-Frederick in 1990 for the Human Resources Department and is still occupied by this department.

### 2009



### 1989



*Special thanks to Rocky Follin, FME, for providing the information for this article. ■*

### Susan Mertins, Ph.D.: Capturing the Passion for the Next Generation

By Nancy Parrish

Susan Mertins, Ph.D., knows how to pay it forward. Her undergraduate mentor at George Washington University was a biology professor who left a lasting impression. “By being a superb model, he encouraged questioning, challenged prejudices, and pushed the limits of knowledge,” she said, adding, “He did this all in a quiet way.”

Dr. Mertins is no doubt leaving a similar impression on her mentees. This year, she has been mentor to Kelly Ramsburg and Danielle Berk, two Werner H. Kirsten student interns who have recently been recognized for their scientific achievements (see related article on page 9).

According to Ms. Berk, Dr. Mertins’ greatest strength is in building trust with her students. “We trust her enough to not be afraid to ask questions or tell her when we make a mistake.” Ms. Ramsburg appreciates the way Dr. Mertins “pushes” her students. “She challenges students daily, making them scientists instead of technicians. She pushes students to go beyond the simple requirements of the program....Dr. Mertins fosters a love for science in her students.”

#### Teaching Students to Keep an Open Mind

Over the last 22 years, Dr. Mertins has mentored more than 20 high school students. She does it out of concern that the school systems are under too much pressure to move students on rather than fostering their interest in science. “I feel that it is important to encourage young and bright minds to be enthusiastic about science. Science sometimes falls between the cracks in the current education system of testing and moving students on, and I think mentoring helps capture the passion for the next generation of scientists.”

Dr. Mertins’ goal is “to expose students

to all that a career in science can be. This runs the gamut from technical skills, reading papers, attending seminars and, of course, presenting their work to peers.” Most importantly, she says, is to teach students “to keep an open mind.”

Her students have paid attention. Ms. Berk thinks that the most important thing Dr. Mertins taught her is “to learn from

grasp what they need to know and feel comfortable at their level.”

In spite of the challenges, Dr. Mertins believes the interns bring a fresh, new dimension to the laboratory. She is most satisfied “when I see the light go on in the mind of a student, and I can tell that, all of a sudden, they’re getting it. It could be a simple concept or they might be



As a mentor, Susan Mertins, Ph.D. (center), encourages her students to be enthusiastic about science. Kelly Ramsburg (left) and Danielle Berk (right) were two of Dr. Mertins’ interns this year.

your mistakes...She taught me to look at every possibility.” Ms. Ramsburg notes that Dr. Mertins taught her that “science rarely turns out how you think it will, and sometimes things don’t work at all. However, you can’t let that stop you from researching.” Both students realize these are lessons they can carry with them through life.

#### “Explain EVERYTHING!”

Dr. Mertins feels the biggest challenge in mentoring high school students is taking the time to “explain EVERYTHING!” She has observed that “when high school students enter the lab, they have a certain amount of trepidation and little practical idea of what is ahead. By going step by step and detailing rationale, students find they can

making mature scientific decisions, and that’s a good feeling.”

Her advice to anyone considering mentoring a student: “I would point out the challenges in teaching, but also would mention that these bright students add to the laboratory environment, often in unpredictable ways that more frequently help the research than hurt.”

Dr. Mertins has been at NCI-Frederick for eight years, as a senior investigator in the Screening Technologies Branch, Developmental Therapeutics Program. Before coming to Frederick, Dr. Mertins was a biologist in the Medical Oncology Branch at NCI in Bethesda. She relaxes by creating art quilts, a hobby she took up after earning her Ph.D., when, she says, a friend suggested that she “needed something else to obsess about.” ■



## Amy Franciscovich: From Soccer to Science

By Nancy Parrish

Amy Franciscovich knows about goals—setting them and tending them. A 2002 valedictorian and Presidential Scholar at Governor Thomas Johnson High School, she is also a championship soccer goalkeeper.



Winning recognition at the local, state, and national levels during high school, Ms. Franciscovich continued to play soccer in college, where her team went to the NCAA Tournament three times. She was also selected for All-Conference and All-Academic teams, she was senior captain, and she set several team records, including the most career shut-outs. After graduation, she played in the Atlanta Silverbacks co-ed league, and now she finds time to play in medical school.

Ms. Franciscovich was a 2001–2002 Werner H. Kirsten student intern in the Laboratory of Experimental Immunology, with mentor Howard Young, Ph.D. After graduating from Emory University with a B.S. in chemistry in 2006, she worked in the Sanyal Laboratory at Emory University's School of Medicine within the Cell Biology Department. While there, she was first author on an article published in *Genetics* (Dec 2008; 180: 2057–2071), and she has just completed her first year at Harvard Medical School.

Some memories that stand out for her include the “food offense” rule of Dr. Young’s lab, in which making a mistake

that affected someone else’s work left you to choose from two options: bring in food for the lab or find another lab. She also recalls the Halloween decoration competitions and the pranks students and postdocs played on each other.

### Learning the Value of Mentors

For Ms. Franciscovich, however, the internship represented more than food and pranks. “Working at the NCI gave



Ms. Franciscovich (first row, second from right) was part of the 2001 Washington Post All-Met girls soccer team.  
Photo (c) 2001, John McDonnell/The Washington Post.

me insight not only into the practical side of science with its triumphs and challenges, but also into the personal aspects of the types of relationships that can be fostered within a work-based community,” she notes. She also “learned to value the advice given to me by numerous mentors, and came to appreciate that both science and life have multiple correct approaches that will all lead to finding an answer (or many!)”

It was the mentoring that left the deepest impression on Ms. Franciscovich. She realized that “the lessons learned in

Ms. Franciscovich, shown at the “white coat” ceremony at Harvard Medical School, during which first-year students receive the traditional white coat worn by medical professionals.



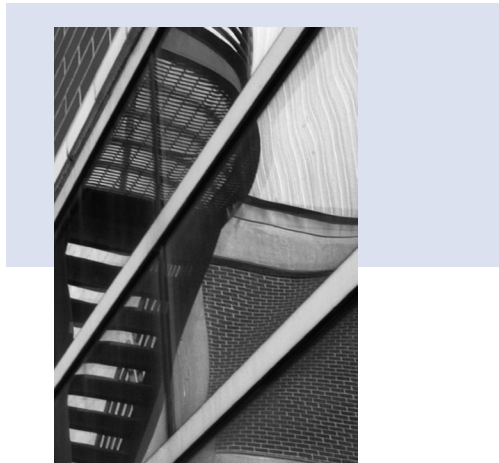
the journey are as significant and rewarding as the final objectives, and that...the type of science being investigated was less important than finding mentors who really wanted to help me to learn and to appreciate science in all of its wonders.” She says that, since leaving NCI, she has selected labs to work in based on the type of mentorship “that reminded me of my NCI experience.”

### Side Tracks May Take You Where You Need to Go

Her advice to current students applies also to anyone wanting to advance their career: “Approach the world with wonder and keep your mind open and flexible, because changes and side-tracking sometimes take you exactly where you need to go. Listen to the people who are in positions where you might imagine yourself to one day be, thank the people who have been important to you along the way, and... take time for yourself. Never hesitate to ask for help because there are many people out there who are ready, willing, and poised to be your ‘genie in the bottle’...Most importantly, enjoy your experiences because that will make them all the more memorable, and laugh because it truly is the best medicine!” ■

*“Work hard, study hard, and enjoy the challenges because things that come simply will not make you nearly as proud as those that required more effort.”*

—Amy Franciscovich



**Congratulations to the March 2009 Poster Puzzler winner!** Kathy Easterday, Administrative Coordinator for the Advanced Biomedical Computing Center, is pictured (right) with Paul Miller, Executive Editor of the *Poster*. ■

## *The Poster Puzzler:*

### **A Staircase Reflected**

*By Ashley DeVine*

The Poster Puzzler for March is the outside staircase of Building 567 reflected in one of the building's windows. The building was constructed in 1952, but the staircase was not added until 1993. Also in 1993, the building received a 9,800-square-foot brick addition for AIDS research labs. The staircase, made of painted steel posts, stringers, and galvanized steel treads, was designed as an emergency exit from the second floor and the roof.

*Special thanks to Rocky Follin, FME, for providing the information for this article.* ■





## 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 Fort Detrick/NCI-Frederick. Win a framed photograph of the Poster Puzzler and an NCI-Frederick tee shirt by e-mailing your guess, along with your name, e-mail address, and daytime phone number, to Poster Puzzler at [poster@ncifcrf.gov](mailto:poster@ncifcrf.gov). Alternatively, you can send us your guess, along with your name and daytime phone number, on one of the *Poster* forms found on the front of the *Poster* stands in the lobbies of Buildings 426 and 549. All entries must be received by **Friday, July 17, 2009**, and the winner will be drawn from all correct answers received by that date.

Good luck and good hunting! ■



## Have Poster, Will Travel

The *Poster*, NCI-Frederick's newsletter, is beginning to make its way around the world, as readers grab the latest issue to take with them and read on the plane or train. Next time you're at a conference, have someone snap a digital of you with a copy of the *Poster*, and send it to us. You might just be featured in the next newsletter. ■



David Hoekzema, Vice President, Strategic Business Development, Advanced Technology Partnerships Initiative (ATPI), represented the ATPI and the Nanotechnology Characterization Laboratory at the 13th Annual Drug Delivery Partnerships meeting in Las Vegas, NV, in January. Sponsored by the Institute for International Research, the meeting brought together more than 300 companies under one roof. Mr. Hoekzema proudly displays the *Poster* in front of the ATPI booth.

