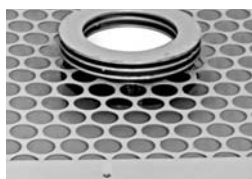


What is it?
Where is it?

Story on page 13.



Poster

NCI Acting Director Niederhuber Visits NCI-Frederick

Recently, NCI-Frederick was honored by an early-morning visit from NCI Acting Director Dr. John Niederhuber, who met informally with NCI-Frederick staff and then toured NIAID's Vaccine Pilot Plant (VPP).

Dr. Niederhuber, a nationally recognized surgeon and immunologist, has investigated the transcriptional and translational regulation of a B-lymphocyte protein, tyrosine kinase BLK, its role in signal transduction and its oncogenic properties, and has worked on developing a mouse model for chemically induced pancreatic ductal adenocarcinoma. He is a prolific author of scientific papers as well as textbooks.

Despite his many duties as Acting Director, Dr. Niederhuber still carves out "escape time" for laboratory research. He continues his own special interest in cancer stem cells and the tumor microenvironment through his work within the NCI Intramural Research Program and his research program in the Center for Cancer Research.

With a smile, he said, "It's important to me," and he explained that "it's also important to keep my pulse on what's happening in laboratories. I think I have a better understanding of the challenges of research if I continue to do some research myself; that I can better serve both intramural and extramural researchers if I wrestle with the same things they do each day."

Researchers in Dr. Niederhuber's laboratory are using a "wounding" model to study the effects of extracellular matrixes or microenvironments on tumor growth



and the role that stem cells play—how the stem cells relate to the tumor microenvironment—to understand the biology of tumor metastasis and to eventually identify targets to block the pathway activity. Under investigation are the conditions that favor stem cells, such as hypoxia, and therapeutic avenues that may be available by manipulating the tumor environment with hypoxia-inducing factors. Another group in his laboratory is working on stem cells in the

continued on page 2

JUNE 2006

IN THIS ISSUE

- Science Today 3
- NCI-Frederick 4
- Platinum Publications 6
- Technology Transfer Branch 10
- Frederick Employee Diversity Team 11
- Poster People Profile 12
- The Poster Puzzler 13
- Did You Know 14
- Spring Research Festival 16
- Environment, Health, and Safety Program 18
- Student Intern Awards 21
- Outreach and Special Programs 22
- Campus Improvement Committee 24
- Summer Fun 25
- Fisher BioServices 26
- SAIC-Frederick, Inc. 27
- Data Management Services 28
- Wilson Information Services Corporation 29
- New Faces at NCI-Frederick 30
- Café NCI-Frederick 31
- Employment Opportunities 32

Dr. Niederhuber Visits NCI-Frederick

continued from page 1

endocervix and studying the relation of tissue stem cells to HPV infection.

NCI-Frederick: Visionary Risk-Taking

When asked how NCI-Frederick could most effectively contribute to the broad mission of NCI and the country's initiatives in public health, Dr. Niederhuber replied, "NCI-Frederick is unique in that it is managed as a Federally Funded Research and Development Contract, which affords flexibility, and is a wonderful part of the overall package—visionary risk-taking."

He added that NCI-Frederick complements the overall intramural and extramural programs of all of NCI; the scientists benefit from the "enabling" technologies that we develop and maintain.

One of Dr. Niederhuber's dreams would be to see NCI-Frederick used more and more as a national biomedical resource center. "We need to develop a way that all these resources can be used by other grantees—a team could come to NCI-Frederick, do research here, then take their data back to their home environment. I'd like to lessen the barriers between intramural and extramural partnerships. Developing partnerships is very exciting for us."

Dr. Niederhuber Once Stationed at Fort Detrick

Actually, April was not Dr. Niederhuber's first visit to Frederick. While in the army in the 1960s, he was stationed at Fort Detrick, doing biological research, and lived on base. He volunteered to be a "guinea pig" for many vaccines. "I was shot up so many times, I'm amazed I never became ill. And we never knew what we were getting—the vaccines had numbers, but no names," he said with a chuckle.

A tall man, Dr. Niederhuber loves basketball and played while he was at Detrick. However, instead of playing for the officers' team, he was a "ringer" for the enlisted men's team. "I wanted to play on their team because they had a better record," he said, laughing. Somehow, he and his teammates managed to keep his officer status hidden, and he believes his team won the championship while he was here. "We had great fun playing," he said.

VPP Tour

After meeting and talking with a number of NCI-Frederick researchers and other employees, the entourage visited the National Institute of Allergy and Infectious Diseases (NIAID) Vaccine Pilot Plant (VPP) on the outskirts of Frederick.

Dr. Criss Tarr, director of the VPP, who led a tour around the plant, explained that 50% of the Vaccine Research Center (VRC)/NIAID funding for developing the facility was for HIV, and the other half was for biodefense and emerging infectious diseases. The VRC is currently working on vaccines for HIV, Ebola, Marburg, West Nile virus, and

influenza and anticipates the VPP will play a central role in manufacturing candidate vaccines in these programs.

NCI-Frederick Huge Resource for the Nation

Dr. Niederhuber commented about his visit, "It's very impressive. NCI-Frederick has a wonderful ability to help other institutes. It's a huge resource for the country, and not something that many extramural investigators know much about, but they need to know what we are doing at NCI-Frederick."

Taking a moment to consider his responsibilities as NCI's Acting Director, Dr. Niederhuber concluded, "It's an honor and a pleasure to be leading the NCI at this time; I'm really enjoying my new role. I thought I knew a lot about the workings of NCI, but I'm learning a lot more. Each day brings new discoveries in science, not just at the NCI, but all over the country. I'm amazed at the quality of science and the scientists, and excited about the impact that we've had on the disease just in the last decade. NCI is leading research in cancer, not just in the U.S., but in the world." ♦



New Use for TAP: Studying Mammalian Cells

The word “tap” means different things to different people—a plumbing fixture, the light knocking sound on a door produced by someone’s knuckles. But to Dr. Deb Chatterjee, Associate Director of the Protein Expression Laboratory (PEL) of the Research Technology Program (RTP), TAP stands for Tandem Affinity Purification, an emerging analytical technique to study the workings of cancer cells in a new way.

Understanding how normal and cancer cells operate requires, among other things, knowing which proteins inside the cells associate with each other. The networks of communication inside cells rely on specific proteins finding each other, binding and being modified, leaving and finding other partners, or causing their binding partners to continue carrying chemical messages to new proteins. A richer knowledge of these communication “pipelines” in cancer cells may yield opportunities to intervene with drugs and disrupt corrupted networks or restore those that have gone awry.

TAP is a tool to study these protein-protein interactions, but until now TAP has been most intensively applied to yeast cells (which don’t get cancer). However, over the past year, Dr. Chatterjee and his colleague, Dr. Stan Kaczmarczyk, have improved TAP so that it can be applied to mammalian cells in a rigorous, highly parallel way.

Molecular biology is based on the following tenets:

- 1) All organisms contain genes encoded by nucleic acid. For example, the human genomic sequence reveals approximately 30,000 different genes.
- 2) Each gene is transcribed to form an RNA molecule (messenger, ribosomal, micro).
- 3) Messenger ribonucleic acids or mRNAs can be translated into

structural or catalytic (enzymatic) proteins. The complexity of the entire repertoire of proteins (aka the proteome) of the human is estimated to be about 1 million different molecules.

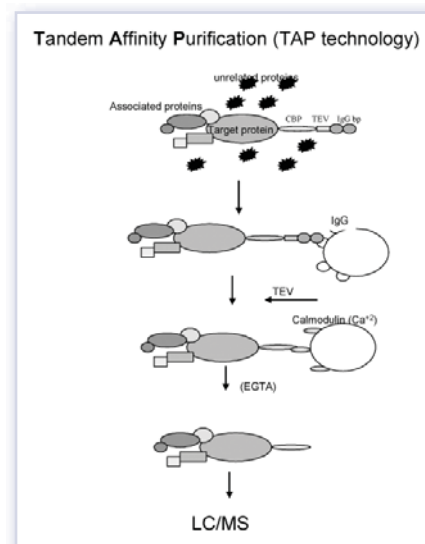
TAPping into Networks

How do you get from 30,000 genes to 1 million proteins? Each gene can generate diversity at the RNA level through alternative splicing, and each splice variant can in turn be post-translationally modified by adding different types and numbers of sugar molecules and by sculpting the protein backbone itself with exo- and endopeptidases. These processes can generate the tremendous diversity of cell types in the human through differential expression of the 30,000 genes, the basic details of which are still being deciphered by molecular developmental biologists. But how does each cell type organize the tens of thousands of proteins and their activities? By organizing the proteins into networks.

Through the work of many researchers, we have learned that the proteome of each cell type is organized into networks. Proteins “communicate” with one another through close physical contact or interaction. Researchers have developed both laboratory and computational methods to understand the composition of each network and the interaction of individual networks with other networks. The proteins of a particular cell type may contain hundreds of networks, each comprising 10 to 20 proteins.

How do you study protein-protein interaction or inter-protein communication? Historically, protein interactions have been studied using biochemical approaches (e.g., using antibodies to pull a particular protein down from a cell extract and examining what else comes along for the ride) or genetic methods (yeast

2 hybrid). Both approaches have drawbacks: the biochemical methods may not be sensitive or specific enough, and the genetic methods tend to identify lots of false positives, causing the researcher to spend much time investigating false leads. These shortcomings were the driving force that led to Drs. Chatterjee and Kaczmarczyk’s ongoing development of tandem affinity purification (TAP).



Schematic diagram of Tandem Affinity Purification (TAP).

Think of TAP (see figure) as a network-building tool. For example, if you’re interested in what causes prostate cancer, one starting point for a diagnostic or treatment gene target could be a prostate cell component, e.g., the androgen receptor (AR), a nuclear protein receptor that plays a role in turning on the transcription of particular genes in the cell nucleus of a prostate cell. Once one of the AR-interacting proteins binds to AR, AR is activated and is translocated into the nucleus, binds to a specific genomic location (Androgen Response Element, ARE), and specifically stimulates mRNA production.

continued on page 5

NCI-Frederick: Helping Others in Biodefense

NCI-Frederick: Helping Others in Biodefense

[Editor's note: The following article is adapted from an article by Karen Fleming-Michael, Public Affairs Specialist, U.S. Army Medical Research and Materiel Command, which appeared in the Fort Detrick Standard, April 13, 2006.]

A warehouse-sized plant for making biodefense and HIV vaccines, and three of the Army's biodefense vaccines owe at least part of their successes to NCI-Frederick's willingness to lend a hand.

NCI-Frederick's expertise in creating small batches of drugs and vaccines for clinical trials aided the U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID) in getting pilot lots of vaccines for anthrax, Venezuelan equine encephalitis (VEE) and staphylococcal enterotoxin B (SEB). NCI-Frederick's experience in building the facility where those lots are produced (the Biopharmaceutical Development Program) also helped the National Institute of Allergy and Infectious Diseases (NIAID) develop its own contractor-operated 126,000-square-foot Vaccine Pilot Plant.



"Our feeling has always been that if we can help serve the needs of other government agencies, we should do it," said Dr. Craig Reynolds, associate director of NCI-Frederick.

BDP Aids USAMRIID

In 1998 Dr. Robert Ulrich, chief of the Department of Immunology at USAMRIID, enlisted the Biopharmaceutical Development Program (BDP) at NCI-Frederick to create pilot lots of a recombinant vaccine to protect warfighters from SEB, the second most common source of food poisoning outbreaks, and the cause of staphylococcal toxic shock syndrome. SEB has long been on the list of bioterror agents because of its ability to incapacitate or kill 80 percent or more of people exposed to an aerosol form of it.

"At the time (1998) there were very few options for making the vaccine. They [NCI-Frederick] were one of the few games in town interested in working with us," Dr. Ulrich said. "It was sort of a two-way inquiry: They wanted to build the facility up and



collaborate with us, and we had three projects: the recombinant SEB, the recombinant protective antigen for *Bacillus anthracis*, and VEE vaccine."

The BDP began in the 1980s to produce multiple biopharmaceuticals, like monoclonal antibodies and cytokines. "We really felt that with the proper policies, procedures and protections, we could, in a single facility, produce multiple agents

at the same time. That was pretty much unheard of at the time, but it's a tremendous way to be able to get a large number of agents into early clinical trials," Dr. Reynolds said.

Being able to quickly produce and test the potential of many drugs, vaccines, and therapies, they believed, would help weed out the promising from the not-so-promising products so commercial companies would be willing to take them on to further testing and FDA licensure for cancer patients. Typically, 5 to 10 percent of proposed products make it to FDA licensure, so the more that can be vetted, the more that can help cancer patients. The NCI-Frederick program works on an average of 10 to 12 projects a year to increase their odds of success.

Collaborations Mutually Beneficial

Although the BDP and USAMRIID have very different missions, their collaborations have been beneficial. The Army got the three products it ordered from a close-by neighbor, and the NCI program, which today employs more than 125 people and has 40,000 square feet of lab space, broadened its

portfolio of biopharmaceuticals.

"We're quite open to doing what we can for people because it feeds back into our main mission."

"It's amazing how far the science goes beyond the boundaries of a particular disease or application," Dr. Stephen Creekmore said. Dr. Creekmore is chief of the Biological Resources Branch, which manages the BDP. "We're quite open to doing what we can for people because it feeds

NCI-Frederick: Helping Others in Biodefense

back into our main mission. I can't tell you how much we learned from that rPA (recombinant protective antigen) project. Huge amounts."

