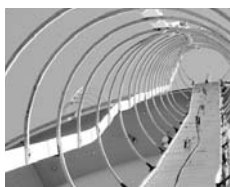


What is it?
Where is it?

Story on page 16.



Poster

Target: SARS Virus

NCI-Frederick Researchers Identify Potent Antibodies against SARS

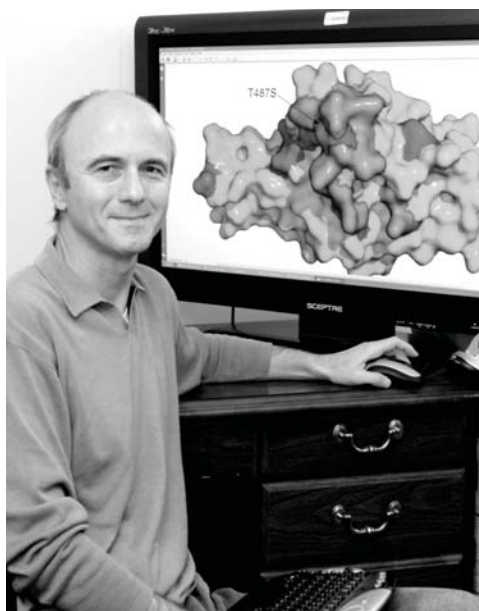
By Maritta Perry Grau

Dimiter Dimitrov, Ph.D., his colleagues Zhongyu Zhu, Ph.D., Xiaodong Xiao, Ph.D., and others in the Protein Interaction Group, Center for Cancer Research Nanobiology Program, and the National Institute of Allergy and Infectious Diseases (NIAID), recently identified human antibodies capable of preventing infection by the virus which causes SARS (severe acute respiratory syndrome). Other members of the research team were from the U.S. Army Medical Research Institute for Infectious Diseases at Fort Detrick and academic institutions in the United States, Switzerland, and Australia.

SARS outbreaks occurred in late 2002/early 2003 and in the winter of 2003–2004. Scientists found that the viruses were transmitted from animals to humans; therefore, it seemed logical that any antibody would have to work

on animals as well as on humans to prevent possible future outbreaks.

Co-author Kanta Subbarao, M.D., Laboratory of Infectious Diseases, NIAID, who verified how well the



Dr. Dimitrov's monitor shows a model of the binding region of the SARS infection-preventing antibody. Even when portions of the region were experimentally mutated, the antibody neutralized the virus, preventing it from entering the host cell.

Laboratory of Infectious Diseases, NIAID, who verified how well the antibodies worked in animal models, commented, "This study is important because the viral strain that caused the outbreak in people in 2002 probably no longer exists in nature. What we need to prove for any vaccine, therapeutic, antibody, or drug is that it is effective not only against the strain of SARS virus isolated from people, but also against a variety of animal strains, because

animals will be a likely source for re-emergence of the SARS virus."

Through their studies of HIV, Drs. Dimitrov and Xiao had learned a great deal about how viruses enter cells and spread. They responded quickly to the SARS outbreak in 2002/2003, using their familiarity with HIV to study

continued on page 2

SEPTEMBER 2007

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Target: SARS Virus

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the SARS spike glycoprotein, the part of the virus that binds and allows entry into human cells. They and their collaborators identified two human antibodies against the SARS virus.

Just how did they do this? First, one of the antibodies, S230.15, came from a SARS patient, while the second, m396, was taken from a library of human antibodies which Dr. Zhu had developed from the blood of 10 healthy volunteers. The same library is being used to identify antibodies with potential as cancer therapeutics. Second, Dr. Dimitrov's team, in collaboration with Dr. Xinhua Ji, Macromolecular Crystallography Laboratory, NCI-Frederick, solved the structure of m396 and its complex with the SARS receptor binding domain (RBD), and showed that the antibody binds to an RBD region the virus uses to attach itself to host cells. Thus, the antibody presumably prevents that attachment.

Indeed, when Dr. Dimitrov and his collaborators tested the antibodies, both were highly efficient at neutralizing recombinant forms of the virus from both outbreaks. Next, the researchers injected mice with the antibodies and, 24 hours later, exposed them to the SARS virus. The mice with the m396 or S230.15 antibodies were protected from the virus.

Further analysis of the structure of m396 and its interactions with experimental mutations indicated that the antibody could successfully neutralize all known forms of the virus. "This antibody neutralizes all strains of SARS we tested and is likely to neutralize all strains of the virus with known sequences," said Dr. Dimitrov. "There are no other reports for such antibodies available."

NCI Director John E. Niederhuber, M.D., commented, "Our researchers at NCI-Frederick have an extraordinary breadth of expertise, ranging far

beyond cancer to areas such as AIDS research, advanced biotechnology, and vaccine manufacturing. We are realizing, as never before, that cancer

is a model for many diseases, and NCI's research is a rich resource to our NIH colleagues and the biomedical research community at large." ♦

Read a complete report on Dr. Dimitrov's and his colleagues' work on the SARS virus: Zhu Z, Chakraborti S, He Y, Roberts A, Sheahan T, Xiao X, Hensley LE, Prabhakaran P, Rockx B, Sidorov IA, Corti D, Vogel L, Feng Y, Kim J, Wang L, Baric R, Lanzavecchia A, Curtis KM, Nabel GJ, Subbarao K, Jiang S, and Dimitrov D: Potent cross-reactive neutralization of SARS coronavirus isolates by human monoclonal antibodies. *Proc Natl Acad Sci USA*:104(27), 2007.

Visit the Protein Interaction Group's web site:
www-lecb.ncifcrf.gov/~dimitrov/dimitrov.html.



Medical Use for *Diazona angulata*

NCI-Frederick Repository Helps Texas Researchers Find Rare Toxin

By Maritta Perry Grau and
David Newman, D. Phil.

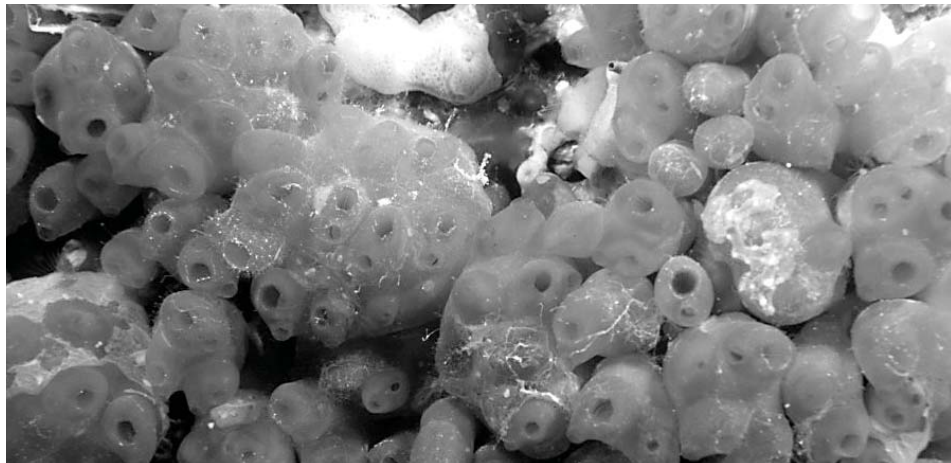
Recycle, re-use, don't throw anything away, as our grandparents used to say, are popular catch-phrases again today. Several years ago, researchers at both the Scripps Institution of Oceanography and the University of Texas, Southwestern Medical Center, had reason to be grateful for that philosophy because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

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

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

"We have provided that organism in our shipments to the repository," Dr. Colin told him.

After using the COMPARE algorithm to search the DTP's 60-cell line database and identifying some potential extracts, Dr. Newman



Diazona angulata, an Ascidian found in February 1994 on the ceiling of a cave off the coast of the Philippines, was extracted and screened at NCI-Frederick, and extracts were then sent to Dr. Bill Fenical, Scripps Institution of Oceanography, in La Jolla, CA, for his research. Photo courtesy of Dr. Patrick Colin, now of the Coral Reef Research Foundation, Palau.

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

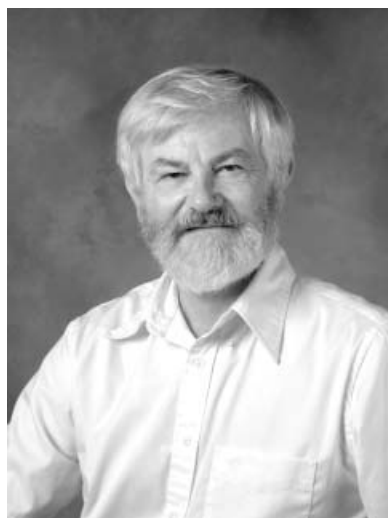
Thanks to the alertness of Dr. Colin and Dr. Newman, Dr. Fenical and his colleagues were able to complete their research, leading to the compound known as diazonamide A. Building on that research recently, Patrick Harran, Ph.D., and colleagues determined that a synthesized version of the toxin might

be useful in chemotherapy treatments for cancer because in mice, at least, it doesn't have side effects such as weight loss and loss of appetite. Ernest Hamel, M.D., Ph.D., then at

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

Dr. Fenical's work was published in 2003 (Cruz-Monserrate Z, Vervoort HC, Bai R, Newman DJ, Howell SB, Los G, Mullaney JT, Williams MD, Pettit GR, Fenical W and Hamel E: Diazonamide A and a synthetic structural analog: Disruptive effects on mitosis and cellular microtubules and analysis of their interactions with tubulin. *Mol Pharmacol* 63:1273-1280. 2003).

Dr. Harran's article was published in February 2007 (Wang G, Shang L, Burgett AWG, Harran PG, and Wang X: Diazonamide toxins reveal an unexpected function for ornithine δ -amino transferase in mitotic cell division. *Proc Natl Assoc Sci USA* 104:2068-2073; published online before print as 10.1073/pnas.0610832104. 2007). ♦



David Newman, Chief, Natural
Products Branch

Does a Leopard Change Its Spots?

DNA Testing Reveals New Species of Clouded Leopard

By Frank Blanchard

It neither purrs like a house cat nor roars like a lion. But the midsized clouded leopard has other ways of making itself known: It can climb tree branches horizontally while facing the sky. It can dangle upside down by its hind legs, then zip headfirst down tree trunks and hit the ground running.

Now there's yet another distinction for some of these rare and endangered wild cats. Working with researchers at the National Zoological Park and elsewhere, Stephen O'Brien, Ph.D., research fellow Valerie Buckley-Beason, and their colleagues in the Laboratory of Genomic Diversity (LGD) have discovered what may be a new species of clouded leopard.

Despite its name, the clouded leopard is not a type of leopard, but a species unto itself, the sole member of the genus *Neofelis*, specifically *Neofelis nebulosa*. Among its four subspecies is a small population indigenous to Borneo. The Bornean cats were the standouts in recent genetic testing.

"We show that Bornean clouded leopards are a distinct population, reproductively isolated from other clouded leopard subspecies," the Frederick group reported in the Dec. 5 issue of *Current Biology*. Genetic distinctions recorded among samples taken from 109 clouded leopards suggest the Bornean clouded leopards are, in fact, a new species.

In the same issue of *Current Biology*, a separate report from the United Kingdom describes physical variations—such as coloration and patterning—that mark Indonesian clouded leopards as sufficiently distinct to warrant the new species designation.

The World Conservation Union United States Endangered Species Act lists the clouded leopard as endangered, and the World Conservation Union (also known



The clouded leopard of Borneo may be a new species.

as the International Union for Conservation of Nature and Natural Resources [IUCN]) lists the cat as vulnerable. The Convention on International Trade in Endangered Species bans international trade in these cats.

Ms. Buckley-Beason and her group conducted DNA testing combining multiple genetic markers that indicated large genetic differences between clouded leopards from mainland Asia and those from the island of Borneo. The range of genetic variation was compared with similar measures among the five species of *Panthera*: lion, tiger, leopard, jaguar, and snow leopard.

