**In addition to her work experience and her diligence in medical school, Gurske de Perio credits her success to the opportunities and support she received from Lawrence B. Bone, MD, chair of the UB Department of Orthopaedics and residency program director . . .**

**Mentoring Made a Difference**

Leslie Manohar, MD, also a member of UB’s first-year residency class, acknowledges how fortunate she was to have a female faculty mentor in orthopaedics during medical school. “Of course, there have been people who discouraged me from going into the field,” says the 2005 graduate of the University of Chicago’s Pritzker School of Medicine. “It has never given me pause, and has only made me more determined.”

Before being matched by UB, Manohar anticipated that whatever residency she landed in, she’d probably be the only female physician in her class. “On the interview trail, I did see several women, but after so many interviews I realized they were usually from the same pool. “There were only one to two at each interview, so I was pretty excited to hear that there would be not one but three women in the program this year.”

Perhaps no one was more shocked to learn about the female majority of the 2005–2006 class than the lone male resident, Jesse Affonso, MD. “My friends thought that it was quite comical, and I was the butt of a fair number of jokes for awhile. If I was called ‘Jessica’ one more time . . .” says the graduate of the University of Massachusetts Medical School.

As the foursome exchanged e-mails before the start of their residency, it quickly became apparent to Affonso that they were all going to get along well. After all, what wasn’t to like about classmates who enjoyed talking sports as much as he did?

“In the end, what is most important to me in colleagues is that they’re hard workers and team players. That is not sex-dependent,” Affonso says.

“I am certainly known as ‘the male’ in the ortho class,” he adds. “But there are a lot worse things to be known as.”

Phillips Lytle understands that health care providers face unique legal challenges. HIPAA, STARK, compliance issues, DOH regulations, reimbursement, the OPMC, and let’s not forget about MFCU audits. These are all hot topics that we are prepared to help you with. Have questions or concerns? Call us or e-mail Lin McDougall, Esq., the health care practice group coordinator, at (716) 847-5478 or lmcdougall@phillipslytle.com.

Buffalo Physician

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**Research News**

**Alternatives to Bariatric Surgery**

Severe obesity treatments focus of $5 million study

BlueCross BlueShield of Western New York and the University at Buffalo School of Public Health and Health Professions have announced a five-year research and treatment program for the severely obese that will study the effects of weight-loss alternatives to gastric bypass surgery.

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**T he $5 Million Program is a landmark effort to stem the public-health obesity crisis.** According to the Centers for Disease Control and Prevention, the annual cost of obesity in the United States is $117 billion, including health-care expenses and lost productivity. An estimated $4.5 billion was spent on gastric bypass surgery in 2005 alone, a 1,000 percent increase over 1995.

The treatment and research program, to be conducted by UB researchers, will be the first of its kind to use and assess proven scientific methods for treating the severely obese, defined as those who are approximately 100 pounds or more over ideal weight. Participants will be monitored in one of four different programs. Each will use various combinations of behavior modification and lifestyle changes, meal replacement, counseling and medication.

The program, announced in March at a press conference at the university, was hailed by UB President John B. Simpson, PhD, as a hallmark collaboration between two institutions deeply concerned about the community’s health and welfare.

“The U.S. Surgeon General calls obesity ‘the terror within’ and has issued a call to action,” added Alphonso O’Neil-Trevisan.

O’Neil-Trevisan, in addition to Trevisan, is principal investigator on the study, called “Trevisan.

Tretiavin”.

At the end of the study, the outcomes and costs of medical care of the groups will be compared, as well as compared with those of a population of patients who have undergone bariatric gastric-bypass surgery.

Maurizio Trevisan, MD, dean of the UB School of Public Health and Health Professions and a coinvestigator on the study, called it “a great example of what can be achieved through collaboration among institutions in Western New York.”

Michael F. Noe, MD, UB clinical professor of social and preventive medicine and associate dean for community relations and clinical affairs, is principal investigator on the study.