Offering the BDP's surplus capacity to the biodefense institute also made good business sense. Dr. Reynolds said, "When we have a time when something isn't lined up, we always have a list of other products that can go in the queue."

Expertise Shared with NIAID

The NCI-Frederick also shared its "how to" expertise with the National Institute of Allergy and Infectious Diseases when that institute began building the Vaccine Pilot Plant as part of its Vaccine Research Center. "The VRC's philosophy of accelerating timelines for vaccine development is facilitated by the organizational focus of the VRC, the integration of bench, translational and clinical research under one roof, and the ability to reliably access contract manufacturing capacity, whether via outsourcing to vendors, or via the new Vaccine Pilot Plant," said Dr. Phil Gomez, director of Vaccine Production at NIAID's Vaccine Research Center.

Because NCI-Frederick had already established current good manufacturing practices, or cGMP, NIAID turned to that institute for help. "In many ways, NCI is a key pioneer in the field of government-owned cGMP space, and the bottom line is that we wanted to build on their success," Dr. Gomez said. "A lot of the infrastructure that we accessed was established by NCI as part of the BDP, and we were able to leverage that. It has been a very fruitful relationship." Unlike the BDP, NIAID's Vaccine Pilot Plant doesn't expect to be able to offer up its services to outside customers. "Right now we're focused on developing our own products, and there is no excess capacity. In the future, should circumstances allow, the pilot plant will be available for products of interest to the VRC, via VRC collaborations," Dr. Gomez said.

Dr. Reynolds believes these collaborations spurred the creation of

the National Interagency Biodefense Campus (NIBC) being built at Fort Detrick. In fact, the NCI-Frederick is considered a key member of a confederation along with all the campus partners. "There's no doubt that these demonstrations of interagency cooperation have really helped to feed the NIBC," he said. "Our collocation with the campus and the agencies will be a tremendous advantage to us. It will be to our advantage to have been here and been a productive partner." ♦



continued from page 3

Hybrid AR Molecule Demonstrates Use of TAP

By constructing a hybrid AR molecule (depicted in the figure on page 3), Drs. Chatterjee and Kaczmarczyk have shown that TAP can be used to "fish out" interacting proteins using any starting protein. In their experiment, they included additional protein pieces from other proteins to fish out the AR "bait" and AR interacting proteins. For instance, a synthetic peptide from protein A (two copies) is attached to AR in this example to allow its affinity purification on an IgG-Sepharose

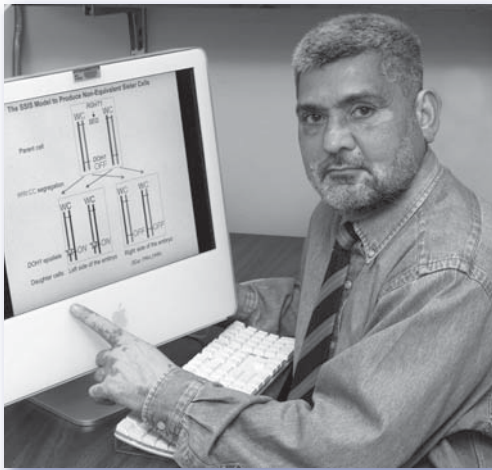
column. Secondary bits of proteins are included in the AR fusion to ensure that AR has in fact been pulled out. The interacting proteins can also be identified following the affinity column by gently separating the proteins in the complex and sizing them by liquid chromatography and mass spectrometry. Using this approach, several known interacting proteins have been confirmed and a number of new, interesting proteins were identified. Currently, PEL is collaborating with NCI scientists Drs. Ettore Appella, Amar Klar, and Jorge Toro to identify interacting proteins using this TAP technology. The technology is being further fine-tuned

by replacing much shorter and better purification handles for ease of use.

The TAP technology, which may ultimately become useful to the research community as a core service, was developed from the SAIC Technology Development Fund, with additional funding from the Office of the Director of Scientific Operations. TAP and other PEL services such as gene cloning, protein expression/purification, and microbial and eukaryotic cell propagation services can be accessed by contacting Dr. James Hartley, Director of the PEL, 301-846-7374, hartley@ncifcrf.gov, or Dr. Deb Chatterjee at PEL, Building 327, 301-846-6893 (chatterjee@ncifcrf.gov). ♦

Platinum Highlight

Dr. Amar J.S. Klar
Gene Regulation and Chromosome Biology Laboratory,
Center for Cancer Research



Dr. Amar Klar earned his PhD in the field of microbiology from the University of Wisconsin at Madison, in 1977. He was a staff member for

10 years at the Cold Spring Harbor Laboratory, where he became director of the Delbruck Laboratory in 1985. In 1988, he joined NCI-Frederick as a Senior Scientist. Presently he holds the Senior Biomedical Services position.

Dr. Klar's work involves gene silencing and mating-type switching in yeast. His group determined that sister cells of fission yeast differ from each other developmentally, simply because one daughter cell inherits the older "Watson" DNA strand, and the other one inherits the older "Crick" strand. The older strand

differs from the new strand because of a somatically installed epigenetic imprint that affects gene regulation.

According to Dr. Klar, "To accomplish cellular differentiation by the yeast paradigm, the diploid organisms must evolve a nonrandom strand-sorting process during mitosis." His article describes his group's finding "that such a chromosome-specific, cell-type-regulated, selective-versus-random strand segregation mechanism indeed exists as an ordinary cellular process in mouse cells." He notes that "this mechanism might explain stem cell division and general cellular differentiation, as well as left/right axis differentiation of our brain hemispheres and visceral organs, by mediating critical asymmetric cell divisions in respective tissues during embryogenesis." ♦

Athanasios Armakolas and Amar J. S. Klar

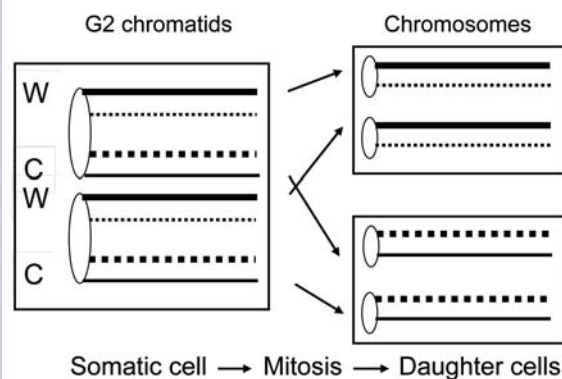
Cell Type Regulates Selective Segregation of Mouse Chromosome 7 DNA Strands in Mitosis

Science 311(5764):1146–1149, 2006

After chromosome replication, sister chromatid copies are generally thought to segregate randomly to daughter cells. However, sister chromatids differ in their DNA strands, with each chromatid inheriting one older strand that is paired to a newly synthesized strand. Genetic analysis with a homologous chromosome pair indicated nonrandom chromatid distribution in embryonic stem cells. A biased segregation pattern was also found in all 100 endoderm cells examined, but not in any of the 165 neuroectoderm cells. In contrast, the mesoderm, cardiomyocyte, and pancreatic cells exhibited a random mode of segregation. Strand distribution mechanisms regulated by cell type may have consequences

for cellular differentiation and for evolving strategies for developmental mechanisms. ♦

"WW:CC" DNA strand segregation pattern



Both older "Watson" (W) strand-containing chromatids are segregated to one daughter cell, and both older "Crick" (C)-containing ones go to the other daughter cell in mitosis

of embryonic stem cells and endoderm mouse cells. So, the WW:CC pattern is discovered. W strands are thick lines; C are thin; older are continuous; and younger ones are unfilled.

For complete article and details on the figure, go to <http://www.sciencemag.org/cgi/content/full/311/5764/1146>. ♦

Platinum Publications

The following 54 articles have been selected from a quarterly listing of publications in 17 of the most prestigious science journals.

Applied Biological Sciences

Edgar R, McKinstry M, Hwang J, Oppenheim AB, Fekete RA, Giulian G, Merril C, Nagashima K, Adhya S. High-sensitivity bacterial detection using biotin-tagged phage and quantum-dot nanocomplexes. *Proc Natl Acad Sci USA* 103(13):4841–4845, 2006.

Biochemistry

Li M, Laco GS, Jaskolski M, Rozycki J, Alexandratos J, Wlodawer A, Gustchina A. Crystal structure of human T-cell leukemia virus protease, a novel target for anticancer drug design. *Proc Natl Acad Sci USA* 102(51):18332–18337, 2005.

Cell Biology

Acharya U, Edwards MB, Jorquera RA, Silva H, Nagashima K, Labarca P, Acharya JK. *Drosophila melanogaster* scramblases modulate synaptic transmission. *J Cell Biol* 173(1):69–82, 2006.

Armakolas A, Klar AJS. Cell type regulates selective segregation of mouse chromosome 7 DNA strands in mitosis. *Science* 311(5764):1146–1149, 2006.

Chen B, Mariano J, Tsai YC, Chan AH, Cohen M, Weissman AM. The activity of a human endoplasmic reticulum-associated degradation E3, gp78, requires its Cue domain, RING finger, and an E2-binding site. *Proc Natl Acad Sci USA* 103(2):341–346, 2006.

Horikawa L, Chiang YJ, Patterson T, Feigenbaum L, Leem SH, Michishita E, Larionov V, Hodes RJ, Barrett JC. Differential cis-regulation of human versus mouse TERT gene expression in vivo: Identification of a human-specific repressive element. *Proc Natl Acad Sci USA* 102(51):18437–18442, 2005.

Suh HC, Gooya J, Renn K, Friedman AD, Johnson PF, Keller JR. C/EBP α determines hematopoietic cell fate in multipotential progenitor cells by inhibiting erythroid differentiation and inducing myeloid differentiation. *Blood* 2006.

Cellular Immunology and Immune Regulation

Hel Z, Tsai WP, Trynieszewska E, Nacsaj, Markham PD, Lewis MG, Pavlakis GN, Felber BK, Tartaglia J, Franchini G. Improved vaccine protection from simian AIDS by the addition of nonstructural simian immunodeficiency virus genes. *J Immunol* 176(1):85–96, 2006.

Wright HV, Bailey D, Kashyap M, Kepley CL, Drutskaya MS, Nedospasov SA, Ryan JJ. IL-3-mediated TNF production is necessary for mast cell development. *J Immunol* 176(4):2114–2121, 2006.

Zhang N, Yang D, Dong H, Chen Q, Dimitrova DI, Rogers TJ, Sitkovsky M, Oppenheim JJ. Adenosine A2a receptors induce heterologous desensitization of chemokine receptors. *Blood* 2006.

Evolution

Johnson WE, Eizirik E, Pecon-Slattery J, Murphy WJ, Antunes A, Teeling E, O'Brien SJ. The Late Miocene radiation of modern Felidae: A genetic assessment. *Science* 311(5757):73–77, 2006.

HIV

Frahm N, Kiepiela P, Adams S, Linde CH, Hewitt HS, Sango K, Feeney ME, Addo MM, Lichterfeld M, Lahaie MP, Pae E, Wurcel AG, Roach T, St John MA, Altfeld M, Marincola FM, Moore C, Mallal S, Carrington M, Heckerman D, Allen TM, Mullins JI, Korber BT, Goulder PJR, Walker BD, Brander C. Control of human immunodeficiency virus replication by cytotoxic T lymphocytes targeting subdominant epitopes. *Nat Immunol* 7(2):173–178, 2006.

Koff WC, Johnson PR, Watkins DI, Burton DR, Lifson JD, Hasenkrug KJ, McDermott AB, Schultz A, Zamb TJ, Boyle R, Desrosiers RC. HIV vaccine design: insights from live attenuated SIV vaccines. *Nat Immunol* 7(1):19–23, 2006.

Kottlilil S, Shin K, Jackson JO, Reitano KN, O'Shea MA, Yang J, Hallahan CW, Lempicki R, Arthos J, Fauci AS. Innate immune dysfunction in HIV infection: effect of HIV envelope-NK cell interactions. *J Immunol* 176(2):1107–1114, 2006.

Immunobiology

Khan T, Hixon JA, Stauffer JK, Lincoln E, Back TC, Brenner J, Lockett S, Nagashima K, Powell D, Wigginton JM. Therapeutic modulation of Akt activity and antitumor efficacy of interleukin-12 against orthotopic murine neuroblastoma. *J Natl Cancer Inst* 98(3):190–202, 2006.

Ortaldo JR, Winkler-Pickett R, Wigginton J, Horner M, Bere EW, Mason AT, Bhat N, Cherry J, Sanford M, Hodge DL, Young HA. Regulation of ITAM-positive receptors: role of IL-12 and IL-18. *Blood* 107(4):1468–1475, 2006.

Zhang R, Lifson JD, Chougnnet C. Failure of HIV-exposed CD4(+) T cells to activate dendritic cells is reversed by restoration of CD40/CD154 interactions. *Blood* 107(5):1989–1995, 2006.

Immunology

Cicala C, Arthos J, Martinelli E, Censoplano N, Cruz CC, Chung E, Selig SM, Van Ryk D, Yang J, Jagannatha S, Chun TW, Ren P, Lempicki RA, Fauci AS. R5 and X4 HIV envelopes induce distinct gene expression profiles in primary peripheral blood mononuclear cells. *Proc Natl Acad Sci USA* 103(10):3746–3751, 2006.

Yao ZJ, Cui YZ, Watford WT, Bream JH, Yamaoka K, Hissong BD, Li D, Durum SK, Jiang QO, Bhandoola A, Hennighausen L, O'Shea JJ. Stat5a/b are essential for normal lymphoid development and differentiation. *Proc Natl Acad Sci USA* 103(4):1000–1005, 2006.