"The genetic distinctions are based on multiple genetic markers and, if replicated, would justify the recognition of two distinct clouded leopard species," said Dr. O'Brien, chief of LGD and head of the Section of Genetics.

The clouded leopard discovery arose during basic genetic studies of the

cat, part of the laboratory's work in comparative genomics. By studying the genetic makeup of cats and other mammals, scientists can gain valuable insights into the mechanisms of genetic disease. For example, 12 species of cats are susceptible to a feline version of AIDS.

"This is the outcome of a multidisciplinary approach to the study of the natural history of feline populations and their natural defenses against disease," Dr. O'Brien said.

Ms. Buckley-Beason, the lead author, collected the molecular data on clouded leopards for her master's-degree thesis at Hood College. Data from the Bornean cats were so out of line with those from the other clouded leopards that she ran detailed genetic comparisons in search of an explanation.

"I asked my mentors, 'Am I looking at a new species?'" she said. "They nodded, and I was like, 'Oh, my God.'"

SAIC-Frederick, Inc., LGD collaborators were Joan Menninger (now retired), who performed the chromosome analysis that identified chromosomal distinction, and Melody Roelke, Ph.D., a veterinarian clinician who collected specimens and cared for the volunteer clouded leopards whose DNA samples were used in the study. Carlos Driscoll, NCI, aided in microsatellite analyses.

Additional collaborators included scientists from the Comparative Molecular Cytogenetics Core, Mouse Cancer Genetics Program, at NCI-Frederick; H&W Cytogenetics Services, Lovettsville, Va.; the National Zoological Park, Washington, D.C.; and researchers from the United Kingdom, China, Taiwan, Thailand, and Vietnam. ♦

Closing in on Prostate Cancer

By Dianna Boissy and Maritta Perry Grau

[Editor's note: This is the first of two parts. In part I, we discuss the risks, symptoms, and causes of prostate cancer. In part II, we'll discuss treatment options.]

We're closing in on prostate cancer. Recently, Meredith Yeager, Ph.D., and her colleagues at the Core Genotyping Facility, NCI-Frederick, discovered a second genetic marker for prostate cancer. That marker, combined with an earlier one, accounts for one out of every four cases of the disease in white males in the United States.

What Are Your Risks of Developing Prostate Cancer?

The National Cancer Institute (NCI) notes that out of every three men diagnosed with cancer each year, one is diagnosed with prostate cancer. The cancer forms in the tissue of the prostate, a walnut-sized gland in the male reproductive system that is found below the bladder, in front of the rectum.

NCI's on-line booklet says that prostate cancer is the second most common type of cancer among men (skin cancer is first). While the number of men diagnosed with prostate cancer increased by a little over 1 percent between 1994 and 2003, the number of deaths is down significantly—by 4 percent. In 2003, for example, the SEER statistics, the latest data we have available, estimated that 185,981 men were diagnosed with prostate cancer, while 29,554 men died. NCI estimates that 218,890 new cases of prostate cancer will be diagnosed in the United States by the end of 2007 and that 27,050 men will die of the disease. African American men are at higher risk for the disease than are white men, and Asian or American Indian men are at lowest risk.

According to a National Institutes of Health (NIH) web site, your risk of

developing prostate cancer increases as you age. More than 65 percent of cases are diagnosed in men over age 65, with 70 the average, in the United States.

What Causes Prostate Cancer?

While we're not sure what causes it, we are understanding it better, as evidenced by Dr. Yeager's research. In part, it may be genetic—you are at higher risk for prostate cancer if your father or brother has had it, too.

Diet may also play a part. NIH indicates that a diet high in animal fat may increase the risk of prostate cancer, while a diet high in fruits and vegetables may decrease the risk. Studies to find out whether men can reduce their risk of prostate cancer by taking certain dietary supplements are ongoing.

Men with prostate cells called high-grade *prostatic intraepithelial neoplasia* (PIN) may be at increased risk for prostate cancer. These prostate cells look abnormal under a microscope.

How Do You Know If You Have Prostate Cancer?

Like many other cancers, symptoms may not be immediately apparent, so regular checkups are important.

Common symptoms include:

- Urinary problems (inability to urinate, difficulty starting or stopping flow, or urine flow that is weak or starts and stops on its own, frequency of urination, pain or burning during urination);
- Difficulty having an erection;
- Blood in the urine or semen; or
- Frequent pain in the lower back, hips, or upper thighs.

Don't panic if you do have these symptoms. Frequently, they may be caused by some other health problem. However, be sure you tell your doctor or urologist and have the symptoms diagnosed and treated right away.

Ascertaining your risk is a conundrum. Most men who have known risk factors do not get prostate cancer. Conversely, men who do get the disease often have no known risk factors, except for growing older. If you think you may be at risk, you should talk with your doctor. Your doctor may be able to suggest ways to reduce your risk and can plan a schedule for checkups. ♦

Prostate Cancer

For more statistical information on prostate cancer:

Ries LAG, Harkins D, Krapcho M, Mariotto A, Miller BA, Feuer EJ, Clegg L, Eisner MP, Horner MJ, Howlander N, Hayat M, Hankey BF, Edwards BK (eds): *SEER Cancer Statistics Review, 1975–2003*, National Cancer Institute. Bethesda, MD, based on November 2005 SEER data submission, posted to the SEER web site, 2006.

To read about Dr. Yeager's research on the prostate cancer markers:

Yeager M, Orr N, Hayes RB, et al.: Genome-wide association study of prostate cancer identifies a second locus at 8q24. *Nature Genetics* 39:645-649, 2007 (<http://www.nature.com/ng/journal/v39/n5/full/ng2022.html>)

To access NCI's online prostate cancer booklet: www.cancer.gov/cancertopics/wyntk/prostate

To review NCI's estimates of current prostate cancer statistics: www.cancer.gov/cancertopics/types/prostate

National Center for Health Statistics, part of the CDC, statistics for 1994–2003: <http://www.cdc.gov/cancer/prostate/statistics/>

Cancer trends: <http://www.cdc.gov/cancer/prostate/statistics/trends.htm>

Overview of cancer statistics from 1975–2003. You can click on "Prostate" to see specific disease numbers: http://seer.cancer.gov/csr/1975_2003/

NIH information on senior health: <http://nihseniorhealth.gov/prostatecancer/causesandriskfactors/02.html>

Accelerating Drug Development

First Phase 0 Results May Shorten Timeline in Drug Development

By Maritta Perry Grau

At the annual meeting of the American Society of Clinical Oncology in June, Shivaani Kummar, M.D. (staff clinician with the Developmental Therapeutics Section, Medical Oncology Branch), presented encouraging results from the first phase 0 trial, part of the NExT (NCI Experimental Therapeutics) program in the Division of Cancer Treatment and Diagnosis and the Center for Cancer Research. Dr. Kummar and her colleagues administered single, sub-therapeutic doses of the drug ABT-888, an inhibitor of Poly (ADP-ribose) polymerase, to patients, resulting in

positive biological effects.

NCI-Frederick researchers who contributed included Drs. Robert Kinders, Ralph Parchment, Robert Wiltout, and Larry Phillips, as well as Gurmeet Kaur, Sonny Khin, Joseph Tamaszewski, and Sherry Yang.

“NCI scientists hope that this new Phase 0 trial design will be a forerunner for the way drugs are developed and put through the clinical trials pipeline in the near future. At a time of rapidly accelerated understanding of the cancer process, it is important that we get new drugs into clinical trials as soon as possible and determine how effective they can be

in humans,” said NCI Director John E. Niederhuber, M.D., in an e-mail after the conference.

The Phase 0 trials focus on analyzing the effects of a drug at the molecular level, gradually increasing dosage level to determine whether the drug has the desired impact on a target or biomarker (a Phase 0 trial does not evaluate efficacy of the drug) in a minimal number of subjects. The great advantage of the Phase 0 trial is that it compresses the timeline for initial testing. For example, tests may run just seven days, thus speeding up the search for drugs that do indicate some activity on the disease. ♦

Role of phase 0 clinical trials in cancer drug development.

Current challenges in cancer drug development	Phase 0 trials
Suboptimal use of target assessment and imaging techniques in early-phase clinical trials	Enable biomarker development and assay qualification in human tissues before the initiation of the trial Evaluate imaging studies that provide functional and metabolic information about the effects of a drug on its target(s) Integrate such assays and/or imaging studies in phase 0 trials to establish the mechanism of action in vivo in actual patient samples
Establishment of the recommended phase 2 dose in trials with molecularly targeted agents	Evaluate target modulation, a primary endpoint
Late-stage failures with low rates of anticancer drug approvals	Provide data that improves the chance of success of subsequent trials and allows the systematic de-prioritization of investigational agents that do not show expected biological effects
Long timelines for the development of promising agents	Shorten drug development timelines through early initiation of first-in-human, proof-of-concept trials that provide data to better inform and expedite subsequent clinical development
Increasing number of complex trials that require substantial resources	Help prioritize resource allocation for subsequent larger trials by investing resources in early-phase trials that involve a small number of patients

Source: Adapted from http://www.nature.com/nrc/journal/v7/n2/fig_tab/nrc2066_T1.html.

Accelerating Drug Development

For further information, read:

Kummar S, Kinders R, Rubinstein L, Parchment RE, Murgo AJ, Collins J, Pickeral O, Low J, Steinberg SM, Gutierrez M, Yang S, Helman L, Wiltout R, Tomaszewski JE, and Doroshow J: Compressing drug development timelines in oncology using phase '0' trials. *Nat Rev Cancer* 7: 131–139 (February 2007) doi:10.1038/nrc2066.

Kinders RJ, Hollingshead M, Parchment RE, Khin S, Kaur G, Phillips L, Tomaszewski J, and Doroshow J: *J Clin Oncol* NCI Phase 0 Working Group: 2007 ASCO Annual Meeting Proceedings Part 1. 25[18S]:14058, 2007 [abstract].

Kummar S, Kinders RJ, Gutierrez ME, Rubinstein L, Parchment RE, Phillips LR, Low J, Murgo AJ, Tomaszewski JE, Doroshow JH, and the NCI Phase 0 Working Group: Inhibition of Poly (ADP-ribose) polymerase (PARP) by ABT-888 in patients with advanced malignancies: results of a phase 0 trial. Oral Presentation, American Society of Clinical Oncology Annual Meeting, June 2007 (abstract #3518).

Gutierrez M, Kummar S, Horneffer Y, Juwara L, Chen A, Melillo G, Pickeral O, Tomaszewski JE, Murgo AJ, Doroshow JH, and the NCI Phase 0 Working Group: Recruitment experience in a phase 0 trial of ABT-888, an inhibitor of Poly (ADP-ribose) polymerase (PARP), in patients with advanced malignancies. American Society of Clinical Oncology Annual Meeting, June 2007 (abstract #14111).

Rubinstein LV, Steinberg SM, Kummar S, Low J, Parchment R, Kinders R, Gutierrez M, Murgo AJ, Doroshow JH, and Tomaszewski J: Statistical considerations for a phase 0 trial. American Society of Clinical Oncology Annual Meeting, June 2007 (abstract #14038).

Kinders RJ, Palma J, Liu X, Colon-Lopez M, Luo Y, Rodriguez LE, Shi Y, Guan R, Wei S, Low J, Murgo A, Pickeral O, Kummar S, Gutierrez M, Rubinstein L, Yang S, Ji J, Kaur G, Parchment R, DiPaolo T, Collins J, Hollingshead M, Tomaszewski J, Doroshow J, and Giranda V: Development of a quantitative enzyme immunoassay for measurement of PAR as a pharmacodynamic biomarker of PARP activity. Poster presentation; 2006 AACR International Conference on Molecular Diagnostics in Cancer Therapeutic Development, September 2006.