“More than 4.7 percent of the adult population in the U.S. is seriously obese and at risk for the major complications of that condition,” explained Noe.

“While many meet the criteria for bariatric surgery and a growing number of procedures are being performed annually, surgical management is not without its complications and, for various reasons, is not an attractive option for many people or not available to them. “It’s essential that alternative, nonsurgical approaches to help people who are severely overweight be evaluated,” he added, “and we need to determine if these new approaches are safe, double and cost-effective. We think this study will provide some definitive answers.”

Noe’s coinvestigators, in addition to Trevisan, are Leonard Epstein, PhD, UB professor of pediatrics and a leading authority on obesity; John Leddy, MD, UB associate professor of clinical orthopaedics, and Jeffrey Lackner, PsyD, UB assistant professor of medicine and a specialist in behavioral medicine. Cheryl Kennedy is project director.

To learn more about the study and its methodology, go to the UB News Services site at www.buffalo.edu/news/ and search “obesity.”
Scientists in UB’s Center for Research in Cardiovascular Medicine have received two grants from the National Heart Lung and Blood Institute (NHLBI) to develop strategies aimed at reversing a heart dysfunction called “hibernating myocardium,” which can cause disabling heart failure and sudden death.

HIBERNATING MYOCARDIUM is a condition in which heart cells (myocytes) that have experienced reduced blood flow over an extended period of time due to narrowed coronary arteries adapt to this deprivation by down-regulating metabolism while remaining functionally viable. Previous work employing the center’s novel swine model of hibernating myocardium has shown that, while restoring blood flow to these “hibernating” regions improves function and a patient’s prognosis, cells in the left ventricle (the heart’s main pumping chamber) often remain chronically dysfunctional and do not return to normal. The reasons for this remain unclear; researchers say, but in most circumstances do not appear to be caused by replacement with scar tissue.

In one of the grants, totaling $2.5 million over five years, the UB researchers will seek to determine if the metabolic changes that myocytes undergo in order to remain viable during hibernation limit their long-term ability to recover fully after revascularization. Led by John M. Canty, MD ’75, Albert and Elizabeth Rekate Chair in Cardiovascular Disease and chief of the Division of Cardiovascular Medicine, the researchers will undertake concurrent physiological, proteomic and mitochondrial functional studies in the swine model that will be translatable to humans. As part of the study, they will use proteomic profiling to identify candidate mitochondrial proteins in the swine with established viable dysfunctional myocardium that do not have significant cardiac scar tissue.

“These protein studies will be coupled with assays of mitochondrial respiration and of the activity of specific enzymes in the swine model—work that relies on the state-of-the-art proteomic research facilities and mass spectrometry at UB,” says Canty, who also heads the Cardiovascular Disease Group of the New York State Center of Excellence in Bioinformatics and Life Sciences at UB.

“By using therapies similar to those that are used clinically in patients, such as angiolipid and adenosine gene transfer to over-express growth factors in the heart, we can identify how changes in the molecular pathways responsible for the adaptation to decreased blood flow can be reversed more completely. The ultimate goal of manipulating these pathways will be to restore full contractile function.”

Areas of hibernating myocardium are common in patients with heart failure arising from coronary artery disease, Canty notes. “Determining how this impacts prognosis is the focus of the UB Cardiovascular Center’s PAREPET (Prediction of Atherothrombotic Events with Positron Emission Tomography) clinical trial, which also is funded by NHLBI.”

“Identifying the basic mechanisms responsible for incomplete functional recovery after revascularization hopefully will lead to new therapies that will improve the outlook and symptoms of these patients who are at high risk for adverse cardiovascular events,” says Canty.

AdulT STEM CELLS TO TARGET DAMAGED HEARTS

Under the second grant, which totals $1.98 million, researchers in the center will investigate the potential of bone marrow-derived adult stem cells to treat hibernating myocardium.

