

Poster

What is it?
Where is it?

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Automatic External Defibrillators

New Program May Save Lives

By Timothy A. Rowe

NCI-Frederick is launching a program that will make automatic external defibrillators (AEDs) readily accessible in the workplace. These portable devices are used to assist someone experiencing a sudden cardiac arrest (SCA) by automatically administering a shock to restore the heart's normal rhythm. "We initiated this program in response to a number



Dr. Jack Simpson, Protein Chemistry Laboratory, practices CPR in the recent AED training program.

of requests from NCI-Frederick staff members," said Dr. Craig Reynolds, NCI Associate Director, "as well as to comply with HHS guidelines for placing AEDs in federal buildings."

In partnership with Medtronic, NCI-Frederick will provide AEDs that are portable, automated, and require minimal training. These AEDs offer a potentially lifesaving treatment to victims of sudden cardiac arrest.

How Does an AED Work?

If someone experiences SCA, a trained responder will apply the AED's electrode pads to the victim. A built-in computer

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Scientist Poll

NCI-Frederick Ranks Highest among Government Research Institutions

By Lisa Simpson

A recent poll conducted by *The Scientist* magazine verified what many of our researchers here on campus already know—the National Cancer Institute at Frederick is one of the best places in the United States at which to conduct research. The Facility ranked second in the poll and was the highest-ranking government research institution in the 2007 "Best Places to



Work in Academia" survey (published in the November 2007 issue).

More than 2,000 life scientists in tenured or tenure-track positions in

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Automatic External Defibrillators

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assesses the victim's heart rhythm, judges whether defibrillation is needed, and automatically administers the shock. The process is nearly foolproof.

Portable AEDs are becoming increasingly commonplace in the workplace, office buildings, health clubs, airports, shopping malls, and entertainment venues. Thanks to advances in AED technology, a lifesaving shock can now be safely and effectively administered to victims of SCA by non-medical individuals.

Where Will These AEDs Be Located?

Because time is of the essence—a victim of SCA has the greatest chance of surviving if the shock is administered within three to five minutes of collapse—Medtronic is working with NCI-Frederick to identify the best locations for the AEDs and to implement a program of ongoing maintenance and training.

The larger NCI-Frederick buildings are expected to have multiple AEDs; smaller buildings will either have one or share one with a nearby building. Installation of AED cabinets has begun, and AEDs will be placed in the cabinets after volunteer training is completed.

Volunteer To Be a Trained Responder

The training for volunteer responders consists of a traditional, three-and-a-half hour cardiopulmonary resuscitation (CPR) course developed by the American Heart Association that will include instructions on how to use the AED. A few hours of training for you could mean a lifetime to a victim of SCA.

Classes are scheduled at 9:00 a.m. and at 1:00 p.m. on the dates shown in the sidebar. Class size is limited to 10 participants. To register for a class and become a volunteer responder, please

contact the Environment, Health, and Safety Program at 301-846-1451. ♦



Volunteers are taught where to position the paddles that administer the shock. Here, Terri McLellan examines the paddles before placing them on the patient's chest.

Sudden Cardiac Arrest (SCA)

By Nancy Parrish

The Heart Rhythm Foundation indicates that an estimated 325,000 deaths from sudden cardiac arrest (SCA) occur each year. SCA is an “electrical problem,” resulting from a heart rhythm disorder, and occurs most often in people with heart disease.¹ The American Heart Association defines cardiac arrest as “the sudden, abrupt loss of heart function.” The signs of cardiac arrest are loss of consciousness, cessation of normal breathing, and loss of pulse and blood pressure.²

Likelihood of survival from SCA decreases 7 to 10 percent with every minute that passes without emergency help. While an estimated 95 percent of SCA victims die before ever reaching the hospital, defibrillation administered within the first five to seven minutes increases the survival rate to 30 to 40 percent.²

SCA is not a heart attack, which results from a “plumbing problem” that occurs when blood flow to the heart is interrupted by a blockage in a blood vessel.¹ However, SCA may occur in conjunction with a heart attack. Immediate attention is required for both conditions.

For more information on sudden cardiac arrest, heart attacks, heart disease, and heart health, visit these web sites:

National Heart Lung and Blood Institute: <http://www.nhlbi.nih.gov/>

American Heart Association: <http://www.americanheart.org>

The Heart Rhythm Foundation: <http://www.heartrhythmfoundation.org/default.asp>

WebMD: <http://www.webmd.com/heart/> ♦

¹From the Heart Rhythm Foundation web site, <http://www.heartrhythmfoundation.org/facts/scd.asp>

²From the American Heart Association web site, <http://www.americanheart.org/presenter.jhtml?identifier=4481>

Dates for AED Training Classes

Friday, December 21
Thursday, January 3, 2008
Friday, January 4
Wednesday, January 9
Thursday, January 10
Wednesday, January 16
Thursday, January 17
Wednesday, January 23
Thursday, January 24
Wednesday, January 30
Thursday, January 31

NCI Recognition

Nine NCI-Frederick Staff Win NCI Director's Awards

By Paul Miller

Nine NCI-Frederick employees won individual and mentoring awards at the annual NCI Director's Awards meeting in Bethesda on November 6. One individual was cited in both categories.

Individual Awards

Jeffery N. Strathern, Ph.D., for outstanding achievement in providing administrative support and mentorship to scientists in the Center for Cancer Research (CCR) while conducting world-class research and leading innovative research programs.

John U. Dennis, D.V.M., M.S., for outstanding teamwork in accomplishing the move to the new Cancer Research Center vivarium (CRC is a unit distinct from the CCR).

Susan M. Fox, B.A., B.S.W., for outstanding accomplishments in revising the CCR annual reporting processes and providing timely reports to NCI and NIH.

Ave Cline, for outstanding efforts in support of the CCR Office of the Director.

Darren Henderson, for notable contributions to space management and laboratory design for the CCR.

Sandy Montgomery-Aker, for outstanding administrative support of NCI's clinical research programs.

David Goldstein, Ph.D., for tireless efforts to identify cutting-edge technology and make it easily available to CCR fellows.

Nadya I. Tarasova, Ph.D., for outstanding work in the development of peptides targeting the SMO protein, a key regulator of cancer stem cells.



Top to bottom: Ave Cline; Jeffery Strathern, Ph.D.; and Nadya Tarasova, Ph.D.

Mentors of Merit

For excellence in mentoring and guiding the careers of trainees in cancer research:

Stuart F. J. LeGrice, Ph.D.
Jeffery Strathern, Ph.D.

Length of Service

NCI-Frederick employees have accumulated 700 years of service among the 34 employees who were recognized. Ten have each served 10 years; 12 have served 20 years apiece; and 12 have served 30 years each. ♦

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academia or other non-commercial research organizations ranked their work environments according to 39 criteria in eight areas: (1) job satisfaction; (2) peers; (3) infrastructure and environment; (4) research resources; (5) pay; (6) management and policies; (7) teaching and mentoring; and (8) tenure. Survey results highlighted research resources and infrastructure and environment as particular strengths at NCI-Frederick.

According to the poll, the top 15 U.S. academic institutions include:

1. Massachusetts General Hospital, Boston, MA
2. **National Cancer Institute at Frederick, Frederick, MD**
3. Clemson University, Clemson, SC
4. Purdue University, West Lafayette, IN
5. Trudeau Institute, Saranac Lake, NY
6. St. Jude Children's Research Hospital, Memphis, TN
7. The J. David Gladstone Institutes, San Francisco, CA
8. University of Nebraska-Lincoln, Lincoln, NE
9. University of Texas Southwestern Medical Center, Dallas, TX
10. Beth Israel Deaconess Medical Center, Boston, MA
11. University of Texas M.D. Anderson Cancer Center, Houston, TX
12. Duke University, Durham, NC
13. Wadsworth Center, Albany, NY
14. Georgia Institute of Technology, Atlanta, GA
15. Mayo Clinic, Rochester, NY

The NCI-Frederick Scientific Library subscribes to *The Scientist* magazine and has a copy of this issue available for viewing. The article may also be accessed on-line at <http://www.the-scientist.com/2007/11/1/61/1/>. ♦

Prostate Cancer Treatment Options

By Dianna Boissy and Maritta Perry Grau

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

Prostate cancer, which forms in prostate tissues (a gland in the male reproductive system found below the bladder, in front of the rectum), affects one out of every three men. According to the National Institutes of Health (NIH Publication No. 05-1576), 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.

If you are diagnosed with prostate cancer, you and your doctor will want to take into account several important factors when deciding on treatment:

- Your age and expected life span;
- other serious health conditions you may have;
- the stage and grade of the cancer;
- your feelings (and your doctor's opinion) about the need to treat the cancer;
- the likelihood that a particular type of treatment will cure the cancer (or provide some other measure of benefit); and
- your feelings about the side effects common to the treatments you are considering.