NCI-Frederick Programs

NCI-Frederick/Ft. Detrick Fitness Challenge 2007
saic.ncifcrf.gov/fitnesschallenge/

NCI-Frederick Suggestion Committees
web.ncifcrf.gov/campus/committees/

NCI-Frederick Advanced Technologies to Support Research
web.ncifcrf.gov/research-technologies/default.asp

Domestic Cats Have Common Ancestor

By Lisa Simpson



Carlos Driscoll, Laboratory of Genomic Diversity

Humans and cats started living with each other at least 9,000 years ago. Archeological and anthropological evidence points to cats as the initiators of this arrangement—which should come as no surprise to those familiar with cats. However, where feline domestication began has

been a controversial subject among evolutionary biologists.

Recently, after analyzing microsatellite and mitochondrial DNA, Carlos Driscoll and colleagues provided an answer to this mystery. All modern domestic cats, *Felis silvestris catus*, descend from a common ancestral population of wildcats from a region of the Near East called the Fertile Crescent.

This key finding has research implications, notes Mr. Driscoll, because “results can be compared without having to worry about the confounding influence of wildly different genetic backgrounds. Domestic cats are one of the best models we have for the study of virally mediated cancers (using feline leukemia virus), HIV/AIDS (using feline immunodeficiency virus), and are models for human genetic disorders,” such as polycystic kidney disease and retinal atrophy, says Mr. Driscoll. “Background work, such as this study on cat origins, had long ago been done on other models (mouse, rat), and the work was sorely needed for the cat.”

This information enhances “our understanding of evolution, and speciation, as well as human cultural evolution,” says Mr. Driscoll. “This is the first phylogeny of this species... and it shows us how this relatively young species has changed over the last 300,000 years.”

He adds that these data may also help “develop cats into a model of evolutionary, not just biomedical, research.” Furthermore, “Because cats seem to have initiated domestication themselves at a time and place when humans were becoming sedentary, cats are indicative of a human cultural adolescence when we were transitioning from hunting/gathering to agriculturally driven urbanization,” a concept that is “helpful in coloring in the outlines of our own species’ maturation.”

Mr. Driscoll has been a member of the Laboratory of Genomic Diversity since 1993. He holds a master’s degree from Hood College, and is currently a doctoral candidate in zoology at the University of Oxford in the United Kingdom. ♦

Carlos A. Driscoll, Marilyn Menotti-Raymond, Alfred L. Roca, Karsten Hupe, Warren E. Johnson, Eli Geffen, Eric H. Harley, Miguel Delibes, Dominique Pontier, Andrew C. Kitchener, Nobuyuki Yamaguchi, Stephen J. O’Brien, David W. MacDonald

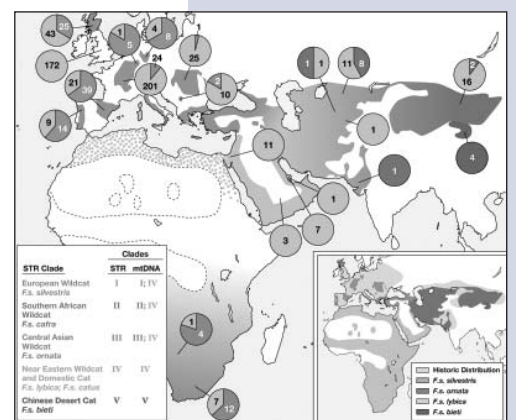
The Near Eastern Origin of Cat Domestication

Science 2007 Jul 27;317(5837):519-23. Epub 2007 Jun 28

The world’s domestic cats carry patterns of sequence variation in their genome that reflect a history of domestication and breed development. A genetic assessment of 979 domestic cats and their wild progenitors—*Felis silvestris silvestris* (European wildcat), *F. s. lybica* (Near Eastern wildcat), *F. s. ornata* (central Asian wildcat), *F. s. cafra* (southern African wildcat), and *F. s. bieti* (Chinese desert cat)—indicated that each wild group represents a distinctive subspecies of *Felis*

silvestris. Further analysis revealed that cats were domesticated in the Near East, probably coincident with agricultural village development in the Fertile Crescent. Domestic cats derive from at least five founders from across this region, whose descendants were transported across the world by human assistance.

To access the complete article, please visit <http://www.sciencemag.org/cgi/content/full/317/5837/519>



Platinum Publications

The following 40 articles have been selected from 10 of the most prestigious science journals during the past quarter.

Biophysics

Grigorenko BL, Rogov AV, Topol IA, Burt SK, Martinez HM, Nemukhin AV. Mechanism of the myosin catalyzed hydrolysis of ATP as rationalized by molecular modeling. *Proc Natl Acad Sci USA* 104(17):7057–7061, 2007.

Cell Biology

Schmitt J, Benavente R, Hodzic D, Hoog C, Stewarts CL, Alsheimer M. Transmembrane protein Sun2 is involved in tethering mammalian meiotic telomeres to the nuclear envelope. *Proc Natl Acad Sci USA* 104(18):7426–7431, 2007.

Cellular Immunology and Immune Regulation

Chen X, Baumel M, Mannel DN, Howard OM, Oppenheim JJ. Interaction of TNF with TNF receptor type 2 promotes expansion and function of mouse CD4⁺CD25⁺ T regulatory cells. *J Immunol* 179(1):154–161, 2007.

Pascal V, Yamada E, Martin MP, Alter G, Altfeld M, Metcalf JA, Baseler MW, Adelsberger JW, Carrington M, Anderson SK, McVicar DW. Detection of KIR3DS1 on the cell surface of peripheral blood NK cells facilitates identification of a novel null allele and assessment of KIR3DS1 expression during HIV-1 infection. *J Immunol* 179(3):1625–1633, 2007.

Shirota H, Petrenko L, Hong C, Klinman DM. Potential of transfected muscle cells to contribute to DNA vaccine immunogenicity. *J Immunol* 179(1):329–336, 2007.

Cell, Tumor, and Stem Cell Biology

Loomis KD, Zhu S, Yoon K, Johnson PF, Smart RC. Genetic ablation of CCAAT/enhancer binding protein alpha in epidermis reveals its role in suppression of epithelial tumorigenesis. *Cancer Res* 67(14):6768–6776, 2007.

Palmieri D, Bronder JL, Herring JM, Yoneda T, Weil RJ, Stark AM, Kurek R, Vega-Valle E, Feigenbaum L, Halverson D, Vortmeyer AO, Steinberg SM,

Aldape K, Steeg PS. Her-2 overexpression increases the metastatic outgrowth of breast cancer cells in the brain. *Cancer Res* 67(9):4190–4198, 2007.

Clinical Trials and Observations

Neelapu SS, Gause BL, Harvey L, Lee ST, Frye AR, Horton J, Robb RJ, Popescu MC, Kwak LW. A novel proteoliposomal vaccine induces antitumor immunity against follicular lymphoma. *Blood* 109(12):5160–5163, 2007.

Experimental Therapeutics, Molecular Targets, and Chemical Biology

Huang J, Hu J, Bian X, Chen K, Gong W, Dunlop NM, Howard OM, Wang JM. Transactivation of the epidermal growth factor receptor by formylpeptide receptor exacerbates the malignant behavior of human glioblastoma cells. *Cancer Res* 67(12):5906–5913, 2007.

Mi L, Wang X, Govind S, Hood BL, Veenstra TD, Conrads TP, Saha DT, Goldman R, Chung FL. The role of protein binding in induction of apoptosis by phenethyl isothiocyanate and sulforaphane in human non-small lung cancer cells. *Cancer Res* 67(13):6409–6416, 2007.

Genes Therapy

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Genetic Diversity

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Stephen Waggoner, Ph.D. Learning the Secrets of Success

By Nancy Parrish

Of the many opportunities seized by Stephen Waggoner, Ph.D., while a Werner H. Kirsten student intern in 1995–1996, the most valuable was the chance to present his research. This



Intern Stephen Waggoner presented his work at the 1996 Spring Research Festival.

early experience influenced his career in ways he probably wasn't even aware of when he was a student at Thomas Johnson High.

Memories of his internship revolve around presenting his research: building a wooden poster display for the Frederick County Science Fair; giving his first talk at the student seminar series; traveling to Bethesda with his mentor, O. M. Zack Howard, Ph.D., and Howard Young, Ph.D., to present his work at NIH Poster Days (followed by lunch at “a great Mexican restaurant”); and presenting at lab meetings, which taught him to think on his feet. “Joost Oppenheim’s insightful questions prepared me for a career full of difficult, and sometimes unfriendly, questions from my peers,” he recalled.

From Marine Biologist to Viral Immunologist

Growing up, Dr. Waggoner wanted to be a marine biologist. As a student intern, however, his interests began to change, beginning in the Laboratory of Molecular Immunoregulation (LMI) with mentors Dr. Howard and Joost Oppenheim, Ph.D. At St. Mary’s College of Maryland, he majored in chemistry and biology while working at LMI during the summers. An internship at Southern Research Institute introduced him to virology, and his senior project at St. Mary’s combined chemistry, microbiology, and bacteriology.

His doctoral work in microbiology at the University of Virginia involved immunology and virology. Today he is a postdoctoral fellow at the University of Massachusetts Medical School working in viral immunology, a field he believes to be his “true calling.”



Dr. Waggoner and his wife, Lisa, following his defense of his doctoral thesis in January 2007.

Greatest Accomplishments

His holds his marriage to “my wonderful wife, Lisa,” another researcher at the University of Massachusetts, as one of his greatest accomplishments since leaving NCI. Other achievements include earning his Ph.D. and winning awards for his

research at the International Meeting on Hepatitis C and Related Viruses in 2003, and at the American Association of Immunologists Annual Meeting in 2006.

“Enormous Impact” on His Career

Dr. Waggoner is grateful for his experience at NCI-Frederick, noting that it had “an enormous impact on my career.” While most of his colleagues, he said, were in college before they ever worked in a laboratory and in graduate school before conducting their own independent research, “I began my first research project at the age of 16 and now have 13 years of laboratory experience.” Further, he feels his NCI experience made it easier to “learn new techniques and tackle the difficult scientific questions” that arose during his doctoral training.

Most important, however, was the development of his self-confidence. He believes his experiences here provided “a strong basis for the confidence I needed to present my thesis work at international scientific meetings in San Diego, Boston, Heidelberg (Germany), and Kyoto (Japan).”

“A Wonderful Place to Learn”

Describing NCI-Frederick as a “wonderful place to learn” about the global nature of research, the variety of disciplines, and the secrets of success, Dr. Waggoner advises current interns to “take advantage of the vast resources available” at NCI. Most important, however, is to present your work as often as possible. Developing this skill not only helps you understand the science, but also hones your ability to communicate. “There is a tendency to be shy, humble, or insecure when it comes to public speaking,” he observed, but, no matter what your career, “you will have to be able to communicate your ideas and capture the attention of your audience.” ♦

Spring Research Festival

Congratulations to the 2007 Spring Research Festival Poster Winners

By Lisa Simpson

Listed below are the winners, their laboratories/programs, the poster categories, and the poster titles. Many winners had supporting authors on the posters.