The study is headed by Te-Chung Lee, PhD, associate professor of biochemistry and a specialist in stem cell biology. Lee and colleagues will use the center’s swine model to investigate whether transplanting the model’s own bone marrow mesenchymal stem cells (MSC)—cells that have the capacity to develop into blood vessels, as well as other types of tissue—into the downregulated tissue can change the myocardial adaptive responses and improve the function of the hibernating myocardium.

“My colleagues and I already have carried out initial stem-cell transplantation studies with promising results,” says Lee. “Additional studies will be needed to determine whether and how stem-cell populations isolated from aged animals may be used. In the long term, the translation between the MSC-based therapy in the porcine hibernating myocardium and regenerative medicine for humans with chronic coronary artery disease will lead to optimized MSC therapies that can be of clinical value in managing aging and curing disease,” he says.

The research will be carried out in two phases. During the first phase, investigators will conduct extensive studies of the characteristics and potential of the targeted stem cells, including research on the influence of aging on the potency of MSCs (hibernating myocardium typically does not occur in young persons). “If aging indeed impairs the function of these adult stem cells,” says Lee, “genetic and tissue engineering might be used to boost the competency of aged MSCs.”

He notes also that mesenchymal stem cells do not appear to generate a strong immune response. “If this characteristic is proven rigorously, and if we determine how these stem cells differentiate into cells for specific ‘jobs,’ it might provide the basis for ‘off-the-shelf’ use of these stem cells in future therapeutic applications,” he says.

The second phase of the project will involve injecting the stem cells into swine with hibernating myocardium. The researchers will track the cells’ progress, evaluate their feasibility, and determine if cells engineering for enhanced survival, blood vessel regeneration and “homing potential” (the tendency to migrate properly to the heart rather than elsewhere) can better improve blood flow and tissue function in hibernating myocardium.

Participants in this research include Jennifer V. Lee and colleagues from the University at Buffalo’s School of Engineering and Applied Science; Zhaohui “Te-Chung” Lee, PhD, associate professor of biochemistry, and Michael D. Banas, MD, research assistant professor of medicine; Kenneth Blumenthal, PhD, professor and chair of the UB Department of Biochemistry, and Robert Straubinger, PhD, associate professor of pharmacometrics.

Additional investigators involved in the $2.5 million study are Lee; Alan D. Haskin, PhD, professor and chair of the UB Department of Biostatistics; Jun Qu, PhD, research assistant professor of pharmacometrics; and Michael D. Banas, MD, research assistant professor of medicine.

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Center of Excellence Opens

Marks a milestone for transformation of Buffalo economy

By John DellaContrada

Creation of a life-sciences industry and economy for Buffalo Niagara took a historic step forward with the grand opening of UB’s New York State Center of Excellence in Bioinformatics and Life Sciences on June 2, 2006. Also celebrating its grand opening that day was Roswell Park Cancer Institute’s Center for Genetics and Pharmacology, which adjoins the Center of Excellence.

Governor George E. Pataki, who proposed the creation of the Center of Excellence in 2001 as part of a plan to jump-start the New York State economy through creation of high-technology centers of excellence across the state, was among the distinguished speakers at the ribbon cutting. Also speaking were Representative Thomas M. Reynolds, Senator Hillary Rodham Clinton, Senator Charles E. Schumer, New York State and Hauptman-Woodward Medical Research Institute (HWI).

Along with the new HWI building, which opened in May 2005, the Center of Excellence and RPCI’s Center for Genetics and Pharmacology constitute the Buffalo Life Sciences Complex on the Buffalo Niagara Medical Campus. New York State funding for construction of the RPCI and Hauptman-Woodward buildings has totaled $70 million.

The fact that the three buildings will be connected—an overhead bridge to be constructed will link the Center of Excellence with the HWI facility—underscores the close collaboration that will occur between the scientists who work in them in the development and commercialization of new drugs, therapies and biomedical devices. Working together, the three institutions will draw upon their proven research strengths in genomics, structural biology and bioinformatics, as well as established core programs in cancer biology, neurology, virology and pharmacology. This research will be aided by the immense computational power of UB’s Center for Computational Research (CCR), one of the nation’s largest academic supercomputing centers, capable of performing 22 trillion operations per second. CCR is being relocated to the Center of Excellence from the North Campus.