Standard Treatments

1. *Watchful waiting*: you are closely monitored and treated only when symptoms appear or change (used primarily in older men with other medical problems and early-stage disease).
2. *Surgery*
 - **Pelvic lymphadenectomy** removes the lymph nodes in the pelvis.
 - **Radical prostatectomy** removes the prostate, surrounding tissue, and seminal vesicles. **Retropubic prostatectomy** removes the prostate through an abdominal incision. Nearby lymph nodes may also be removed. **Perineal prostatectomy** removes the prostate through an incision made between the scrotum and anus. Nearby lymph nodes may be removed through a separate, abdominal incision.
 - **Transurethral resection of the prostate (TURP)** removes tissue from the prostate using a resectoscope (a thin, lighted tube with a cutting tool) inserted through the urethra. This procedure may be done to relieve symptoms caused by a tumor before other cancer treatment is given or when a radical prostatectomy is not appropriate because of age or illness.
 - **Orchiectomy** removes one or both testicles, the main source of male hormones, to decrease hormone production (some hormones can cause certain cancers to grow; see Hormone Therapy, below).
3. *Radiation therapy* uses high-energy X-rays or other types of radiation to kill cancer cells or keep them from growing.
 - **External radiation therapy** uses a machine outside the body to send radiation toward the cancer.
 - **Internal radiation therapy** uses a radioactive substance sealed in needles, seeds, wires, or catheters that are placed directly into or near the cancer. The method used depends on the type and stage of the cancer.
4. *Hormone therapy* removes hormones or blocks their action and stops cancer cells from growing. Some hormones can cause certain cancers to grow. If tests show that the cancer cells have places where hormones can attach (receptors), drugs, surgery, or radiation therapy is used to reduce the production of hormones or block them from working.

Several forms of hormone therapy (also called androgen deprivation therapy) are used to treat prostate cancer:

 - **Luteinizing hormone-releasing hormone agonists** prevent the testicles from producing testosterone;
 - **Antiandrogens** block the action of androgens (hormones that promote male sex characteristics);
 - **Drugs** that can prevent the adrenal glands from making androgens include ketoconazole and aminoglutethimide;
 - And, as mentioned under "Surgery" (#3, above) hormone production may be decreased through **orchiectomy**.

New Treatments Available

New types of treatment are being tested in clinical trials.

1. *Cryosurgery or cryotherapy* uses an instrument to freeze and destroy prostate cancer cells.

2. *Chemotherapy* uses drugs to stop the growth of cancer cells. The type of chemotherapy given depends on the type and stage of the cancer being treated. Chemotherapeutic drugs for prostate cancer include mitoxantrone, paclitaxel, docetaxel, and doxorubicin.

- **Systemic chemotherapy** can reach cancer cells throughout the body.
- **Targeted chemotherapy** affects cells mainly in the area administered.

3. *Biologic therapy* (also called biotherapy or immunotherapy), a new treatment, uses your immune system to fight cancer.

4. *High-intensity focused ultrasound* (high-energy sound waves) destroys cancer cells through an endorectal probe used to make the sound waves.

Interested in learning more? Check out the web sites below to find a wide range of up-to-date information:

- *LiveHelp* at www.cancer.gov/cis
At this web site, NCI's Cancer Information Service specialists answer your questions about cancer. Also, you can request NCI booklets, fact sheets, and other materials; or you can call 1-800-4-CANCER for similar information.
- <http://www.cancer.gov/publications>
Here, you can find many NCI booklets and fact sheets.
- www.cancer.gov/cancertopics/wyntk/prostate
This web site links you to NCI's online prostate cancer booklet.
- www.cancer.gov/cancertopics/types/prostate
Review NCI's estimates of current prostate cancer statistics.
- www.cdc.gov/cancer/prostate/statistics/
Review statistics for 1994–2003, compiled by the National Center for Health Statistics, part of the Centers for Disease Control and Prevention (CDC).
- www.cdc.gov/cancer/prostate/statistics/trends.htm
This site links you to the CDC's statistics and trends on prostate cancer.
- http://seer.cancer.gov/csr/1975_2003/.
Information from NCI's Surveillance and End Results trial provides statistics for 1973 through 2003.
- <http://nihseniorhealth.gov/prostatecancer/causesandriskfactors/02.html>
Provides NIH information on senior health. ♦

Life and Death in the Balance

By Lisa Simpson



Melissa McKay, Ph.D., Laboratory of Cell and Developmental Signaling

In normal tissues, a delicate balance exists between the cellular systems that control cell survival and those

that control cell death. Cell-survival mechanisms protect healthy cells; however, damaged or unneeded cells are induced to self-destruct by mechanisms that promote programmed cell death, or apoptosis.

Understandably, the processes that control this balance must be carefully managed in the cell. Recent work by Melissa McKay, Ph.D. has revealed that caspase-dependent cleavage of a protein normally associated with cell survival, kinase suppressor of Ras 1 (KSR1), is able to promote cell death under apoptotic conditions.

“KSR1 is a protein scaffold that, in its full-length form, positively regulates the Ras/ERK signaling pathway, which is involved in promoting cell survival,” Dr. McKay said. “This work shows that, in apoptotic cells, KSR1 is cleaved in a caspase-dependent manner. This not only disrupts the scaffolding ability

of the full-length protein, but also creates a stable KSR1 fragment that can inhibit ERK signaling,” thus promoting apoptosis.

Problems with apoptosis regulation have been linked to several diseases, including cancers where cells that should undergo apoptosis manage to avoid it, causing uncontrolled tumor growth. Dr. McKay noted, “Better understanding of the mechanisms that regulate the see-saw battle between cell death and survival may lead to novel therapeutic options for these diseases.”

Dr. McKay earned her Ph.D. in Biochemistry, Cell and Developmental Biology from Emory University. In early 2005, she began a postdoctoral fellowship with Dr. Deborah Morrison in the Laboratory of Cell and Developmental Signaling. ♦

Melissa M. McKay and Deborah K. Morrison

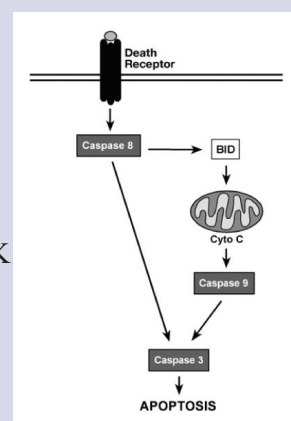
Caspase-dependent Cleavage Disrupts the ERK Cascade Scaffolding Function of KSR1

J Biol Chem 2007 Sep 7;282(36):26225-34. Epub 2007 Jul 5

Kinase suppressor of Ras 1 (KSR1) is a protein scaffold that facilitates ERK cascade activation at the plasma membrane, a critical step in the signal transduction process that allows cells to respond to survival, proliferative, and differentiative cues. Here, we report that KSR1 undergoes caspase-dependent cleavage in apoptotic cells and that cleavage destroys the scaffolding function of the full-length KSR1 protein and generates a stable C-terminal fragment that can inhibit ERK activation. KSR1 is cleaved in response to multiple apoptotic stimuli and occurs *in vivo* during the involution of mouse mammary tissues, a morphogenic process requiring cellular apoptosis. In addition, we find that in comparison with KSR1(-/-)

mouse embryonic fibroblasts expressing wild type KSR1 (WT-KSR1), cells expressing a cleavage-resistant KSR1 protein (DEVA-KSR1) exhibit reduced apoptotic signaling in response to tumor necrosis factor- α /cycloheximide treatment. The effect of DEVA-KSR1 expression was found to correlate with increased levels of active phosphoERK and could be significantly reversed by treating cells with the MEK inhibitor U0126. In contrast, reduced phosphoERK levels and enhanced apoptotic signaling were observed in cells constitutively expressing the C-terminal KSR1 fragment (CTF-KSR1). Moreover, we find that cleavage of WT-KSR1 correlates with a dramatic reduction in active

phosphoERK levels. These findings identify KSR1 as a caspase target and suggest that cleavage of the KSR1 scaffold represents another mechanism whereby caspases down-regulate ERK survival signaling to promote cellular apoptosis.



To access the complete article, please visit <http://www.jbc.org/cgi/content/full/282/36/26225> ♦

Platinum Publications

The following 37 articles have been selected from 15 of the most prestigious science journals during the past quarter.

Biophysics

Ramalingam S, Honkanen P, Young L, Shimura T, Austin J, Steeg PS, Nishizuka S. Quantitative assessment of the p53-Mdm2 feedback loop using protein lysate microarrays. *Cancer Res* 67(13):6247–6252, 2007.

Cell Biology

Berthet C, Rodriguez-Galan MC, Hodge DL, Gooya J, Pascal V, Young HA, Keller J, Bosselut R, Kaldis P. Hematopoiesis and thymic apoptosis are not affected by the loss of Cdk2. *Mol Cell Biol* 27(14):5079–5089, 2007.

Oberst A, Malatesta M, Aqeilan RI, Rossi M, Salomoni P, Murillas R, Sharma P, Kuehn MR, Oerill M, Croce CM, Bernassola F, Melino G. The Nedd4-binding partner 1 (N4BP1) protein is an inhibitor of the E3 ligase Itch. *Proc Natl Acad Sci USA* 104(27):11280–11285, 2007.

Cellular Immunology and Immune Regulation

Okoye A, Meier-Schellersheim M, Brechley JM, Hagen SI, Walker JM, Rohankhedkar M, Lum R, Edgar JB, Planer SL, Legasse A, Sylwester AW, Piatak M, Lifson JD, Maino VC, Sodora DL, Douek DC, Axthelm MK, Grossman Z, Picker LJ. Progressive CD4(+) central-memory T cell decline results in CD4(+) effector-memory insufficiency and overt disease in chronic SIV infection. *J Exp Med* 204(9):2171–2185, 2007.