Postdoctoral Fellows

Michaela Wendeler, HIV Drug Resistance Program (HIV-DRP, Biochemistry): Site-specific incorporation of unnatural amino acids to study novel inhibitors of HIV-1 RNase H

Arti Santhanam, Laboratory of Cancer Prevention (Cancer Biology): Global profiling of novel translational targets of tumor suppressor Pcdcd4

William Dunty, Jr., Cancer and Developmental Biology Laboratory (Developmental and Cell Biology): Wnt3a/beta-catenin signaling controls posterior body development by coordinating mesoderm formation with segmentation

Jason Clement, Molecular Targets Development Program (Drug Development and Delivery): New MDM2-inhibitory alkaloids from *Lissoclinium badium*

Rasmi Thomas, Laboratory of Genomic Diversity (Genetics and Epidemiology): Novel KIR3DL1 alleles and their expression levels on NK cell

Steven Bradfute, Bacteriology Division, United States Army Medical Research Institute of Infectious Diseases (USAMRIID; Immunology): Lymphocyte responses to Ebola virus infection

Katherine Brittingham, USAMRIID (Immunology): Responses to infection of human dendritic cells by attenuated *Francisella tularensis* offer insight for second-generation vaccine development



Anil Shanker, Cancer and Inflammation Program (Immunology): Proteasome inhibition promotes tumor cell apoptosis by exogenous TRAIL without blocking anti-tumor immune effectors in vivo

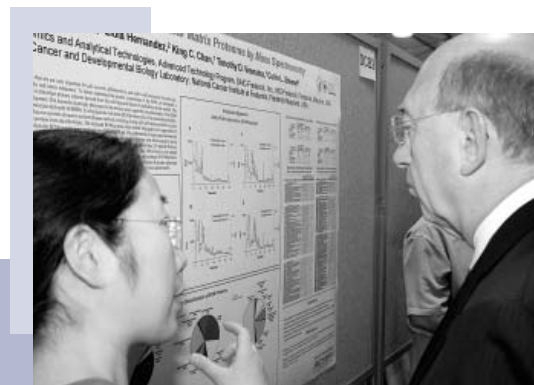
Yaroslava Yingling, Center for Cancer Research, Nanobiology Program (Informatics): In silico design of an RNA nano-ring

Stephen Toth, USAMRIID (Structural Biology and Chemistry): A mechanically induced instability of botulinum neurotoxin light chains and its remedy

Jianhua Gan, Macromolecular Crystallography Laboratory (Structural Biology and Chemistry): The art of dsRNA processing by RNase III

Michael Moore, HIV-DRP (Virology): HIV-1 genomic dimerization: A tale of two RNAs

Samuel Rulli, Retrovirus Assembly Section, HIV-DRP (Virology): How does mouse APOBEC restrict MLV infectivity? Insight into possible mechanisms of inactivation



Rebecca Russell, HIV-DRP (Virology): Vif-APOBEC3 binding: Two domains are better than one

Krista Delviks-Frankenberry, HIV-DRP (Virology): Identification of novel mutations in the HIV-1 RNase H primer grip that enhance AZT resistance

Lab Technicians/ Technical Support

Shikha Sharan, Laboratory of Protein Dynamics and Signaling (Developmental and Cell Biology): Differential roles for C/EBP beta in mouse mammary epithelial cell proliferation, differentiation and lactation activation

Kristin Biris, Cancer and Developmental Biology Laboratory (Developmental and Cell Biology): Ripply2 is a putative segment determination gene that is dynamically expressed in the presomitic mesoderm during early mammalian development

Curtis Hose, Laboratory of Functional Genomics (Diagnostics and Therapeutics): Human tumor cell lines in vitro provide a good model for Topotecan-induced transcriptional changes in analogous xenografts

Nicole Fer, Drug Screen Support Laboratory (Diagnostics and Therapeutics): Transcriptional profiling

Spring Research Festival



Krishna Moody, USAMRIID (Infectious Pathogens): A novel spore-associated protein of *Bacillus anthracis* capable of binding fibronectin



of palmerolide A, a putative inhibitor of V-ATPase, indicates perturbation of cholesterol biosynthesis and HIF-1 α regulated genes

Vanessa Eccard, Integrated Toxicology Division, USAMRIID (Diagnostics and Therapeutics): Identification and characterization of small-molecule inhibitors of botulinum neurotoxins A

Vickie Marshall, Viral Epidemiology Core (Genetics and Epidemiology): Conservation of virally encoded microRNAs in the Kaposi's sarcoma-associated Herpesvirus (KSHV) in patients with Kaposi's sarcoma and matched controls from Italy and Spain

Luba Zaritskaya, Laboratory of Cell-Mediated Immunity, CSP, SAIC-Frederick, Inc. (Immunology): Flow cytometry-based cytotoxicity assay: Application for monitoring cancer vaccine trials and research

Wojciech Kasprzak, Basic Research Program, SAIC-Frederick, Inc. (Structural Biology and Chemistry): Determination of hepatitis Delta virus type III functional conformations

Rachel Bagni, Viral Oncology Section, AIDS Vaccine Program, SAIC-Frederick, Inc. (Virology): EBV gene transcription kinetics during viral reactivation by bortezomib in cell lines and in a clinical setting

Jennifer Meyers and Taralyn Rogers, Bacteriology Division, USAMRIID (Vaccines and Gene Therapy): Binding characteristics of monoclonal antibodies to the *Yersinia pestis* LcrV antigen

Students

Tashan Mistree, Laboratory of Cancer Prevention, NCI (Cancer Biology): Selective targeting of cancer stem cells by naturally occurring compounds: A model for prevention and therapy

James Cherry, Laboratory of Molecular Technology, Advanced Technology Program, SAIC-Frederick, Inc. (Cancer Biology): Array CGH analysis of ovarian cancer and the identification of potential biomarkers

Anuja Trivedi, Laboratory of Molecular Immunoregulation, NCI (Immunology): Regulation of IL-7 production by Beta-estradol in thymic stromal cell lines

Mayukh Sircar, Molecular Target Development Program, CCR, NCI (Molecular Biology): Isolation of monoclonal antibody fragments specific for Discoidin Domain Receptor-1 from a phage library

Leslie Gee, HIV-DRP (Virology): Comparative analysis of RNA elements involved in retrovirus replication

Bilguujin Dorjsuren, HIV-DRP (Virology): Analyzing the structure and function of the human T-cell leukemia virus type-1 matrix protein by site-directed mutagenesis ♦



Poster People Profile

Selden Cooper: Who Is That Masked Man?

By Nancy Parrish

If you happen to be at the National Aquarium in Baltimore on a Sunday, you might see Selden Cooper, but you might not recognize him because he'll be in full diving gear. He is part of a volunteer diving team responsible for the Atlantic coral reef exhibit as well as the care and feeding of the sting rays. A diving enthusiast for more than 25 years, Mr. Cooper is fascinated by the sting rays. "They are such wonderful creatures, incredibly gentle," he notes.



Caring for Employees

As the on-site Employee Assistance Program (EAP) counselor for Business Health Services, Mr. Cooper also takes care of the employees at NCI-Frederick. He meets with employees to assess their concerns and develop a "useful definition of the problem," and then makes recommendations on how to address the problem.

Now in his seventh year as the EAP counselor for the NCI-Frederick community, Mr. Cooper finds helping clients resolve problems the most satisfying part of his job. "Clients do me the great honor of inviting me into their lives," he explained, adding that "it's a privilege and a moral responsibility." He finds reward in working in the context of the workplace because resolving a personal issue often resolves a workplace issue. "You have a two-winner outcome," he said, adding, "That's what makes the EAP unique."

"There's something special about this place."

He also loves working in the larger

context. "There's something special about this place," he notes, since "important humanitarian work is being done here." He is gratified to work with the scientists and those supporting them because he feels he is making a contribution to something larger.

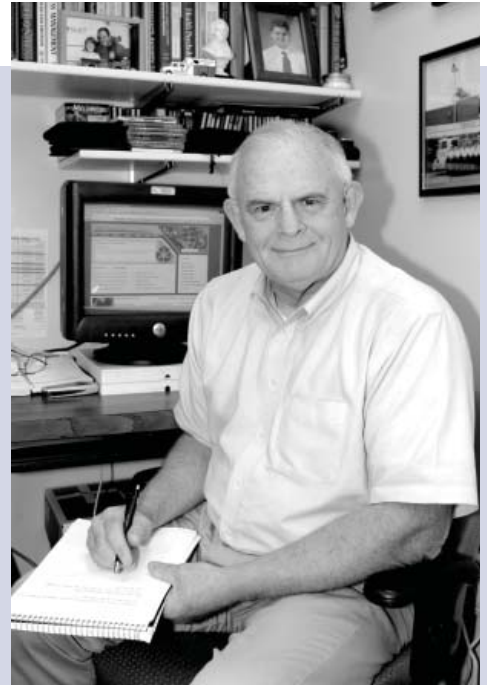
Making Connections

According to Mr. Cooper, his career has thrived because "there were always fortuitous connections that came into play." The most significant of these was a tie to the board of the Jersey Shore Medical Center that launched his career in employee assistance programs more than 25 years ago. When approached by the Center to start an EAP, Mr. Cooper recalled, "My first question was 'What's that?'" Over the next 13 years, he developed and administered the program, which provided services for more than 3,000 employees and their families. A later connection led him to the Office of Employee Assistance at the U.S. House of Representatives, which serves more than 12,000 employees in Washington, DC, as well as all district offices, and includes the U.S. Capitol police. This EAP has been recognized as one of the best in the country.

Keeping Priorities

With two masters' degrees and a nearly completed Ph.D., Mr. Cooper is a Licensed Certified Social Worker-Clinical (LCSW-C), a Board-certified Diplomate in clinical social work, and a Certified Employee Assistance Professional (CEAP). He has always made education a priority in his life, a fact that is obvious as soon as you walk into his office and see the shelves lined with books of all kinds. "I buy books at a much more rapid rate than I could ever possibly read them," he says with a laugh.

His top priorities, however, are his daughter, who is married, and his 18-year-old son, a high school discus thrower, with whom he shares many interests. A former college thrower, Mr. Cooper was a nationally ranked masters track and field athlete in the shot put until an injury sidelined him. However, he still enjoys working out with his son.



Selden Cooper, on-site EAP Counselor

His True Passions

A former volunteer firefighter with 25 years of service, Mr. Cooper says he'll always have a passion for public service. His other great interest is classical music. His favorite pieces, he says, are Beethoven's Ninth Symphony and the Missa Solemnis.

He is also a Civil War buff and for good reason: his paternal grandfather served with General Beauregard in the Southern army, and his maternal great-grandfather was in the Union army. His mother's collection of books about the history of the Civil War inspired his interest in the period. Naturally, he enjoys living in the Frederick area. ♦

Employee Assistance Program

Offering You a Helping Hand

By Nancy Parrish

Ever wondered how much you should spend for a house? A car? Need help with a living will or power of attorney? Dealing with stress? Need to set up a budget for your college student? Want to know more about substance abuse?

These are some of the issues the Employee Assistance Program (EAP) can help you with. Managed by Business Health Services (BHS), EAP offers all NCI-Frederick employees and their eligible dependents free, confidential assistance with personal, family, and work-related issues, 24 hours a day, every day, all year.

A nationally recognized company with over 20 years' experience in providing employee assistance plans, BHS offers an on-site counselor, as well as a network of more than 7,000 licensed counselors to assist you with issues that may affect your ability to work to your full potential. In addition to counseling on personal and work-related issues, the program offers help with issues related personal finance and legal matters.

What Happens When You Call

When you call 1-800-765-3277, you will be connected to a BHS Care Coordinator, a master's-level clinician who assesses your needs, monitors the progress of your case, and ensures that you receive the help you need. Your Care Coordinator then handles all future calls from you, so you will not have to re-explain your concern to someone unfamiliar with your history.

Legal consultations cover non-work-related legal issues, such as estate planning, domestic/family matters, motor vehicle violations, real estate concerns, landlord/tenant disputes, IRS and business matters, even criminal charges. You'll speak

by phone or in person with a qualified legal professional for up to 30 minutes at no charge, per problem episode, per year. If you need additional legal consultation, it may be continued at a discounted rate.

Financial consultations are available on such issues as budgeting, college funding, retirement funding, credit counseling, debt management/consolidation, estate planning, and tax preparation. You may speak with a qualified financial specialist by phone for up to 60 minutes at no charge, per problem episode, per year. If further advice is necessary, you will be referred to a local resource.

