



NEWS ABOUT UB'S SCHOOL OF MEDICINE AND BIOMEDICAL SCIENCES AND ITS ALUMNI, FACULTY, STUDENTS AND STAFF

Pathways

SPRING 2007

Gardella and Melendy Named AAAS Fellows

JOSEPH A. GARDELLA, JR, PhD, PROFESSOR OF CHEMISTRY, AND THOMAS MELENDY, PhD, ASSOCIATE PROFESSOR OF MICROBIOLOGY AND IMMUNOLOGY, HAVE BEEN ELECTED FELLOWS OF THE AMERICAN ACADEMY FOR THE ADVANCEMENT OF SCIENCE (AAAS), THE WORLD'S LARGEST GENERAL SCIENTIFIC SOCIETY AND PUBLISHER OF THE JOURNAL SCIENCE.



Gardella

They were among 449 scientists selected by their peers this year for their "meritorious efforts to advance science or its applications."

Gardella was selected as a fellow by the AAAS Section on Chemistry "for scientific leadership in surface analysis of polymers and biomaterials and for developing related surface modification techniques for these same materials."

Melendy was selected as a fellow by the AAAS Section on Biological Sciences "for characterizing mechanisms of eukaryotic chromosomal and viral DNA replication and of regulation of DNA replication in response to DNA damage."

A UB faculty member since 1982, Gardella is an analytical chemist in the College of Arts and Sciences who specializes in the application of novel techniques to the characterization of biosurfaces to foster tissue regeneration and wound healing after serious injury.

In particular, he is developing novel measurement and computational data analysis methods to analyze the surface chemistry of polymers, especially those in biomaterials.

The work is at the intersection of chemistry, biology, medicine and engineering, and fits within the UB 2020 strategic strength in integrated nanostructured systems.

Gardella and his colleagues have developed and patented techniques that use methods to measure the drug-release rates from biodegradable materials and the degradation rates of polymers used in control release devices for tissue engineering.

His work in this area has been funded by the National Science Foundation for more than two decades; he also receives funding from the National Institutes of Health and foundations, including the John R. Oishei Foundation.

A winner of the Ernest A. Lynton Award for Faculty Public Professional Service and Academic Outreach, and recently named a fellow of the American Vacuum Society for his research involving ultra-high vacuum techniques, Gardella was honored by the White House with a 2005

Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring. The annual award, administered by the National Science Foundation, honors individuals who have demonstrated a commitment to mentoring students and boosting the participation of minorities, women and disabled students in science, mathematics and engineering.

Gardella also is a winner of the Schoelkopf Medal of the Western New York American Chemical Society.

A faculty member since 1994, Melendy conducts research that uses a combination of biochemical, molecular biological, pharmacological and cell biology approaches

to address basic questions about the central mechanisms and DNA damage-dependent regulation of DNA replication.

His work on how viruses replicate their genomes has focused on the human/bovine papillomaviruses and the human/primate virus, simian virus 40.

In addition to these basic biological questions, Melendy's research also is revealing new targets for the development of anti-viral therapeutics.

Melendy's laboratory in the School of Medicine and Biomedical Sciences is at the forefront in studying how the human papillomavirus



Melendy

takes over the cellular DNA synthesis machinery in order to replicate its viral genome.

His group also has developed a highly specific, high-throughput assay for activation and evaluation of ATR function. (ATR is one of the two primary protein kinases required to stop DNA replication and cell growth when cells are exposed to DNA damage.)

Whether licensed for commercialization, or used by Melendy's lab, this assay will provide a dramatically improved screen for ATR kinase inhibitors, highly sought after for combinatorial anti-cancer therapies. A patent is pending.

Melendy is director of the

Buffalo Center for DNA Replication and Repair, one of the foci of excellence in the UB 2020 Strategic Strength in Molecular Recognition in Biological Systems and Bioinformatics.