# Cheryl Parrott Speaks at Hood College

## Ms. Parrott Receives Honorary Doctorate, Addresses Hood College Graduates

By Nancy Parrish

After addressing nearly 1,200 at the Hood College Graduate School commencement on May 16, Cheryl Parrott, Director of Communications, NCI-Frederick, received an honorary doctorate.

In granting the honorary degree, Hood College President Ron Volpe, Ph.D., noted Ms. Parrott's many achievements, including her position at NCI-Frederick "as an advocate for the mission and the work of one of the country's most important research facilities." Citing her proficiency in several languages, her dedication to communicating complex research findings to public officials, advocacy groups, the media, and the community, and her service in many local organizations, Dr. Volpe said, "The success you have achieved, the energy you commit to your profession,

and your lifelong contributions serve as inspiration to those of us assembled here to honor you today."

### **Ubuntu: Binding Us Together**

In her address, Ms. Parrott introduced the graduates to a Zulu word, *ubuntu*,



Cheryl Parrott received an honorary doctoral hood at the Hood College graduate commencement.

which describes "the concept of interconnectedness.... *ubuntu* is what we hold in common as people." According to Archbishop Desmond Tutu, she said,

"*Ubuntu* is the essence of being human. The concept of *ubuntu* says we can't exist as human beings in isolation."

Ms. Parrott described the accomplishments of specific graduates from South America, the western United States, Africa, and Frederick, noting how their studies and their work connected them to the people around them as well as to communities across the globe, in the spirit of *ubuntu*. She also noted *ubuntu* in the words of author John Updike: "You cannot help but learn more as you take the world into your hands. Take it up reverently, for it is an old piece of clay, with millions of thumbprints on it."

Urging the graduates to remember John Updike's words, she said, "Each of you, in earning these degrees, is doing exactly that—taking up this old piece of clay, pressing your thumb into it at Hood, and seeing your thumbprint in Santiago, Chile; Portland, Oregon; Nairobi, Kenya; and here in Frederick."

To read Ms. Parrott's complete address, see the online version of the *Poster* page 34. ■





# Notary Services

## What You Need to Know about Notary Services at NCI-Frederick

By Ann Rogers, Donna Bialozor, and Maritta Perry Grau

Many of us at one time or another may have to produce a notarized document for legal reasons, from documents connected with selling/buying a house to executing a power of attorney or patent assignment documents. At NCI-Frederick, two individuals serve as notaries public: Ann Rogers, Laboratory of Cancer Prevention, Center for Cancer Research (Bldg. 576, Rm. 107; 301-846-5703), and Donna Bialozor, Technology Transfer Center (Fairview Center, Rm. 502; 301-846-5465). Ms. Bialozor's notary services are generally focused towards official duty-related documents.

According to *Black's Law Dictionary*, a notary public is a public officer who is authorized by the state or federal government to administer oaths and to attest to the authenticity of signatures. An article from [www.lifescrpt.com](http://www.lifescrpt.com) describes the services provided by a notary public: witnessing a signature on a document, verifying people's identities by legal identification or by knowing them personally, and ascertaining that people are signing documents of their own free will. The notary will administer an oath for a "jurat" notarization, which is indicated by the wording "subscribed and sworn before me..." on the document.

A Maryland notary public is authorized to perform four types of notarial services: witnessing a signature, taking an oath or affirmation (also known as "jurat"), acknowledging a written instrument, and receiving a certificate of protest. A notary has no authority to certify a copy of a public record, a publicly recorded document, a school record or diploma, a professional license, or any other public or private document that does not pertain to the official acts of a notary public. However, according to the notary Division for the State of Maryland, a

notary may perform an "official witness" on these types of documents (<http://www.sos.state.md.us/> and MD STATE GOVT T.18, Refs & Annos; Title 18. Notaries Public).

A notary public cannot perform the services of an attorney-at-law and cannot give legal advice or prepare legal documents. The notary will ask you what type of document you need notarized, which will be documented in the notary's fair register of all official acts performed. The contents of the document, while important, are not the focus of a notarization. Some documents may be more involved to notarize, due to the wording or format. For example, if two signatures need to be notarized, both people must be present during the notarization.

A Maryland notary public, who must be at least 18, is appointed and commissioned by the governor of Maryland. Notaries may take courses to stay updated on changes in the law. Ms. Rogers is a member of the Notary Law Institute of America (NLIA) and has taken training through the NLIA. Ms. Bialozor also has received training from the NLIA and is knowledgeable about Maryland notary regulations from her formal paralegal studies.

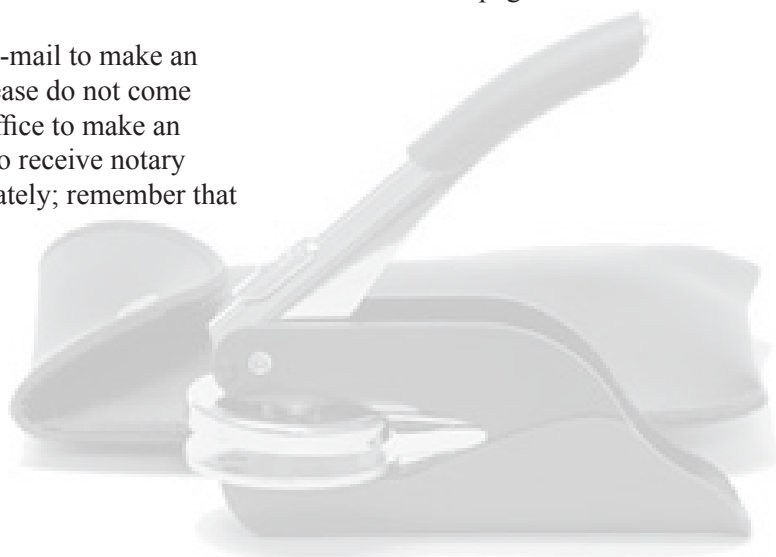
Both Ms. Rogers and Ms. Bialozor explained that if you would like to request the services of a notary public at NCI-Frederick, you must do the following:

- Call or send an e-mail to make an appointment. Please do not come to the notary's office to make an appointment or to receive notary services immediately; remember that

Ms. Rogers and Ms. Bialozor have many official duty responsibilities and need to schedule time to provide professional notary services to the NCI-Frederick community.

Note that Providing notary services is not required as a part of Ms. Rogers' and Ms. Bialozor's official duties at NCI-Frederick. They are permitted to provide notary services during official duty hours as a courtesy and public service to the NCI-Frederick community.

- Bring all necessary documents, individuals, and photo identification for all individuals (preferably a state-issued driver's license with a current home address) with you when you arrive for your appointment. Remember, the notary needs to witness the signatures of all individuals signing a document. If the document is signed before the appointment, a notary will ask for the document to be signed again in the notary's presence. Please note that Ms. Rogers and Ms. Bialozor may not charge a fee if the notary service is conducted during official duty hours at NCI-Frederick, since they are federal employees. Otherwise, a Maryland notary public may charge \$2.00 for one page and \$ .50 for each additional page. ■



## Discovery Café "Specials"

### Discovery Café to Hold Weekly Cook-outs

Next time you stop by the Farmers' Market, you can pick up a burger, hot dog, chicken, or other barbeque item at the Discovery Café cook-out. A variety of items will be featured each week, along with special sides and beverages. Cook-outs will be held every Tuesday, beginning June 16, to coincide with the Farmers' Market, 11:30 a.m. until 1:30 p.m.



Discovery Café  
**COOK-OUT** TODAY!



**NOW OPEN!**  
Discovery  
Café

### For Your Next Meeting, Think "Discovery"

The Discovery Café offers catering service for meetings and conferences. You can choose from a wide variety of offerings, and café staff will deliver it, set it up, and take it down for you. Call Sharon Jackson, Manager, 301-846-1750, for details.

Café hours: Breakfast 7–9:45 a.m.; Snacks 9:30–11:00 a.m.; Lunch 11:00 a.m.–2:00 p.m.; Snacks 2:00–4:00 p.m. ■





## Campus Improvement Committee



### Home-Grown Flowers Beautify Campus

As part of the Campus Improvement Committee's spring planting project, volunteers planted seeds for flowers in one of the USDA greenhouses. The resulting flowers were distributed to volunteers in May for planting around the NCI-Frederick campus. ■



### Eagle Scout Beautifies NCI-Frederick Campus

*By Nancy Parrish*

In his Eagle Scout project, Tuscarora High School senior Michael Probert, Troop 1812, designed new shrubbery beds for Building 426, presented his plan to the NCI-Frederick Campus Improvement Committee, and organized and managed a team of scouts, family, and friends to do the actual labor over a weekend in April. Facilities Maintenance and Engineering (FME) personnel did the demolition of the old beds, and the scouts did the rest of the work. Michael is the son of Carl Probert, Project Controls, FME.