Counseling is available by telephone through TTY and in 130 languages. If you are a non-English speaker, you may request a Care Coordinator who speaks your language. For follow-up, face-to-face counseling, BHS can provide a Spanish-speaking EAP counselor within 3 business days of the initial call. Referrals will be provided to EAP counselors, as they are available, who speak other languages.

Counseling Is Free and Confidential

You can receive up to five (5) EAP counseling sessions (including assessment, follow-up and referral services) at no charge for you and your eligible dependents (spouse and dependent children). You will be treated with the same confidentiality as you would at your doctor's office: no information will be released without your written consent.

On-site Counselor Available

In addition to the BHS network of local counselors, the on-site counselor, Selden Cooper, is available on Tuesdays, Wednesdays, and Fridays for EAP counseling related to personal and workplace concerns. You may request an appointment with

Mr. Cooper when you call the BHS toll-free number, 1-800-765-3277.

A Wealth of Information Available on the Web

The BHS web site (www.bhsonline.com) provides an on-line resource library containing thousands of articles related to health and well-being, legal, financial, small business, and personal growth issues. The information is especially valuable when preparing for your EAP consultation because you can educate yourself first, to make the most of your session.

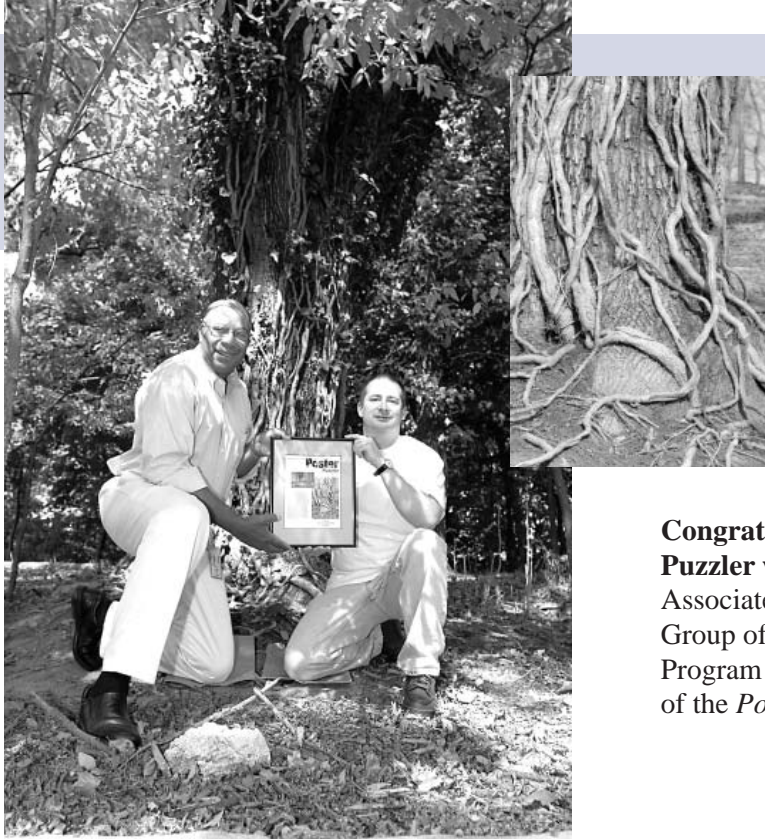
The *Wellness Exchange*, a monthly on-line newsletter, and individual Tip Sheets provide information related to such topics as wellness, substance use and abuse, disaster and terrorism, mental health, parenting and families, and many more. The Solution Centers are designed to guide you through specific life issues with tools such as forms, frequently asked questions, articles, quizzes, references, financial calculators, and more. Topics include adoption, wills, debt and bankruptcy, divorce and child custody, grieving, investing, marriage and living together. ♦

Employee Assistance Program at a Glance

- Free and confidential
- Available 24 hours a day, 7 days a week, 365 days a year
- Counseling provided for personal and work-related issues; on-site counselor available Tuesdays, Wednesdays, and Fridays
- Consultation provided for legal and financial issues
- TTY accessible; 130 languages spoken
- Available to all employees and their eligible dependents

For information, call 1-800-765-3277 or log on to www.bhsonline.com.

Poster Puzzler Winner



Congratulations to the July 2007 Poster Puzzler winner! Rob Hill, Research Associate in the Transgenic Mouse Model Group of the Laboratory Animal Sciences Program with Paul Miller, Executive Editor of the *Poster*.

The Poster Puzzler:

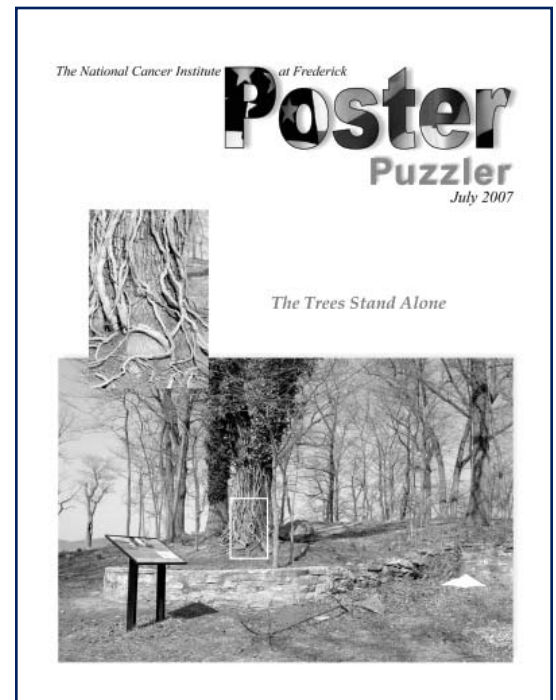
The Trees Stand Alone

By Nancy Parrish

The July 2007 puzzler is a close-up of a vine-covered Norway maple, one of the trees on the grounds of the former St. Joseph's Villa, built by the Novitiate Academy of Frederick in 1895. According to the plaque on the site, the villa served as a summer retreat for Jesuit novices and teachers until 1903, when the Novitiate Academy moved to New York. Eight years later, the land was purchased by Dr. Rudolph Rau, who built a three-story mansion, known as Wide Pastures. Inspired by the hilltop villas of Italy, Dr. Rau designed the landscape with expansive views, fieldstone walls, stairs, terraces, and pathways. In 1929, the home was sold to Robert Bright, who summered there until 1943, when the U.S. government purchased it to use as quarters for the Fort Detrick post commander. The home was demolished in 1977, and all that remains are parts of the fieldstone walls and steps, daffodils, and, of course, the trees.

Thanks to all the participants in the July Poster Puzzler! ♦

Editor's note: Special thanks are extended to Rocky Follin, FME, for providing the information on the liquid nitrogen tank in the March 2007 puzzler.



Poster Puzzler

What is it?

Where is it?

Your challenge, should you decide to accept it, is to correctly identify the item and its location from the picture to the right. Clue: It's somewhere at Fort Detrick/NCI-Frederick. Win a framed photograph of the Poster Puzzler and an NCI-Frederick tee shirt by e-mailing your guess, along with your name, e-mail address, and daytime phone number, to Poster Puzzler at poster@ncifcrf.gov. 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, November 30, 2007**, and the winner will be drawn from all correct answers received by that date.

Good luck and good hunting!



Have Poster – Will Travel!

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



When Ken Michaels, director of Visual Communications, attended the 48th International Conference on Health and Science Communications in Toronto, Canada, he found Cliff Pollack (left), president of the Health Sciences Communications Association, and Jim Huff, president of the Association of Biomedical Communications Directors, examining a copy of the *Poster*.

Outreach and Special Programs

Elementary Outreach Program Needs YOU!

By Maritta Perry Grau

Even though school has started, it's not too late to volunteer with the Elementary Outreach Program (EOP).

Whether you work in a lab or in an office, you have an exciting opportunity to share your love of science with elementary school-aged students all over Frederick County. You'll join a team of other volunteers to visit approximately four schools during the year (that's once every three months). Each visit lasts about two hours. You'll work with a small group of children, who will get a "hands-on" experience in science that they probably wouldn't have otherwise. The lessons and materials are all supplied.

This unique NCI-Frederick community outreach program, founded by Michael Dean, Ph.D., Laboratory

of Genomic Diversity, has been going on since 1995; in 1999, a formal partnership with Frederick County Public Schools was signed.

Dr. Dean commented that the students explore their world with everyday materials, and since volunteers include both scientific and administrative personnel, students learn about a wide range of science-related careers. They talk with "real scientists, not the mad kind they see in the media. I also really enjoy seeing the scientists and other employees experience life in the classroom and the challenge of teaching. I think there is too little appreciation of how hard it is to be a teacher, and how good a job most of them are doing."

Sue Wilson, head of the Scientific Library, explained that, in participating in the Elementary Outreach program, she always finds the teachers "really excited about what we're doing.

They ask questions and want any information we can give them. I just absolutely love going to the schools. It is so much fun. It's another way of looking at how you can influence the future for the better."

Julie Hartman, administrative coordinator of the program, believes the experience is rewarding for all involved. She notes that "the volunteers learn and have as much fun as the students." The program has grown over the years, with more than 80 volunteers participating last year—the most ever. "I am very excited about the EOP this year," Ms. Hartman said, "because formal lesson plans have been created so everyone knows the procedures. This makes all participants more comfortable."

For more information or to volunteer, contact Julie Hartman at 301-846-7338 or eop@ncifcrf.gov; or go to <http://web.ncifcrf.gov/campus/outreach/eop/>. ♦

NCI-Frederick Encourages Scientific Careers

Student Interns Present Posters and Win at Jeopardy

By Maritta Perry Grau

August brought more growth in scientific learning for the NCI-Frederick interns: With the help of their mentors, they designed their own posters, most of which were produced at Scientific Publications, Graphics & Media. They then presented the posters and explained their work at a poster session held in Building 549.

In late August, they participated in what may prove to be an annual event: a Jeopardy tournament organized by Dr. Howard Young and the staff at the Scientific Library. NCI-Frederick groups who had presented seminars to the students during the past few months created questions/answers to check the students' recall. ♦



Outreach and Special Programs

Start 'Em Young!

By Maritta Perry Grau

More than 300 children, ages 6–11, participated in various Take Your Child to Work Day activities in July. New this year were the MdBioLab and the Discover Genomics! Mobile Laboratory, both designed to encourage careers in molecular biology and genomics. ♦



Play and Learning Station

Smiles from Morning to Night

If you have a toddler, you want a safe, secure “home away from home” where your child can learn, play, and grow. Come to the Play and Learning Station (PALS).

“We have designed a nurturing, creative world for all children to help their minds and bodies develop. We work with you to make a smooth

transition into our program, and have it happen with smiles on both your child’s face and your own. We are committed to creating a strong bond with your child to ensure the best start in life,” said Dianne Hunt, director of the program.

The Play and Learning Station provides a safe, caring environment; its staff promotes learning and child development. “Our center houses age-appropriate classrooms,

age-appropriate curriculum and educational toys designed to foster your child’s creativity,” Ms. Hunt said.

The Play and Learning Station currently has several openings in the center. If you are interested in learning more information about their programs, teachers, and center, please feel free to call Ms. Hunt at 301-846-5200, or e-mail her at pals@ncifcrf.gov. ♦



New Faces at NCI-Frederick

NCI-Frederick Welcomes New Staff

Eighty-nine people joined our Facility in April, May, and June 2007.

NCI-Frederick welcomes...

Gopala Battu
 Ryan Campbell-Massa
 Jason Choi
 Ilya Dukhovlinov
 Brett Hollingshead
 Qian Li
 Xiujie Li
 Charles Mueller
 Na Ni
 Silvia Sanchez-Martinez
 Neeraj Sharma
 Charles Stewart
 Julie Torruellas-Garcia
 Kayoko Waki
 Qiou Wei
 Minghong Zhong

Holger Behrsing



David Ford



Gopala Battu



Data Management Services welcomes...