Park JH, Adoro S, Lucas PJ, Sarafova SD, Alag AS, Doan LL, Erman B, Liu XL, Ellmeier W, Bosselut R, Feigenbaum L, Singer A. “Coreceptor tuning”: Cytokine signals transcriptionally tailor CD8 coreceptor expression to the self-specificity of the TCR. *Nat Immunol* 8(10):1049–1059, 2007.

Sa-Nunes A, Bafica A, Lucas DA, Conrads TP, Veenstra TD, Andersen JF, Mather TN, Ribeiro JMC, Francischetti IMB. Prostaglandin E-2 is a major inhibitor of dendritic cell maturation and func-

tion in *Ixodes scapularis* saliva. *J Immunol* 179(3):1497–1505, 2007.

Sonoda KH, Nakamura T, Young HA, Hart D, Carmeliet P, Stein-Streilein J. NKT cell-derived urokinase-type plasminogen activator promotes peripheral tolerance associated with eye. *J Immunol* 179(4):2215–2222, 2007.

Clinical Immunology

Baatar D, Olkhanud P, Newton D, Sumitomo K, Biragyn A. CCR4-expressing T-cell tumors can be specifically controlled via delivery of toxins to chemokine receptors. *J Immunol* 179(3):1996–2004, 2007.

Roberts JN, Buck CB, Thompson CD, Kines R, Bernardo M, Choyke PL, Lowy DR, Schiller JT. Genital transmission of HPV in a mouse model is potentiated by nonoxynol-9 and inhibited by carageenan. *Nat Med* 13(7):857–861, 2007.

Developmental Biology

Pajni-Underwood S, Wilson CP, Elder C, Mishina Y, Lewandoski M. BMP signals control limb bud interdigital programmed cell death by regulating FGF signaling. *Development* 134:2359–2368, 2007.

Xi SC, Zhu HM, Xu H, Schmidtman A, Geiman TM, Muegge K. Lsh controls Hox gene silencing during development. *Proc Natl Acad Sci USA* 104(36):14366–14371, 2007.

DNA Dynamics and Chromosome Structure

Curcio MJ, Kenny AE, Moore S, Garfinkel DJ, Weintraub M, Gamache ER, Scholes DT. S-phase checkpoint pathways stimulate the mobility of the retrovirus-like transposon, Ty1. *Mol Cell Biol* 2007.

Experimental Therapeutics, Molecular Targets, and Chemical Biology

Thorne SH, Hwang TH, O’Gorman WE, Bartlett DL, Sei S, Kanji F, Brown C, Werier J, Cho JH, Lee DE, Wang Y, Bell J, Kirn DH. Rational strain selection and engineering creates a broad-spectrum, systemically effective oncolytic poxvirus, JX-963. *J Clin Invest* 117(11):3350–3358, 2007.

Genetic Diversity

Single RM, Martin MP, Gao XJ, Meyer DG, Yeager M, Kidd JR, Kidd KK, Carington M. Global diversity and evidence for coevolution of KIR and HLA. *Nat Genet* 39(9):1114–1119, 2007.

Genetics

Gragerov A, Horie K, Pavlova M, Madisen L, Zeng H, Gragerova G, Rhode A, Dolka I, Roth P, Ebbert A, Moe S, Navas C, Finn E, Bergmann J, Vassilatis DK, Pavlakis GN, Gaitanaris GA. Large-scale, saturating insertional mutagenesis of the mouse genome. *Proc Natl Acad Sci USA* 104(36):14406–14411, 2007.

Hunter DJ, Kraft P, Jacobs KB, Cox DG, Yeager M, Hankinson SE, Wacholder S, Wang ZM, Welch R, Hutchinson A, Wang JW, Yu K, Chatterjee N, Orr N, Willett WC, Colditz GA, Ziegler RG, Berg CD, Buys SS, McCarty CA, Feigelson HS, Calle EE, Thun MJ, Hayes RB, Tucker M, Gerhard DS, Fraumeni JF, Hoover RN, Thomas G, Chanock SJ. A genome-wide association study identifies alleles in FGFR2 associated with risk of sporadic postmenopausal breast cancer. *Nat Genet* 39(7):870–874, 2007.

Kozlov SV, Bogenpohl JW, Howell MP, Wevrick R, Panda S, Hogenesch JB, Muglia LJ, Van Gelder RN, Herzog ED, Stewart CL. The imprinted gene Magel2 regulates normal circadian output. *Nat Genet* 39(10):1266–1272, 2007.

HIV

Jimenez-Baranda S, Gomez-Mouton C, Rojas A, Martinez-Prats L, Mira E, Lacalle RA, Valencia A, Dimitrov DS, Viola A, Delgado R, Martinez C, Manes S. Filamin-A regulates actin-dependent clustering of HIV receptors. *Nat Cell Biol* 9(7):838–846, 2007.

Kaufmann DE, Kavanagh DG, Pereyra F, Zaunders JJ, Mackey EW, Miura T, Palmer S, Brockman M, Rathod A, Piechocka-Trocha A, Baker B, Zhu B, Le Gall S, Waring MT, Ahern R, Moss K, Kelleher AD, Coffin JM, Freeman GJ, Rosenberg ES, Walker BD. Upregulation of CTLA-4 by HIV-specific CD4(+)

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T cells correlates with disease progression and defines a reversible immune dysfunction. *Nat Immunol* 8(11):1246–1254, 2007.

Immunobiology

Murakami T, Chen X, Hase K, Sakamoto A, Nishigaki C, Ohno H. Splenic CD19(-) CD35(+) B220(+) cells function as an inducer of follicular dendritic cell network formation. *Blood* 110(4):1215–1224, 2007.

Wang LH, Yang XY, Zhang X, Farrar WL. Inhibition of adhesive interaction between multiple myeloma and bone marrow stromal cells by PPAR γ crosstalk with NF- κ B and c/EBP β . *Blood* 2007.

Mechanisms of Signal Transduction

Gills JJ, Castillo SS, Zhang CY, Petukhov PA, Memmott RM, Hollingshead M, Warfel N, Han JH, Kozikowski AP, Dennis PA. Phosphatidylinositol ether lipid analogues that inhibit AKT also independently activate the stress kinase, p38 alpha, through MKK3/6-independent and -dependent mechanisms. *J Biol Chem* 282(37):27020–27029, 2007.

McKay MM, Morrison DK. Caspase-dependent cleavage disrupts the ERK cascade scaffolding function of KSR1. *J Biol Chem* 282(36):26225–26234, 2007.

Tang B, Yoo N, Vu M, Mamura M, Nam JS, Ooshima A, Du Z, Desprez PY, Anver MR, Michalowska AM, Shih J, Parks WT, Wakefield LM. Transforming growth factor-beta can suppress tumorigenesis through effects on the putative cancer stem or early progenitor cell and committed progeny in a breast cancer xenograft model. *Cancer Res* 67(18):8643–8652, 2007.

Medical Science

Roberts ZJ, Goutagny N, Perera PY, Kato H, Kumar H, Kawai T, Akira S, Savan R, van Echo D, Fitzgerald KA, Young HA, Ching LM, Vogel SN. The chemotherapeutic agent DMXAA potently and specifically activates the TBK1-IRF-3 signaling axis. *J Exp Med* 204(7):1559–1569, 2007.

Yang YL, Kitagaki J, Dai RM, Tsai YC, Lorick KL, Ludwig RL, Pierre SA,

Jensen JP, Davydov IV, Oberoi P, Li CCH, Kenten JH, Beutler JA, Vousden KH, Weissman AM. Inhibitors of ubiquitin-activating enzyme (E1), a new class of potential cancer therapeutics. *Cancer Res* 67(19):9472–9481, 2007.

Membrane Transport, Structure, Function, and Biogenesis

Jacobs A, Quraishi O, Huang X, Bousquet-Gagnon N, Nault G, Francella N, Alvord WG, Pham N, Soucy C, Robitaille M, Bridon D, Blumenthal R. A covalent inhibitor targeting an intermediate conformation of the fusogenic subunit of the HIV-1 envelope complex. *J Biol Chem* 282(44):32406–32413, 2007.

Molecular and Structural Immunology

Ishaq M, DeGray G, Mou K, Aguilera A, Yang J, Lempicki RA, Hazen A, Natarajan V. Zap70 signaling pathway mediates glucocorticoid receptor-dependent transcriptional activation: role in the regulation of annexin 1 expression in T cells. *J Immunol* 179(6):3851–3858, 2007.

Molecular Biology, Pathology, and Genetics

Holland SM, DeLeo FR, Elloumi HZ, Hsu AP, Uzel G, Brodsky N, Freeman AF, Demidowich A, Davis J, Turner ML, Anderson VL, Darnell DN, Welch PA, Kuhns DB, Frucht DM, Malech HL, Gallin JI, Kobayashi SD, Whitney AR, Voyich JM, Musser JM, Woellner C, Schaffer AA, Puck JM, Grimbacher B. STAT3 mutations in the hyper-IgE syndrome. *N Engl J Med* 357(16):1608–1619, 2007.