Mechanisms of Signal Transduction

Chen KQ, Iribarren P, Hu JY, Chen JH, Gong WH, Cho EH, Lockett S, Dunlop NM, Wang JM. Activation of toll-like receptor 2 on microglia promotes cell uptake of Alzheimer disease-associated amyloid beta peptide. *J Biol Chem* 281(6):3651–3659, 2006.

Lee HS, Bong YS, Moore KB, Soria K, Moody SA, Daar IO. Dishevelled mediates ephrinB1 signaling in the eye field through the planar cell polarity pathway. *Nat Cell Biol* 8(1):55–63, 2006.

Li WQ, Jiang Q, Aleem E, Kaldis P, Khaled AR, Durum SK. IL-7 promotes T-cell proliferation through destabilization of p27Kip1. *J Exp Med* 2006.

Pandhare J, Cooper SK, Phang JM. Proline oxidase, a proapoptotic gene, is induced by troglitazone—Evidence for both peroxisome proliferator-activated receptor gamma-dependent and -independent mechanisms. *J Biol Chem* 281(4):2044–2052, 2006.

Yu Q, Park JH, Doan LL, Erman B, Feigenbaum L, Singer A. Cytokine signal transduction is suppressed in preselection double-positive thymocytes and restored by positive selection. *J Exp Med* 203(1):165–175, 2006.

Medical Sciences

Helgadóttir A, Manolescu A, Helgason A, Thorleifsson G, Thorsteinsdóttir U, Gudbjartsson DF, Gretarsdóttir S, Magnusson KP, Gudmundsson G, Hicks A, Jonsson T, Grant SFA, Sainz J, O'Brien SJ, Sveinbjornsdóttir S, Valdimarsson EM, Matthiasson SE, Levey AI, Abramson JL, Reilly MP, Vaccarino V, Wolfe ML, Gudnason V, Quyyumi AA, Topol EJ, Rader DJ, Thorgeirsson G, Gulcher JR, Hakonarson H, Kong A, Stefansson K. A variant of the gene encoding leukotriene A4 hydrolase confers ethnicity-specific risk of myocardial infarction. *Nat Genet* 38(1):68–74, 2006.

Mantena SR, Kannan A, Cheon YP, Li QX, Johnson PF, Bagchi IC, Bagchi MK. C/EBP beta is a critical mediator of steroid hormone-regulated cell proliferation and differentiation in the uterine epithelium and stroma. *Proc Natl Acad Sci USA* 103(6):1870–1875, 2006.

Nanda A, Karim B, Peng ZS, Liu GS, Qiu WP, Gan C, Vogelstein B, St Croix B, Kinzler KW, Huso DL. Tumor endothelial marker 1 (Tem1) functions in the growth and progression of abdominal tumors. *Proc Natl Acad Sci USA* 103(9):3351–3356, 2006.

Ott MG, Schmidt M, Schwarzwaelder K, Stein S, Siler U, Koehl U, Glimm H, Kuhlcke K, Schilz A, Kunkel H, Naundorf S, Brinkmann A, Deichmann A, Fischer M, Ball C, Pilz I, Dunbar C, Du Y, Jenkins NA, Copeland NG, Luthi U, Hassan M, Thrasher AJ, Hoelzer D, von Kalle C, Seger R, Grez M. Correction of X-linked chronic granulomatous disease by gene therapy, augmented by insertional activation of MDS1-EV11, PRDM16 or SETBP1. *Nat Med* 12(4):401–409, 2006.

Membrane Transport, Structure, Function, and Biogenesis

Gattis JL, Washington AV, Chisholm MM, Quigley L, Szyk A, McVicar DW, Lubkowski J. The structure of the extracellular domain of triggering receptor expressed on myeloid cells like transcript-1, and evidence for a naturally occurring soluble fragment. *J Biol Chem* 2006.

Mattera R, Tsai YC, Weissman AM, Bonifacino JS. The Rab5 guanine nucleotide exchange factor Rabex-5 binds ubiquitin (Ub) and functions as a Ub ligase through an atypical Ub-interacting motif and a zinc finger domain. *J Biol Chem* 281(10):6874–6883, 2006.

Microbiology

Buck CB, Day PM, Thompson CD, Lubkowski J, Lu WY, Lowy DR, Schiller JT. Human alpha-defensins block papillomavirus infection. *Proc Natl Acad Sci USA* 103(5):1516–1521, 2006.

Molecular Biology, Pathology, and Genetics

Chiang YJ, Nguyen ML, Gurunathan S, Kaminker P, Tessarollo L, Campisi J, Hodes RJ. Generation and characterization of telomere length maintenance in tankyrase 2-deficient mice. *Mol Cell Biol* 26(6):2037–2043, 2006.

Fong LG, Ng JK, Lammerding J, Vickers TA, Meta M, Cote N, Gavino B, Qiao X, Chang SY, Young SR, Yang SH, Stewart CL, Lee RT, Bennett CF, Bergo MO, Young SG. Prelamin A and lamin A appear to be dispensable in the nuclear lamina. *J Clin Invest* 116(3):743–752, 2006.

Gold B, Merriam JE, Zernant J, Hancox LS, Taiber AJ, Gehrs K, Cramer K, Neel J, Bergeron J, Barile GR, Smith RT, Hageman GS, Dean M, Allikmets R, Chang S, Yannuzzi LA, Merriam JC, Barbazetto I, Lerner LE, Russell S, Hoballah J, Hageman J, Stockman H. Variation in factor B (BF) and complement component 2 (C2) genes is associated with age-related macular degeneration. *Nat Genet* 2006.

Hanson JA, Gillespie JW, Grover A, Tangrea MA, Chuaqui RF, Emmert-Buck MR, Tangrea JA, Libutti SK, Linehan WM, Woodson KG. Gene promoter methylation in prostate tumor-associated stromal cells. *J Natl Cancer Inst* 98(4):255–261, 2006.

Hruban RH, Adsay NV, Albores-Saavedra J, Anver MR, Biankin AV, Boivin GP, Furth EE, Furukawa T, Klein A, Klimstra DS, Kloppel G, Lauwers GY, Longnecker DS, Luttges J, Maitra A, Offerhaus GJA, Perez-Gallego L, Redston M, Tuveson DA. Pathology of genetically engineered mouse models of pancreatic exocrine cancer: consensus report and recommendations. *Cancer Res* 66(1):95–106, 2006.

Reilly KM, Broman KW, Bronson RT, Tsang S, Loisel DA, Christy ES, Sun ZH, Diehl J, Munroe DJ, Tuskan RG. An imprinted locus epistatically influences Nstr1 and Nstr2 to control resistance to nerve sheath tumors in a neurofibromatosis type 1 mouse model. *Cancer Res* 66(1):62–68, 2006.

Waalkes MP, Liu J, Ward JM, Powell DA, Diwan BA. Urogenital carcinogenesis in female CD1 mice induced by in utero arsenic exposure is exacerbated by postnatal diethylstilbestrol treatment. *Cancer Res* 66(3):1337–1345, 2006.

Neoplasia

Boyd KE, Xiao YY, Fan K, Poholek A, Copeland NG, Jenkins NA, Perkins AS. Sox4 cooperates with Evi1 in AKXD-23 myeloid tumors via transactivation of proviral LTR. *Blood* 107(2):733–741, 2006.

Herranz M, Martin-Caballero J, Fraga MF, Ruiz-Cabello J, Flores JM, Desco M, Marquez V, Esteller M. The novel DNA methylation inhibitor zebularine is effective against the development of murine T-cell lymphoma. *Blood* 107(3):1174–1177, 2006.

Yang HS, Matthews CP, Clair T, Wang Q, Baker AR, Li CCH, Tan TH, Colburn NH. Tumorigenesis suppressor Pcd4 down-regulates mitogen-activated protein kinase kinase kinase 1 expression to suppress colon carcinoma cell invasion. *Mol Cell Biol* 26(4):1297–1306, 2006.

Neuroscience

Garcia-Fresco GP, Sousa AD, Pillai AM, Moy SS, Crawley JN, Tessarollo L, Dupree JL, Bhat MA. Disruption of axo-glial junctions causes cytoskeletal disorganization and degeneration of Purkinje neuron axons. *Proc Natl Acad Sci USA* 103(13):5137–5142, 2006.

Oncogene

Hara T, Abe M, Inoue H, Yu LR, Veenstra TD, Kang YH, Lee KS, Miki T. Cytokinesis regulator ECT2 changes its conformation through phosphorylation at Thr-341 in G2/M phase. *Oncogene* 25(4):566–578, 2006.

Liu Y, Borchert GL, Surazynski A, Hu CA, Phang JM. Proline oxidase activates both intrinsic and extrinsic pathways for apoptosis: the role of ROS/superoxides, NFAT and MEK/ERK signaling. *Oncogene* 2006.

Ishimura A, Lee HS, Bong YS, Saucier C, Mood K, Park EK, Daar IO. Oncogenic Met receptor induces ectopic structures in *Xenopus* embryos. *Oncogene* 2006.

Sterneck E, Zhu S, Ramirez A, Jorcano JL, Smart RC. Conditional ablation of C/EBP beta demonstrates its keratinocyte-specific requirement for cell survival and mouse skin tumorigenesis. *Oncogene* 25(8):1272–1276, 2006.

Phagocytes

Biswas SK, Gangi L, Paul S, Schioppa T, Saccani A, Sironi M, Bottazzi B, Doni A, Vincenzo B, Pasqualini F, Vago L, Nebuloni M, Mantovani A, Sica A. A distinct and unique transcriptional program expressed by tumor-associated macrophages (defective NF-kappa B and enhanced IRF-3/STAT1 activation). *Blood* 107(5):2112–2122, 2006.

Protein Structure and Folding

El Omari K, Ren J, Bird LE, Bona MK, Klarmann G, LeGrice SFJ, Stammers DK. Molecular architecture and ligand recognition determinants for T4 RNA ligase. *J Biol Chem* 281(3):1573–1579, 2006.

Prabakaran P, Gan J, Feng Y, Zhu Z, Choudhry V, Xiao X, Ji X, Dimitrov DS. Structure of SARS coronavirus receptor-binding domain complexed with neutralizing antibody. *J Biol Chem* 2006.

Wexler-Cohen Y, Johnson BT, Puri A, Blumenthal R, Shai Y. Structurally altered peptides reveal an important role for N-terminal heptad repeat binding and stability in the inhibitory action of HIV-1 peptide DP178. *J Biol Chem* 281(14):9005–9010, 2006.

Protein Synthesis, Post-translation Modification, and Degradation

Chen ZQ, Dong J, Ishimura A, Daar I, Hinnebusch A, Dean M. The essential vertebrate ABCE1 protein interacts with eukaryotic initiation factors. *J Biol Chem* 2006.

Mitchell MS, Tozser J, Princler G, Lloyd PA, Auth A, Derse D. Synthesis, processing, and composition of the virion-associated HTLV-1 reverse transcriptase. *J Biol Chem* 281(7):3964–3971, 2006.

RNA: Structure, Metabolism, and Catalysis

Dash C, Marino JP, Le Grice SFJ. Examining Ty3 polypurine tract structure and function by nucleoside analog interference. *J Biol Chem* 281(5):2773–2783, 2006.

Gan J, Tropea JE, Austin BP, Court DL, Waugh DS, Ji X. Structural insight into the mechanism of double-stranded RNA processing by ribonuclease III. *Cell* 124(2):355–366, 2006.

Transplantation

Welniak LA, Kuprash DV, Tumanov AV, Panoskaltsis-Mortari A, Blazar BR, Sun K, Nedospasov SA, Murphy WJ. Peyer patches are not required for acute graft-versus-host disease after myeloablative conditioning and murine allogeneic bone marrow transplantation. *Blood* 107(1):410–412, 2006. ♦

It's a Small Patent World after All

Welcome back to the wonderful world of patenting. As you may recall from previous Technology Transfer Branch articles published in the September and December 2005 NCI-Frederick *Poster*, the diagram for following and understanding the patenting process is not unlike the maps of some well known amusement parks: As much as one may study the map or diagram, the translation of what is on the paper to what actually "is" can be quite an eye-opening experience. And even if one has managed to maneuver through one area of the park or process without too much trepidation, i.e., the kiddie rides or U.S. patent process, the experience can change from easygoing to the hair-raising twists and turns of a roller coaster ride with little warning.

Twist #1: Need for a Foreign Filing License

Here is a real-world example: The NCI-Frederick Laboratory of Cure-for-Cancer is involved in an informal collaboration with a foreign university. The foreign university located in Azerbaijan wants to file a Azerbaijanian patent application on a discovery that was made during your collaboration. Your Azerbaijanian collaborator graciously includes your name as an inventor. This may seem harmless enough, until you realize a foreign filing license was not obtained.

Under U.S. patent law, a foreign-filing license must be obtained from the United States Patent Office Commissioner of Patents prior to filing a patent application in a foreign country on an invention made in the U.S.A. (35 U.S.C. §184 Filing of application in foreign country). If a foreign patent application is filed through error and without

deceptive intent, and if disclosure of the invention through a foreign application wouldn't be detrimental to national security (35 U.S.C. §181 Secrecy of certain inventions and withholding of patent), patent law provides a process for granting of a retroactive foreign filing license. Without it, your new discovery may not be eligible for patent protection in the U.S. The only way to "lift the bar" is to obtain a retroactive foreign filing license by filing a petition with the U.S. Patents and Trademarks Office and hope such will be granted, which is a long, costly, and legally arduous process for the inventor and the inventor's employer (35 U.S.C. §185 Patent barred for filing without license). The U.S. inventor faces other complications if an application is filed in a foreign country without a foreign filing license if the inventor's failure to obtain the license was not due to error or was with deceptive intent. These complications may include criminal charges and fines. This would be the hair-raising part of the ride.