High-throughput collaboration is one way we stand out. We’re able to accelerate the standard academic procedure for research and development, which makes us very attractive to industry. In a sense, the buildings are a vessel for rethinking how research institutions produce science.

—Bruce Holm, PhD
The plan is to recruit ‘entrepreneurial scientists’ who are attracted to state-of-the-art research facilities, unique opportunities for collaborative research and the momentum of the region’s growing biotech industry.

Paul Grovesveld, winner of the 2000 Nobel Prize in Medicine and professor of molecular and cellular neuroscience at Rockefeller University, was among the distinguished speakers at the “Frontiers in Biological Systems” symposium, held June 13–15 at the Center of Excellence and the Hyatt Regency in Buffalo. Other featured presenters included distinguished scientists Charles Center, chief scientific officer at SEEKERD, a leading high-performance DNA analysis company based in San Diego, and Andrea Califano, professor of biomedical informatics at Columbia University, where he directs the Columbia MAGNet Center, one of seven National Centers for Biomolecular Computing funded by the National Institutes of Health.

Center is author of the first textbook on genomics, The Science and Technology of the Human Genome Project. Califano is a pioneer in the field of computational biology. “It is a tremendous endorsement for the Center of Excellence that so many extraordinary scientists agreed to speak at our symposium,” says Norma Nowak, PhD, director of scientific planning for the center. “It is a tremendous endorsement for the Center of Excellence that so many extraordinary scientists agreed to speak at our symposium,” says Norma Nowak, PhD, director of scientific planning for the center. “We hope this was just the beginning of their relationship with the center, and that they will serve as ambassadors for the center as we begin recruiting talented scientists worldwide to join us in this exciting new venture at UB and in Buffalo.”

The symposium included two sessions describing the development and commercialization of biotech research from UB and in Buffalo. “Innovation in Bioengineering Technologies” featured the work of the three

UB researchers who are developing tissue-engineered blood vessels, computer programs for analyzing x-ray images of blood vessels to improve treatment of heart and brain vessels, and a chemical sensor trained to recognize disease biomarkers, respectively.

“Success Stories in Building a Life Science Company in Western New York” featured commentary from the CEOs and presidents of three Buffalo-based biotech companies: SmartPMI Diagnostics, Empire Genomics and Rechet Inc. Also speaking at the symposium were scientists Michael Snyder, director of the Yale Center for Genomics and Proteomics; Thomas Blumenfeld, professor and chair of biochemistry and molecular genetics at the University of Colorado Health Sciences Center; Clain Franco-Liggett, president and director, the Institute for Genomics Research; David Robin, director of the Proteomics/ Genomics Core at the Digestive Disease Center, Stanford University School of Medicine; Samuel Dantzig, professor and director of genomics chemistry at Columbia University and Memorial Sloan-Kettering Cancer Center; Nathaniel Heintz, director, Laboratory of Molecular Medicine, Howard Hughes Medical Institute; and Margaret Pericak-Vance, director of the Center for Human Genetics, Duke University Medical Center.

Also participating were Lawrence S.B. Goldstein, professor of cellular and molecular medicine at UC San Diego and investigator, Howard Hughes Medical Institute; Sangram Sisodia, director of the Center for Molecular Neurobiology, University of Chicago; Michael Burghard, director of the Bonnem Genomics Informatics Center, University of Pittsburgh Medical School; James Gimelshein, professor of biomedical informatics, Columbia University College of Physicians and Surgeons; and Charles Meld, senior associate, Bees Alton Hamilton.

“The beautiful new buildings and the combined talents of the three institutions is an amazing draw,” Holm says. “When you combine that with the high quality of life in this region and the growing national awareness of what we are accomplishing here, you have a formula for success that has tremendous potential.”

Symposium Features Nobel Laureate

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