Neoplasia

Kiziltepe T, Hideshima T, Ishitsuka K, Ocio EM, Raje N, Catley L, Li CQ, Trudel LJ, Yasui H, Vallet S, Kutok JL, Chauhan D, Mitsiades CS, Saavedra JE, Wogan GN, Keefers LK, Shami PJ, Anderson KC. JS-K, a GST-activated nitric oxide generator, induces DNA double-strand breaks, activates DNA damage response pathways, and induces apoptosis in vitro and in vivo in human multiple myeloma cells. *Blood* 110(2):709–718, 2007.

Oncogenetics

Chen M, Rahman L, Voeller D, Kastanos

E, Yang SX, Feigenbaum L, Allegra C, Kaye FJ, Steeg P, Zajac-Kaye M. Transgenic expression of human thymidylate synthase accelerates the development of hyperplasia and tumors in the endocrine pancreas. *Oncogene* 26(33):4817–4824, 2007.

Leupold JH, Yang HS, Colburn NH, Asangani I, Post S, Allgayer H. Tumor suppressor Pcd4 inhibits invasion/intravasation and regulates urokinase receptor (u-PAR) gene expression via Sp-transcription factors. *Oncogene* 26(31):4550–4562, 2007.

Rapisarda A, Melillo G. UVC inhibits HIF-1alpha protein translation by a DNA damage- and topoisomerase I-independent pathway. *Oncogene* 26(48):6875–6884, 2007.

Yuli C, Shao N, Rao R, Aysola P, Reddy V, Oprea-Ilie G, Lee L, Okoli J, Partridge E, Reddy ESP, Rao VN. BRCA1a has antitumor activity in TN breast, ovarian and prostate cancers. *Oncogene* 26(41):6031–6037, 2007.

Protein Structure and Folding

Wang YL, Stieglitz KA, Bubunenko M, Court DL, Stec B, Roberts MF. The structure of the R184A mutant of the inositol monophosphatase encoded by *suhB* and implications for its functional interactions in *Escherichia coli*. *J Biol Chem* 282(37):26989–26996, 2007.

Receptor Biology

Giubellino A, Gao Y, Lee SM, Lee MJ, Vasselli JR, Medepalli S, Trepel JB, Burke TR, Bottaro DP. Inhibition of tumor metastasis by a growth factor receptor bound protein 2 Src homology 2 domain-binding antagonist. *Cancer Res* 67(13):6012–6016, 2007.

Transcription, Chromatin, and Epigenetics

Tan W, Wang YH, Gold B, Chen JS, Dean M, Harrison PJ, Weinberger DR, Law AJ. Molecular cloning of a brain-specific, developmentally regulated neuregulin 1 (NRG1) isoform and identification of a functional promoter variant associated with schizophrenia. *J Biol Chem* 282(33):24343–24351, 2007. ♦

Methicillin-Resistant *Staphylococcus Aureus* (MRSA)

Protection against MRSA

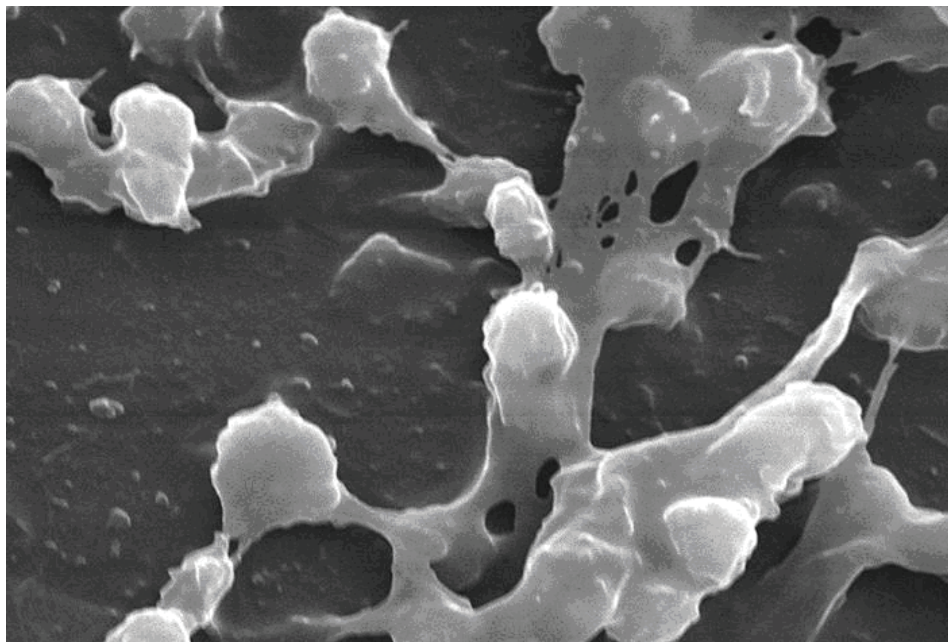
By Barbara Romeka

A number of cases of methicillin-resistant *Staphylococcus aureus* (MRSA) infection were reported in surrounding communities this past fall. Although the media attention has subsided, Occupational Health Services (OHS) encourages employees to take measures to protect themselves and their families against this and all other types of invasive bacteria and viruses.

S. aureus, often referred to as “staph,” are bacteria commonly carried on the skin or in the nose of healthy people; more than one-fourth of the population carries these bacteria without infection. However, staph bacteria represent one of the most common causes of skin infections in the United States. Most of the skin infections from staphylococcus are minor, resulting in pimples and boils, which are usually treated without antibiotics. However, staph bacteria also can cause serious infections in surgical wound infections, bloodstream infections, and pneumonia.

MRSA is a type of staph that is resistant to certain antibiotics. According to the Centers for Disease Control and Prevention (CDC), MRSA infections occur most frequently among persons who have undergone invasive medical procedures, or who have weakened immune systems and are being treated in a health care facility such as a nursing home or dialysis center.

Factors associated with MRSA infections in otherwise healthy people who have not been hospitalized or treated in a health care facility (known as community-associated MRSA) include close skin-to-skin contact; openings in the skin, such as cuts or abrasions; contaminated items and surfaces, crowded living conditions, and poor hygiene.



“This highly magnified electron micrograph depicted numbers of Staphylococcus aureus bacteria, which were [found] on the luminal surface of an indwelling catheter. Of importance is the sticky-looking substance woven between the round cocci bacteria, which was composed of polysaccharides, and is known as ‘biofilm’. This biofilm has been found to protect the bacteria that secrete the substance from attacks by antimicrobial agents such as antibiotics; Magnified 2363x.” Photo: Janice Carr; text from the Public Health Image Library (<http://phil.cdc.gov/phil/home.asp>).

To prevent staph and MRSA infections, it is necessary to practice good hygiene, including:

1. Keeping hands clean by washing thoroughly with soap and water or using an alcohol-based hand sanitizer (the U.S. Food and Drug Administration recommends a concentration of ethanol or isopropanol of 60 percent to 90 percent for greatest efficacy.)
2. Thoroughly washing and cleaning all shared athletic equipment, cooking utensils, and shared clothing.
3. Keeping cuts and scrapes clean and covered with bandages until healed.
4. Avoiding contact with other people’s wounds or bandages.
5. Avoiding the sharing of personal items such as towels or razors.

Information for this article came from the CDC web site, www.cdc.gov. ♦

Poster People Profile

Lise DeVore Combining a Love of Animals with a Respect for Research

By Nancy Parrish

When Lise DeVore moved to Frederick 27 years ago, she wanted a job writing about something she loved: animals. However, writing jobs were hard to come by for someone with a B.A. in English and no experience, she recalled, so she shifted her sights to working with animals instead of writing about them.

Starting Small

At a job interview with the National Zoo in Washington, DC, Ms. DeVore met “a very kind interviewer” who suggested that, because she had neither experience nor a science background, she should “start out small.” Seeming to take this comment literally, she landed a job at Litton Bionetics (one of the previous animal production contractors for NCI-Frederick), working with black, brown, and white mice. As a supply technician for the gnotobiotic isolator area, Ms. DeVore prepared and sterilized the feed, bedding, and water for her tiny charges. From this position, she progressed to animal caretaker, then supervisor for the Barrier Production and Isolator Production staff.

All of her jobs over the years have involved raising pathogen-free rodents for research. “I have worked with guinea pigs, hamsters, and rats in addition to the mice,” she said, adding, “I must say, the rats are my favorite!”



Taking Pride in the Animals

Now a production supervisor for Charles River Laboratories, Ms. DeVore supervises 21 people who raise pathogen-free immunodeficient

mice for investigators at NCI both in Frederick and Bethesda, as well as throughout the United States, Canada, Italy, England, and India. She finds her job satisfying on many levels: she is gratified when she hears that a particular investigator wants animals only from Charles River. She adds, “A huge reward is when we actually hear about the role our mice have played in finding cures.” What pleases her most, however, is that she works with “a group of people who really love their animals and work hard to provide the research community with quality mice. And to some, that might sound crazy, but not to the scientist who gets our animals. The excellent care our mice receive results in a calm and healthy research model.”