He also is a member and former director of UB's Witebsky Center for Microbial Pathogenesis and Immunology. He is a winner of the American Cancer Society Research Scholar Award and of the National Institutes of Health "Independent Scientist" Award. When lists were compiled in 2002 and in 2005, he was among UB's top 100 Federal Research Grantees. **EP**

— ELLEN GOLDBAUM

Department of Surgery Faculty accomplishments

UB's Trauma/Critical Care faculty were recently honored to learn that the percentage of patients who survive either blunt or penetrating trauma is higher at Erie County Medical Center than at any other trauma center in New York State. The finding is based on data collected by the New York State Committee on Trauma that compares 44 Level I trauma centers statewide. In addition:

William Flynn, MD, a member of UB's Trauma/Critical Care faculty was recently elected chair of the New York State Committee on Trauma. In this capacity, he will direct the activities of this statewide group of trauma specialists.

James Hassett, MD, vice chair of education for the Department of Surgery, was recently appointed to the editorial board of the *Journal of Surgical Research*.

Kelli Bullard Dunn, MD, a member of UB's surgical oncology faculty at Roswell Park Cancer Institute, was recently appointed to the editorial board of *Diseases of the Colon and Rectum*.

Merril Dayton, MD, chair of the Department of Surgery, was recently elected president of the Western Surgical Association, one of the largest surgery organizations in the country.

DAVID R. PENDERGAST, EdD, PROFESSOR OF PHYSIOLOGY AND BIOPHYSICS AND ADJUNCT PROFESSOR OF MECHANICAL AND AEROSPACE ENGINEERING, HAS BEEN APPOINTED DIRECTOR OF THE CENTER FOR RESEARCH AND EDUCATION IN SPECIAL ENVIRONMENTS (CRESE) IN THE SCHOOL OF MEDICINE AND BIOMEDICAL SCIENCES.

Pendergast Named Director of CRESE



Pendergast succeeds Claes E. Lundgren, MD, PhD, who has directed the center since its inception in 1985. Lundgren is relinquishing the position to concentrate on his research projects, several of which he is conducting in collaboration with Pendergast. He will remain involved in the center as associate director.

Pendergast, who has been the center's associate director since 1991, studies a broad range of human adaptations to exercise on land, in water and in outer space. Internationally known in the field of exercise and environmental physiology, he currently is working with the U.S. Navy to improve performance in extreme environments. This work includes developing a system to protect divers in extreme temperatures, as well as locomotor and respiratory muscle training.

He also is conducting research with colleagues on exercise metabolism, muscle diseases and improving the performance of competitive swimmers through training and drag-reducing swimsuits.

CRESE houses specialized facilities that allow researchers to study human physiology in extreme conditions, including heat, cold, high and low humidity, high and low atmospheric pressure, and high and low gravity. It contains a unique annular (doughnut-shaped) pool and water-filled hyperbaric chamber that allow specialized aquatic research.

Pendergast has been a UB faculty member since 1973. He received a bachelor's degree from Brockport State College, a master's degree from the University of Pittsburgh and a doctorate from UB. **BP**
— LOIS BAKER

Lee Receives International Honor

RICHARD V. LEE, MD, professor of medicine, obstetrics and pediatrics in the School of Medicine and Biomedical Sciences, has received the C. G. Barnes Award from the International Society of Obstetric Medicine in recognition of his outstanding contributions to the field.

Also, the North American Society of Obstetric Medicine has announced the establishment of a lecture in Lee's name to be delivered at the annual meeting of the society.

Lee is renowned in the field of obstetric medicine, which concentrates on treatment of disease, infection and complications during pregnancy. His honor by the international society is particularly apt: His subspecialty is geographic medicine, which studies and treats diseases endemic to specific—usually isolated—regions of the world.

A founding member of the International Society of Obstetric Medicine, Lee has traveled widely, carrying out his research, clinical and teaching activities. His work has covered a broad range of issues, including international health, the complexities of managing medical complications of pregnancy and the health status of geographically isolated human populations.