Lawrence Dixon
 David Ford
 Steven Late
 Michael Rice

SAIC-Frederick, Inc., welcomes...

Heather Allen
 Marni Amsellem
 Maung Aye
 Holger Behrsing
 Pardeep Bhandari
 Dion Brewer
 Delicia Brown
 Mark Burkett
 Pearl Chapman
 Tonya Cheek
 Qian Chen
 Jules Choumbeun
 Rosemary Dawson
 Norman De Castro
 Tania Defibaugh
 Adrienne Diehl
 Lisa Giebeig
 Anthony Giles
 Jiwan Giri
 Glenda Goff
 Brianna Grant
 Tara Grove
 Irina Guerman
 Edwin Gurski
 Bradley Hasson
 Candace Jarvis
 Jeffrey Jensen
 Bambi Jewett
 George Kessie

Susana Korolevich
 Vineet Kumar
 Yongmin Liu
 Giovanni Lopez
 Caroline Madjo
 Emmanuel Maiga
 Bryan Malseed
 Mohammed Masood
 Jeffrey Mast
 Andrew Mecchi
 Abbie Mimiko
 Stephanie Mizell
 Ellen Moroney
 Adri O'Neil
 Pallipamula Stacie
 Timothy Paul
 Sergey Plisov
 Jeffry Popp
 Kelli Potter
 Justin Quon
 Cassie Redden
 Joe Reese
 Gloryvee Rivera
 Oscar Rojas
 Allison Rose
 Scott Schiffhauer
 Denise Shelley
 Denece Shelton
 Teresa Stitely

John Stroka
 Hongmei Sun
 Edline Talabert
 Tina Taylor
 Audrey Turner
 Chao-Kuei Wang
 Solomon Wangari
 Brandon Wastler
 Bih-Rong Wei
 Girma Woldemichael
 Jennifer Woodley

Edwin Gurski



Vineet Kumar



Cassie Redden



Girma Woldemichael



Abbie Mimiko



Frederick Employee Diversity Team

Diversity Round-Up

By Maritta Perry Grau

Third Annual Festival Latino de Frederick

SAIC-Frederick, Inc., helped sponsor the third annual Festival Latino de Frederick held September 22. The NCI-Frederick Employee Diversity Team (EDT) helped promote the event, which took place at Frederick Community College. Proceeds benefited the Community Foundation's Progreso Latino Scholarship Fund.

Diversity Team Launches Web Site

We promised in the July issue of the *Poster* that you'd read more about our new web site. We keep our promises—go to <http://diversity.ncifcrf.gov/>. Here you can access lots of other diversity-related sites, keep up to date on NCI-Frederick EDT-sponsored programs, visit our Travel section, read about the movie now playing or about past movies that you can borrow from the Scientific Library, and more.

Get Your Free Movie Ticket!

Recent winners of movie tickets to local theaters include Jerry Alexandratos, Shawn K Brown, Roxanne Gibson, and Dan Oleyar.

You, too, can win: fill out a short questionnaire about the contents of the Diversity display case, slip it into the ballot box, and keep your fingers crossed that your correct responses will be one of those chosen. You'll find the questionnaires right next to the display case at the back of the NCI-Frederick Café in Building 549.

How Do You Learn?

We never stop learning, whether it's in a casual way or through formal



Latino Festival 2006. Photo courtesy of Alberto Ramirez, Director of Learning Technologies, Frederick Community College.

lessons—but we all learn in different ways. Being aware of these styles of learning may be very helpful to you in working with colleagues and supervisors. Barbara van der Schalie, Clinical Monitoring and Research Program, presented a Lunch'n'Learn program in June about styles of learning in the workplace.

More Generations in the Workplace Today than Ever Before

Most workplaces today are multi-generational, even though the retirement age is lower than ever. For example, many of us have worked here since the early 1970s and by now are grandparents or possibly even great-grandparents; some of us are working side by side with or are mentoring the latest crop of student interns, still in high school. So, you may find three or four generations in your work area.

Different Styles of Learning

The multigenerational age span affects not only how we view life in general but how we learn. We all have different ways of learning, whether it's visual, auditory, or kinesthetic (tactile). Teachers have long been taught to

present material in a variety of models because we retain 10 percent of what we hear, 50 percent of what we see or read, and up to 85 percent of what we experience (that kinesthetic mode of learning). While we're likely to continue the same pattern of learning behavior throughout our lives, we're also influenced by the experiences we have.

Ms. van der Schalie noted that different groups may have different needs in their learning. For example, she pointed out that near-sighted people may need to have printed tables presented in larger fonts for readability. "Boomers" (ages approximately 43–61) are technically oriented but may need extra time to assimilate that knowledge. Boomers' children, the "Y" generation or "Nexters" (now mostly in their 20s), are even more independent and technically oriented. They want options in their training—CDs, handouts, etc.

She emphasized, "There are skilled managers in all generations; the best are those that understand the people they work with" and provide a range of learning experiences.

Join the Team!

The NCI-Frederick Employee Diversity Team meets the first Thursday of the month at 9:00 a.m.; our meeting place varies, so e-mail Paul Miller, chairperson, at pmiller@ncifcrf.gov, or call him at 301-846-5660.

Other team members include Ethel Armstrong, Scientific Library; Sukanya Bora, Human Resources; Peter Boving, Environment, Health, and Safety; Debra Dixon, Administrative Resources Council; Deborah Eyer, military representative; Maritta Grau, Scientific Publications, Graphics & Media; and Dr. Scott Keimig, Environment, Health, and Safety. ♦

Healthy Lifestyle

Three Participate in Iron Girl Triathlon

By Maritta Perry Grau and Jan Warfield

In keeping with the spirit of the NCI-Frederick Fitness Challenge, Dr. Robin Dewar and Helene Highbarger (both, Virus Isolation and Serology Laboratory), and Jan Warfield, AIDS Monitoring Laboratory (all part of the Applied/Developmental Directorate), have endured extremes of weather, from the sharp cold of January through the hot, humid summer, training intensively for the August 2007 Ryka Iron Girl Triathlon in Columbia, MD.

Their persistence paid off, as they all finished in less than 2 hours and 45 minutes and were among 1,700 successful finishers in the triathlon. In fact, Ms. Warfield was first in her age group for the swim portion.

In this woman-only sprint triathlon, the largest in North America, more

than 2,200 women, ages 13 to 77, competed. The participants were required to swim 1 K (0.62 miles), bike 30 K (17.5 miles), and run 5 K (3.4 miles).

Keys to the trio's success were hard work, good support from family, good coaching tips from professional trainers Herb Spicer and Patti Harden, and the availability of the Odom Fitness Center on base, said Dr. Dewar. "We used the gym as our main center," she said, explaining that they used the gym for their individual training, as well as for group workouts each week.

Dr. Dewar kept detailed records of her exercise, partially through a notebook (recording maximum heart rate, etc.) and partially through the Fitness Challenge web site, where she logged her miles/hours. Asked for a quick estimate, she said, "I know I biked/ran/walked over 1,000 miles from January to the triathlon date and swam about twice a week over the same time."

Ms. Warfield noted, "From January 2007, I would estimate that I biked 700 miles, and ran and walked 300 miles. I swam two to three times/week in the indoor pool at the Odom gym, a mile at each swim workout, alternating between interval training and straight distance workouts, for a total of 80 miles or so. I used the Odom gym for spinning classes and the treadmills two to three times a week in the winter. Once the weather improved, I used the outdoor track and the running trails on the base."



Jan Warfield competes in the 17.5-mile biking section of the Iron Girl Triathlon.



Dr. Robin Dewar (on left) and Helene Highbarger celebrate the completion of the Iron Girl Triathlon.

Ms. Highbarger added, "We were very grateful to have the indoor pool here on base, and the stationary bikes and treadmills at the gym for cold or inclement weather. The running paths around the base were very pleasant, too. Some days were like Wild Kingdom with all the critters we saw! All in all, I'm certain I wouldn't have even attempted the Iron Girl if I didn't have the facilities here to train." ♦

ryka
Iron Girl®
C O L U M B I A
2008

Chocolate: Ancient Medicine for Modern Times

By Lisa Simpson

Chocolate has been an important part of human society for hundreds of years. Aztec and Mayan cultures revered chocolate as a royal food, using cocoa beans for currency and burying vessels containing cocoa beverages to accompany their dead in the afterlife. Even the scientific name, *Theobroma cacao*, translates to “food of the gods.”

Cocoa and chocolate were also used in the past for medicinal purposes against a wide range of ailments. In the early 1700’s, French druggist Pierre Pomet wrote in his *Compleat History of Druggs* that, among other things, cocoa could “ease coughing of lungs” and “help digestion,” said David Stuart, Ph.D., Director of Nutrition and Natural Product Sciences at the Hershey Company, who, along with Debra Miller, Ph.D., Senior Nutrition Scientist at Hershey, presented the “Science of Chocolate” in June, hosted by the Scientific Library. Other early medical codices included cardiovascular disease-related uses of cocoa, such as “relief from faintness of heart, to generate/produce blood, relieve heart palpitations, and to strengthen the heart.”

Blood Pressure Benefits

While not quite the cure-all claimed by early medical practitioners, “modern medicine now shows positive benefits from chocolate consumption, with results from scientific studies to support the claims,” said Dr. Stuart. “These days, we’re really focusing on the cardiovascular aspects of consuming chocolate and cocoa,” added Dr. Miller.

For example, a 2003 study in the *Journal of the American Medical Association* showed that daily consumption of 100 grams of dark

chocolate (a 3.52 ounce bar containing 60% cocoa) significantly reduced blood pressure after just six days, but white chocolate, which does not contain cocoa powder, did not. “It’s all in the cocoa,” noted Dr. Miller. Incidentally, when the subjects stopped consuming the dark chocolate, their blood pressure resumed its former level within two days.

Major Antioxidant Source

The key benefit that cocoa and dark chocolate bring to the consumer is antioxidant power, due to an abundance of substances called flavanols (a type of polyphenol) in the cocoa bean. While also found in other foods (such as green tea, grapes, and apples), “cocoa is thought to be the most concentrated food source of flavanols,” said Dr. Miller. Polyphenols, especially flavanols, act as antioxidants in the body, protecting cells against the damaging effects of free radicals that cause damage to cells and DNA. “An imbalance between antioxidants and free radicals in the body causes ‘oxidative stress,’ which has been linked to cancer, aging, atherosclerosis, and neurodegenerative diseases.”

Healthy in Moderation

Dr. Miller pointed out that the human body does produce its own antioxidants; however, “As we get older, our capability lessens and we need to get more from our diet.” Two tablespoons of cocoa are equal to 6½ cups of black tea in antioxidant strength, or 1½ cups of blueberries. Of course, “You generally don’t just



Drs. Debra Miller (L) and David Stuart (R) brought a variety of dark chocolate and cocoa, as well as cocoa bean pods, to share with the audience.

eat two tablespoons of cocoa powder,” she added, “but you can get it from a piece of dark chocolate,” or as part of a recipe or drink.

Although dark chocolate provides a good “dose” of antioxidants, it should be consumed in moderation due to its fat and calorie content. Dr. Miller pointed out that non-fat, sugar-free hot cocoa is an excellent way to get more flavanol antioxidants into the diet without adding many extra calories.

The take-home message is that including sensible amounts of dark chocolate and cocoa in a diet that is rich in other sources of antioxidants, such as fruits, vegetables, and tea, may help reduce the risk of cardiovascular disease. “The key is moderation,” concluded Dr. Miller. ♦

Get the Facts about Influenza

By Robin Pickens

Editor's note: With flu season approaching, we thought it would be helpful to provide this important information to the community. This is the first of two articles from Occupational Health Services.