Combining Compassion with Respect

Her biggest challenge early on, she noted, was reconciling her love for animals with “their inevitable fate as research models.” She was helped by an NIH researcher who, recognizing her concern over the animals, pointed out that “it was people like me that he wanted working with his animals, compassionate of their needs and respectful of their role in research.”

It was then that she appreciated the relationship between high-quality animal care and high-quality research.

“That concept took hold...I understood it,” she recalled.

While she has attended lots of workshops, and received certification and recognition over the years, she feels “the real education comes from the people you work with. Sometimes the lessons are painful, sometimes tough, and sometimes a real hoot.” She especially enjoys



*Lisa DeVore, Production Supervisor,
Charles River Laboratories*

working with the children at Take Your Child To Work Day because of the delight the children take in handling the mice and rats. When there is so much criticism of animal research, she notes, “It is gratifying to expose kids to the positives of research.”

Challenges Up Ahead

Ms. DeVore feels the greatest change in her career so far is actually lying ahead, when the facility moves to its new location off campus. While she knows her group will miss the close ties they have made with many people on this campus, they are looking forward to having a new building. “It is exciting, and it will be a lot of hard work to build up production in our new facility while maintaining animals for our customers in this one. Challenging, to say the least!” ♦

Poster Halloween Photo Contest



We asked and you delivered! To accompany this year's NCI-Frederick Halloween contest, we asked you to send in pictures of yourselves, your children, or your pets in costume. Winners will receive an NCI-Frederick knit golf shirt.

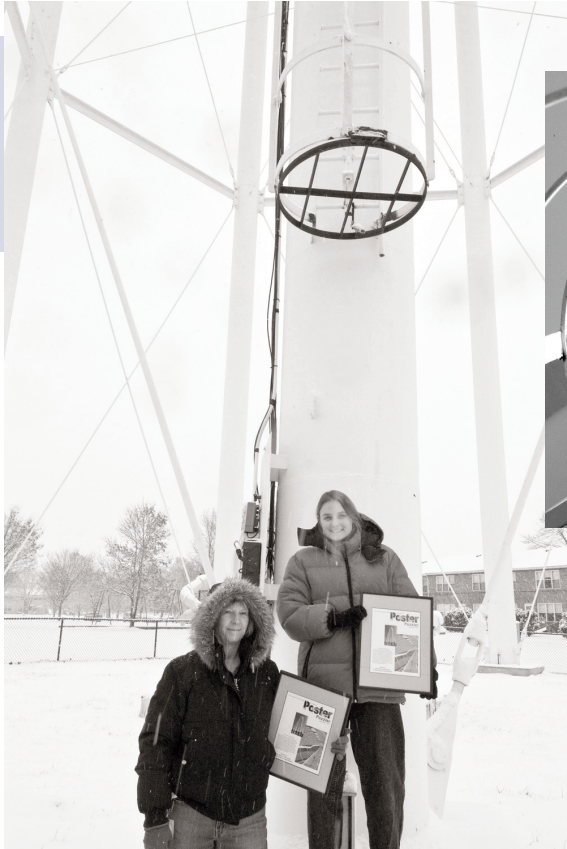


Top left, Pet category: Ace of Spades, submitted by Shawn Brown. And yes, Shawn assures us, that is the cat's own, natural "spade" on its nose.

Bottom left, Children's category: "Raggedy Andy Hartman," submitted by Julie Hartman.

Bottom right, Adult category: Avian Bird Flu (Shawn Brown) and West Nile Virus (Karen Allen).

Poster Puzzler Winner



Congratulations to the September 2007 Poster Puzzler co-winners! Linda Damuth, left, and Michele Gula, QC analysts for the Biopharmaceutical Development Program.

The Poster Puzzler:

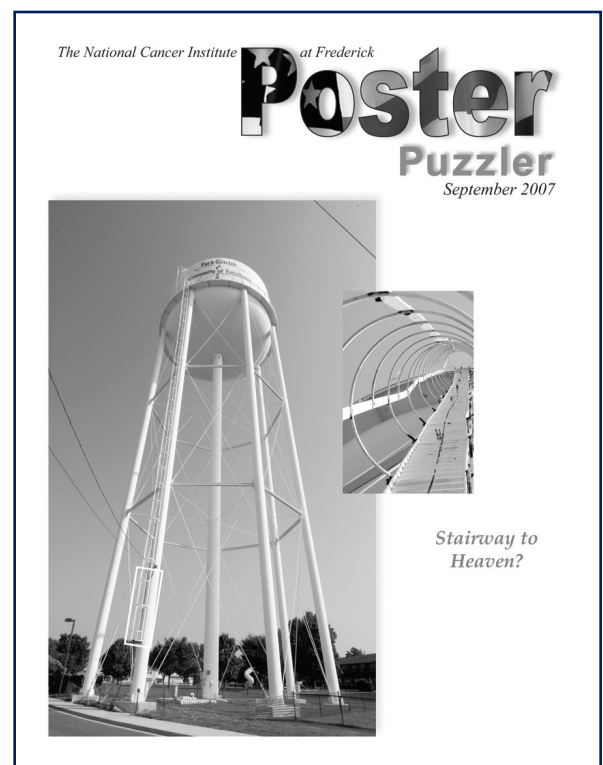
Stairway to Heaven?

By Nancy Parrish

We're not sure if this is what Led Zeppelin had in mind, but our September Puzzler sure looks like a stairway to heaven. It's actually the ladder on Water Tower 1057, on Doughten Drive near Building 549. This section leads to a catwalk that circles the lower part of the tank, and another ladder leads to the top of the tower, 160 feet in the air. Inspectors and maintenance crews climb the ladders to check for leaks, rust, or other imperfections that may need repair. Tower 1057 is one of three water towers on campus that provide an uninterrupted water supply to Fort Detrick during working hours.

Thanks to all the participants in the September 2007 Poster Puzzler!

Special thanks to Rocky Follin of FME for providing information for this article.



Poster Puzzler

What is it?

Where is it?

Your challenge, should you decide to accept it, is to correctly identify the item and its location from the picture to the right. Clue: It's somewhere at Fort Detrick/NCI-Frederick. Win a framed photograph of the Poster Puzzler and an NCI-Frederick tee shirt by e-mailing your guess, along with your name, e-mail address, and daytime phone number, to Poster Puzzler at poster@ncifcrf.gov. Alternatively, you can send us your guess, along with your name and daytime phone number on one of the *Poster* forms found on the front of the *Poster* stands in the lobbies of Buildings 426 and 549. All entries must be received by **Friday, January 25, 2008**, 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.

Dr. Dimiter Dimitrov Presents Talk on Human Monoclonal Antibodies

By Maritta Perry Grau

This past November, speaking at the prestigious annual European Antibody Congress held in Lyon, France, Dr. Dimiter S. Dimitrov, Protein Interactions, Center for Cancer Research Nanobiology Program, lectured on the human monoclonal antibodies developed in his group at NCI-Frederick.

In addition, other leading scientists from around the world discussed the current status and future trends in the development of antibody-based

therapeutics, the fastest-growing field in biological therapeutics.

Representatives from well-known institutes and pharmaceutical companies attended the meeting. These included institutes such as the Paul-Ehrlich Institute, Stanford University, the University of Zurich, and the University of Cambridge; "pharma" companies such as Merck, Abbott, Biogen Idec, Invitrogen, Roche, Genentech, Cambridge

continued on page 15



Dr. Dimiter Dimitrov took the Poster with him to the 2007 European Antibody Congress held November 5-7 in Lyon, France.

Outreach and Special Programs

Share Your Love of Science!

By Maritta Grau and Julie Hartman



A fourth-grader at Sabillasville Elementary School soaks a sterile disc in an all-purpose household cleaner. The soaked disc will be placed in a Petri dish containing bacteria. Students will observe the Petri dish over time to see if the cleaner is an effective disinfectant. This experiment is just one of the hands-on science lessons taught this year in NCI-Frederick's Elementary Outreach Program (photo by Frank Blanchard).

NCI-Frederick's education programs begin with elementary students and continue through postdoctoral graduates.

Elementary Outreach Program

The Elementary Outreach Program, begun in 1995, is growing strong. Four-member teams of volunteers fan out to elementary schools across the county once every three months for about two hours. Teams work with small groups of children to give the children "hands-on" science experiences they probably wouldn't have otherwise. Teams include people from every area of NCI-Frederick: scientific, administrative, and support. This school year, the award-winning program will visit 10 schools in Frederick County, each team going to four or five schools.

Formal lesson plans and materials are supplied and are coordinated with the county school curriculum. For information or to volunteer, contact Julie Hartman, administrative coordinator, 301-846-7338, or eop@ncifcrf.gov, or <http://web.ncifcrf.gov/campus/outreach/eop/>.

High School Program

The Werner H. Kristen Student Internship Program (SIP) for high school seniors is a great program that brings the students to you instead of you leaving your lab or office. A special "thank you" to the mentors of the SIP students for their commitment to this unique program.

We are recruiting mentors for the 2008–2009 school year. Please visit http://web.ncifcrf.gov/careers/student_programs/internships/SIP.asp for more information and registration.