Twist #2: Differences between U.S. and Foreign Patent Laws

Another element U.S. inventors want to be aware of is the difference between U.S. patent law and foreign patent laws in naming inventors on applications. In the U.S., inventorship is a legal determination; the application must include all inventors who made independent, conceptual contributions to the invention. In many foreign countries, inventorship is more of a business or good-will decision than a legal decision. Therefore, a foreign colleague may think naming a U.S. collaborator as an inventor on a foreign application is an act of good will, not realizing he or she may actually be creating a patent law nightmare for the American collaborator. Feel like

you're going down the roller coaster instead of up it now?

Twist #3: Informal Collaboration Agreements

For those who prefer the smoother ride of a merry-go-round or water flume to a monster roller coaster, TTB suggests keeping lines of communication open and active with foreign collaborators, especially in the patent process. When entering into even an informal collaboration, put an agreement in place that speaks to patenting. NCI has a new Collaboration Agreement (CA) that is perfect for informal collaborations with language agreeing to work together on publication and patenting. One of the terms of the CA says:

The Parties agree to work together to make the results of their research publicly available; however, before either Party submits a paper or abstract for publication, the other Party shall have thirty (30) days to review the proposed publication to ensure that Confidential Information is protected. The disclosing Party may request in writing that the proposed publication be delayed for up to thirty (30) additional days as necessary to file a patent application. Data that are generated by either Party under the Research Plan ("Research Data") will be kept confidential until published or a corresponding patent application has been filed.

The CA may be just the ticket to keep your research and resulting inventions on the fast track without too many unexpected twists and turns. Your laboratory's NCI Technology Transfer Specialist can help you put a CA or other appropriate transactional agreement in place to make the most of your collaborative efforts and to protect you and your inventions as you enjoy your adventure in the wonderful world of patenting! ♦

Frederick Employee Diversity Team

Honey and Diversity

Since last month's Spring Research Festival was symbolized by the honeybee, we thought you might enjoy reading a bit about the use of honey in cultures around the world.

In many cultures, honey has associations that go far beyond its use as a food. In literature, religion and folk belief, honey is frequently a symbol of human or godly kindness, or a symbol for that which is pleasant and desirable. Those knowledgeable about Judeo-Christian culture may recall that Moses' Promised Land is described as "flowing with milk and honey." The significance of honey carries over to Jewish tradition, in that an apparent exception was made for it in Jewish dietary laws: Although insects and their products are normally considered unclean, honey is deemed a kosher food product.

Honey Symbolizes Kindness

In Buddhist theology, the festival of Madhu Purnima in late summer commemorates Buddha's making peace among his disciples by retreating into the wilderness. Buddha was nourished in his hideaway by a monkey bringing him honey to eat. On Madhu Purnima, Buddhists remember this kindness by ceremoniously giving honey to monks. The monkey's gift is frequently depicted in Buddhist art.

Vishnu, Preserver and Protector of the Hindu trinity of gods, is often depicted as a blue bee on a lotus flower.

Honey plays an important role in Greek mythology—one that is today commemorated in the names not only of humans, but bees themselves. Melissa was a nymph who extended kindnesses to the infant Zeus while he was hidden away from his father, Cronus, the lord of the universe.

Melissa plundered bee hives of their honey to sustain Zeus. When Melissa's role in protecting Zeus was discovered, Cronos transformed her into an earthworm. Zeus later took pity on Melissa and transformed her into a honeybee. This mythology is evidenced in the scientific name for honeybees, *Apis mellifera*.

Even the Bard had words to say about honey: "He is not worthy of the honeycomb, that shuns the hives because the bees have stings" (Shakespeare, William. *Locrine*, Act III:iii).

References

Bishop, Holley. *Robbing the Bees*. Free Press, 2005

<http://www.geocities.com/Area51/Dungeon/4785/Greek.html>

<http://www.herbsnhoney.com/bees.htm>

<http://www.ibra.org.uk/>

<http://www.wsu.edu/~delahoyd/shakespeare/loctrine3.html> ♦



Teresa Ramirez, Laboratory of Experimental Immunology, and Paul Miller, Chairperson, Frederick Employee Diversity Team, display the Diversity Team's cookbook and movie guide. The publications were given out at the Spring Research Festival. To join the Diversity Team, e-mail Paul Miller at millerp@ncifcrf.gov.

Winners of Diversity Movie Tickets

Win a free movie pass from the Diversity Team! Just answer the questions posted at the Diversity display case in the Café NCI-Frederick, Building 549. Congratulations to the lucky winners from February and March:

Alan Brooks
Shawn Brown
Samitabh Chakroborti
Eileen Downey
Kathy Easterday
Erica Emeigh

Tiffany Gee
Roxanne Gibson
Ann Gamero
Yolanda Goines
Jeanne Hazzard
Chistian Kloc

Fung Lian
Daniel Oleyar
Beverly Studebaker
Martha Summers
Tim Waybright
Alexander Zdanov ♦

Poster People Profile: Fran Hostetler

What Do You Do?

Frances “Fran” Hostetler first came to Ft. Detrick in 1983, as a soldier. She was manager of “the old club,” which is now the community activities center. After five years at Ft. Detrick, she went to Ft. Dix, New Jersey, where she was a Drill Instructor for two years. She returned to Ft. Detrick to work as a cook at the club, and, when the Café NCI-Frederick opened its doors in 1996, she started there as a cook. As she puts it, “The rest is history.”

Officially, she is the Facilities Manager, but, she says, she does everything from mopping floors to preparing the annual budget. “I really try to keep the patrons happy by providing a variety of good, healthy food options at a reasonable price, and by providing a friendly greeting and a good atmosphere to enjoy their meal or break,” she said in a recent interview.

Career Began in the Army

Ms. Hostetler learned about food service in the Army, having attended school in all phases of the business and taken several classes in financial management while still on active duty. “I have the Army to thank for most of my education in food service,” she commented, but she indicated that experience has taught her the most. “I guess the best teacher of all was the fact that I have spent the last 40 years of my life in food service of one kind or another.”

Changes in Eating Habits Created Challenges

The biggest single change she has witnessed over the years is in the kind of food people are eating now. “People are now more into healthy eating,

which means finding food items that are low calorie and low fat, while still trying to keep the ‘steak-and-potato’ people happy.”



*Fran Hostetler
Facilities Manager, Café NCI-Frederick*

Loves the People Here

Interacting with people on campus is her favorite part of her job. “The absolute best part of my job is the interaction I can have with the patrons who come in to use the facility. I have had the opportunity to meet some of the nicest and most interesting people,” she said, adding, “Without this job, I would never have known any of these people.”

In Her Free Time

The owner of three standard poodles, she says her three “boys” are her pride and joy. She shows two of them in obedience class, which, she said, “has taught me patience and humility.” Other favorite activities include running and working out. She believes “there’s nothing like a long run at the end of the day to relieve the tension.” Trying to keep a few thousand people happy at mealtime must inspire some long runs, indeed. ♦



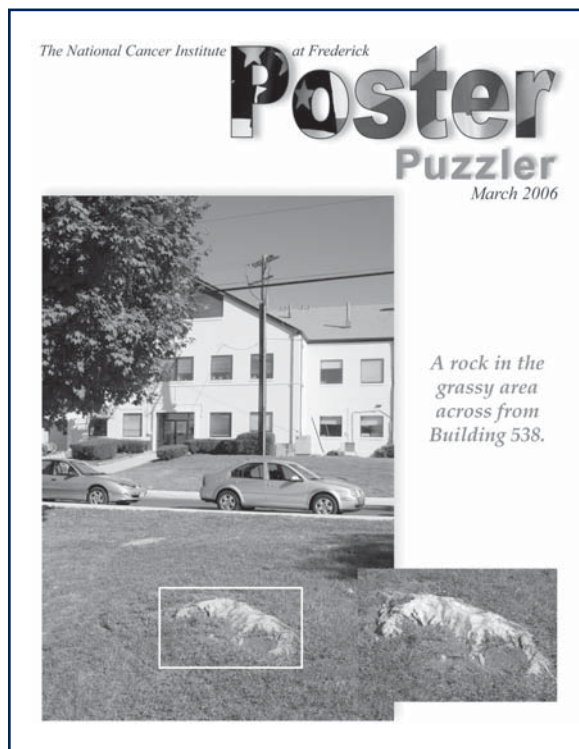
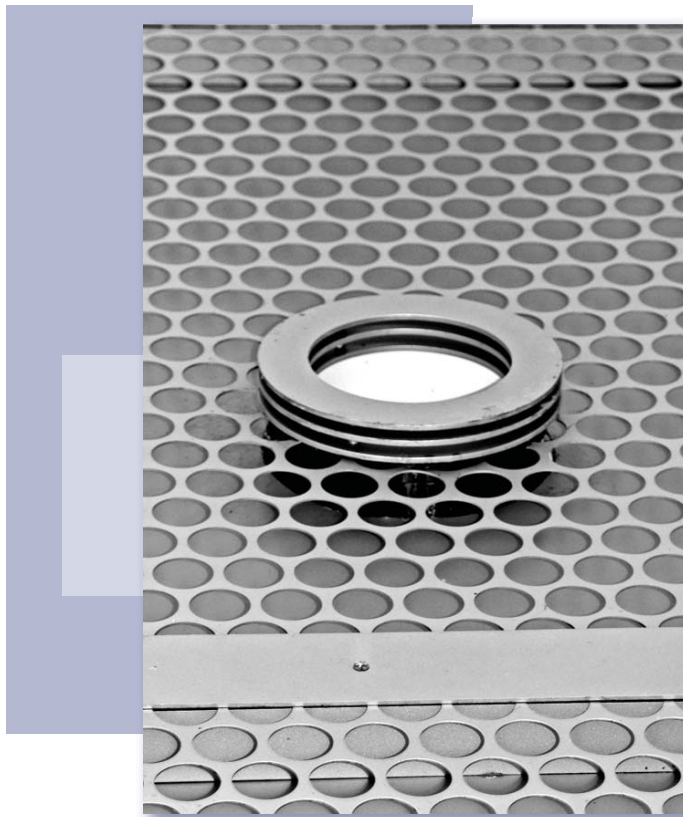
Poster Puzzler

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 by e-mailing your guess, along with your name, e-mail address, and daytime phone number, to Poster Puzzler at 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 28, 2006**, and the winner will be drawn from all correct answers received by that date.

Good luck and good hunting! ♦



Congratulations to our March 2006 Poster Puzzler joint winners: Jami Troxler, Research Technician, and Michael Malasky, Research Assistant CORE Laboratory ♦

The Poster Puzzler:

A Piece of the Rock

The March Poster Puzzler can probably be best described by what it's not: it's not a picture of a mountain range taken from a hot air balloon; nor is it the fossil of a manatee that washed up from the antediluvian deep 100,000 years ago.

The March Puzzler is a rock in the grassy area across from Building 538. Measuring just over five feet in length, this limestone rock has lain in quiet vigil over the area for much longer than any of us have been here. In the early 1950s, it saw the construction of the U.S. Army's Aerobiological Laboratories in Building 376, and the U.S. Army Chemical and Physical Laboratory in Building 538. Nearly 40 years later, it saw the installation of the modular buildings now housing Human Resources (Building 371) and the HR Recruiting and the NCI Ethics offices (Building 372).

This sturdy guardian also shows signs (war wounds) of conflict with lawn mowers over the years. Yet through it all, it has remained true and solid as a, well, rock.

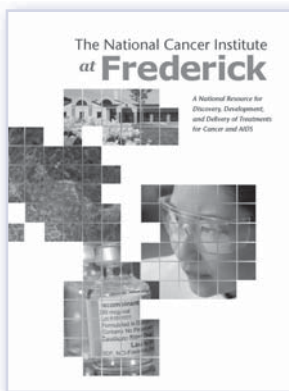
Special thanks to Rocky (no pun intended) Follin, FME, for the information in this article.

Thanks to all the participants in the March 2006 *Poster* Puzzler! ♦

Did You Know?

NCI-Frederick Garners Awards

NIH Plain Language Award



NCI-Frederick's first Annual Report Executive Summary has been awarded an Honorable Mention in the 2005 NIH

Plain Language Awards competition. Produced in fall 2004, the 16-page booklet was developed following extensive interviews with representatives from Charles River Laboratories, Data Management Services, SAIC-Frederick, Inc., and Wilson Information Services, Inc. The staff of Scientific Publications, Graphics & Media and other SAIC information specialists worked closely with NCI-Frederick administration in developing both content and design.

Having also achieved a Gold Award in the 2005 MarCom Creative Awards and an Award of Distinction in the 2005 Communicator Print Media Awards, the summary has now been recognized for excellence in graphic design, effective communication, and readability. ♦

National Public Service Award

NCI-Frederick Principal Investigator Dr. Howard Young, Laboratory of Experimental Immunology, received a National Public Service Award in April. The award recognized his efforts to improve the work environment of NCI-Frederick and NIH. Over the years, Dr. Young has been involved in a number of events to that end: he founded, and for five years chaired, the Spring Research Festival; participated in the initiation of, and

was scientific advisor to, the Werner Kirsten Student Intern Program; established and still runs the Summer Student Seminar Series; recently developed a student training program on ethics and the conduct of scientific research (visit the Web site <http://web.ncifcrf.gov/campus/ethicscourse/>); and has served for three years on the NCI Introduction to Cancer Research Career selection committee. As a mentor and member of the research career program, Dr. Young sponsors a student and has helped select and place disadvantaged minority students interested in biochemical research.