Shown here are, back row, L to R: Michael Probert, Tim Lenhart, Manager, Operations & Maintenance, FME; and Paul Miller, Chairperson, Campus Improvement Committee, NCI. Front row, L to R: Doug Leggett, Supervisor, Telecommunications & Labor Services, FME; and Woody Smith, lead, landscaping activities, FME. ■



## Novel H1N1 (Swine Flu) Facts and What to Do If You Get the Flu

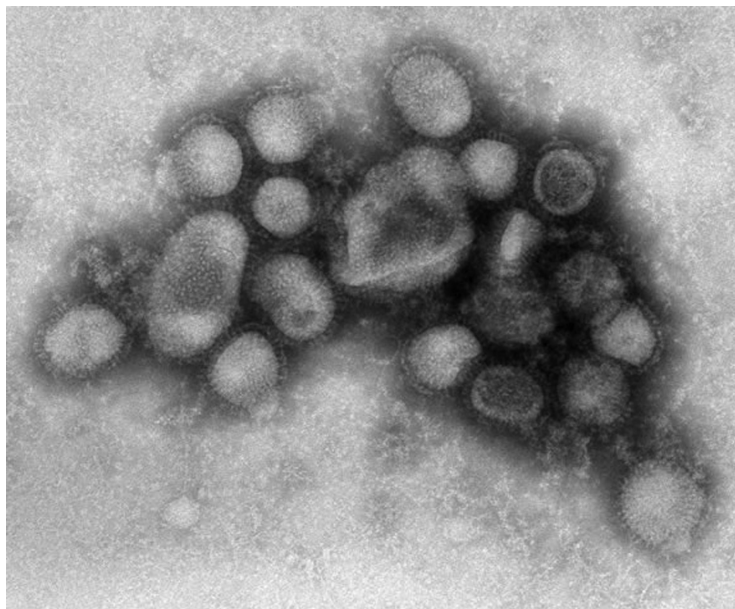
By Mary Carol Fleming

Can you distinguish flu symptoms from a simple cold? If you have flu-like symptoms, do you know what the Centers for Disease Control and Prevention (CDC) recommends you should do?

If you have listened to the news in the past few months, you are well aware that novel influenza A (H1N1), or swine flu, is causing illness in the United States and countries around the

world. CDC surveillance data from May 21 indicated that the number of people visiting their doctors with influenza-like illnesses was higher than expected in the United States for this time of year. As of May 27, the CDC reported 7,927 confirmed and probable cases of novel H1N1 in the United States and 11 deaths. Those states with the highest incidence of novel H1N1 cases are Illinois (927), Wisconsin (1,130 cases), Texas (1,358), California (553), and Arizona (532). In contrast, Maryland (44 cases), Pennsylvania (95), and Virginia (25), reported far fewer cases.

There are two main types of influenza viruses, influenza A and B, which cause seasonal epidemics of the flu almost every winter in the United States. Novel H1N1 is a new flu virus of swine origin that was first detected in April 2009. It is believed that this flu virus spreads in the same way that regular seasonal



An image of the novel influenza A (H1N1) virus taken in the CDC Influenza Laboratory (<http://www.cdc.gov/h1n1flu/images.htm>).

flu viruses spread; mainly through the coughs and sneezes of people who have the virus.

Laboratory data compiled by the CDC shows that seasonal influenza A (H1N1 and H3N2) and influenza B viruses are still circulating in the United States, but novel H1N1 and “unsubtypable” viruses now account for a significant number of the viruses detected. Unsubtypable viruses are those that, through normal testing, cannot be subtyped as regularly occurring human seasonal influenza viruses. In the context of the current outbreak, it is likely that most of these unsubtypable viruses are novel H1N1.

The CDC expects that illnesses may continue for some time. As a result, you or people around you may become ill, and you need to recognize the symptoms and know what to do.

## Symptoms of Novel H1N1 Flu

The symptoms of novel H1N1 are similar to the symptoms of the seasonal flu and include fever, cough, sore throat, runny or stuffy nose, body aches, headache, chills, and fatigue. Some people who have been infected with the new virus have also reported diarrhea and vomiting.

## What to Do If You Catch the Flu

If you become sick, you may be ill for a week or longer. The CDC believes that novel H1N1 develops in a pattern similar to seasonal flu viruses—you may be contagious from one day before you exhibit symptoms to up to seven days after you get sick. Children, especially younger children, might potentially be contagious for longer periods. Please take the following precautions if you or someone you know catches the flu:

- Stay home.
- Avoid contact with other persons, except to seek medical care.



- Wear a mask or cover your coughs and sneezes with a tissue. Avoid coughing on your hands.
- Keep surfaces (especially bedside tables, bathroom and lunchroom counters, and toys for children) clean by wiping them down with a household disinfectant according to directions on the product label.



- You do not need to separately clean linens, eating utensils, or dishes belonging to a sick person, but

do wash them thoroughly before anyone else uses them.

- Wash linens (such as bed sheets and towels) with laundry soap and tumble dry on a hot setting. Carry the dirty laundry in a basket, rather than your arms, so that you do not contaminate yourself.

- Wash your hands with soap and warm water or use alcohol-based hand rub immediately after being in contact with someone who is ill.



Most people will recover from novel H1N1 or seasonal flu without needing medical care; however, if you become severely ill or are at high risk for flu complications, contact your health care provider or seek medical care at a local hospital emergency room. If you become ill and experience any of the following warning signs, seek emergency medical care:

- Difficulty breathing or shortness of breath
- Pain or pressure in the chest or abdomen
- Sudden dizziness
- Confusion
- Severe or persistent vomiting
- Flu-like symptoms that improve but then return with a fever and worsened cough

These signs indicate serious flu complications.

## Medications to Use or to Avoid

The CDC recommends the antiviral drugs oseltamivir and zanamivir to treat and/or prevent infection from novel H1N1 and seasonal flu. Your health care provider will determine if antiviral drugs are needed. These drugs are prescription medicines that prevent flu viruses from reproducing in your body. If you get sick, antiviral drugs can make your illness milder and make you feel

better faster. They may also prevent serious flu complications. During the current outbreak, the priority use for influenza antiviral drugs is to treat severe influenza illness—those who have been hospitalized or are at high risk for complications. The drugs work best if given within two days of becoming ill, but may be given later.

If you are caring for someone who might have novel H1N1 and that person is 18 years old or younger, do not give that person aspirin or aspirin-containing products (e.g., bismuth

subsalicylate) because of the risk of Reye syndrome. Instead, to relieve fever, use acetaminophen or ibuprofen.

For further information about planning for a serious flu outbreak, visit [www.pandemicflu.gov/plan/individual/checklist.html](http://www.pandemicflu.gov/plan/individual/checklist.html).



Occupational Health Services clinicians remain informed about the current influenza situation and are available to answer your questions.

This article is based on guidelines and information from the CDC web site, [www.cdc.gov/h1n1flu/](http://www.cdc.gov/h1n1flu/). ■

## Celebrating the Women of NCI-Frederick

By Maritta Perry Grau

This past spring, four women were selected from among numerous NCI-Frederick employee nominations to represent the women making history at NCI-Frederick. The Diversity Team solicited the nominations in celebration of Women's History Month.

The final selectees included **Kathy Green**, Assistant Manager, Visual Communications, and Art Director, Scientific Publications, Graphics & Media, Advanced Technology Program, SAIC-Frederick; **Kim Iman**, Senior Subcontracts Specialist, Research Subcontracts Department, SAIC-Frederick; **Kathleen Noer**, Flow Cytometry Core Manager, Basic Science Program, SAIC-Frederick; and **Sandra Ruscetti, Ph.D.**, Principal Investigator and Chief, Retroviral Molecular Pathogenesis Section, Laboratory of Cancer Prevention, Center for Cancer Research (CCR), NCI-Frederick.

## Kathleen Noer



Kathleen Noer manages the Flow Cytometry Core, Cancer Inflammation Program, Center for Cancer Research. With more than 40 years of combined flow cytometry expertise, Ms. Noer and her colleagues operate and maintain seven analyzer flow cytometers and three cell-sorting flow cytometers. They operate the cell sorters, train investigators to run their own samples, and often troubleshoot

instrumental and experimental problems for the users.

Recently, Ms. Noer and her staff replaced older instruments with newer, more advanced instrumentation, a project that has involved investigating, comparing, and choosing the new instruments; learning to use the new software and hardware; and then teaching this usage to the investigators. In addition, they are helping the Cancer and Inflammation Program to phenotype infiltrating leukocytes in mouse tumor models.

## Mary Katherine (Kathy) Green



Kathy Green guides the work of four graphic designers, two photographers, and two word processing/forms design specialists. She has established standards of graphic design that consistently portray a favorable and professional public image of NCI-Frederick. Virtually every advertisement seen by the general public, all internal forms, policies, procedures, etc., and a goodly portion of all other communication products (newsletters, posters, flyers, etc.) are touched by her in some way.

Ms. Green noted that her department is a very busy one. On a typical day, a visitor might find "At one desk, two illustrators are brainstorming to visually convey a new idea for scaling up the production of a compound active against HIV; at another, a designer is helping a customer refine figures for a site visit report. Another staff member is assembling information for an SPGM workshop. An editor is checking information submitted for a special project; another is editing a journal manuscript; and a third is working with a photographer on images for the NCI-Frederick *Poster* newsletter. On any given day, there's a lot going on that makes me proud of our efforts."



### Sandra Ruscetti, Ph.D.



Dr. Sandra Ruscetti has worked at NCI-Frederick since 1989—nearly 20 years—and in Bethesda before that. Her laboratory studies retroviruses that cause leukemia or neurological disease in rodents to learn how molecular changes in normal cells result in pathological consequences.