New Undergraduate Program

An opportunity for undergraduates is being developed at NCI-Frederick. The Undergraduate Internship Program (UIP) is in its infancy but is moving forward quickly. The web site will be available soon on NCI-Frederick's "Outreach and Special Programs" page. The UIP will give students who are working toward their associate or bachelor's degree an opportunity to get hands-on work experience in their field. The student

will be brought on as an unpaid special volunteer and may receive credits toward his or her degree. The number of credits and time given to the program will vary with each student and will be agreed upon by the mentor, student, and a school official.

We need volunteers from all areas, i.e., laboratories, offices, shops, computer services, and library, willing to mentor college students. Registering to be a mentor does not obligate you to mentor a student; it simply means that you are interested in participating in the program. If you are interested in being a mentor, please contact Barbara Birnman, birnmaba@mail.nih.gov, or Julie Hartman, hartmanjb@mail.nih.gov.

Many of you take part in other programs to help educate our students through NCI-Frederick. The time and effort you give to help prepare our future workforce are greatly appreciated.

Now the Courses Come to You!

Looking for a general college-level class? Something to help you with training for possible job advancement?

The University of Maryland University College has teamed with NCI-Frederick and Fort Detrick to offer three courses this spring in Building 549. Eventually, they hope to offer courses aimed toward a specific degree or certificate.

To check courses or get further information, go to www.umuc.edu/index.shtml or contact Barbara Birnman, Public Affairs Specialist, Office of Scientific Operations, 301-846-1956. Talk with your human resources representative to determine to what extent your group reimburses or pays for the courses. You may also talk with a UMUC counselor, on campus the third Thursday of each month in Building 1520. To make an appointment with the counselor, call 301-619-2854.

Outreach and Special Programs

University of Maryland University College

Course Offerings at
NCI-Frederick
Building 549
Spring Semester 2008

Course Title: Human Resources Management (HRMN 300/Section 7811)

Dates/Times: Mondays 6:30–9:30 p.m., January 28–May 5, 2008

Course Title: Technical Writing (WRTG 393/Section 7821)

Dates/Times: Tuesdays 6:30–9:30 p.m., January 29–May 6, 2008

Course Title: Manager in a Technological Society (MGMT 610/Section 7831 Hybrid*)

Dates/Times: Wednesdays 6:30–9:30 p.m., January 23–May 7, 2008

* Hybrid Class Meeting Dates: January 23, February 6, March 5, March 19, April 2, April 16, and April 30, 2008 ♦

Have Poster–Will Travel!
continued from page 13

Antibody Technology (now MedImmune Cambridge), Domantis (now part of GSK), MorhoSys AG, Celltech, Genmab, Antitope, Wyeth Pharmaceuticals, AstraZeneca, and Dyax.

Most talks focused on antibodies in clinical trials and described various problems during the discovery phase, preclinical and clinical trials, and how to overcome those problems. Despite the focus on cancers, Dr. Dimitrov observed, “Interestingly, although most of the presentations were on antibodies against cancer, inflammation, and autoimmune diseases, there is a tendency to try to begin to develop more antibodies against infectious diseases.” ♦



At the close of the 2007 Farmers' Market, Mary Ann Checkley, Gene Regulation and Chromosome Biology Laboratory, won a basket filled with the vendors' choice goodies. Left to right are Gavin, J.C. Cuisine; Ms. Checkley; and Barbara Birnman, Public Affairs Specialist, Office of Scientific Operations.

New Faces at NCI-Frederick

NCI-Frederick Welcomes New Staff

Seventy-one people joined our Facility in July, August, and September 2007.

NCI-Frederick welcomes...

Ravi Ampapathi
Muthukumar Balasubramaniam
Matthew Bell
Mary Braun
Suhman Chung
Caroline Davis
Catherine Deatherage
Thushara Diyabalanage
Maria Ana Duhagon
Rui Gong
James Gould
Meghana Gupta
Sven Klaschik
Wei Liu
Geoffrey Lynn
Lydia Martin
Melissa Musser
Prashant Panchal
Haiyan Qin
Tadashi Satoh
Ayelet Shmueli
Janani Varadarajan
Sagie Wagage
Edward Wright, Jr.
Qian Zhang

Robert Leighty



Christina Zinger



Jonathan Bray



Regina Cer



Data Management Services welcomes...

Robert Leighty
William Steinhaus

SAIC-Frederick, Inc., welcomes...

Michelle Adejana
Notalomwan Aigbogun
Shervon Bailey
Joy Beeler
Jonathan Bray
Ashley Butler
Carolyn Cable
Amy Cannon
Hector Carrillo
Regina Cer
Kyndal Cook
Bruno Domen
Barry Eigel
Kristina Erny
Jacob Estes
Amy Gray
Jessica Green
Lynae Green
Alice Hall
Halee Helmer
Deborah Hill
Gordon Hill
Sarah Hooper
Amy James
Daniel Liverette
Rachael Mabyou
Anna Maciag
Linnia Mayeenuddin
Jennifer Mehalko

Chad Ogle
Martha Oseguera
Rhonda Pung
Roxana Quintanilla
Joshua Roark
Amy Rump
Patrick Ryscavage
Lisa Sheffield
Cindy Staup
Lynn Thomason
Gregory Thornwall
Lady Ung
Jiro Wada
Lemin Wang
Christina Zinger

Jiro Wada



Sarah Hooper



Geoffrey Lynn



Fitness Challengers Circle the Earth

By Lisa Simpson

Fitness Challenge 2007 is in the home stretch! Participants have really been on the move this year, logging in enough biking, running, and walking miles so far to circumnavigate the Earth more than one-and-a-half times. Look for the final tallies for the three Fitness Challenge categories—pounds lost, miles traveled, and other fitness activity hours—in the March 2008 issue of *The Poster*.

Congratulations to the winners from summer and fall 2007:

Pounds lost:

Shirley Foreman, Fisher BioServices Central Repository (June)
Adrienne Diehl, SAIC-Frederick, Inc., Laboratory Animal Sciences Program (July)

Tania Defibaugh, SAIC-Frederick, Inc., Contracts and Administration Directorate (August)
Tara Grove, SAIC-Frederick, Inc., Vaccine Clinical Materials Program (September)
Cammi Bitner, SAIC-Frederick, Inc., Advanced Technology Program (October)
Kelly Leib, SAIC-Frederick, Inc., Biopharmaceutical Development Program (November)

Miles traveled:

Naoya Yuhki, National Cancer Institute (NCI), Laboratory of Genomic Diversity (June)
Evette Paganortiz, Fort Detrick, U.S. Army Reserve Center, Flair Armory (July)
Fred Skroban, Fort Detrick Engineering Directorate (August)
John Beutler, NCI, Molecular Targets Development Program (September)

Susie Culler, Wilson Information Services Company (October)
Sally Biser, Charles River Laboratories (November)

Other fitness activity hours:

Laverne Harris, Fort Detrick, Defense Commissary Agency (June)
Roberta Matthai, SAIC-Frederick, Inc., Basic Science Program (July)
Carolyn Jean Eyler, SAIC-Frederick, Inc., Contracts and Administration Directorate (August)
Tammie Ford, SAIC-Frederick, Inc., Environment, Health, and Safety Directorate (September)
Bill Lonergan, SAIC-Frederick, Inc., Facilities Maintenance and Engineering (October)
Steve Stull, SAIC-Frederick, Inc., Basic Science Program (November) ♦

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

Many thanks to those who completed November's Fitness Challenge survey, sponsored by Occupational Health Services. Please watch for the survey results in the March 2008 issue of *The Poster*.

Get the Facts about Influenza: Part II

Flu Shot Provides Best Protection

By Robin Pickens

[Editor's note: This is the second of two articles from Occupational Health Services. The first article, in the September Poster, addressed what the flu is, how it is spread, prevention techniques, and vaccination options. This article addresses flu shots, flu symptoms, and your "flu IQ."]

According to the Centers for Disease Control and Prevention (CDC) web site, the most effective way to prevent the flu is be vaccinated against it. More than 1,200 employees at NCI-Frederick received vaccinations in October and November. This number represents a 30 percent increase over last year. "I attribute this increase to better publicity, through programs at the library and promoting the vaccinations through the newsletters and flyers," said Alberta Peugeot, Manager of Occupational Health Services (OHS).

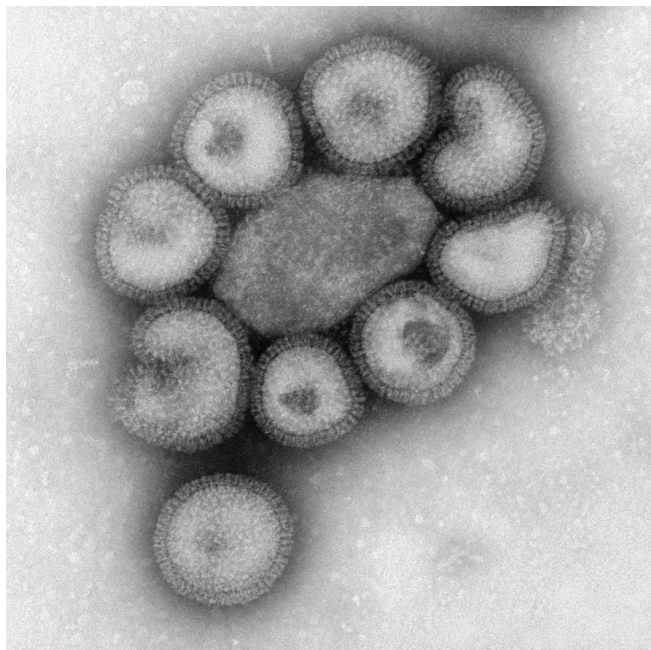
How Effective Is the Flu Shot?