He maintains an active research program, studying the health of the Rendille tribe of Northern Kenya; the Kayapo, Parakana and Apalai tribes of Brazil, and the Ladakh people of Northwestern Himalaya. The Medical Trek Program at UB, which he developed, gives a variety of students the opportunity to participate in field work with these native groups.

Under the auspices of the United Nations High Commission for Refugees, Lee also has provided care and medical educational programs for refugees in Thailand and Cambodia, and he has consulted for the World Health Organization's Collaborating Center for Health in Housing, based in Buffalo.

For more than 20 years Lee has organized conferences and workshops on obstetric medicine for the American College of Physicians, and has recruited and trained young clinicians in the field throughout the U.S. and Canada. He said he considers that accomplishment the best reward for a career in a branch of medicine that was not well recognized during the lifetime of C. G. Barnes, who established the specialty.

Lee holds bachelor's and medical degrees from Yale University, and completed his residency and postdoctoral training at Yale-New Haven Hospital. He is secretary of the board of trustees of the Yale-China Association and maintains academic interchanges with medical schools in Hong Kong, Changsha (Hunan Province) and Beijing. **BP**

— LOIS BAKER



Lee

Cain Honored by Heart Rhythm Society



MICHAEL E. CAIN, MD, dean of the School of Medicine and Biomedical Sciences, has been selected as the 2007 recipient of the Heart Rhythm Society's Distinguished Service Award, which is given annually to an individual who has made outstanding contributions to the society. The award was presented on May 11 during

the society's 28th Annual Scientific Sessions, held in Denver, Colorado.

Cain, a cardiac electrophysiologist, has been a member of the Heart Rhythm Society since 1985. He was elected to the board of trustees in 1998 and subsequently served as secretary of the society, chair of the 2002 annual

scientific sessions, and then as president in 2003–2004. Since his presidency, Cain has continued to serve the society in many capacities. He has chaired the Governance Committee, Presidents Council, International Advisory Council, and the 2005 Strategic Planning Conference. He now serves as the North American cochair of the International Coalition of Organizations of Pacing and Electrophysiology (COPE) and the Chair of the Publications Committee.

The Heart Rhythm Society is the international leader in

science, education and advocacy for cardiac arrhythmia professionals and patients, and the primary information resource on heart rhythm disorders. Its mission is to improve the care of patients by promoting research, education and optimal health care policies and standards. Founded in 1979 to address the scarcity of information about the diagnosis and treatment of cardiac arrhythmias, the society is the preeminent professional group representing more than 4,200 specialists in cardiac pacing and electrophysiology in 78 countries. **BP**

—S. A. UNGER

In Memoriam Former editor of *Buffalo Physician* and devoted naturalist

BRUCE S. KERSHNER, an award-winning writer and former editor of *Buffalo Physician* from 1983 to 1987, died February 16, 2007 at the Center for Hospice and Palliative Care in Cheektowaga. He was 56.

Kershner, who held a master's degree in botany and ecology from the University of Connecticut in Storrs, was a devoted naturalist who delighted many with his environmental books and nature guides. After leaving UB, he continued as an adjunct faculty member until 1992.

During the period he worked at UB, Kershner began research on his first major book, *Secret Places*, a guide to little-known scenic treasures in Western New York, published in 1994 and still stocked in bookstores today.

"Not only was he utterly knowledgeable and passionate about the environment, but he was just a joy to be around," says Alan J. Kegler, *Buffalo Physician's* art director and associate director of UB's Office of Creative Services. "His enthusiasm for life was absolutely contagious. I'll never forget the survival class that he taught through UB's Rachel Carson College. I participated in that class, which ended up being a precursor to his *Secret Places* book, and his work in protecting and establishing the Zoar Valley Multiple Use Area and the old growth forests."