Chances are you've had the flu at least once in your life, so you know it makes you feel tired and achy. But do you know exactly what the flu is?

The flu is a respiratory illness caused by influenza viruses that enter the body through the mouth, nose, or eyes. When an infected person coughs or sneezes, the virus becomes airborne and can be breathed in by anyone nearby, making it very contagious.

The flu can also be spread through indirect contact. For example, if an infected person sneezes on his or her hands and then touches a doorknob, another person can become infected after touching the same doorknob and then touching his or her nose or mouth.

The flu virus is usually prominent during the fall and winter, the time of year known as "flu season." In the United States, the flu season is generally between October and May, with the peak between late December and March. Last winter, the number of flu cases peaked during February.

How can I prevent the flu?

Wash your hands frequently. Encourage your family, coworkers, and friends to cough and sneeze into the crook of their arm, not into their hands, and dispose of tissues immediately. Remember, school-age children are usually first to get the flu, and they frequently pass it on to family members. Teach children to wash their hands frequently and cough or sneeze into the crook of their arm.

These are good prevention strategies, but the best strategy to prevent the flu



The best strategy to prevent the flu is to be vaccinated, usually between October and December.

is to be vaccinated, usually between mid-October and December, before the peak of flu season.

Should I get a vaccination?

If you fall into any of the following high-risk groups, you should be vaccinated for the flu:

1. People who are 50 years of age and older
2. People with certain chronic medical conditions (at any age)
3. People who live in nursing homes or other long-term care facilities
4. Women who are pregnant
5. Children between the ages of 6 months and 5 years

Additionally, people who live with or come into regular contact with anyone in the high-risk groups should also be vaccinated (e.g., daycare workers, long-term care workers, and health care workers).

What is the difference between the flu shot and the flu nasal spray?

The flu shot is a needle injection containing inactivated vaccine, meaning it contains killed influenza virus. Because the virus is killed, you cannot get the flu from a flu shot. The

flu shot is approved for people six months of age and older, including healthy people and people with chronic medical conditions. Children eight years old and younger who are receiving the influenza vaccine for the first time should receive two doses (separated by at least four weeks for the flu shot and at least six weeks for the nasal spray).

The nasal spray flu vaccine is made with live, weakened flu viruses, but it will not cause the flu. Also known as LAIV (live attenuated influenza vaccine), this vaccine is approved for healthy people aged 5 to 49. It is not approved for women who are pregnant.

More Questions?

If you have any questions about the flu or flu vaccination, feel free to contact OHS at 301-846-1096. Or log on to one of these web sites:

- <http://www.cdc.gov/flu/>
- www.flufacts.com
- <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5606a1.htm>

[Next issue: How effective is the flu shot? What are the symptoms of flu? What is your "Flu IQ"?] ♦

Cold and Flu Season Is around the Corner

By Lisa Simpson

Be prepared—visit these web sites for information about the cold and influenza viruses, how to tell whether you have a cold or the flu, and treatment options for when these microbes have you in their grip.

What You Should Know About the Flu

<http://www.cdc.gov/flu/>

Antiviral Medications for Influenza

<http://www.cdc.gov/flu/professionals/treatment/>

The Common Cold

<http://www3.niaid.nih.gov/healthscience/healthtopics/colds/overview.htm>

Cold Remedies: What Works, What Doesn't, and What Can't Hurt

<http://www.mayoclinic.com/health/cold-remedies/ID00036>

Cold and Flu Guidelines

<http://www.lungusa.org/site/pp.asp?c=dvLUK9O0E&b=23161>

Dean Applies Scientific Skills to Painting... a Key

By Maritta Perry Grau

Earlier this summer, Michael Dean, Ph.D., Laboratory of Genomic Diversity, combined his love of baseball with the decoration of a key. Not just any key, but one made of fiberglass that stood about 6 feet high.

Frederick joined a number of other cities in developing a community art project to be displayed throughout the city. Most other cities choose an animal or other creature closely associated with work in that region: horses and buffalo in the West; mules in Pennsylvania; the crab in Annapolis, Maryland. Frederick chose a key: the Keys to Frederick.

Why a key? Francis Scott Key is buried in Frederick, and “Key” is a part of many place names in the area; even the local baseball team is called the Frederick Keys.

After some experimentation, Dr. Dean, a pop art artist in his spare time, primed his sculpture with an

automotive primer, then used oil paints for his baseball theme. The major colors were orange and black, colors used by the Keys and the national Baltimore team, the Orioles. As usual for a careful scientist, he had thought out each step of the plan, and everything—from the number of baseballs stenciled on the pole to colors and baseball stitching—had “a purpose or meaning related to Frederick, the national anthem, or baseball. There is coded information in the piece which people are having fun figuring out,” he commented.

If you'd like to see pictures of his step-by-step process and learn what those meanings are, check out the web site <http://www.artsciencepub.com/key.htm>. There, you'll see pictures and notes on each step of the process, a short history of baseball in Frederick, as well as links to related sites. ♦

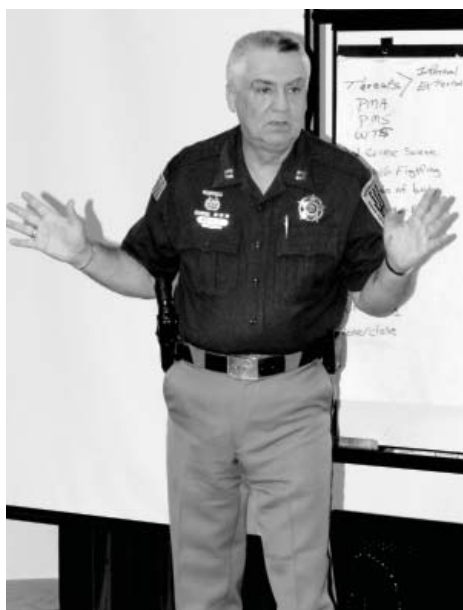


Andy Warhol on campus? Dr. Michael Dean, LGD, was one of nearly 75 local artists who contributed “keys” to the recent Frederick communitywide art project.

"You Can Protect Yourself!"

By Nancy Parrish

Punctuating his delivery with sudden, explosive karate movements, Captain Kirby Lee Maybush, Commander of the Judicial Services Division of the Frederick County Sheriff's Office, presented a personal self-defense class on July 24 and again on August 7 to a packed auditorium.



Captain Kirby Lee Maybush of the Frederick County Sheriff's Office presented a self-defense program to a packed house.

Captain Maybush developed the self-defense program in response to the alarmingly high number of domestic violence complaints, sexual and physical assaults, robberies, and muggings in Frederick County, and he made it his personal goal to train every woman in the county. Although he has been teaching the class for more than 30 years, he said, "It would tickle me to death if I never had to give this class again."

A former Green Beret and trained in five types of martial arts, Captain Maybush used frightening statistics,

case histories, and a touch of humor to emphasize the importance of knowing how to defend yourself.

Develop an Attitude

According to Captain Maybush, there are two types of threats: internal and external. The internal threats are those you can do something about: drugs (including over-the-counter drugs); alcohol ("When you start feeling good, you can no longer protect yourself"); cigarettes ("We all know the importance of breathing"); lack of exercise ("There are only two kinds of exercise: from the waist up and from the waist down"); and sexual conduct that may lead to HIV/AIDS ("The number one reason women go out with men they shouldn't is that they 'didn't want to hurt his feelings'").

Most important, however, is your attitude. "Develop an attitude, right now, that 'I can protect myself,'" he said, and he assured the audience that "you *can* protect yourself!"

Use PMA, PMS, and WTS against External Threats

Captain Maybush stressed the importance of PMA, PMS, and WTS. Positive mental attitude, or PMA, cannot be separated from your performance. Tapping his forehead, he said, "What's up here is what wins fights." Physical fitness, mental attitude, and spiritual attitude (PMS) are all needed for defending yourself. Also critical is WTS, or the will to survive.

Follow-up Class Held

The class, sponsored by Protective Services, drew more than 200 attendees over the two sessions, according to Manager Tom Gannon-Miller. On August 22, Captain Maybush returned to give a hands-on demonstration. ♦

Advice from a Pro

Over the years, several people have told Captain Maybush that they avoided abuse or assault based on his class. Here are a few of his tips:

Second crime scene: Don't ever go to it. Most victims are taken somewhere else, where a crime is committed. Scream or otherwise attract attention of others or to scare away a potential attacker.

Use your strong side: Everyone has a strong side and a weak side. If you fall, try to fall on your strong side. Hit, pull, push with your strong side. Stand at a 45-degree angle, strong side toward your attacker, with weight evenly distributed (so you won't lose balance).

Nothing is worth your life: If a criminal wants your property, give it up. Throw, don't hand, money or property to him. Throw it at a 45-degree angle, so he has to lean away to get it. When he picks it up, run.

Run in a zig zag: Change directions as much as you can. Try to put things—anything—between you and your attacker.

Listen to your gut feeling: It is usually right. If you have a gut feeling about someone, avoid him.

continued on page 27

continued from page 26

Beware of tunnel vision: Open up your range of vision when you are alone. Know that there will always be at least two attackers (“They’re cowards”), and, if approached, be alert to another attacker.

Follow “Kirby’s 15-second rule”: Attacks are always made from the rear, so check behind you every 15 seconds when you’re alone. If you’re in a mall, check the reflections in the glass storefronts.

Watch for emotional changes: Watch a potential attacker’s eyes, not his hands. You will see a threat escalating in the eyes first.

To avoid carjacking: Do not load cargo on the right side of your vehicle because you have to walk around to get in. If you have a baby or small child, put the child in last and take the child out first.

If a police car signals you to pull over: If you don’t feel safe, turn on your dome light and flashers, wave to the police car, and drive to a safe area. When you stop, put both hands on your steering wheel and wait for the officer. Do not open your windows all the way, and remember, you have the right to ask the officer to call the stop in to his supervisor before you comply.

NCI-Frederick: Practice Your Escape Plan

By Robin Pickens

During October, the Environment, Health, and Safety Directorate is joining forces with the National Fire Protection Association (NFPA) to remind staff to “Practice Your Escape Plan.” During this year’s fire safety campaign, firefighters and safety advocates will be spreading the word about the dangers of fires and teaching occupants how to plan and practice escaping from a building in case of fire.

Steps to Practice Your Escape Plan

Be familiar with the steps below. Remember to practice your plan when the alarm sounds in your building!

When you hear the evacuation alarm or are told to evacuate the building:

1. Remain calm.
2. Immediately cease all operations that could become hazardous.
3. Leave quickly, without running.
4. During normal business hours, your supervisor will ensure that all occupants evacuate. In addition, you should check that everyone else in your area is leaving as instructed.
5. During other-than-normal business hours, quickly check nearby restrooms, copier rooms,

equipment rooms, and the like for personnel as you exit.

6. Accompany and assist handicapped personnel, visitors, and any co-workers who appear to need calm direction or assistance.
7. Shut all doors behind you as you go. Closed doors can slow the spread of fire, smoke, and water.
8. Proceed as quickly as possible in an orderly manner. Do not push or shove. Hold handrails when you are walking on stairs.
9. Once outside, move away from the building to your designated assembly area.

If you need more information, contact Tim Rowe at 301-846-1903 or rowe@ncifcrf.gov. ♦

New Faces in EHS

EHS welcomes four new staff members: Bryan Malseed, Senior Safety Specialist, and Victor Carr, Safety Specialist, in our Waste Management group; Sarah Hooper, Nurse Practitioner, and Carolyn Cable, Program Coordinator, in our Occupational Health Services clinic. ♦

According to NFPA research, about 5,000 office building fires occur annually—that’s more than a dozen every day! Unlike NCI-Frederick, many businesses do not plan or practice their fire escape plan. Be alert and know how to escape from a fire—and practice your escape plan in October!