As a principal investigator, Dr. Ruscetti plans and directs the research

being carried out by a talented group of postdocs, staff scientists, technicians, and students. They've discovered that the Friend spleen focus-forming virus causes erythroleukemia in mice by deregulating erythroid signal transduction pathways and blocking differentiation. Further, their studies with PVC-211 murine leukemia virus have shown that the PVC-211 virus causes a rapid neurodegenerative disease in rats by infecting brain capillary endothelial cells, leading to vascular changes and activation of brain macrophages (microglia).

These animal models are now being used for preclinical screening of drugs that target the molecules activated by the virus. "We hope that our work will identify and validate molecular targets relevant to human diseases for their prevention and treatment," she notes.

An enthusiastic participant in the life of NCI-Frederick, Dr. Ruscetti and a colleague organized the Frederick Faculty Seminar Series 12 years ago. She has also served on numerous committees, including the Women Scientists Advisory committee, the CCR Advisory board, and the NCI tenure review panel. "These activities are important to me because they give me the opportunity to give something back to the scientific community that has supported me for over 30 years," she says. ■

### Kim Iman



Kim Iman treats everyone with respect and kindness. "Treating people with kindness creates a win-win situation when it comes to negotiating subcontracts, too!" she said.

Ms. Iman provides cancer and HIV research subcontracting support, from the pre-award status through subcontract close-out. She meets with internal and external

customers to determine their requirements and to prepare solicitations that vary in complexity, subcontract type, and award subcontracts; reviews and analyzes cost and technical proposals; negotiates applicable terms and conditions; and holds any pre- or post-award discussion that may be required.

Ms. Iman said, "I am very proud of the work that is done at NCI and for the small part I play by providing continued research subcontracting opportunities with various institutions and cancer centers. I am very proud of our department for the camaraderie that is always demonstrated, ensuring the final goal will be met."

One of her special projects is supporting the annual NCI Intramural Scientific Investigators Conference. "As a breast cancer survivor myself, this meeting is of the utmost importance; I have a personal, vested interest in the latest research and discoveries that may be developed and result in a cure!"

### Norway Motorcycle Tour Reveals the Culture of the Sami People

By Scott Keimig

In August of last summer, I spent my vacation as a member of a motorcycle tour of northern Norway. We picked up rental BMW bikes in the historic Norwegian city of Trondheim and spent the next 12 days exploring this indescribably beautiful country. In two days our wheels crossed the Arctic Circle (*Polarsirkelen*) at Saltfjellet, and the remaining 10 days took us to the Arctic Norway and a large portion of Sápmi, the traditional homeland of the Sami people.

As we headed into the mountainous interior of Finnmark, and away from the warming influence of the Gulf stream, temperatures dropped into the upper 40s, and a good deal of snow clung to the north slopes of the massive mountain peaks. It was here that we started seeing wildlife other than sea birds. From the road we spotted several arctic fox wearing their summer color. Elgs (moose), lynxes, and brown bears were also common in this area, but we did not see any. It was in Finnmark that we saw our first scattered herds of domestic reindeer.

The excitement of seeing these animals wore off rapidly. Within 24

hours we had seen perhaps 5,000; they soon became the equivalent of Hereford cattle on the U.S. prairie.

The owners of the sprawling reindeer herds are the indigenous people of northern Scandinavia, now known as the Sami (the prior name, Lapps, is considered a mild pejorative term by some). About 60 percent of all the Sami people live in Norway, and their historic homeland is Sápmi. The Sami are the predominant ethnic minority, making up

nearly 20 percent of the population of Norway. About every hour we would come across a pull-out where there was a grouping of conical tents called *kata*, which are the traditional summer dwellings of nomadic Sami and are quite similar

to the Native American teepee. The function of these roadside tents is that of attracting tourists to vend souvenirs of Sami lifestyle, including knives, pelts, antlers, wooden bowls, and bumper stickers of moose silhouettes. At one such stop near Kåfjord, we had an interesting



A Sami man in traditional dress, vending reindeer pelts.

conversation with a very chatty Sami teenager. She talked about her school studies and mentioned her dream of attending a university in the U.S. She said she wanted to go “somewhere with no snow and lots of winter sunshine!” and made it clear she was interested in California and Florida.

Our departure from Kåfjord was the last time we would see sunshine for a while, as cloud cover developed on our ride into Alta. A former whaling port,



A village near Tromsø, Norway.

Alta now ties its fortune to stone, either the commercial slate quarries or the UNESCO World Heritage site dedicated to preserving thousands of stone-age, carved petroglyphs dating as far back as 6,000 years. Discovered in 1972, the carvings are thought to have been made by the ancestors of the Sami during the time of glacial retreat in the late ice age. In addition to displays about the petroglyphs, the site also had a large section devoted to the fate of Finnmark during World War II. We learned of the scorched-earth policy used by the Wehrmacht as it retreated southwest of the Soviet advance of 1945. Operation Nordlicht ordered the deportation of the total population of Finnmark and the unconditional torching of all homes, shops, churches, farms, boats, and any resource that could be used by the Russian army. The rural Sami lost a great deal of the material aspects of their cultural heritage to the Nazi fires. Only a handful of buildings survived, so one must look hard in Finnmark to find a structure older than 60 years.

The remainder of our journey was to Nordkapp, the northernmost point of continental Europe. The presence of Sami life was evident during this portion of our ride. There is truly a unique culture and one in the midst of a wild, pristine environment that would be enjoyed by those interested in human survival in an unforgiving environment. ■



# New Faces at NCI-Frederick

One hundred and eight people joined our facility in January, February, and March 2009.

## The National Cancer Institute welcomes...

Reetesh Akhouri ■ Debanjan Biswas ■ Chawaree Chaipan ■ Rachel Dekluyver ■ Kari Dilley ■ Huiting Fan ■ Xianyang Fang ■ Tanja Grkovic ■ Bjorg Gudmundsdottir ■ Clare Holleley ■ Walter Hubert ■ Qun Jiang ■ Emily Kloc ■ Hongjie Li ■ Shan Liu ■ Shuang Liu ■ Ying Liu ■ Haiyun Lu ■ Susan Martinez ■ Abid Mattoo ■ Doo-Yi Oh ■ Sandrine Puverel ■ Taichiro Takemura ■ Ping Wang



*Daryl Smith*

## Charles River Frederick welcomes...

Zachary MacIntosh



*Kristy Lidie*

## Data Management Services welcomes...

Archana Shrestha



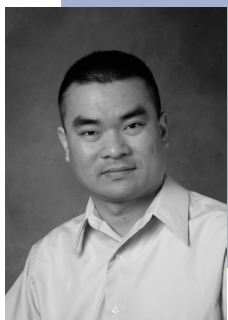
*Haiyun Lu*

## SAIC-Frederick welcomes...

Stephen Adler ■ Shanthala Basavappa ■ William Boone III ■ Aroussiak Bowen ■ Edward Brown III ■ Molly Buehn ■ Sidaro Chau ■ Evangela Covert ■ Melissa Dawson ■ Lindsay Dutko ■ Meredith Dyson ■ Eric Eckley ■ Muriel Edmonds ■ Rajaa Elmeskini ■ Brenda Fevrier Sullivan ■ Dawn Fishbein ■ Siobhan Flaherty ■ Geneti Gaga ■ Andrew Gallagher ■ Mariana Gonzalez Del Riego ■ Jessica Graham ■ Edward Grant ■ Peter Greco ■ Charles Hadry ■ Carissa Haney ■ Jianbin He ■ Jennifer Hertsch ■ Fam Hluan ■ Melinda Hohnke ■ Lynda Huber ■ Hong Jiang ■ Brandon Keele ■ John Kessler II ■ Sara Khan ■ Yuliya Kriga ■ Jason Lawrence ■ Steven Lescalleet ■ Kristy Lidie ■ Mirna Martinez ■ Jessica Mason ■ Alexandra McCary ■ Kathleen McCormick ■ Lori McHugh ■ Michele Mehaffey ■ Michelle Melenwick ■ Eden Miller ■ Marla Mullen ■ Michael Murphy ■ Joshua Orchard ■ Cynthia Osborne ■ Garry Ostermeier II ■ Lawrence Pawlik ■ Kimberly Peifley ■ Deborah Peters ■ Donna Pike ■ Thomas Platek ■ Jennifer Quinlan ■ Karen Richardson ■ Sharon Ricketts ■ Thomas Ruffner II ■ Steven Silberman ■ Danielle Siler ■ Daryl Smith ■ Daniel Soppet ■ Anthony Speedy ■ James Spencer ■ David Stender ■ David Stockman ■ Lisa Timmer ■ Ana Toler ■ Bao Tran ■ Henri Tuthill, Jr. ■ Arinze Uzoka ■ Rachele Valentine ■ Hue Vuong ■ Kathleen Watkins ■ David Wells ■ Rodney Winkler ■ Keith Zecher



*Kathleen Watkins*



*Bao Tran*



*Sara Khan*



*Andrew Gallagher*

## Wilson Information Services Corporation welcomes...

C. Alan Doss ■ Lora Main ■

## ATP Video Wins Award

By Ken Michaels

We were recently notified that *Advanced Technology Program*, the video produced by Scientific Publications, Graphics & Media and released in November 2008, has won a Gold Award in the Video/Corporate

Image category of the Hermes Creative Awards competition.