Dr. Young also brings humor to his work with young people. In speaking to student groups, he often presents "The Top 12 Rules to Remember for Working in a Laboratory." Three are: take your work seriously, but not yourself seriously; only work with people who like chocolate; and you can go anywhere you want if you look serious and carry a rack of microfuge tubes.



Dr. Young is a two-time recipient of the National Institute of Health's Merit Award. He is an elected fellow in the American Academy of Microbiology,

and was the first recipient of the NCI-NIH Directors' Award for Mentoring.

Dr. Young commented that after reviewing the accomplishments of the other winners, "I am honored by the fact that I was also chosen for this award. Although I knew I had been nominated, I was full of some disbelief when I received the call that I had been selected. It is a great privilege to work here at NCI-Frederick, and my attempts to improve the quality of this workplace represent my commitment to recognize this privilege by devoting some of my efforts to the organization as a whole."

The American Society for Public Administration and the National Academy of Public Administration jointly present these annual awards for excellence in public service. The awards were established in 1983 "to honor individuals whose accomplishments are models of public service within and outside the work environment ...[and] who exhibit the highest standards of excellence, dedication, and accomplishment over a sustained period of time and who are creative and skilled career managers at all levels of public service," according to the Web site, http://www.napawash.org/about_academy/npsa2006winners.html.

Dr. Young is currently investigating new methods to combine cytokine treatment with use of chemotherapeutic drugs in the preclinical development of possible new protocols to treat cancer. He has been involved in a collaborative project with the U.S. Army Medical Research Institute for Infectious Disease, which led to important findings on the mechanisms involved in the host response to Ebola virus infection and anthrax toxin. His many other scientific accomplishments are reflected in more than 240 peer-reviewed papers. ♦

Did You Know?



Do You Know Your U.S. Flag Laws and Regulations?

[Editors' note: In this "season" of Memorial Day, Flag Day, and the Fourth of July, it seems appropriate to print the article below about U.S. flag customs and courtesies. Since we work on a military post, an occasional reminder of proper flag etiquette can't hurt. We thank Ann Rogers, Laboratory of Cancer Prevention, for writing this article.]

I was brought up to respect, honor, and love our flag and those who have died fighting to give me my freedom. I was an "Army brat" in many ways: I was born on a military installation; both parents served in the military; an uncle was killed in World War II; two sons served in the Armed Forces; and now I work at Ft. Detrick. Thus, I am sensitive to the rules of military etiquette. Each day, when I hear the bugle calls at 5:00 p.m., I face the flag and put my hand over my heart. Each day, I also see folks hurrying to their cars, apparently unaware of what is taking place and what their response should be. (Ft. Detrick has put in speakers all over the post to ensure that we hear "Retreat" and "To the Colors" being played at the flag-lowering ceremony.)

Flag Regulations

The *U.S. Code of Regulations* explains our responsibility during flag ceremonies or when the flag passes us in a parade.

TITLE 4—FLAG AND SEAL, SEAT OF GOVERNMENT, AND THE STATES CHAPTER 1—THE FLAG

Sec. 9. Conduct during hoisting, lowering or passing of flag.

During the ceremony of hoisting or lowering the flag or when the flag is passing in a parade or in review, all persons present except those in uniform should face the flag and stand at attention with the right hand over the heart. Those present in uniform should render the military salute. When not in uniform, men should remove their headdress with their right hand and hold it at the left shoulder, the hand being over the heart. Aliens should stand at attention. The salute to the flag in a moving column should be rendered at the moment the flag passes.

—From the *U.S. Code Online via GPO Access* [wais.access.gpo.gov]; laws in effect as of January 7, 2003; document not affected by public laws enacted between January 7, 2003, and February 12, 2003 [CITE: 4USC9].



Notice the regulation includes both U.S. citizens and our foreign visitors. It is an honor to have foreign guests training with us at NCI-Frederick. We invite our visitors to join us in honoring our flag. Many visitors' countries have suffered the loss of war heroes, just as we have. As these visitors stand at attention to our flag, they may think of their countries and the freedoms they have that were bought at such a high price.

Respecting the Flag

Now, you may ask, "What about when I am driving my car?"

Officer Pineiro, NIH police, explained that when we hear the bugle calls, we should stop, get out of our vehicle, and salute, as noted in the flag regulations above. Sadly, although Officer Pineiro is required, as an officer of the law, to render respect to the flag, since very few people here stop when "Retreat" is played, he must focus his attention on the traffic, forcing him to forgo his duty to his country to oversee our safety.

"Retreat" does not simply tell us that it is 5:00 p.m. and our work day is done. Each day, as we listen to the news about the fighting in Iraq, "Retreat" provides us the opportunity to reflect on those making the supreme sacrifice. Often, as I listen to "Retreat" and "To the Colors," I pray for those in the military or just focus my thoughts, with a grateful heart, on them and their willingness to pay a high price for me.

Now, when you hear the bugle calls, get out of your car and stand at attention for just those few minutes to honor and respect our flag. Better yet, watch the soldiers perform this ceremony in front of Building 810; it will stir your heart. ♦

Spring Research Festival

Spring Research Festival Celebrates Tenth Year

On May 17 and 18, the corner of Ditto and Sultan swarmed with the activity of the tenth annual Spring Research Festival. Hundreds of vendors, exhibitors, and scientists took part in the popular event to showcase the science underway at the National Cancer Institute at Frederick and Fort Detrick.

Successful Formula

The Spring Research Festival has attracted big crowds every year since it began 10 years ago, when, according to festival founder Dr. Howard Young, it drew nearly 150 vendors and 30 exhibitors. While a few features have been modified over the years, the basic format of the festival has remained the same: posters, technology, exhibits, and, of course, food.

The most significant change came five years ago, when, Dr. Young explained, the Office of the Director adopted the festival “as a regular, established NCI-Frederick showcase of the excellent science being performed by the NCI, the Army, and the USDA.” This change included the selection of Ms. Cheryl Parrott as Chair of the Organizing Committee, which, Dr. Young noted, “provided ‘institutional memory,’” and helped define the responsibilities of the various offices that contribute to the festival’s success. As an “official” event, the festival was assured of enough volunteers and, equally important, appropriate funding.

The festival has drawn increasing numbers every year from all across campus. Dr. Young reflected, “I believe that all the groups here at Ft. Detrick now see the Festival as an event in which participation is worthwhile and expected by their communities. This was evident to me this year by the significant number of posters from the Army and the USDA.”

New in 2006

New this year was the presence of the National Interagency Confederation for Biological Research, a collaborative working group of all the medical research and advanced biotechnology organizations from the biotechnology and biodefense sides of the campus. The Confederation comprises the CDC, DHS, NCI-Frederick, NIAID, USAMRIID, and USDA. Representatives were on hand to discuss the mission of the Confederation and the large, scale model of the new National Interagency Biodefense Campus at Ft. Detrick.

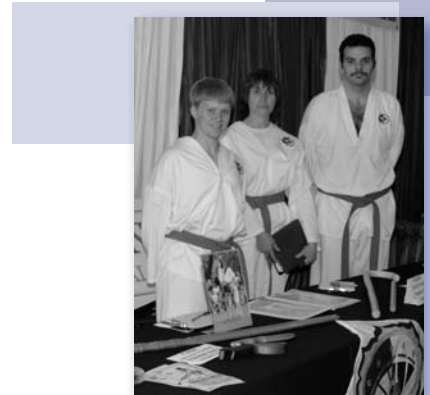
Another new feature, according to Ms. Parrott, was the display of all posters on both days, an important change that allowed extra time for viewing the full range of scientific findings. Over 160 posters were presented, and nearly 200 vendors and 42 exhibitors from both within and outside the community participated in the event.

Other Events

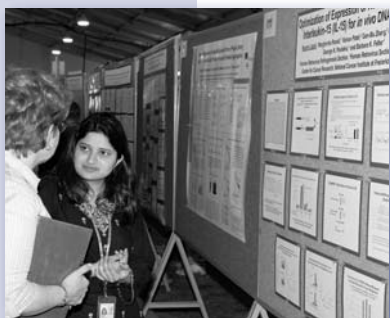
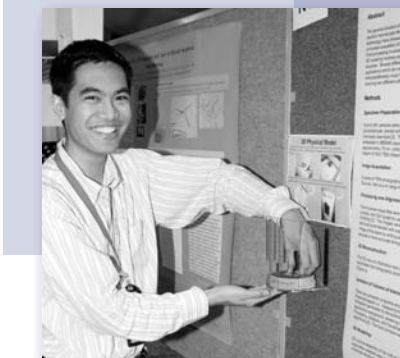
The keynote speaker was Dr. Daniel Erlanson, of Sunesis Pharmaceuticals, Inc., who presented “Fragment-based Drug Discovery at Fluxional Sites in Proteins,” describing the use of Tethering® in a fragment-based approach to drug discovery. The Scientific Library offered movies to both entertain and educate viewers about the honeybee, this year’s mascot.

In spite of the “rinse-cycle/dry cycle” weather, Ms. Parrott commented, “We had wonderful attendance. This is truly an all-institute success because there’s so much teamwork involved.”

For more information on the 2006 Spring Research Festival, visit the Web site, <http://web.ncifcrf.gov/events/springfest/default.asp>. ♦



Spring Research Festival



Congratulations to the 2006 Spring Research Festival Poster Winners

Associate Director

Dr. Ester Rozenblum — Laboratory of Molecular Technology (**New Technology**)
Laboratory of Molecular Technology (LMT) Technology Development

Associate Scientist

John M. Roman — Laboratory of Proteomics and Analytical Technologies (**New Technology**)
Comparative Separation of Estrogens by HPLC-MS and SFC-MS

Investigators

David DeShazer — USAMRIID Bacteriology Division (**Infectious Pathogens**)
A New Secretion System in *Burkholderia mallei* Is Required for Virulence and Secretion of an Immunogenic Protein

Farivar M. Eskandari — USDA-ARS-Foreign Disease Weed Science Research Unit (**New Technology**)
Discovery of a *Cercospora* Leaf Spot on Russian Knapweed from Montana

Postdoctoral Fellows

Melissa M. McKay — Laboratory of Protein Dynamics and Signaling (**Biochemistry**)
Effects of Caspase-dependent Cleavage of KSR1 on TNF α -mediated apoptosis

Veronica Hall — Laboratory of Experimental Immunology (**Cancer Biology**)
Friend or Foe? IFN-Gamma Mediated Induction of Pro-Metastatic Gene Expression in the Tumor Microenvironment

Dr. Cyril Berthet — Mouse Cancer Genetics Program (**Developmental and Cell Biology**)
Combined loss of Cdk2 and Cdk4 Results in Embryonic Lethality and Rb Hypophosphorylation

William C. Dunty, Jr. — Cancer and Developmental Biology Laboratory (**Developmental and Cell Biology**)
Wnt3a/beta-catenin Signaling Regulates Mesoderm Fate and Vertebrate Segmentation by Controlling a Network of Transcription Factors

Joseph C. Manimala — Laboratory of Medicinal Chemistry (**Diagnostics and Therapeutics**)
Development of a Novel Carbohydrate Microarray and its Applications

Ana Romero — Laboratory of Experimental Immunology (**Immunology**)
Development of a Type I Interferon Resistant Clone Implicates STAT2 as a Critical Mediator in the Induction of Apoptosis.

Rashmi Jalah — Vaccine Branch, CCR (**Immunology**)
Optimization of Expression of Human and Rhesus Interleukin-15 (IL-15) for In Vivo DNA Delivery

Dr. Zhen Xiao — Laboratory of Proteomics and Analytical Technologies (**Molecular Biology**)
Analysis of the Extracellular Matrix and Vesicle Proteomes in Osteoblasts

Laura Carim-Todd — Mouse Cancer Genetics Program (**Molecular Biology**)

A Conserved Amino Acid Sequence that Increases TrkB Signaling
Drs. Cassio Baptista and Kelly Banfield — Laboratory of Molecular Technology (**New Technology**)
Virus-Microarray and Monoclonal Antibody-Microarray

James Gattis — Macromolecular Crystallography Laboratory (**Structural Biology & Chemistry**)
The Structure of the Immunoglobulin-like Domain of TLT-1 and Detection of a Naturally Occurring Soluble Fragment

Cristina Bergamaschi — Vaccine Branch, CCR (**Vaccines and Gene Therapy**)
Modulation of Immunogenicity of SIV and HIV Antigens Using Fusion Proteins with Lysosomal-Associated Membrane Protein-1 (LAMP-1)

J.Mohamad Fakruddin — Laboratory of Human Retrovirology (**Virology**)
Identification of Novel Anti-HIV-1 Role for IL-27

Hongzhan Xu — HIV Drug Resistance Program (**Virology**)
Identification of APOBEC3G Mutants that Exhibit a Defect in Virion Incorporation

Dr. Galina N. Nikolenko — HIV Drug Resistance Program (**Virology**)
A Novel Mechanism of HIV-1 Drug Resistance: Mutations in the Reverse Transcriptase Connection Domain Enhance AZT Resistance.