The flu shot comprises three influenza strains. Each year, the strains may change to "match" the predicted circulating flu strains. When the match is good, the vaccine will prevent influenza in 70 percent to 90 percent of healthy people younger than 65. Sometimes an unpredicted strain will appear after the vaccine has been distributed to doctor's offices and clinics. When this happens, you may get the flu even if you were vaccinated.

Is It the Flu or a Cold?

Flu symptoms generally appear one to three days after exposure to the virus. The onset of symptoms often seems sudden; people describe feeling like they've "been hit by a truck." Flu symptoms can be mild or severe.

What Does the Flu Virus Look Like?



Negative-stained transmission electron micrograph (TEM) of influenza virus particles, or "virions."

Photo from the Public Health Image Library <http://phil.cdc.gov/Phil/home.asp>. CDC/ Dr. F. A. Murphy.

Common symptoms of the flu include:

- Fever (usually high)
- Headache
- Muscle aches
- Chills
- Extreme tiredness
- Dry cough
- Runny nose (more common in children than adults)
- Stomach symptoms, such as nausea, vomiting, and diarrhea (more common in children than adults)

You don't need to experience all of these symptoms to have the flu. Even if you only have one or two, you should see your doctor.

Is It Too Late to Receive a Flu Shot?

No! Even if you didn't receive a flu shot in the fall, you may still be protected if you are vaccinated in December. In the United States, the flu season can last as late as May,

with the peak occurring between late December and March. OHS offers flu vaccinations throughout the flu season. You are encouraged to call for an appointment, or for any other questions about the flu or flu vaccinations, 301-846-1096.

Sources:

Department of Health and Human Services, Centers for Disease Control and Prevention:
<http://www.cdc.gov/flu/>.

FluFacts.com In-depth Influenza Information:
www.flufacts.com.

Prevention and Control of Influenza—Recommendations of the Advisory Committee on Immunization Practices (ACIP), 2007:
<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5606a1.htm> ♦

Occupational Health Services

What Is Your Flu IQ?

1. True or False? The best way to prevent the flu is to get a vaccination every year.
2. Which of the following groups are considered high risk for developing flu complications?
 - a. People age 65 and older
 - b. Pregnant women
 - c. Health care workers
 - d. Children, birth to 8 years
 - e. People living or working in long-term care facilities
3. True or False? The flu shot consists of live attenuated (but weakened) influenza virus.
4. True or False? The best time to get vaccinated is in November or December.
5. True or False? If you get an influenza shot, there is a small risk of getting sick with the flu.
6. Which of the following are common symptoms of flu?
 - a. High fever
 - b. Muscle aches
 - c. Headache
 - d. Hacking, productive cough
 - e. Moderate to severe tiredness
7. True or False? Flu is a contagious respiratory illness that can sometimes lead to death.



Answers: 1) True; 2) b, c, d (“a” should be people 50 years or older, and “d” should be children 6 months to 5 years); 3) False (The flu shot consists of three killed influenza strains, while the nasal flu spray has live attenuated influenza virus); 4) True; 5) False; 6) a, b, e; 7) True

Web Sites of Note:

By Lisa Simpson

You'll find a variety of web sites listed throughout our newsletter, such as the Scientific Library's WISCO site for AIDS Awareness Day. Check out these holiday-related sites.

The Consumer Product Safety Commission offers links to a number of government web sites with hints on product recalls, toys, food, and decorations for the holiday season.

<http://usgovinfo.about.com/library/weekly/blholidaysafety.htm>

If you have a live tree, consider safety tips from the National Christmas Tree Association.

<http://www.christmastree.org/safety.cfm>

Looking ahead to 2008, you'll want to keep these healthcare recognition dates in mind.

Cervical Health Awareness Month (January 1–31)

National Cervical Cancer Coalition

<http://www.nccc-online.org/awareness.php>

Age-Related Macular Degeneration/Low Vision Awareness Month (February 1–29)

Prevent Blindness America

<http://www.preventblindness.org/>

Multiple Sclerosis Awareness Week (March 10–17)

National Multiple Sclerosis Society

<http://www.nationalmssociety.org/>

ATP Management Restructured

By Nancy Parrish

Dr. Tim Harris, Director of the Advanced Technology Program (ATP), recently announced a directorate reorganization “to make it more streamlined, to increase efficiency and accountability.” Five “supergroups” comprising the existing laboratories and programs have been organized around common functions.

1. Proteins and Proteomics Group (PPG): Dr. Robert Fisher, Director. Includes the Laboratory of Proteomics and Analytical Technologies, directed by Dr. Timothy Veenstra; the Protein Chemistry Laboratory, directed by Dr. Fisher; and the Protein Expression Laboratory, directed by Dr. James

Hartley. The Viral Technology Laboratory, led by Dr. Betty Conde, will become part of the PEL.

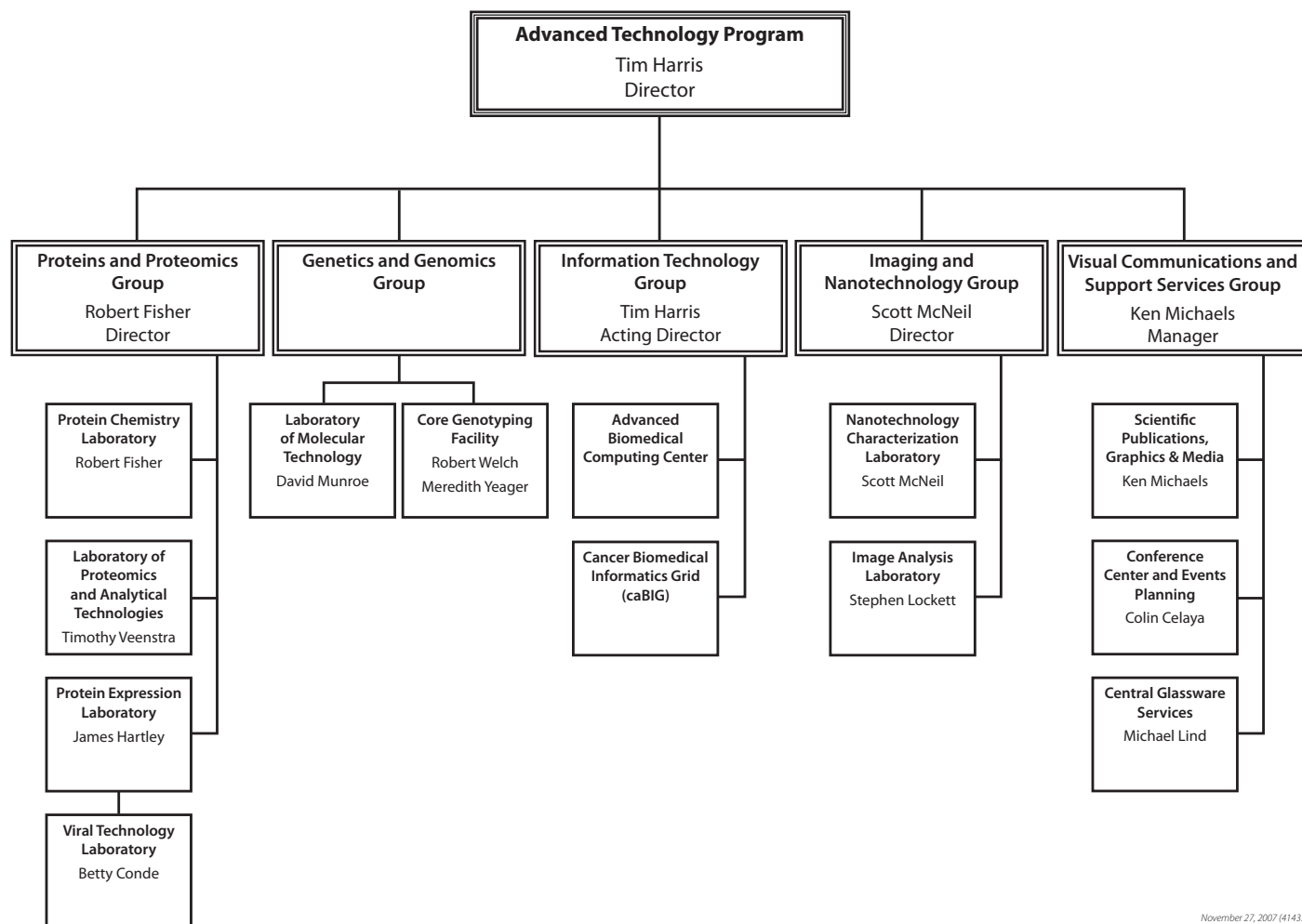
2. Genetics and Genomics Group (GG): Core Genotyping Facility, directed by Robert Welch; and the Laboratory of Molecular Technology, directed by Dr. David Munroe.

3. Information Technology Group: A new Director of Information Systems is being hired to manage this group, which consists of the Advanced Biomedical Computing Center. The new director will also have management oversight for the

CaBIG projects undertaken by SAIC-Frederick, Inc.