Hermes is an international competition for creative professionals involved in the concept, writing, and design of traditional and emerging media. The competition and awards are administered by the Association of Marketing and Communication Professionals.

The video can be viewed on the ATP web site, <http://www.ncifcrf.gov/atp>. ■



## SAIC-Frederick Recognized as an Excellent Place to Work

By Ashley DeVine

SAIC-Frederick is now a six-time winner of the “Workplace Excellence Seal of Approval” from the Alliance for Workplace Excellence (AWE). This award is given to employers who “show an outstanding commitment to overall workplace quality,” according to AWE’s web site, [www.excellentworkplace.org](http://www.excellentworkplace.org). Employers are evaluated on their programs in communication, diversity, employee growth, life–work balance, and others.

Larry Arthur, Ph.D., Chief Executive Officer, SAIC-Frederick, said the company is proud to again be recognized by AWE. “Our success as an organization is a direct result of the efforts of our employees. For us, the best way to serve our customer is to provide a workplace environment where our employees can thrive both as individuals and as members of a community with a common mission.”

AWE is a nonprofit organization dedicated to helping employers in the greater Washington, DC, area become excellent places to work through training and education, recognition awards, and community awareness, according to the web site. ■



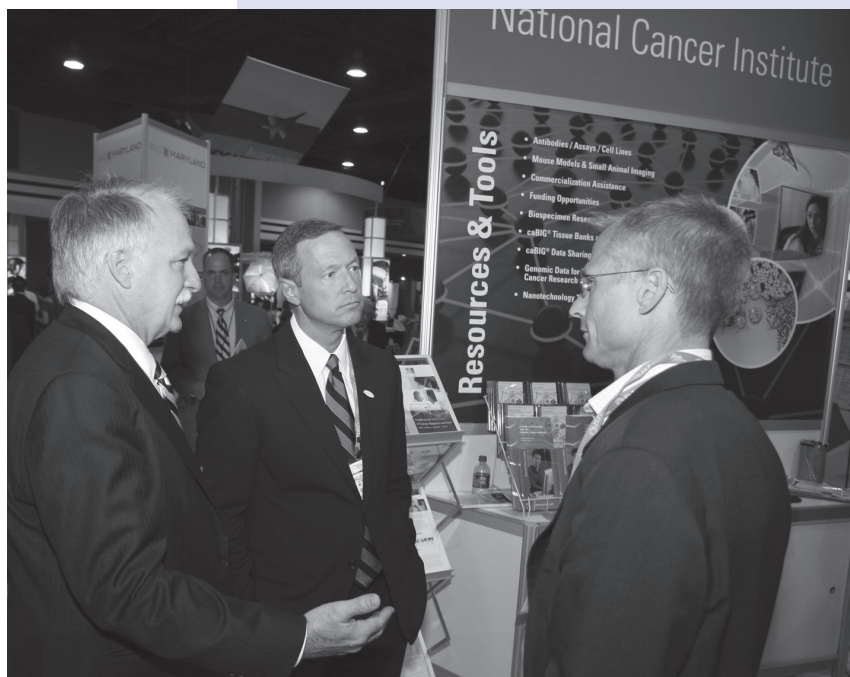
Larry Arthur, Ph.D., Chief Executive Officer, SAIC-Frederick, and Jill Sugden, Human Resources Director, hold the “Workplace Excellence Seal of Approval” award the company received in 2006.

## SAIC-Frederick Represents NCI-Frederick at BIO2009

By Frank Blanchard

SAIC-Frederick staff met with dozens of biotech and drug companies, conducted media interviews, and networked among the more than 14,000 attendees at the 2009 BIO International Convention in May. SAIC-Frederick staff attended the Atlanta, GA, meeting to support the NCI’s Advanced Technology Partnerships Initiative (ATPI). The initiative aims to accelerate the translation of basic research into new cancer treatments through strategic partnerships between the government, industry, academic institutions, and nonprofit organizations. ■

From left: Larry Mahan, Maryland Department of Business and Economic Development; Maryland Governor Martin O’Malley; Frank Blanchard, SAIC-Frederick. Photo by Jay Baker.





## First Annual Conference Celebrates Administrative Professionals

By Ashley DeVine

Approximately 90 administrative professionals attended SAIC-Frederick's first annual Administrative Professionals Conference on April 20, according to Sukanya Bora, Manager of Training and Development, Human Resources. An e-mail from the conference planning committee noted that the purpose of the conference was to "celebrate and thank [administrative professionals] for the many contributions each of you has made during your tenure with the Operations and Technical contractor."

The conference was divided into a morning and an afternoon session. Both sessions included a keynote speaker, three break-out sessions, and a panel discussion with SAIC-Frederick's senior leaders. Both sessions were held at Dutch's Daughter restaurant.

The morning keynote speaker was Annalie Weber, International Director, Toastmasters International, presenting "What, the Cat Got Your Tongue? The Power of Speech." The afternoon keynote speaker was Jeanette Eleff, Certified Co-active Leadership and Life Coach, presenting "Vitalize Your Work: Five Skills You Must Have." The three break-

out sessions featured Maritta Grau, Ken Michaels, and Nancy Parrish, Scientific Publications, Graphics & Media, presenting "Best Practices for Effective Writing"; Prisma Anderson, Kaiser Permanente, presenting "Fitting Fitness into Your Lifestyle"; and Greg Brannan, Adventist Hospitals, presenting "How to Make the Most of Your Work Day: Keys to Keeping Focus and Prioritizing Time." Administrative professionals could also submit questions to SAIC-Frederick's senior leaders.

Some comments that the planning committee received from attendees included that the event was very informative, well-organized, and a good opportunity to hear senior leaders speak; and that attendees felt recognized and appreciated.

The following people are members of the planning committee: Ms. Bora; Barbara Kending (Biopharmaceutical

Development Program); Barbara van der Schalie (Clinical Research Program); April Kennedy (Clinical Research Program); Patricia Barr (Applied and Developmental Research Program); and Kathy Miller (Advanced Technology Program). ■



## The Poster Wins Hermes Award

By Ashley DeVine

The NCI-Frederick *Poster* newsletter recently received honorable mention from the Hermes Creative Awards competition for an article that appeared in the September 2007 edition. The article, "NCI-Frederick Repository Helps Texas Researchers Find Rare Toxin," written by Maritta Grau, Managing Editor of the *Poster*, and Dr. David Newman, Chief, Natural Products Branch, was entered in the Writing/Publication Article category.

Hermes is an international competition for creative professionals involved in the concept, writing, and design of

**Medical Use for *Diazona angulata***

*NCI-Frederick Repository Helps Texas Researchers Find Rare Toxin*  
By Maritta Grau, Editor and David Newman, D. Phil.



*Diazona angulata*, an ascidian found in February 1994 on the ceiling of a cave off the coast of the Philippines, was extracted and screened at NCI-Frederick for anticancer activity. The material was then sent to Dr. Bill Fenical, Scripps Institution of Oceanography in La Jolla, CA, for his research. Photos courtesy of Dr. Patrick Collin, now of the Coral Reef Research Foundation, Palau.

Recycle, reuse, don't throw anything away, as our grandparents used to say, are popular catch-phrases again today. Several years ago, researchers at both the Scripps Institution of Oceanography and the University of Texas, Southwestern Medical Center, had reason to be grateful for that philosophy, because the NCI's Developmental Therapeutics Program-Frederick Repository enabled them to complete a research project.

The Scripps researchers had used all of their samples of *Diazona angulata*, a tiny marine specimen akin to a jellyfish, about 6 inches in size, and thought to be found only off the coast of the Philippines. For over five years, divers had searched fruitlessly for replacement specimens.

Then Pat Collin, Ph.D. (the principal investigator on the Natural Product Branch's [NPRB] Marine Collection contract), stepped into the picture. On a trip to Palau in 1996, he read in an in-flight magazine about the search for *D. angulata*. On reaching Palau, he called David Newman, D. Phil., who was his Project Officer in NPRB.

"We have provided our specimens to our shipments to the repository," Dr. Collin told him. After using the COMPARE algorithm to search the DTP's 60-cell line database and identifying some potential extracts, Dr. Newman

contacted Dr. William Fenical at the Scripps Institution of Oceanography in La Jolla, CA. One of Dr. Fenical's graduate students, Helene Vervoort, had been unable to proceed with her Ph.D. thesis work without this organism, so Dr. Newman arranged a specific Materials Transfer Agreement to ship the specimens to Dr. Fenical.

Thanks to the alertness of Dr. Collin and Dr. Newman, Dr. Fenical and his colleagues were able to complete their research, leading to the compound known as diazonomide A.

Building on that research recently, Patrick Haran, Ph.D., and colleagues determined that a synthesized version of the toxin might be useful in chemotherapy treatments for cancer because in mice, at least, it doesn't have side effects such as weight loss and loss of appetite. Ernest Hamel, M.D., Ph.D., then at

the Screening Technologies Branch, NCI-Frederick, tested the material Dr. Haran had synthesized, together with other similar compounds that he had made, and natural material provided by Drs. Fenical and Vervoort, and determined that the synthesized toxin had the same biological characteristics as the original material.

Dr. Fenical's work was published in 2003 (*Cancer-Metastasis & C.*, Vervoort HC, Bai R, Newman DJ, Howell SB, Luo G, Mullinay JT, Williams MD, Pettis GR, Fenical W and Hamel E: Diazonomide A and a synthetic structural analog: Disruptive effects on mitosis and cellular microtubules and analysis of their interactions with tubulin. *Mol Pharmacol* 63:1273-1280, 2003).