Olga A. Nikolaitchik — HIV Drug Resistance Program (**Virology**)
Effect of GAG Mutations on Recombination and RNA Packaging in HIV-1

Research Associates

Erik Harris — Laboratory of Functional Genomics (**Drug Development and Delivery**)
A Sterol Mesylate Activator of CEBPa Signaling Induces Monocytic Differentiation in Human Leukemia Cells In Vitro and In Vivo.

Senior Research Associate

Claudia Stewart — Laboratory of Molecular Technology (**Informatics**)
LMT LIMS

continued on page 31

Environment, Health, and Safety Program

How Safe Is Your Laboratory?

Is your laboratory safe? If you said yes, how do you know it is safe? Would others in your lab agree? Do you think someone from EHS would agree?

Answer this Question (Honestly!) to Determine If Your Lab Is Safe:

Is everyone who works in your lab thoroughly familiar with the workplace hazards, and does each person routinely use appropriate controls, such as good lab work practices, fume hoods, biosafety cabinets, and personal protective equipment, for these hazards?

If you said yes, you are working in a safe lab!



Who Ensures That Your Lab Is Safe?

Principal investigators, lab managers, and supervisors have the primary responsibility for ensuring that the laboratory and other work areas under their supervision are safe places to work. To make sure all laboratory personnel use safety procedures appropriate for the materials being handled, the workers must be made aware of the nature of the material (e.g., infectious versus inactivated pathogens), and the risks associated with the material. The active management of laboratory practices remains a significant role of supervisory staff and ensures safe work practices.

Secrets to Managing a Safe Lab

What are some secrets to managing a safe laboratory? The primary secret is this: the lab manager or principal investigator takes safety seriously. Lab managers and supervisors should

provide safety information to their lab personnel. In addition to taking safety seriously, safe labs have these items in common:

- Environment, Health, and Safety rules and procedures are followed;
- Pathogen and rDNA registrations, alarm notifications, safety plans, etc., are current and accurate;
- Chemicals, biologicals, and radiologicals are well-organized, properly stored, and labeled;
- Lab personnel wear appropriate personal protective equipment (e.g., safety eyewear, gloves) and use appropriate controls;
- Personnel receive basic training on health and safety hazards and regulations, and are current with re-training requirements;
- Safety information is regularly incorporated into group meetings and is documented; and
- Lab personnel regularly use EHS as a resource—EHS and lab managers interact frequently.

Biological Safety and the IBC

Before initiating work with pathogens, human-derived cells or materials, or recombinant DNA, principal investigators are required to register the work with the NCI-Frederick Institutional Biosafety Committee (IBC). An integral part of the registration process ensures that all laboratory personnel have been apprised of the risks associated with their work. However, implementing safe work practices does not mean that laboratory activities are simply registered with the IBC. Since scientific research rapidly evolves, and the scope of work within a laboratory

continually changes, it is essential that laboratory staff be commensurately trained in new technical challenges and any changes in the potential risks associated with their work.

However, suppose a lab supervisor stresses to a technician the need to recover higher yields of viral particles. To achieve the higher yields, the technician decides to change the standard laboratory procedure to include the use of sharps. While this type of change in a protocol may seem benign, it is not! Using sharps in a laboratory that handles potentially infectious materials significantly increases the risk of occupational exposure. Generally, using sharps during manipulation of human pathogens or potentially infectious materials (for other than parenteral injection of animals) is not allowed at NCI-Frederick, unless the IBC has specifically reviewed and approved the procedure.



Emergency

Are You Prepared to Respond to a Biological Emergency?

Dealing with laboratory accidents should be an integral part of laboratory training. Are you prepared to respond effectively? Whether your exposure is contact with skin, mucosal membranes, or from a puncture wound or cut, these sorts of events constitute significant exposures and require immediate attention. Are you trained to take the following steps?

1. Immediately initiate first aid. Wash contaminated skin for about 20 minutes with a povidone-iodine scrub. Ensuring povidone-iodine scrubs are readily available in your laboratory is a good start to immediate first aid response to

Environment, Health, and Safety Program

a potential biological exposure, especially if a laboratory-associated viral vector is involved (If a mucosal membrane, such as your eye, is exposed, flush the membrane at an eyewash station for at least 15 minutes).

2. Notify the laboratory manager or supervisor as soon as feasible.
3. Notify Occupational Health Services (301-846-1096) about the incident as soon as possible. If there is an emergency after hours, call 911.

Before you report to OHS, you should answer several questions for yourself:

- What infectious material was I working with (bloodborne pathogens, viruses, viral vectors, etc.)?
- What was the infectious dose of the material I was manipulating?

- What was the pedigree of the cell line used to produce the virus?
- Are there other hazardous materials involved in the exposure?

Many factors are considered when contemplating post-exposure prophylaxis. When dealing with retroviral vectors and/or live virus, time is important. Although approved standard operating procedures and approved IBC registration documents may be in place, the only way EHS and the IBC can assure safe practices and procedures are being followed is through the diligence of the supervisor, mandatory training for technicians (with verification of their competency), and continuously monitoring performance.

Recommendations to ensure safe lab practices may also include changing equipment and procedures. For example, would a retractable needle device have avoided the exposure

in the example cited earlier in this article?

Finally, it is imperative that the principal investigator and/or those identified in protocols be fully aware of their laboratory activities, be knowledgeable about the hazards involved with their lab's work, and take responsibility for ensuring that lab personnel are trained in appropriate hazard mitigation measures and safe laboratory practices and procedures. The best way to deal with a potential exposure is to provide the necessary safety systems to ensure the exposure event is avoided altogether.

You may already have summer interns in your laboratory. Ensure that students as well as staff are knowledgeable about laboratory safety. Please use EHS as a resource! If your lab does not have everything a safe lab should, contact us. We will be delighted to help get your lab on track to being safe. EHS can be reached at 301-846-1451. ♦

Safety Quiz: What's Wrong with This Picture?

Can you find at least 12 safety violations in the picture at right?



Answers on page 26

Environment, Health, and Safety Program

Fitness Challenge 2006 is Heating Up!

NCI-Frederick's Fitness Challenge 2006 is heating up along with the seasons. In case you haven't yet heard of this program, here are the basics: the goals are that NCI-Frederick collectively lose 1 TON (2,000 pounds) of body weight; walk, run, or bike AROUND THE WORLD (~25,000 miles); and perform 1 YEAR (8,760 hours) of other fitness activities throughout 2006. All of the organizations at NCI-Frederick are in competition with one another to claim the greatest success by the end of the year. Got it? Good...so, let's get moving!

You Have Lots of Support

Occupational Health Services (OHS) has partnered with the Scientific Library's Center for Health Information (CHI) to support this program. The CHI offers a wide variety of diet, nutrition, and fitness links on its Web site (<http://www-library.ncifcrf.gov/chi.aspx>) that can help employees develop a healthier lifestyle. The CHI also offers individual assistance with registering and tracking your progress on the Fitness Challenge Web site, every Wednesday from 12:00 PM to 1:00 PM.

OHS has also worked closely with Data Management Systems (DMS) to provide an interactive Web site (<http://saic.ncifcrf.gov/fitnesschallenge/>) to support the Challenge. The Fitness Tracker, health information, fitness tips, "Find-A-Buddy," recipes, and links to useful Web sites are just some of the resources you'll find on this dynamic Web site.

The monthly "Lunch and Learn" programs provide information you can use to meet your personal goals. Upcoming events will cover subjects including fitness tips for beginners, the pros and cons of fad diets, how to get your family involved, and controlling

dietary choices throughout the holidays. Check the Web site for details.

Don't Forget to Record Your Progress!

The only way to see your own personal progress as well as add your results to those of your directorate is to log on to the Challenge Web site:

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

Record your activities in the "Fitness Tracker," a feature that allows you to view your personal progress and compare it with all others in your own directorate and the facility as a whole. You may also view the progress of all directorates, so you can see how your directorate stacks up against the others (see table and figure below.)

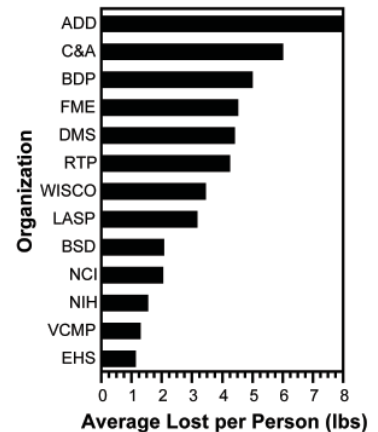
It's Not Too Late to Participate

The staff at OHS are encouraged by the positive results this program continues to have, and we feel fortunate to be able to play a part in helping our fellow NCI-Frederick employees develop and maintain a positive lifestyle. Visit the Web site to keep informed of our upcoming events, find regular fitness tips, and get healthy recipes!

It's never too late to join, or re-join, this facility-wide effort. You must have an on-line account in order to have your individual and organizational progress be counted. To create your personal account, log on to the Web site for instructions, visit the CHI in Building 549 between 12:00 and 1:00 PM on Wednesdays, or call OHS at 301-846-1096 for additional assistance or information.

How Does Your Group Stack Up?

At press time, the Applied Developmental Directorate was leading the charge, with the most number of pounds lost per person. These statistics are based on the data entered by participants, so don't forget to record your results.



We're Getting There!

Here's how we're doing as a group. All information is based on data entered into the Fitness Tracker as of June 9. We look great in the "Other" category, but we need to crank it up in weight loss and biking, running, and walking. We've got less than six months left, so let's go, NCI-Frederick – we can do this!

Activity	Average Per Person	Total	Goal	Percentage Accomplished
Pounds lost	4	512	2,000	26%
Miles Biked	83	3,230		
Miles Run	39	1,815		
Miles Walked	36	3,949		
Total, bike, run, walk		8,994	25,000	36%
Hours Other	60	5,427	8,760	62%

Student Intern Awards

High School Student Interns Win Awards at Science Fair

Werner H. Kirsten Student Internship Program (SIP) students came home with top honors from the 25th Annual Science and Engineering Fair on March 25. This annual event is sponsored through a partnership between Frederick County Public Schools and the Frederick Jaycees. MedImmune provided funds for this year's fair.

Out of about 120 participating middle and high school students, the grand prize was awarded to **Jarrett Remsberg** of Middletown High for his environmental science project,

“Removal of Estrogenic Compounds in Dairy Waste Lagoons by Ferrate (VI): Oxidation/Coagulation.” Mr. Remsberg will be starting his internship this summer with Dr. Nadya Tarasova in the Structural Biophysics Laboratory. First runner up was Frederick High student **Cortney Ragatz** for her first-place medicine and health/gerontology project, “B-Catenins Role in Drug Resistance.” Ms. Ragatz is a current SIP student whose mentor is Dr. Susan Mertins of the Screening Technologies Branch. Together, these students represented Frederick County at the International Science and Engineering Fair in Indianapolis, Indiana, in May.

First-, second-, and third-place awards went to 12 participants, of

whom 4 were SIP students. Three current-year SIP students winning awards for microbiology were **Sean McCann**, First Place (mentors, Drs. Lucy Anderson and Yih-Horng Shiao); **Danielle Guiffre**, Second Place (mentors, Drs. Robert Blumenthal and Amy Jacobs); and **Charles Zhu**, Third Place (mentors, Drs. James McMahon and Barbara Giomarelli). In addition, **Teddy Kamata** (mentor, Dr. Ira Daar), an incoming SIP student, won Second Place in biochemistry.

Please join *The Poster* staff in congratulating all the participants in the science fair for a job well done, and all the SIP mentors for encouraging these bright future scientists! ♦



The March Poster Puzzler winners: Michael Malasky, Research Assistant, and Jami Troxler, Research Technician CORE Laboratory, pictured here with Paul Miller, Executive Editor of *The Poster*, in front of Building 538. ♦



Outreach and Special Programs

Students Not Immune to Science

Recently, biologist Robin Winkler-Pickett, Laboratory of Experimental Immunology, took on a class of sixth-, seventh-, and eighth-grade special education students with disabilities ranging from cerebral palsy, emotional disturbances, and speech and language impairment to learning disabilities.

Ms. Winkler-Pickett provided the students with a culminating activity on their study of the immune system, dovetailing her lesson into the class's previous studies of human biological systems. "It was really great because they remembered things from the beginning of the semester and shared personal experiences," she said.

"I explained that sometimes people are sick, perhaps with an infection, and take antibiotics, or they might have cancer. When I asked, 'Does anybody know anybody who's had cancer?' one young man, who had stayed very quiet until then, raised his hand and said, 'My grandmother.' He knew how worn down she was from the treatments, and he understood what his grandmother was going through."

"Every class you have is very important."

In addition to CDs and other teaching materials that Barbara Birnman's Elementary Outreach staff provided, Ms. Winkler-Pickett brought in some living mouse cancer cells in a flask, pictures of the mice from which the cells had been taken, a graph, a calculator, one of her published articles, and a big



microscope so that the students could study the cells. All the items served to emphasize her point that "every class you have is very important. Language arts—I have to know how to write; the calculators—we have to know our math, so we can graph our data; and even social studies classes help because we work with people from all over the world," she explained.

"Ka-pow! Outta here!"

By the time the students looked at the mouse cells, Ms. Winkler-Pickett had prepared them thoroughly, with information geared to their level. A natural teacher, Ms. Winkler-Pickett led one student, reluctant to approach the microscope and the cancer cells, through logical steps to understand the idea of compatibility markers.

"These are mouse cells, and you're a human," she said, reminding him of her earlier statement about the body's response to a foreign object: "The body says, 'Ka-pow! You're outta here!' to the foreign object."