After leaving UB, Kershner went on to Great Lakes United, where he was senior environmental scientist and researcher. He then taught science at John F. Kennedy High School in Sloan. Throughout these various careers, Kershner kept up with his extensive environmental writings, producing a total of 12 books. In 2004, Sierra Club Books published *The Sierra Club Guide to Ancient Forests of the Northeast*, which Kershner wrote with coauthor Robert T. Leverett. This was his first book with a national focus and it displayed his scholarship on, and deep love of, America's old growth forests. His other books include *Secret Places of Staten Island* and *Buffalo's Backyard Wilderness: An Ecological Study of the Dr. Victor Reinstein Woods State Nature Preserve*.

Kershner was a board member and conservation chair of the Buffalo Audubon Society, vice president and founder of the New York Growth Forest Association, chair and founder of the Western New York Old Growth Forest Survey and chair of the Friends of Allegany and of the Friends of Zoar Valley.

Survivors include his wife, Helene, assistant chair and lecturer in the UB Department of Computer Science and Engineering; a son, Joshua; a daughter, Libby; his mother, Pearl Horder; and a brother, Joel S. **BP**

—ANN WHITCHER-GENTZKE



PHOTO BY RANDY KAPLAN



Adolescents and Substance Use

Studies funded by \$4.1 million in grants from NIH

Craig Colder, PhD, associate professor of psychology, has received two grants totaling more than \$4.1 million from the National Institute on Drug Abuse (NIDA) to study the transition into adolescence and what may promote or mitigate substance abuse in this population.

The first study, funded for \$2.1 million, will examine motivational and self-regulatory aspects of adolescent development and how these interact over time to influence attitudes about drugs and alcohol, and peer context to affect initiation and escalation of substance use.

Colder's coinvestigators on the grant are Larry Hawk, PhD, associate professor of psychology at UB; Jennifer Read, PhD, assistant professor of psychology at UB; Rina Das Eiden, senior research scientist in UB's Research Institute on Addictions and research associate professor of pediatrics and psychology in UB's School of Medicine and Biomedical Sciences; Liliana Lengua, PhD, associate professor of psychology, University of Washington, and William Wiczorek, PhD, director of the Center for Health and Social Research at Buffalo State College.

The second study, funded for \$2 million, will analyze the role of problem behavior, in particular the co-occurrence of internalizing problems (marked by anxiety and mood) and externalizing problems (attention-deficit/hyperactivity and oppositional defiant disorders, autism) in the development of adolescent substance use.

Colder's coinvestigators on this grant are Hawk, Lengua and Wiczorek.

To learn more about these studies and their methodology, visit the UB NewsCenter at www.buffalo.edu/news/ and search "Colder."

By Patricia Donovan

Increasing Living Liver Donation

Program receives \$741,360 grant from DHHS

By John DellaContrada

Thomas H. Feeley, PhD, associate professor of communication and a research assistant professor of family medicine, has been awarded a \$741,360 grant from the Health Resources and Services Administration, an agency of the U.S. Department of Health and Human Services (DHHS), to develop an educational intervention program to increase living liver donations in New York State. He will collaborate with New York Center for Liver Transplantation on the three-year program, which will focus on educating patients awaiting liver transplants about the option of a living donation.

"People awaiting a liver have limited knowledge about living liver donation," explains Feeley, who will serve as the grant's principal researcher and evaluation director. "We want to provide them with the information they need to be better equipped to talk to family and friends about the possibility of being living liver donors.

"In doing so, we hope to significantly increase the number of people who come forward to be screened as potential liver donors and ultimately increase the number of living liver donors in New York State," he adds.

Because the liver can regenerate itself, it is possible that a living donor can give a part of their liver to a recipient. Both the segment that was donated and the

remaining section of the donor liver will grow to normal size within a short period of time, according to the New York Center for Liver Transplantation. Parents, siblings and other relatives may be able to donate organs to family members. Unrelated donors may also donate a portion of their liver if they prove to be a match for the recipient.