Dr. Haran's article was published in February 2007 (*Wang G, Sheng J, Duggan AWG, Haran PG, and Wang X: Diazonomide toxins reveal an unexpected function for centrosome-9-amino-translocation in mitotic cell division. Proc Natl Acad Sci USA* 104:2068-2072; published online before print as 10.1073/pnas.061032104, 2007). ■

The NCI-Frederick Poster September 2007

traditional and emerging media. The competition and awards are administered by the Association of Marketing and Communication Professionals.

To view the article, go to [web.ncifcrf.gov/ThePoster/archive/Sep07\\_POSTER.pdf](http://web.ncifcrf.gov/ThePoster/archive/Sep07_POSTER.pdf). The article is on page 3. ■

## Scientific Library News

By Robin Meckley

The Scientific Library had a busy spring, and special events are lined up for the summer.

### "Pets" Theme Most Popular To Date

Recent studies conducted by NIH researchers (NCI Executive Clips from the Boston Globe 4/20/2009, <https://lion.nci.nih.gov>) suggest that owning a pet can improve the health of your heart in physical and emotional ways.

Picking up on this theme, in May the Scientific Library collaborated with Occupational Health Services and the Employee Diversity Team to offer a REWARDS program on the healthy aspects of pet ownership, called "Pets: Just What the Doctor Ordered!" REWARDS is a multi-part program to educate NCI-Frederick employees on selected consumer health topics using movies, books, and invited speakers.

This theme proved to be one of the most popular programs to date, attracting almost 70 people to one of the sessions and prompting more than 160 employees to contribute pet photos to a special display.

Also included were showings of a movie, a book discussion, and DVDs of an NIH program, all of which addressed the human-animal bond. The program was capped by an informal talk by representatives from Frederick Animal Control, who brought along adoptable pets that proved very popular with employees walking to and from lunch.

As always, with our REWARDS program, all the movies, lectures, invited speaker DVDs, and books are available from the Scientific Library. For more information about the REWARDS

program, including an archive of all previous topics, visit [www-library.ncifcrf.gov/rewards.aspx](http://www-library.ncifcrf.gov/rewards.aspx)

### "Year of Darwin" Video Series Begins June 22

Since the dawn of time, roughly 99 percent of all species have become extinct. What enabled that other one percent to survive the cutthroat competition? Their ability to evolve. The Scientific Library continues its "Year of Darwin" celebration by hosting

Are Good for Everyone!" is our theme. Sessions will provide a story, a craft, and another informational event.

Throughout the day, the library will also host a children's book swap, a children's version of our popular book and media swap. We are collecting donated books right up until July 15. On TYCTWD any child may come into the library and take home some books for free. Children may also bring in books on July 15 and take home some "new" ones.

### Support Our Students in Jeopardy Tournament July 23

For the third year in a row, the Scientific Library will sponsor the NCI-Frederick/Scientific Library Student Science Jeopardy Tournament. It will be held July 23 in the Conference Center auditorium, Building 549. Watch your e-mail for specific times, and mark your calendars so you can cheer on our wonderful students from both

high school and college at this fun and educational event.

In a specialized version of the popular answer-and-question game *Jeopardy*, teams compete in categories relating to both science and NCI-Frederick, NIH, and the Scientific Library.

Students will compete for bragging rights, as well as prizes, including gift certificates and gifts from generous NCI-Frederick vendors. All contestants will receive gifts just for participating.

We encourage NCI-Frederick employees to come and support these talented students. Free refreshments will be available for everyone! Check the library's web site for more information: [www-library.ncifcrf.gov/default.aspx](http://www-library.ncifcrf.gov/default.aspx). ■



The REWARDS program featured a display of pet photos that included dogs, cats, horses, birds, and one lone iguana!

a Summer Video Series this year titled EVOLVE. Through a stunning combination of dramatizations, computer animations, live-action nature footage, and lab work, this History Channel production discovers the biological behavioral innovations that have kept us all on this Earth. This 11-part series will be shown on Mondays, 12:00–1:00 p.m., from June 22 through August 31. Complete information is available at [www-library.ncifcrf.gov/darwin.aspx](http://www-library.ncifcrf.gov/darwin.aspx).

### TYCTWD Program All About Pets

The Scientific Library will host a program all about pets on Take Your Child To Work Day (TYCTWD), July 15. "Pets Are Healthy, Pets Are Fun, Pets



## Respect Your Audience

By Ken Michaels

In the Effective Oral Presentations workshop that is offered on campus, I usually introduce one of my segments with three principles:

1. Always show respect for your audience.
2. Remember that presentation is teaching.
3. Remember that it's all about the message.

I'd like to use this column to address the first of these principles: Always show respect for your audience. What does that mean? Generally speaking, it means, to the best of your ability, make the audience feel comfortable. Here are a few specifics:

**Control the setting.** Be sure the room itself is comfortable, the lighting is appropriate for the presentation, and the audiovisual equipment, if using, is functioning and ready. While these things may not be completely within your control, it shows respect for your audience when you do what you can to control them. How? That takes us to the next recommendation.

**Arrive early.** Look the setting over. If the room is too hot or cold, report it to the facilities people. Arrange the chairs and adjust the lights as you prefer them. Arrange to meet with the AV technician early to load your slides on the projection equipment and test to verify that it works. A speaker who dashes into the room just in time or—horrors!—late, and then fumbles about trying to get the visuals to work is not showing respect for the audience.

**Dress appropriately.** Sloppy appearance at the front of the room is a clear signal from a speaker that talking with this audience is of no particular importance. Neat, professional appearance says exactly the opposite. When your clothes are clean, fit you properly, and are selected with care and good taste, you're showing respect for

your audience. To what degree should you “dress up?” A good rule of thumb is figure out how your audience is likely to be dressed, then dress just a little bit better—not way better, just a little bit.

**Minimize distractions.** Ask audience members at the onset to set cell phones and pagers to the silent position to avoid interruptions.

And finally, and perhaps most important of all, “the Boy Scout” principle:

**Be prepared.** Your audience will know, almost immediately, how well prepared you are. Having your visuals well organized, legible, and carefully proofed for errors is a sign of respect for the audience. Ditto for having notes or handouts carefully

prepared and ready for use. Being well prepared not only shows respect for the audience, it's the best way of all to walk to the lectern with confidence. ■



## Web Sites of Note

By Ashley DeVine

Throughout our newsletter, you will find web sites listed that provide you with more information than we can put in our articles. You are probably aware that there are many days, weeks, and months devoted to the recognition of particular health care issues. While we cannot list them all, we have selected a few that seem most pertinent to NCI-Frederick.

### June:

National Scleroderma Awareness Month: [www.scleroderma.org](http://www.scleroderma.org)  
National HIV Testing Day, June 27: [www.hivtest.org/press\\_files/whatis.cfm](http://www.hivtest.org/press_files/whatis.cfm)  
UV Safety Month: [www.aao.org/aaosite/eyemd/uv.cfm](http://www.aao.org/aaosite/eyemd/uv.cfm)

### July:

Hemochromatosis Awareness Month: [www.irondisorders.org](http://www.irondisorders.org)

### August:

National Immunization Awareness Month: [www.cdc.gov/vaccines](http://www.cdc.gov/vaccines)  
Cataract Awareness Month: [www.aao.org/aaosite/eyemd/cataract.cfm](http://www.aao.org/aaosite/eyemd/cataract.cfm)

## Upcoming Events and Dates to Note

### June 16

Farmers' Market opens; continues every Tuesday through October 27, 11 a.m.–1:30 p.m.

### July 3

Independence Day–NCI-Frederick closed

### July 15

Take Your Child to Work Day

### July 17

Poster Puzzler Entries Due

### July 29

Student Poster Day

### September 1

Labor Day–NCI-Frederick closed

## Employment Opportunities

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

Charles River Laboratories  
[www.criver.com](http://www.criver.com)

Data Management Services  
[css.ncifcrf.gov/services](http://css.ncifcrf.gov/services)

National Cancer Institute at Frederick  
[www.training.nih.gov/postdoctoral](http://www.training.nih.gov/postdoctoral)

SAIC-Frederick, Inc.  
[www.saic-frederick.com](http://www.saic-frederick.com)

Wilson Information Services Corporation  
[www-library.ncifcrf.gov](http://www-library.ncifcrf.gov)

## NCI-Frederick Programs

NCI-Frederick/Ft. Detrick Fitness Challenge 2009  
[saic.ncifcrf.gov/fitnesschallenge/](http://saic.ncifcrf.gov/fitnesschallenge/)

NCI-Frederick Suggestion Committees  
[web.ncifcrf.gov/campus/committees/](http://web.ncifcrf.gov/campus/committees/)

NCI-Frederick Advanced Technologies to Support Research  
[web.ncifcrf.gov/research-technologies/default.asp](http://web.ncifcrf.gov/research-technologies/default.asp)

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Comments or suggestions for *The Poster* may be directed to [poster@ncifcrf.gov](mailto:poster@ncifcrf.gov).