"Now," she asked him, "even if these things get on you, they're not human, so what's your body going to do?"

The child answered, "Pow! Outta here!" After that, he was eager to examine the cancer cells.

"He just amazed me that he got that concept of compatibility," Ms. Winkler-Pickett said.



Outreach and Special Programs

Mrs. Winkler-Pickett noted that as she used scientific terminology with the students, she defined the terms. If she forgot, Brenda Whipp, the special education teacher, would prompt her by saying, "Now, Ms. Pickett, what is that?"

Noting that Mrs. Winkler-Pickett encouraged the students to ask lots of questions, Ms. Whipp said, "This was one of the culminating activities at the end of the science unit. And so, it was a big deal for them, that they would have a real scientist come and talk with us. And the kids were very curious. They knew who Ms. Pickett was, because they had met her in December, and her son, Adam, is in the class, but to see her in her professional role was a bit different."

No One's Ever too Old to Play with Dry Ice

Mrs. Winkler-Pickett chuckled as she added, "I had two instructions from Adam, which were to talk about 'cloning' mice, which is kind of his term, and to bring dry ice. No matter how old you are, there is always going to be a fascination with dry ice. When we pulled out the dry ice, water, and the liquid soap, and made dry ice bubbles, they were excited. I had hands all over the place!"

Perhaps one of the best outcomes of the lesson was that these students were so excited about what they'd learned, they wanted to discuss their new knowledge with relative strangers, teachers, and students from other classes. Ms. Whipp explained, "Kids



from other classes would come in to see the pictures, too, and my kids explained what they had learned." For example, Ms. Whipp's students could explain that the mice with no hair had no immune system and were more susceptible to disease, "and they could relate the mouse cells to human cells that make up our own tissue."

A Huge Heart for Science

Ms. Winkler-Pickett pointed out that the students "are getting concepts that other people just don't get. I certainly can see them someday in a support function or mechanism, at NCI-Frederick. These kids have a huge heart and enthusiasm for science."

I now have some students telling me that they want to be in a science field.

Ms. Whipp agreed. "They're very inquisitive. In special ed, one of the things that you're constantly asking your students is, 'Where do you want to go from here?' I now have some students telling me that they want to be in a science field. That lesson was a wonderful eye-opener for them." ♦



Campus Improvement Committee

Campus Improvement Committee Stays Busy

Campus Is Improved with Flower Power

Many of the flowers you see in glorious bloom around the campus are here thanks to the efforts of our industrious Campus Improvement Committee. In March the committee organized about 20 volunteers to plant 400 geranium seedlings in small pots. These were cared for in one of the USDA greenhouses, and were transplanted in May throughout the facility. Volunteers also came together to plant a few thousand seeds of colorful annuals, including four-o'clocks, pansies, zinnias, marigolds, and rudibekias, which were also transplanted throughout the facility. ♦



Signs of Improvement

Other signs of Campus Improvement Committee activity are, literally, signs. New building number signs were installed throughout the spring and provide easy identification of all buildings. More important, this project is part of a larger, identity plan. "Our intent is to identify our buildings as belonging to NCI and to get a couple of hundred more NCI logos on display on our campus," Ken Michaels, chairman of the Signage Committee, recently explained. The new signs have a clean, crisp look and, along with the banners, instantly identify NCI-Frederick to personnel and visitors alike. ♦

Our Own Wye Oaks Take Root

If you haven't seen them yet, you should stop by to pay your respects to the two Wye Oak seedlings that the committee planted last fall on the east and west sides of Building 560. These are the offspring of the mighty Wye Oak, which stood in quiet majesty for over 400 years in the village of Wye Mills, Maryland. The oldest and the largest white oak tree in the nation, the Wye Oak was declared the living symbol of Maryland's state tree in 1939. A severe storm brought the tree down in June 2002, but, thanks to the Campus Improvement Committee, we can share in its legacy. The seedlings have wintered well, and appear to be making themselves at home on our campus. ♦



The Campus Improvement Committee is always interested in getting community input. If you have an idea of how we can improve the NCI-Frederick campus, we would like to hear from you. Submit your ideas or comments on-line through our Web site: <http://web.ncifcrf.gov/campus/committees/campus.asp>. ♦

Summer Fun

Summer Fun Right Here in Our Own Backyard!

The Morale, Welfare, and Recreation Directorate (MWR) of Fort Detrick offers programs and services to benefit the health and well-being of all personnel on base. As employees of NCI-Frederick or its contractors, we may take advantage of these services, too. Some of the activities are listed here, but a complete listing of services and activities may be found on the MWR Web site, <http://www.detrick.army.mil/wellbeing>.

Enjoy movies under the stars!

July 7, Blue and Gray Field, 8:30 p.m. Check the Web site for details.

Community Yard Sale: July 15, Blue and Gray Field, 8:00 a.m.–2:00 p.m. Make money while you clean out those closets, garages, and storerooms! \$10.00 for two tables, bring your own chairs. For more information, call 301-619-3237.

Register for swimming lessons, Session IV: July 24-28, Session begins July 31. For information, call the Outdoor Pool, 301-619-2368.

Battle of the Beast: August 5. Old time bull riding competition at the W.J. Bar Ranch. Call 301-619-2957 for details.

Nallin Farm Reservations

The Nallin Farm Recreational Area is complete with three shelters, a grill pavilion, horseshoe pits, a stocked trout pond, playground, and bathrooms. Groups must reserve the area seven days in advance. For details, contact the Directorate of Morale, Welfare, and Recreation, 301-619-2711 from 10:00 a.m.–4:00 p.m., Monday through Friday.

Community Fun Fest: September 9. Watch for advertisement. This is one of Fort Detrick's most popular family events of the year.

Bowling Parties: Can be customized to your next event. Call 301-619-2816 for details.

Paint Ball Course: Now open, Area B. This is one of the best paint ball courses in the area, with great prices and fun for all. Groups are welcome by advance reservation. For details, call 301-619-0247.

Swimming: Buy your pool pass now! Pool pass entitles holder unlimited use of both indoor and outdoor pools: The outdoor pool, located next to the tennis courts, is open from Memorial Day through Labor Day. The indoor pool, located in the Odom Fitness Center, is open year round. Telephone: 301-619-2368 for more information.

V-Mail Delivery: Send an old fashion V-Mail to your special military person (in Landstuhl Army Regional Medical Center in Germany, or in Iraq or Afghanistan). Call 301-619-7510 for details. ♦

PALS



From head to toe, there were giggles galore at the Play and Learning Station (PALS) on "Silly Hat" day, May 9, and "Silly Sock" day, May 11. ♦

NCI-Frederick Central Repository: Fisher BioServices

Update on the Information Technology Initiative

Response from user surveys over the past several years has indicated that the top two repository operational needs of the scientific community are: 1) convenient real-time electronic access to sample data, and 2) the ability to interface electronically with the repository for specimen input and withdrawal. We heard you. After three years of evaluation, planning, programming, and testing, the roll-out of the new system is scheduled for October 1, 2006.

Workshop Held in January

On January 26, 2006, Fisher BioServices hosted a workshop to share with repository users the background, plans, and timeline for transition from the current Central Repository inventory system to the BioSpecimen Inventory – II (BSI-II) system, produced by Information Management Services. The one-day workshop was well attended by a good cross-section of people involved in one way or another with repository operations.

The workshop was presented in four parts: background, history, and goals of the initiative; update on progress

to date, including a description of the new system, timeline for transition, and data conversion issues; discussion of current Web forms and future Web access; and open discussion. The workshop provided an opportunity for users to share their ideas and concerns. Workshop evaluations provided valuable information on which future discussions will be based. Copies of the presentations can be found on the Central Repository Web site, http://www.ncifcrf.gov/repository/cr/info_tech.asp.

Over Two Million Records To Be Transferred to New System

Transitions of this magnitude involve gathering of requirements, programming, testing, and data conversion. Of these four, data conversion has the most unknowns and can be the most problematic. The current system has over two million records which will be converted and transferred to BSI-II. Fisher BioServices has analyzed current data using statistical analysis and 20 unique field identifiers. We have also developed a variety of quality control checks to ensure accuracy upon transition. These include 100% automated data comparison

and a percentage of visual checks. Some data conversion issues require interface with repository users for resolution. This process has begun. Many investigators have heard from our staff and responded to our inquiries.

New Fields Required

Additionally, the new system has several required fields which are not available in the current system (see slide 33 of the IT Details presentation found on the Web site). Of importance are study name and study ID. Prior to transition, users will have the opportunity to indicate their preferences for the research study names and study IDs. Additionally, users will be able to reserve BSI Label IDs for specimens which will be submitted to the repository. The Central Repository Web site will be updated soon to allow repository users to indicate their preferences for these fields. Fisher BioServices staff encourages you to visit the site regularly. Updates regarding the timeline, information about training, frequently asked questions, and opportunities for input and feedback are available on the Web site listed earlier. ♦

Answers to Safety Quiz on page 19:

1. The researcher is transferring material by mouth pipetting.
2. There's a mug—and, presumably, a drink—on the lab counter.
3. The researcher has not fully fastened his lab coat.
4. The researcher is not wearing gloves.
5. The researcher has no eye protection.
6. The gas cylinder should be on the floor, and secured.
7. The hot plate is on a combustible surface (the Sigma catalog).
8. The waste container is not closed.
9. The waste container is not labeled/tagged with contents.
10. Sharps (needles) are improperly stored and have not been placed in a sharps container.
11. Radioactive isotope vials are incorrectly stored on the benchtop and are not labeled.
12. The bench paper is glossy side up. ♦



SAIC-Frederick, Inc. Earns Fourth Annual Alliance for Workplace Excellence Award

For the fourth consecutive year, SAIC-Frederick, Inc., has received the "Seal of Approval" from the Alliance for Workplace Excellence (formerly the MD Work~Life Alliance). The annual award recognizes visionary

employers that view workplace excellence as a strategic business imperative, creating workplaces where employees can achieve success in all aspects of their professional and personal lives, while enhancing the business bottom line.

Dr. Larry Arthur, president and CEO of SAIC-Frederick, Inc., stated that "Receipt of this recognition for four years in a row demonstrates our continued focus and commitment to our employees and their need to balance work and personal life. We recognize that our employees' dedication to excellence in all aspects of cancer and AIDS research is the foundation of our success and that our people are our greatest resource."

The Alliance for Workplace Excellence is a 501(c)3 nonprofit organization funded by Montgomery County, Maryland, and corporate sponsors. Through its key strategies of training, management consulting

and product development, the alliance helps employers develop the tools and education necessary to become recognized as excellent places to work.

SAIC-Frederick, Inc., Signs Agreement with FITCI

Partly as an outgrowth of our participation in the Work for Others program, SAIC-Frederick, Inc., has signed an agreement with the Frederick Innovative Technology Center, Inc. (FITCI), a technology business "incubator" located at Hood College. Under the agreement, client companies at FITCI may be able to obtain special or unique services from NCI-Frederick, especially those related to the laboratories within the Research Technology and Biopharmaceutical Development Programs, which may not be available elsewhere. Each request will be evaluated, with our response dependent upon available capacity to provide the work. Each action would be subject to NCI review and approval.

FITCI, a non-profit organization founded in 2004, provides local entrepreneurs with fully equipped office space, as well as the shared use of various Hood facilities and support equipment. Commercial and wet laboratory spaces are also available. In addition, FITCI staff provides its customers with business plan reviews; consulting services; a mentoring program; networking, marketing, and public relations assistance; periodic seminars on business topics; and funding assistance.

NCI-Frederick Represented at BIO 2006 in Chicago

Dr. Carl Garland, Research Technology Program; Mary Lou Siegle, Human Resources; and Dr. Bruce Crise, Gene Expression Laboratory, RTP, recently attended BIO 2006, the 14th annual international convention of the Biotechnology

Industry Organization (BIO), in Chicago. As part of the Maryland Expo booth, the NCI-Frederick contingent distributed information and answered questions about the WFO/EA (Work for Others/Economy Act) programs as they apply to NCI-Frederick's services and expertise now available to private industry and other government agencies.

Speakers at the convention included former President Bill Clinton, Health and Human Services Secretary Michael O. Leavitt, actor Bernie Mac, and award-winning journalist Neil Cavuto. Nearly 20,000 people from 62 countries attended.

BIO represents more than 1,100 biotechnology companies, academic institutions, state biotechnology centers and related organizations across the United States and 31 other nations. BIO members are involved in the research and development of healthcare, agricultural, industrial, and environmental biotechnology products.



Publication Awards

Two products of Scientific Publications, Graphics & Media recently were recognized with an Award of Distinction and an Honorable Mention through the annual Communicator competition, an international awards competition that recognizes outstanding work in all specialties in the communications field. This year 5,214 entries were judged in the Print Media competition. The Award of Distinction is awarded for projects that are judged to "exceed industry standards" in communicating a message or idea. About 18% of the entries won this award. Honorable Mention certificates are granted to

continued on page 28

Data Management Services (DMS)

Data Management Services: Computers and Statistical Support

Although perhaps most widely known for our Microcomputer Support and Web Development services, C&SS also offers many other services to the NCI-Frederick community. In this issue of The Poster we highlight some of these other services.

Statistical Consultation

The Statistical Consultation group provides a wide array of mathematical and statistical consulting services to the NCI-Frederick scientific community. The director and consulting statisticians work in collaboration with principal investigators through all facets of the scientific process: from development and formulation of research and statistical hypotheses through design of experiments and statistical analyses, preparation of technical reports and modern graphics, to preparation of formal scientific documents and publications in peer-reviewed journals.