Carla R. Williams, executive director of the New York Center for Liver Transplantation, will serve as the grant's principal investigator. The center, which shares the grant with UB, collaborates on projects and services with five transplant programs in New York State.

To learn more about liver transplantation needs in New York State and living liver donations, visit the UB NewsCenter at www.buffalo.edu/news/ and search "Feeley."

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By Kathleen Weaver

Alcohol Problems and Sexual Identity

Study funded by \$579,325 grant from the NIAAA

The National Institute on Alcohol Abuse and Alcoholism (NIAAA) has awarded a \$579,325 grant to Amy Hequembourg, PhD, of the UB's Research Institute on Addictions (RIA) to study the role of gender and sexual identity in alcohol use and victimization.

The Mentored Research Scientist Development Award will support five years of both research and professional development.

The research component, known as the Conversations on Personal Experiences (COPE) Study, will include recruitment of a total of 400 gay men, lesbians, and bisexual men and women (GLBs) to discuss alcohol use and interpersonal

violence, including childhood sexual abuse, sexual assault, and intimate partner violence.

There are a range of risk and protective factors associated with alcohol use and victimization among individuals who face stress associated with social stigmatization of their sexual identities, according to Hequembourg.

"Understanding risk and protective factors for this population could greatly enhance the effectiveness of alcohol and victimization prevention, early intervention and treatment efforts," she says.

The professional development component of the award includes training in advanced statistical analysis and methods for combining qualita-

tive and quantitative approaches in research. Hequembourg's mentors include RIA Senior Research Scientists Kathleen A. Parks, PhD; R. Lorraine Collins, PhD, who is also a research professor in UB's Department of Psychology; and Michael R. Frone, PhD, who is also a research associate professor in UB's Department of Psychology. They will provide collective expertise in addictions research, victimization studies, and advanced statistical analyses.

To learn more about these studies and their methodology, visit the UB NewsCenter at www.buffalo.edu/news/ and search "Hequembourg."

By Kathleen Weaver

Neurobiology of Cocaine Dependence

Study funded by \$1.6 million grant from NIDA

Scientists in UB's Research Institute on Addictions (RIA) have received a \$1.6 million grant from the National Institute on Drug Abuse to support a study aimed at reducing the anxiety and craving associated with cessation of cocaine use over the short term, as well as reducing cocaine dependence over the long term.

Alexis C. Thompson, PhD, principal investigator on the study and associate professor in the Department of Psychology in the UB College of Arts and Sciences, is collaborating with co-investigator Jean DiPirro, PhD, assistant professor in Buffalo State College's Department of Psychology and associate research scientist at the RIA.

"By targeting neuropeptide Y, a neurotransmitter in the brain and testing whether enhancing the activity of this neurotransmitter

will reduce heightened anxiety and craving for cocaine, we hope to learn what happens during periods of abstinence from cocaine," explains Thompson. "This is important because craving, anxiety, and depression during cocaine abstinence are known to underlie relapse to cocaine use."

Thompson and DiPirro will test methods of suppressing anxiety during the very important first 48 hours of abstaining from the drug, as well as at one-week and three-week intervals. They also will investigate the general role of stress in initial and ongoing cocaine use. The ultimate goal of this study is to identify drug therapies that will alleviate cocaine dependence.

For some time, both Thompson's neurochemistry and behavior lab at RIA and DiPirro's neurobiology and health lab at Buffalo State have been investigating how exposure to drugs change the brain and lead to long-term changes in motivation underlying drug addiction and other mental health disorders.

Their new study will add to the understanding of neurobiological substrates that underlie cocaine dependence and help to determine whether a medicinal compound can be identified as a viable treatment for cocaine dependence.

This is important because craving, anxiety, and depression during cocaine abstinence are known to underlie relapse to cocaine use.