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

[web.ncifcrf.gov/ThePoster](http://web.ncifcrf.gov/ThePoster)

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## EXTRAS ■ EXTRAS ■ EXTRAS

### Medical Mission to Guatemala

*The following report was written by Michael Dean, Ph.D., for Medical Assistance Programs (MAP) International, the group that provided the medicines for his mission trip to Guatemala:*

This was my third year on a medical mission trip to Guatemala using MAP International's fantastic Travel Packs. We stay at Mi Refugio, a Christian school in San Pedro Sacatepequez, just outside Guatemala City. The school provides a base for operations and modern living quarters and food. Most importantly, Kari Engen, the school's founder and director is tied into the local health professionals, and so our medical clinics are always coordinated to provide care to those that need it most, and we can refer patients with chronic and severe medical conditions to proper resources.

This year I was the leader of the medical teams that included one MD, and 8 RNs. We were very lucky this year to form a partnership with a team from World Vision (Vision Mundial). World Vision has recently begun serving several Mayan villages in the area of the school and they needed an assessment of the children in these communities so that they can plan future programs. Guatemala is unique in retaining 20 unique Mayan populations, each with their own language, and culture. We visited six of these villages, driving on dirt roads that quickly led into beautiful mountain landscapes. We passed by fields of corn, often growing on boulder strewn hills, and got a sense of the connection of the people to the land and their food.

The clinics were set up at local schools and we treated children at the school, and later mothers came with their families. The women were all dressed in beautiful traditional clothing, as were their daughters. It was amazing to see everyone waiting patiently for their turn to be seen—the mothers lovingly holding or caressing their impeccably behaved children. One boy arrived with a 104° fever and we quickly undressed him, placed cool towels on him and gave him antibiotics, Tylenol (from our MAP supplies), juice and brought

him and his mom to a private room for observation. After a few hours the fever was down and we felt safe to release him.

By In large the Indigenous people are healthy. I took blood pressures on many moms, and nearly all were 110/70. None are overweight. But we could see that they walk everywhere, carry their children, breast feed them, and largely live on a traditional diet. This is a sharp contrast to the Latino people that I interpret for in the Mission of Mercy Clinic in Frederick Maryland. So we have something to learn from cultures that have retained their lifestyle and diet.

World Vision provided many of their own medicines and they complemented nicely with the supplies in the MAP Travel Pack. We always had what we needed! We also gave out soap, dental supplies and a towel provided by the United Methodist Commission on Relief. And a prayer team prayed with each family that was willing.

I was deeply moved by the beauty of the little girls and had many pictures of them sitting on my knee so that I would not forget them. I jokingly asked to adopt a few, but the mothers were not willing to part with them. Many of the women speak only Kaqchikel, a Mayan dialect and little or no Spanish. So I was in the middle of a three language conversation from English to Spanish to Kaqchikel and back. But overriding all this was the love of the nurses for the people and no words were needed to communicate that. We all laughed at the same time when a little boy wet his pants and the leg of the nurse that was holding him.

Although the medicines are a blessing, sometimes children need more. One woman arrived with four children. But after some discussion we learned that two were not hers. They were living with a grandmother, because their mother had died. The grandmother was sick, so this woman was bringing the children to the clinic for her. It seemed vastly

*continued on page 34*

## Medical Mission to Guatemala

*continued from page 33*

inadequate to hand them vitamins and a toothbrush in the face of their vast needs. But we could document these special cases for World Vision to follow up on, and so could leave with some hope.

We spent one day at the San Pedro Health Center, directed by my good friend Dr. Ernesto Arredondo. Patients were lined up out the door from the moment we got there until we had to pack up at 6 PM. We treated young and old, men and women with all manner of illnesses. The MAP Travel Pack was such a blessing as the health clinic is very poorly supplied with medicines, and any left over supplies could be left with him, knowing that they would be well used.

Dr. Arredondo sent us one day to visit a poor community of Villa Hermosa. I met another orphan girl, whose mother recently died in childbirth. She was living with her aunt and grandmother, and again we felt very inadequate to help her. One woman showed us a horribly infected wound on her leg, resulting from an untreated insect bite. The woman, a mother of four, knew that it should receive surgical care, but could not afford such treatment. I held her as a nurse cleaned and scrubbed the wound, without anesthesia. Although it must have hurt terribly, she did not even squeeze my hand and only grimaced slightly as she was treated. We instructed her on would

care, and gave her supplies, and with that and prayers we hope it will heal.

Our last two days were spent at the Mi Refugio school checking on the staff and students. There were lots of colds and fevers and the MAP medicines were well used. However, we were shocked to be presented with one five year old girl named Ana. She has severe scoliosis since birth and her family cannot afford treatment. She cheerily submitted to our examinations and photography. Upon my return I identified a surgeon, Dr. Weinstein, that specializes in these cases. So now we are trying to get the X-rays that are needed to assess Ana's condition and plan a strategy. ■

## Cheryl Parrott Speaks at Hood College

*The following is the text of the speech given by Cheryl Parrott, Director of Communications, NCI-Frederick, at the commencement of the Hood College Graduate School, May 16, 2009.*

### **Ubuntu Surfing on Earth's Homepage**

Thank you, President Volpe, for that kind and very generous introduction.

Distinguished graduates, learned faculty and staff, members of the Board of Trustees, and all of you – you smiling family and friends who have taken the time, traveled, and gone to great effort to support your graduate through the program and are now here to celebrate. I'm deeply honored to be able to help you mark this threshold event in your lives.

I think one of the reasons you have me today, instead of a celebrity, is your college believes that this ceremony is more about you, rather than the person addressing you.

Graduates, this is your day, and in celebration of you, I'm weaving a few of your stories into our time together here. I'm sure you'll recognize some of your colleagues and friends...and maybe yourself.

You come from across the globe. Your ages range from 20-something to 60-something. Your disciplines cover such a range that you have the makings of a complete, functioning society right here. Under this tent today, we are in the company of a composer, a coach, an entrepreneur, a rocket scientist, a nurse, a cancer researcher, a children's counselor, a linguist, a farmer, an engineer, a poet—and more.

There is such a wealth of beauty and accomplishment in this Class of 2009. I only wish I could mention each of you... but that would take awhile.

In addition to celebrating you with your stories today, I have a word for you: *ubuntu*. Actually *ubuntu* is more than a word; it's a concept of our interconnectedness with each other—in your class, in this college, in the world. Many of you are familiar with the concept, and I suspect that even more of you are living it...perhaps under a different rubric.

(If you're texting or twittering out there, that's u-b-u-n-t-u.)

*Ubuntu* is what we hold in common as people. Archbishop Desmond Tutu says that *ubuntu* is the essence of being

human. The concept of *ubuntu* says we can't exist as human beings in isolation. The word is Zulu, and there's a maxim: "A person is a person through other persons." This concept of how we intertwine runs through science, history, math—every aspect that defines us as humans. It's a very big idea, and such a good idea, that it's been co-opted.

It's also a computer operating system. We're now in *Ubuntu* 9.04, and the homepage says, "*Ubuntu* is a complete, free operating system that emphasizes community and support. It's the computer operating system for human beings."

It gets better: you can even drink *Ubuntu* Cola with Fair Trade sugar from Malawi and Zambia. A jingle tells us, "It's *ubuntubelievable* good!"

But the *ubuntu* we're focusing on today is the *ubuntu* that gathers us in as interrelated, interdependent voyagers in time and space on our home planet. *Ubuntu* helps us decide whether we want to be the best in the world or the best for the world.

One of my favorite authors, John Updike might have been thinking of *ubuntu* when he said, "You cannot help

*continued on page 35*



## Cheryl Parrott Speaks at Hood College

*continued from page 34*

but learn more as you take the world into your hands. Take it up reverently, for it is an old piece of clay, with millions of thumbprints on it.” Today, you’re more prepared to reverently take this old piece of clay into your hands and gently shape it.

You’re more connected than you might think. *Ubuntu* is what binds us to every other human, not only biologically as a species, but conceptually, in spirit—even through time. Just as nations’ histories and cultures can blend, the lines between us can blur.

Really, even quantum physics can show us *ubuntu* in this uncertainty of where I stop and you begin. Under some conditions, we know a wave can become a particle and the reverse. Evidently, that can happen in us, too. In recent studies, scientists have discovered “mirroring neurons” deep in our brains. They enable us to figuratively step right into the middle of each others’ circumstances and experience them so closely that we have similar emotional responses. Am I you or are you me? As with waves and particles, it could depend on the conditions. That sort of empathy is *ubuntu*.

One of you in this class is about to receive a Master’s in Human Sciences. Angela Davidson transferred to Hood because she missed the intimate learning environment of a small college. The Hood community embraced her and made it possible for her to work toward her degree while continuing her relationships with clients and co-workers in Pennsylvania. She is with the Army’s Exceptional Family Member Program. Angela provides respite and therapeutic activities to families who have children with autism.

She was able to apply immediately what she learned in the classroom to her daily work, and became very sure that working with others is what she was meant to do. She was even able to keep her high school coaching jobs. Each day, when she showed up with her varsity football, wrestling, and competition cheerleading teams, she saw that her students deserved

to dream beyond their rural hometown, and to be able to rely on a coach who would not give up on them. Angela said, “It seemed there was always a deeper lesson to be learned by continuing to push through the busy schedule and the sacrificed time with loved ones.” That’s the determination of *ubuntu*.

This life path, *ubuntu*, is an ancient one. The word is from a language that is predominant in sub-Saharan Africa. Think of it! This is the heart of where we began. Just as we don’t know precisely when our ancestors first thrived in Africa, we can’t determine exactly when the concept and the word began. For me, it’s not a long stretch to think that *ubuntu* was writ large across those first members of our human family. For eons, they survived droughts, monsoons, beasts, and plagues to give birth to us. Our ancestors couldn’t have done that alone, without connections and interdependence. Through others and with others, our human family grew: that’s *ubuntu*.