Custom Software Development

Our team of analysts and developers employs the most modern methods and tools to create custom software solutions to meet the unique needs and requirements of NCI-Frederick. Our staff can assist you with

both administrative and scientific programming needs, as well as Web design and development services.

Visit the C&SS Web site at <http://css.ncifcrf.gov> or call 301-846-1060 for information about custom development services available from C&SS.

Technology Advocacy and Consultation

As NCI-Frederick's information technology experts, C&SS continually explores and evaluates new technologies that could benefit the user community and further NCI-Frederick's mission. C&SS staff would be happy to meet with you to discuss your specific technology needs.

Computer Software Training

Watch for postings and e-mail notifications for the summer schedule of software training classes.

Please see the Computer Software Training Web site at <http://css.ncifcrf.gov/training> for information or to register for classes.

The Computer Services Helpdesk provides the NCI-Frederick community with a single point of contact for computer assistance, information, service, and support. The Helpdesk is staffed from 8:00 a.m. to 5:00 p.m., Monday through Friday, excluding NCI-Frederick holidays.

Requests for service can also be placed via the C&SS Web site (<http://css.ncifcrf.gov/helpdesk>) at any time.

Site-Licensed Software Available from the Helpdesk!

C&SS, in conjunction with the NCI, has worked to secure site licenses for many of the programs in broad use at NCI-Frederick. To view the growing list of software available from the Helpdesk, visit the C&SS Web site at: <http://css.ncifcrf.gov/helpdesk/software.asp> or contact the Computer Services Helpdesk to borrow the software or request installation assistance. ♦

Contacting C&SS

Computer Services Helpdesk

Web: <http://css.ncifcrf.gov/helpdesk>

E-mail: helpdesk@css.ncifcrf.gov

Phone: 301-846-5115

Hours of Operation:

8:00 a.m.–5:00 p.m.,
Monday through Friday

NCI-Frederick Webmasters

Phone: 301-846-6700

E-mail: webmaster@css.ncifcrf.gov

Other Inquiries

Phone: 301-846-1060

continued from page 27

those entries that “meet the high standards of the industry.”

Honorable Mention:

Advanced Technologies. The four-color brochure and accompanying family of eight inserts described services available through the Economy Act/Work for Others provisions and were produced for Carmen Clark, Carl Garland and Keith

Rogers. The design and production team included Allen Kane, Kathy Green, Nancy Parrish, and Maritta Grau.

Award of Distinction:

Executive Summary, 2005 Annual Report. This 16-page, four-color publication won in the “Other—Executive Summary” category. Published in autumn 2005, the project updated the previous executive

summary (which also won an Award of Distinction in this competition last year). Connie Suders led the content update and development, assisted by Maritta Grau and Nancy Parrish; Kathy Green and Allen Kane provided graphic re-design.

SPGM has won 11 awards and nine honorable mentions in various juried competitions during the past two years. ♦

Librarian's Picks

Recycling has many benefits, some not even related to the environment. The Library holds its Book & Media Swap every October, where you can take advantage of someone else's bibliophilia, for free! Here is a sample of titles our most recent participants had to choose from:

Angels and Demons by Dan Brown

An explosive international thriller from the author of *The Da Vinci Code*.

Blood Work by Michael Connelly

A spine-tingling manhunt guaranteed to boost the blood pressure.

The Devil Wears Prada by

Lauren Weisberger

A delightfully dishy novel about the all-time most impossible boss in the history of impossible bosses.

The Face by Dean Koontz

The Face will not leave Koontz fans disappointed with this bestselling novel of suspense and adventure.

King of Torts by John Grisham

Grisham's most unusual legal thriller yet. A compelling tale of corruption of the mind and soul.

Nights in Rodanthe by Nicolas Sparks

A timeless love story of two people who meet by chance in the small North Carolina coastal town of Rodanthe.

The Pilot's Wife by Anita Shreve

Shreve does a wonderful job weaving anguish, love, mystery, and resolution in *The Pilot's Wife*.

Portrait of a Lady by Henry James

A story of intense poignancy, Henry James' tale of love and betrayal still resonates with modern audiences.

Shepherds Abiding by Jan Karon

The eighth novel in the bestselling Mitford Years series is a meditation on the best of all presents—the gift of one's heart.



Song of Solomon by Toni Morrison

A powerful, sensual, and poetic exploration of four generations of a family. Readers will discover a century's worth of secrets, ghosts, and troubles.

A Virtuous Woman by Kaye Gibbons

Author Gibbons creates a multi-layered and indelibly convincing portrait of two seemingly ill-matched people who somehow miraculously make a marriage.

Be sure to leave room in your schedule for next year's event. Who knows, some of these titles may be on the shelves again. ♦



Scientific Library staff were busy as bees at their Spring Research Festival booth.

Something New in the Center for Health Information (CHI)

Do you eat lunch in the Café? Do you attend seminars in the Conference Center? If so, why not drop by the Library to see how you are doing with weight control and heart healthiness? For your convenience, a self-service blood pressure monitoring system has been installed, as well as a scale. It's quick, it's easy, and it's private (Rex and Rosie are still in residence, but they are sworn to secrecy). So why not give it a try? ♦

Classes at the Scientific Library

Orientation

July 19, August 9, September 13
2:30 p.m.

Making Sense of DNA and Protein Sequences
July 6, 12:30–3:00 p.m.

Entrez Gene Quick Start
July 26, 12:30–3:00 p.m.

Unmasking Genes in the Human Genome
August 22, 12:30–3:00 p.m.

Please call 301-846-5840 for more information. ♦



New Faces at NCI-Frederick

NCI-Frederick Welcomes New Staff

Ninety-one people joined our Facility in January, February, and March 2006.

NCI-Frederick welcomes...

Christopher Badorrek
Suhwan Chang
Said El Kassouli
Ken Fujii
Anna Ilinskaya
Jordan Irvin
Tinoush Moulaei
Ping Sun
Andreas Sundgren ♦

SAIC-Frederick, Inc., welcomes...

Selam Abebe
Jeffrey Appel
Adil Asheer
Rolanda Bailey
Paul Biser
David Blythers
Brian Boland
William Bowlbliss
Mikhail Bubunenko
Susan Chinkuli-Mccready

David Circle
Jeffrey Clogston
Talisa Creavalle
Heather Cronise-Santis
Charles Davis
Norma Diaz-Mayoral
Timothy Dotson
Kimberly Dreyer
Charles Early, Jr.
Shaun Einolf
Erica Emeigh
Jessica Etzler
Elizabeth Ferrell
Tamika George
Yihui Gong
Lisa Gregory
Linda Griffith
Viktoriya Grinberg
Shannon Gupta
Tammy Harding
Taquita Haygood
Wayne Helm
Herbert Higson
Paula Jacobs-Brooks
Jiuping Ji
Ming Ji
Man-Shiow Jiang
Emmanuel Jones
Awn Kam
Rebecca Keyser
Matthew Lamb
Jean Lapadula
Julia Lee
Lavonia Logan
April Lopez
Heather Marshall
Shane May
Dawn Mcdowelle

Yihui Gong



Charles Rivers Laboratories welcomes...

Judy Downs ♦

Charles Early, Jr.



Andreas Sundgren



Christopher Badorrek



Judy Downs



Said El Kassouli



Café NCI-Frederick

Café NCI-Frederick, Building 549

Great selections at great prices!

The Café NCI-Frederick is open to all personnel who work on the NCI-Frederick-Fort Detrick campus. If you're used to getting your breakfast or lunch off campus, you know how expensive and inconvenient it can get. The Café NCI-Frederick is your solution!

Breakfast and Lunch Just Got Easier

Stop by before work to choose from a plentiful breakfast selection, including eggs to order, breakfast sandwiches, omelets, pancakes, sausage, biscuits and gravy, home fries, and more. You can check out the wide array of lunch choices from the menu on-line at <http://web.ncifcrf.gov/campus/cafe/>, or pick up a menu in the Café.

This summer, the Café will feature a "grab-n-go" section of pre-made salads and sandwiches, fresh fruit daily, and our popular, cold strawberry-and-melon soup. Or, if you're in the mood for a good salad, there are 21 items to choose from in the salad bar, including 4 types of lettuce.



Catering Services Available

Looking for food to go along with your next meeting or office party? The Café NCI-Frederick can help! Catering packages are available with a large selection of items to choose from, at a reasonable cost. Call 301-846-1750 to make your arrangements.

The Café is open Monday through Friday, 7:00 a.m.–10:00 a.m. for breakfast, and 11:00 a.m.–2:00 p.m. for lunch. If you would like to make a suggestion to our menu selection, or if you have any questions, please call 301-846-1750. ♦



continued from page 17

Students

Kimberly Shafer-Weaver — Laboratory of Cell-Mediated Immunity, CSP (**Immunology**)
Modulating Tolerance of Tumor-Specific T Cells in a Murine Model of Prostate Cancer

Sean McCann — Laboratory of Comparative Carcinogenesis (**Molecular Biology**)
Allele-Specific Methylation Changes in the Non-Imprinting 45S rRNA Promoter Regions after Environmental Exposure

Technicians

SPC Gibson, Christopher — DSD, USAMRIID (**Biodefense**)
Development of a Protocol for Reusing the CombiMatrix Hybridization Platform

Alma Arnold — Image Analysis Laboratory (**Cancer Biology**)
Measuring Migration Potential of Astrocytes in Three Dimensions

Carrie Saucedo — Molecular Targets Development Group (**Drug Development and Delivery**)
Solabellin, a Novel Anti-HIV Protein Isolated from *Solanum umbellatum*.

Vickie Marshall — AIDS Vaccine Program (**Genetics and Epidemiology**)
Phylogenetic Characterization of Virally-encoded MicroRNA's in the Kaposi's Sarcoma-Associated Herpesvirus (KSHV)

Jeff Subleski — Laboratory of Experimental Immunology (**Immunology**)
IL-18 + IL-12 Induces Antimetastatic Activity in the Liver by Modulating NK and NKT Cells

Theodore Luck — Laboratory of Cell-Mediated Immunity, CSP (**Immunology**)
Sensitivity Training: Optimizing the Granzyme B and Perforin ELISPOT Assays

Danielle Fink — Neutrophil Monitoring Laboratory (**Immunology**)
Nonspecific Deposition of IL-8 by Human Neutrophils during Chemotaxis In Vitro

Krishna Moody — Division of Bacteriology, USAMRIID (**Infectious Pathogens**)
Biochemical Analysis of *Bacillus anthracis* Spores from Fully Virulent Strains

Wei Gao — Laboratory of Immunopathogenesis and Bioinformatics (**Informatics**)
SNPit: A Genetic Software Analysis Tool for High Density Genotyping Association Studies

Craig Cavin — USDA-ARS-Foreign Disease Weed Science Research Unit (**NewTechnology**)
Host Range Determination of *Colletotrichum gloeosporioides* from Russian Thistle

Jennifer Meyers — USAMRIID (**Vaccines and Gene Therapy**)
CpG ODNs Enhance the Efficacy of the *Yersinia pestis* F1-V Vaccine Assessed by Parenteral and Aerosol Challenges in a BALB/c Murine Model for Plague.

Wendell Miley — AIDS Vaccine Program (**Virology**)
Measurement of HCV Genotype 1-6 Viral Loads by Real-time Quantitative RT-PCR ♦

The Poster Staff

Executive Editor

Paul Miller

Associate Editor

Ken Michaels

Managing Editor

Maritta Grau

Co-Editor

Nancy Parrish

Production Editor

Kathy Green

Lead Designer

Tammy Schroyer

Photography Editors

Jonathan Summers

Marti Welch

Contributing Editors

Administrative Resource Center

Debbie Dixon

Judi Carter

Tanya Sappington

Charles River Laboratories

Cliff Hubbard

Community Outreach

Barbara Birnman

Julie Hartman

Data Management Services

Stephanie Sheppard

Facilities Maintenance and Engineering

Deborah Dobbe

Environment, Health, and Safety Program

Alberta Peugeot

Frederick Employee Diversity Team

Scott Keimig

Fisher BioServices

Kathleen Groover

Patricia Hinds

SAIC-Frederick, Inc.

Dave Bufter

Science Today

Paul Nisson

Wilson Information Services Corporation

Sue Wilson

Robin Meckley

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

<http://web.ncifcrf.gov/ThePoster>

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

<http://www.criver.com>

Data Management Services

<http://css.ncifcrf.gov/about/dms.htm>

National Cancer Institute at Frederick

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

SAIC-Frederick, Inc.

<http://saic.ncifcrf.gov>

www.saic.com

Wilson Information Services Corporation

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

Look for the Following Events Around Campus:

Poster Puzzler—Entry Deadline: July 28, 2006

Take Your Child To Work Day—July 12, 2006

Fitness Challenge Learning Lunches—second Thursday of each month.

Check the Web site for details: <http://saic.ncifcrf.gov/fitnesschallenge/>

Farmers' Market—Every Tuesday, 11:30 a.m.–1:30 p.m. (or sellout)

Summer Adventure Masterpieces Children's Art Fair—July 25, 2006

Bake sale, lemonade stand, and silent auction to benefit the NCI-Frederick Play and Learning Station (PALS) Child Care Center.

Bldg. 549 Café Conference Room, 11:00 a.m.–12:30 p.m.

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

Comments or suggestions for *The Poster* may be directed to <http://web.ncifcrf.gov/ThePoster>

The National Cancer Institute

at Frederick

Poster

Frederick, MD 21702-1201