Retirement

A Scientist and a Friend

Carlton J. Briggs: Lifelong Enlistment in a Worthwhile Cause

By Lisa Simpson

When President Richard Nixon declared war on cancer in 1971 with the National Cancer Act, “I thought that there was an opportunity to enlist in a worthwhile cause,” said Carlton J. Briggs, who retired in June as a biologist from the Eukaryotic Transcriptional Regulation Section of the Laboratory of Protein Dynamics and Signaling.

Little did he know when he arrived in 1975 that he would work for more than three decades side-by-side with premier researchers. Some of his projects included the now-legendary tumor-suppressor protein, p53, which induces cell-cycle arrest and apoptosis and thus stops abnormal cell growth; and on C/EBP β , a protein that is part of many cancers that involve the Ras oncogene.

When Mr. Briggs started his career in Dr. George Shibley’s laboratory, the institute’s focus was on finding a link between retroviruses and cancer. “I ran the quarantine lab where all new viral isolates were characterized before scaling up in the production department,” said Mr. Briggs. However, when NCI changed its research focus and the demand for purified retrovirus diminished, Mr. Briggs’ expertise in virology and cell culture launched him on a path to a wide range of projects, delving into virology and protein chemistry.

He worked with Dr. Harvey Rabin to study the effect of herpes virus saimiri (a primate herpes virus) on human T-cell tumors. In 1983, he joined Dr. Steven Oroszlan, then director of the Laboratory of Molecular Virology and Carcinogenesis, studying and publishing on the role of the nucleocapsid protein in the life cycle of HIV.



“Carlton had excellent training in tissue culture techniques,” noted Dr. Oroszlan. “He helped all investigators in the lab.” Mr. Briggs helped design and set up a containment facility for the lab’s HIV work and managed to find time to complete a master’s degree in microbiology in 1992.

When Dr. Oroszlan retired in 1996, Mr. Briggs worked with Dr. Karen Vousden, then chief of the Regulation of Cell Growth Laboratory, on the tumor-suppressor protein, p53, which “inhibits the growth of abnormal cells by inducing cell-cycle arrest and apoptosis,” Mr. Briggs explained.

For the last four years, Mr. Briggs has worked on C/EBP β , a protein “implicated as a critical component of many cancers (such as skin tumors) that involve activation of the Ras oncogene,” said Dr. Peter Johnson, principal investigator of the Eukaryotic Transcriptional Regulation Section. “Thanks to Carlton’s persistent efforts, we were able to develop a method to purify active versions of normal and mutant versions of recombinant C/EBP β , which were invaluable for our studies.”

His friends and co-workers call Mr. Briggs an upbeat, even-tempered

philosopher and a hard-working colleague. “Carlton invariably went about his work with a calm and implacable outlook, and was very popular with his co-workers,” said Dr. Johnson. Dr. Oroszlan added that Mr. Briggs’ attention to detail won his colleagues’ “professional esteem as well as their personal affection.”

Dr. Jon Shuman, now an assistant professor of biology at Brewer-Parker College in Georgia, worked with Mr. Briggs in the Johnson lab to purify C/EBP β protein using affinity chromatography, a task that “requires long hours” and “considerable time spent in the cold room,” said Dr. Shuman. “Carlton met these challenges with an even temperament and a ready smile. He is a wonderful person and a pleasure to work with. I am proud to call him both a colleague and a friend.”

Mr. Briggs reported that he is “enjoying every minute” of his retirement now, but noted how much he appreciates the colleagues he worked with over the years. “Working as long as I did at NCI-Frederick allowed me to meet men and women from all over the world [who] enriched my life both professionally and personally.” ♦

Advanced Biomedical Computing Center

ABCC Staff Members Receive NIH Director's Award

By Nancy Parrish

Bill Boyer, Jim Cooperman, and David Cragg of the Advanced Biomedical Computing Center (ABCC) were recently honored with the NIH Director's Award for their expertise in providing information systems security for critical information at NCI-Frederick. Part of the NIH Information Systems Security Program team, they were responsible for implementing major security programs designed to prevent unauthorized access to government information systems.

The primary tasks of Mssrs. Boyer, Cooperman, and Cragg are to protect NCI-Frederick's information technology (IT) resources and scientific data from hackers, viruses, malware, and spyware through the use of complex systems and safeguards as well as security awareness training and personnel security. In addition, they were intensively involved with the formal certification and accreditation (C&A) process required by NIH for the NCI-Frederick network



L. to R: David Cragg, Bill Boyer, and Jim Cooperman pooled their expertise to implement information systems security for critical information at NCI-Frederick.

infrastructure. This process ensures that security safeguards are operational on all information systems and that NIH is in compliance with the Federal Information Systems Management Act. The three honorees ensured that the C&A process took place at NCI-Frederick within appropriate budget and time constraints.

According to the e-mail sent from Mr. Daniel Sands, NIH Chief

Information Systems Security Officer, who nominated staff for the award, the program team "demonstrated remarkable leadership and dedication in helping NIH maintain a highly effective IT security program despite complex issues involving the unique, heterogeneous IT environment of NIH and rapid changes in threats and technology." ♦

Data Management Services (DMS)

Siford Promoted to Assistant Manager, Web Design and Development

Tim Siford, Computer and Statistical Services (C&SS), Data Management Services, has been named Assistant Manager, Web Design and Development, for C&SS.

Galen Mayfield, Web Design and Development manager of C&SS,

commented, "Throughout his tenure with C&SS, Tim has developed strong relationships with clients and demonstrated the utmost dedication to their success. He has long been a respected leader within C&SS. Tim will be contributing in the

areas of client satisfaction, project management, enterprise initiatives, and mentoring."

Mr. Siford may be reached at 301-846-6700 or by e-mail at tjs@css.ncifcrf.gov. ♦

ATP Initiates a Forum for Scientific Exchanges

By Nancy Parrish

Tim Harris, Ph.D., Advanced Technology Program (ATP) Director, has initiated regular get-togethers for scientific exchange. These gatherings give scientists from NCI-Frederick and USAMRIID a chance to interact with investigators from ATP. The events, held at the Community Activity Center on Porter Street, open with a poster session, followed by an introduction from Dr. Harris and short talks by scientists from selected ATP labs. The presentations are followed by refreshments and informal discussion.

Drop by at the next event!



Robert Welch and Meredith Yeager (bottom right) from the ATP Core Genotyping Facility (CGF) in Gaithersburg were featured speakers at the June 20 event. Posters on display (top and bottom) also profiled the CGF and its work. The presentations were followed by refreshments and informal discussion (top right).

Scientific Publications, Graphics & Media Wins Awards

By Maritta Perry Grau

Four entries in two competitions recently netted Scientific Publications, Graphics & Media recognition for writing and graphic design.

Nancy Parrish's "Write When You Get Work" feature, entitled "Anne Hartley, M.D.: Great Expectations" (March 2007, page 26), won a gold award in the Hermes Creative Awards competition. "Have a Great Race," an advertisement designed and produced by Richard Frederickson for SAIC-Frederick, Inc.'s sponsorship of the 2006 Frederick Marathon, received an honorable mention.

In the annual Magnum Opus Awards competition, "Yooson Eugina Kim, DDS," another "Write When You Get Work" feature by Ms. Parrish (September 2006, page 27), won a bronze award in the "Best Interview

or Profile" editorial category. Maritta Grau's "Students Not Immune to Science" (June 2006, pages 22–23), also won an honorable mention in the "Best Feature Article" editorial category; biologist Robin Winkler-Pickett, Laboratory of Experimental Immunology, provided the photos. *Poster* lead illustrator Tammy Schroyer designed the layout for all three articles.

The Hermes Creative Awards competition, sponsored by the Association of Marketing and Communication Professionals, is designed for marketing, communication, advertising, public relations, media production, web and freelance professionals. As part of its mission, the association fosters and supports the efforts of marketing and communication professionals

who contribute their unique talents to public service and charitable organizations.

The Magnum Opus Awards program is sponsored by *Publications Management* magazine and the Missouri School of Journalism. It is dedicated to raising the quality bar for custom publications, and, in turn, their value for strategic marketing. The judges consider such elements as information and entertainment value, quality of writing and display copy, creative use of imagery and typography, and consistency of color palette and style.

SPGM work has been recognized over the past six years with 37 awards from various competitions, including two Best of Show, four Gold Awards and one Platinum Award. ♦

SAIC-Frederick, Inc.

Trivett Named Outstanding Young American by Jaycees

By Maritta Perry Grau



AVP Research Associate Matthew Trivett is a true “standout” in his scientific contributions

Matthew Trivett, a research associate in the Retroviral Immunology Section, AIDS Vaccine Program, has been

recognized as one of 10 Outstanding Young Americans by the U.S. Jaycees (Junior Chamber of Commerce).

Mr. Trivett is completing a master’s in biomedical sciences while studying the ability of T cells to either prevent infection entirely or reduce the peak viral load associated with HIV infection.

Each year, the Jaycees select 10 Americans between the ages of 18 and 40 whom they believe “exemplify the best attributes of the nation’s young people,” according to the Jaycee web site, http://www.usjaycees.org/projects_toya.htm.

Winners must stand out in at least three of these areas: personal improvement or accomplishment; financial success or economic innovation; social improvement to major contemporary problems; philanthropic contribution or voluntary service; politics or government service; scientific or technological contributions; legal reform;

cultural achievement (literature, history, education, arts); academic leadership or accomplishment; moral and religious leadership; athletic accomplishment; success in the influence of public opinion; any other important contribution to the community, state, or nation.

The top ten list also included Dr. Lisa Ellen Hensley, a microbiologist with the U.S. Army Medical Research Institute of Infectious Diseases at Fort Detrick. The site indicated that Dr. Hensley “has emerged as one of the premier scientists in the discovery of medical countermeasures against lethal diseases such as Ebola virus, SARS, and smallpox. She has identified a candidate therapeutic for the SARS virus and at least two candidate therapeutics for Ebola, one of which has also demonstrated some effectiveness against the Marburg virus.” ♦

NCI-Frederick Café

Starbucks Coffee at NCI-Frederick Café

By Lisa Simpson

Need caffeine to jump-start your day? The NCI-Frederick Café, Building 549, now offers Starbucks coffee and tea along with its regular assortment of hot and cold beverages.

You’ll also find lots of delicious breakfast options. Choose from a selection of pre-made breakfast sandwiches, Danishes, muffins, bagels and cinnamon buns.

Take a break at lunch: Soups, salad bar, hot entrees, sandwiches, desserts, and pizza are available, to name a few.

Check out the menu on-line at www.detrick.army.mil/calendar/lunchmenu.pdf, or pick up a menu in the Café.

Make it easy on yourself: Let the NCI Frederick Café cater your next meeting or special office event. Call 301-846-1750.



The NCI-Frederick Café is open Monday through Friday, 8:00 a.m.–9:00 a.m., for breakfast, and 11:00 a.m.–1:30 p.m. for lunch. Pre-made sandwiches, salads, desserts, and beverages are available for purchase from 9:00 to 11:00 a.m. ♦

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

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Employment Opportunities

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

Charles River Laboratories

www.criver.com

Data Management Services

css.ncifcrf.gov/services

National Cancer Institute at Frederick

www.training.nih.gov/postdoctoral

SAIC-Frederick, Inc.

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Upcoming Events and Dates to Note

Poster Puzzler Entry Deadline: November 30

Scientific Writing Workshop: November 5, 7, and 9

Veterans Day: November 12

Thanksgiving Day: November 22

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

Fitness Challenge Learning Lunches: Second Thursday of each month. Check the web site for details: <http://saic.ncifcrf.gov/fitnesschallenge/events.asp>

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

Reminder: When you have a change in staff, be sure to change the information in the NCI-Frederick database. You can do this online by logging on to 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 web.ncifcrf.gov/ThePoster

The National Cancer Institute at Frederick

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