One of you graduating today is from the other side of the country. Sue Rosenbloom came from Oregon to join, as she says, “the premier program in the nation” and to earn an M.A. in Thanatology. It was at considerable sacrifice; it meant living in a dorm, away from her husband of 38 years, her children, and perhaps most wrenchingly, four beloved grandchildren. Sue kind of figured it was her time. She’d been a decorator, a cosmetologist, an employment counselor, a flight attendant. And she found that through some great challenges in her life, she was resilient and had a gift for helping others rediscover their own strengths. I think she’ll be one of the leading lights for end-of-life issues in her already progressive state—Oregon. This is the compassion of *ubuntu*.

*Ubuntu* is the ideological parent of such phenomena as the Truth and Reconciliation Commission, formed to help heal the terrible divisions of apartheid in South Africa. And *ubuntu* is the generosity of spirit that inspired the

Marshall Plan to rebuild Europe after World War II.

You, in this class, also show such generosity of spirit. One of you has earned an MBA to share with the citizens the world. Rodrigo Gutierrez has been an engineer for 20 years, first in Chile, and now in the United States. When I spoke with Rodrigo about his reasons for pursuing his new degree, he told me that as a civil engineer, he was steeped in mathematics—the core of his work—but his workday wasn’t filled with mathematics. It was filled with other people. His new MBA answers the need he felt for the “people element” of applied mathematics—economics and financing. He said, “I was missing the social aspects of my career—the more human elements.”

Rodrigo’s company is one that builds megaprojects—airports, mines, traditional power and alternative energy plants—all over the world. He is now a systems-cost engineer, which means that for one of these megaprojects, it is Rodrigo who plans for every facet of a project costing billions of dollars. Rodrigo is, without doubt, connected on a global scale. And when you consider those solar energy projects, maybe even on an astronomical one. This is the strength of *ubuntu*.

By now you might be thinking, “But there’s plenty of evidence in cultures, besides the Zulu, for this concept.” And you’re right. *Ubuntu* is certainly akin to Hinduism’s karma. And to the Hawaiian ohana—Big Family. The Choctaw Nation of Oklahoma, where I’m from, promotes the oneness of all people. It was the Choctaw who first traveled and named the notorious Trail of Tears. They lost their ancestral lands and over one-third of their population along the way, but the peaceable Choctaw held to their belief. They still say: Okla itpi ba chaf fa. “The People together are to be as one.” It’s not some hackneyed soundbite. It’s a directive. It’s *ubuntu*.

Another of your class, Michelle Sharp,

*continued on page 36*

## Cheryl Parrott Speaks at Hood College

*continued from page 35*

thinks in terms of connectivity between the art of medicine and the funding of medical research. She's earned a Master's in Biomedical Sciences. After undergraduate school, Michelle went to work for the National Cancer Institute in Bethesda, doing research on breast and prostate cancers. Soon, though, she migrated north to Hood's Graduate Program and became a contractor supporting the Department of Defense Congressionally Directed Medical Research Programs.

Now, rather than research focusing on one or two diseases, she can be part of programmatic reviews for research progress in a whole realm of diseases, including not only cancer, but such diverse conditions as neurofibromatosis and Gulf War illnesses. Michelle is choosing the path of sharing, helping to find the best and most needed research to fund. I might mention that she's done all this—work and graduate school—while caring for a toddler and planning for a new little one who'll arrive in July. That's multi-level, multi-tasking *ubuntu*.

Personally, I discovered *ubuntu* through language. I started out interpreting and translating French and German in the architecture and engineering fields. For me, languages and word origins are fascinating things. You can excavate in a language, the way you might at an archeological dig, and if you peer through layers of a word, history tumbles out at you. English roast and Hindi roti; the French rotisserie, and German Röstchen; Albanian rosti, and Japanese rosuto biifu. All these are children of a common parent—as we are.

And now, I'm at the National Cancer Institute, still interpreting, in a way, through science writing. NCI is one of the research institutes where they're pioneering personalized medicine. Imagine this: a cancer patient may have vaccines developed specifically for her alone, based on her tumor's unique DNA. Isn't it a beautiful paradox that through this genome we all share so closely, that defines us as family, we now

can individualize medicine for our own particular form of a disease that is one of the scourges of our time? When scientists mapped the human genome, it became a story of scientific success, of course. But it was also a humanitarian triumph. It's through this mapping that we've at last been able to show what Charles Darwin always suspected: the notion of race is biologically meaningless. And that is a great stride in the spirit of *ubuntu*.

You know that in medicine, we think of preventing and treating and curing. Through life's ups and downs, I've learned that when none of those will work, there's something else—healing—that need for the ultimate communication in a life—saying good-bye. That's what led me to Hood's Thanatology Program...where I met people living the *ubuntu* drumbeat, people who had so many of those empathy-mirroring neurons flashing, they looked like meteor showers.

One of those is Homer Carhart. We were Thanatology students together and became fast friends. Homer is a cosmic example of *ubuntu*—several lives packaged in one man, a modern Da Vinci. Like Leonardo, Homer is an artist—a poet and composer of classical music. Homer is a scientist—a chemist, horticulturist, and mathematician. He is an inventor, a philosopher, and a philanthropist. (Remember when I read that list of professions that are represented under this tent today? At least half of those are Homer.) At almost 95 years of age, with his inquiring mind, his irreverent humor, and his irrepressible smile, he is a beacon in the world. Homer, like Angela, Sue, Rodrigo, and Michelle, is forever linked to you now, as part of your Hood family. This is the continuity of *ubuntu*.

As with any family, there are risks to being so connected; we rise and fall together. We're so close through travel, the trade winds, through Facebook, satellite signals, and the DNA we hold in common, that simply by doing good to another person, the result is that we've

done something good for ourselves.

Jun Yang understands this very well. She has earned her second Master's, this one in Computer Science. She came to Frederick shortly after earning her Master's of Science in Genetics. Here, at the National Cancer Institute, Jun runs a genetic sampling core facility for cancer and AIDS researchers. It was a challenge for her to deal with a huge amount of data. Just in the past couple of years, they've accumulated more than 2 terabytes of clinical data for their clients. That's terabytes. To put things in perspective, if we started counting, one byte per second, it would take us about 64,000 years to count the data that Jun manages.

She decided to enroll in the Computer Science Master's Program so she could better understand and manage those 2 trillion bytes. It turns out that her new degree is just what the doctor ordered—literally. In the laboratory, Jun helps analyze the gamut of gene expression for each clinical sample. This gives researchers at the lab bench and treating physicians at a patient's bedside a better understanding of disease processes in cancer and AIDS, and how to fight them. This is the vision of *ubuntu*.

Hood, too, models *ubuntu* in the Frederick community, hosting lecture series, concerts, public service events. Our community is brand new compared to the African societies where we first began, yet our alma mater eagerly embraces this philosophy of caring and humanity. You are one with it. What you impart to the places—and the people—your life touches will carry an element of your experience here. I have no doubt that it will be like Hood...and like you: bold, compassionate, and generous.

One last story from your graduating class: Collins Mwangi embodies *ubuntu*. Armed with an MBA, Collins is straddling the worlds of Hood and his hometown Limuru, not far from Nairobi in Kenya. Collins is a mechanical engineer, and he's already

*continued on page 37*



## Cheryl Parrott Speaks at Hood College

*continued from page 36*

made a difference. With two colleagues, Collins designed a water purification unit—filters, UV light, and microchip—that runs on a car battery. It's already working in Guatemala, and, he hopes, is destined for use in Kenya, and eventually the rest of Africa. And that was just undergraduate school!

Shortly after he chose Hood for his graduate work, he spent some time at home, visiting with the hard-working artisans in Nairobi's open-air markets. It struck him that with his MBA training, he could help them organize and network to make a better profit for their labors. That's Fair Trade. He says he wants to help build a cohesive business community and to help manufacturing firms grow and succeed, not just in Kenya, but throughout Africa. And here's the *ubuntu*: Collins wants to help the communities, of course, but he also

wants to influence them, to help them develop more complex and stable social structures in Africa. "It's more about the people," Collins told me. This is the power of *ubuntu*.

So here you are. You've earned graduate degrees. For some of you, this isn't the first time, but it is a new chapter. After the finals, the comprehensives, it probably means you're in debt. It might mean a new job or a promotion, or a job search. It might mean a move to a different part of the country or the world. But on a level other than economics, other than career advancement, you have a different perspective now, a deeper understanding of your field and how it intertwines with other fields...and how you intertwine with other people.

Please remember John Updike: "You cannot help but learn more as you take the world into your hands. Take it up

reverently, for it is an old piece of clay, with millions of thumbprints on it."

Each of you, in earning these degrees, is doing exactly that—taking up this old piece of clay, pressing your thumb into it at Hood, and seeing your thumbprint in Santiago, Chile; Portland, Oregon; Nairobi, Kenya; and here in Frederick.

I stand with your Hood family—past and present. We all applaud your formidable achievements now. And we will cheer you on as you share them with the world—for the world.

To you, Class of 2009! You are *ubuntu*!

Cheryl Parrott  
The Graduate School Commencement  
Hood College  
Frederick, Maryland  
May 16, 2009 ■