4. Imaging and Nanotechnology Group: Dr. Scott McNeil, Director. Laboratories Include the Image Analysis Laboratory, directed by Dr. Stephen Lockett, and the Nanotechnology Characterization Laboratory, directed by Dr. McNeil.

5. Visual Communications and Support Services Group: Ken Michaels, Manager. Includes Scientific Publications, Graphics & Media; the Conference Center and Events Planning groups, managed by Colin Celaya; and Central Glassware Services, managed by Michael Lind. ♦



November 27, 2007 (41437)

SPGM Retreat Focuses on Teamwork

By Nancy Parrish

Scientific Publications, Graphics & Media (SPGM) held its annual retreat on October 31 at ThorpeWood, in the Catoctin Mountains. The purpose of the retreat was to improve teamwork skills among staff members. “We function pretty well as a team,” said SPGM manager Ken Michaels, “but we can always use a refresher.”

In preparation for the retreat, the staff completed the Myers-Briggs Type Indicator (MBTI) questionnaire. This well-known and -respected instrument profiles personality preferences and

helps individuals understand their own behavior as well as differences in the behavior of others. Sykanya Bora, Human Resources Manager of Training and Development, and a certified MBTI trainer, helped the staff review the 16 personality preferences and how understanding these preferences can improve communication in teams; the group then honed their teamwork skills, putting into practice their knowledge of the personality preferences discussed earlier. ♦



ThorpeWood, located in the Catoctin Mountains.



BDP Gives Thanks in a Big Way

The Biopharmaceutical Development Program held a special collection last month to gather goods for U.S. troops overseas. Goods included snack foods, personal care items, games and other entertainment materials, and other items. ♦





Scientific Library Shows Documentary to Observe World AIDS Day

By Robin Meckley

December 1 was observed as World AIDS Day, established by the World Health Organization in 1988 to focus global attention on the devastating impact of the HIV/AIDS epidemic. Governments, national AIDS programs, faith organizations, community organizations, and individuals joined to recognize the importance of the fight against HIV/AIDS.

The Scientific Library recognized World AIDS Day and the fight against HIV/AIDS with a multi-part program that began December 3, 2007, and runs through January 8, 2008.

During December, the library showed a 2-part, 4-hour documentary, *The Age of AIDS*, produced by PBS Frontline. The program investigates the science, politics and human cost of AIDS, through interviews with researchers, activists, and patients.

Look for a "Science in the Cinema" program about AIDS during the first two weeks of January 2008. We will show a movie and host a speaker to discuss the issues raised in the movie.

In addition, the library staff has created two informative bulletin boards about AIDS. One bulletin board provides information about our program and brochures about AIDS. The other bulletin board shows different ways countries throughout the world observe World AIDS Day.

For more information, go to

- www.worldaidsday.org
- www.hhs.gov/aidsawarenessdays/days/world/index.html
- www.pbs.org/wgbh/pages/frontline/aids.

Want to Know What's Happening? Check the Online Library Events Calendar

The Scientific Library recently launched an online **Library Events Calendar** at www-library.ncifcrf.gov:8086/library_events. The web calendar provides a quick, monthly look at all the events the library sponsors and includes links to more information about each activity. We invite you to look at this calendar every week to stay informed about all library activities.

Stressed Out? Head for the Relaxation Room

In our continuing efforts to help NCI-Frederick personnel take a few moments during the work day to relax and "de-stress," the Scientific Library, with the support of Occupational Health Services (OHS), plans to open a **Relaxation Room** soon, as part of the library-OHS Center for Health Information (CHI). Available for 30-minute intervals to those who sign up to use it, the room will be in a quiet, dark area, and will include a comfortable chair with a massage/heat pad, and soft music or relaxing sound effects playing on a CD/DVD player.

Add a Library Barcode to Your New ID Card

The library's barcode allows you to check out materials, use the library's computers, request full-text journal articles, and

access all parts of the library's web page,



on or off-site. If you never received a barcode, or if you have a new NCI-Frederick ID card, (old library barcodes do not transfer to the new card), visit the Scientific Library in Building 549 to get one.

We can also come to you to distribute barcodes to everyone who needs them.

Call us at 301-846-5850, or e-mail library@mail.ncifcrf.gov.

Remember, your Scientific Library barcode is free and can open many informational doors!

Eighth Annual Book and Media Swap

The eighth annual Book and Media Swap began in October to celebrate National Medical Librarians Month. NCI-Frederick employees donated



Scientific Library patrons found many "treasures" to replenish office or personal libraries at the eighth annual book swap. Any materials remaining were donated to local charities.

hundreds of books, videos, and other media in exchange for "book cards" that allowed them to select an equal number of items during the swap that started on November 9. Thanks to all who contributed materials for the book and media swap; we had a terrific turnout!

For complete information about the swap, please check the web page at <http://www-library.ncifcrf.gov/bookswap.aspx>.

Wilson Information Services Corporation (WISCO)

Did You Wash Your Hands? Fighting the Flu, and Other Germs, Too

“Small creatures, invisible to the eye, fill the atmosphere, and, breathed through the nose cause dangerous diseases.” Amazingly, this writing is from *Rerum Rusticarum*¹, written by Marcus Terentius Varro, 117–126 B.C.E.! Even that early in history, people were theorizing about microbes!

In November the Scientific Library co-sponsored with OHS an awareness campaign about precautions to help fight flu and other illnesses. The library created a time line for the development of the Germ Theory of Medicine, set up an information table, let people test the cleanliness of their own hands, (www.giantmicrobes.com), and even held a drawing to win toy stuffed “germs.”



Watch out! Dr. Simpson's "Sore Throat Germ" is replicating!

Carrie McCracken won the Ear Ache Germ; Carl McIntosh, the Common Cold Germ; Dr. Robert Blumenthal, the Cough Germ; Jennifer Mariano, the Flu Germ; Samantha Bauchiero, the Stomachache Germ; and Dr. Jack Simpson, the Sore Throat Germ. ♦

www.giantmicrobes.com), and even held a drawing to win toy stuffed “germs.”

¹Bettmann, Otto. *A Pictorial History of Medicine*. Springfield, IL: Charles C. Thomas, c. 1956, p. 35.

Thanks for the Jokes!

Even though the October program “Laugh for the Health of It!” is over, you can still laugh your way through the day, and relieve stress and tension at our REWARDS web site, www-library.ncifcrf.gov/jokes.aspx. Enjoy!



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web.ncifcrf.gov/ThePoster

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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.

saic.ncifcrf.gov
www.saic.com

Wilson Information Services Corporation

www-library.ncifcrf.gov

Upcoming Events and Dates to Note

Poster Puzzler Entry Deadline: January 29, 2008

Christmas Day: December 25, 2007

New Year's Day: January 1, 2008

Martin Luther King, Jr. Day: January 21

Presidents' Day: February 18

The 2008 NCI Intramural Scientific Retreat: January 8

<https://cms.palladianpartners.com/cms/1186421424/>

8th Annual CCR Fellows and Young Investigators Colloquium: March 3-5

<https://cms.palladianpartners.com/cms/1187204210/>

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

Poster

Frederick, MD 21702-1201

Weather Advisory

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

Closing or Delayed Opening

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

Early Dismissal

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

Who Ya Gonna Call?

Telephone

Recorded weather line	301-619-7611
Ft. Detrick toll free number	1-800-256-7621, *8, 37611#
TDD	301-619-2293

Internet (This will only be used if there is a change in operating hours.)

Fort Detrick's home page: <http://www.detrick.army.mil/>.

Weather information pops up automatically. ♦

Radio/TV

Frederick, MD

WAFY	FM/103.1
WFMD	AM/930
WFRE	FM/99.9
WTOP	AM/820

Hagerstown, MD

WARK	AM/1490
WJEJ	AM/1240
WQCM	FM/94.3
WWEG	FM/106.9
WHAG	TV/Channel 25

Baltimore, MD

WBAL	AM/1090
WCAO	AM/600
WIYY	FM/97.9
WPOC	FM/93.1

Thurmont, MD

WTHU	AM/1450
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Williamsport, MD

WCRH	FM/90.5
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Chambersburg, PA

WHGT	AM/1590
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Gettysburg, PA

WGET	AM/1320
WGTY	FM/107.7

Mercersburg, PA

WSRT	FM/92.1
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Greencastle, PA

WAYZ	FM/104.7
WWMD	FM/101.5

Waynesboro, PA

WCBG	AM/1380
WFYN	FM/101.5

Martinsburg, WV

WEPM	AM/1340
WICL	FM/95.9
WLTF	FM/97.5

Charles Town, WV

WMRE	AM/1550
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Washington, DC

WMZQ	FM/98.7
WRQX	FM/107.3
WTOP	FM/103.5
WWTP	AM/1500 and FM/107.7
WUSA	TV/Channel 9 ♦



NCI-Frederick Annual Halloween Contest



Who Are These Masked People?

Can you identify the people behind the costumes pictured here? The Employee Recreation Council held its ninth annual Halloween costume contest October 30. Prizes were awarded for the Most Bootiful, Most Spooktacular, Most Creative Individual, and Most Creative Group.

Next year's contest will be on October 31 (a Friday).

