endowment update

An annual publication of the Foundation for Upstate Medical University for endowment campaign donors

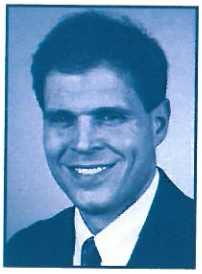
Foundation for UPSTATE MEDICAL UNIVERSITY

September 2011

David G. Murray, MD, Endowed Professorship in Orthopedic Surgery

Celebrating 24 years

Ongoing research related to musculoskeletal cancer



Timothy A. Damron, MD

The David G. Murray, MD, Endowment continues to support ongoing research related to musculoskeletal cancer in the Musculoskeletal Science Research Center at the Institute for Human Performance. Research is concentrated in three primary areas: radiation effects on and recovery from stunted bone growth and bone fragility; fracture risk prediction in patients with metastatic carcinoma and myeloma; and translational cancer models of sarcoma and metastatic breast carcinoma.

Continued funding from the National Cancer Institute of the National Institutes of Health and Upstate Golisano Children's Hospital allocations have allowed further exploration of the molecular pathways involved in recovery of the growth plate after radiation damage. The current focus of this project—now 12 years running—is to find specific agents that can selectively stimulate growth plate recovery in children who are undergoing radiation without altering the desired effects of irradiation on the tumor. Proposed work will utilize novel cell culture techniques combined with laser microdissection and molecular analysis to separate out newer cells regenerating after irradiation exposure.

In related work, through funding from the Carol M. Baldwin Breast Cancer Research Foundation, pilot data from our laboratory and through collaboration with Kenneth Mann, PhD, and researchers at both RPI and Hospital for Special Surgery related to the effects of irradiation on bone quality and fracture risk continues to accrue. This is a burdensome and potentially devastating clinical problem for all ages of patients undergoing radiotherapy, including patients with breast cancer. Although the irradiation is beneficial for tumor control, it may also lead to bone death and fractures. Proposed work would allow a better understanding of the mechanisms of this damage and provide a basis for new preventive strategies.

Funded in part by a grant from the Musculoskeletal Tumor Society and by the Carol M. Baldwin Breast Cancer Research Foundation, cooperative work with Kenneth Mann, PhD, and collaborators from Harvard's Beth Israel Deaconess

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Vision 2000

Celebrating 13 years

Expanded approach to vision research

Francesca Pignoni, PhD

Francesca Pignoni, PhD, of the Center for Vision Research (CVR) participated in the ground-breaking for the new Institute for Human Performance (IHP) building expansion. Once the expansion is complete in early 2013, the entire CVR will move into the IHP. This move will allow them to pursue their research using an interdisciplinary and interdepartmental approach as they work with colleagues from a variety of disciplines.

Andrea S. Viczian, PhD, was the recipient of an R01 grant from the National Eye Institute. Dr. Viczian's grant will enable her to continue her lab's research efforts that were previously supported in part

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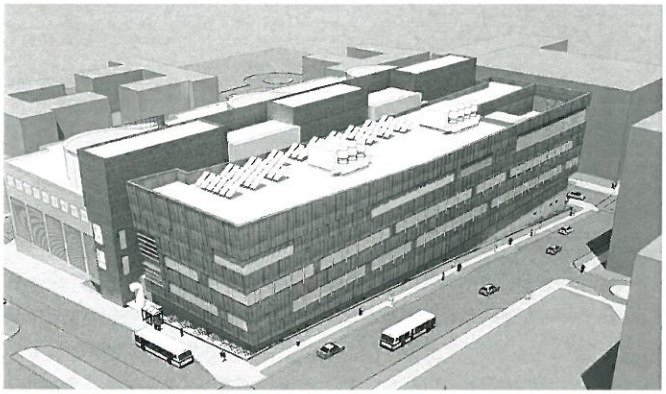
endowment update

Vision 2000 *Continued from front*

through monies raised by Vision 2000.

The CVR continues to participate with their colleagues at the three other SUNY medical universities and SUNY Optometry in SUNY Eye Institute (SEI) as they strive to enhance fundamental and translational research for the diagnosis and treatment of eye diseases to the benefit of all New Yorkers. The strength of SEI lies in the collective strengths of the component institutions. Integrating these strengths will lead to increasing national and international recognition for excellence in eye research. Dr. Barry Knox and Dr. John Hoepner are on the steering committee for the SEI.



Institute for Human Performance building expansion rendering

The CVR web site continues to be a source of information on both CVR researchers and their work. Be sure to visit the site today at **www.centervisionresearch.org** ■

David G. Murray, MD, Endowed Professorship in Orthopedic Surgery

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Biomechanics Laboratory continues to explore novel techniques for fracture prediction in patients with defects in bone created by metastatic tumors such as breast carcinoma. This ongoing work has begun to show that use of CT-based Structural Rigidity Analysis has the potential to impact decision making of physicians managing patients with impending pathologic fractures. Furthermore, preliminary data from our patients has suggested that the use of SRA may provide better specificity and comparable sensitivity compared to the standard clinical rating system currently used.

Recently, funding through the Orthopaedic Research and Education Foundation has provided for a cooperative study with the Hospital for Special Surgery and Strong Memorial Hospital in the clinical evaluation of surgical treatment for pathologic lesions of the proximal femur. The purpose of this trial will be to determine whether impending and pathologic fractures in this region are better treated by fracture stabilization techniques or whether arthroplasty is preferred.

Through the endowment, three research fellows have completed post-doctoral study including Yan Wang (2003-2005), Jennifer Lisle (2005-2006) and Mingliang Zhang (2006-2008), while our laboratory graduated two doctoral candidates, Bryan Margulies, PhD, in 2007 and Jason Horton, PhD, in 2010. Dr. Margulies has completed a post-doctoral fellowship at the University of Pennsylvania and is now on our research faculty. Dr. Horton is currently participating in a post-doctoral fellowship at the National Institutes of Health National Cancer Institute. In addition, support for travel has allowed our fellows and current PhD candidates, Lihini Keenawinna, BS, and Kimo Bachiashvili, MD, to present at numerous national meetings. Since the establishment of the endowment, laboratory members have produced over 45 peer-reviewed publications and participated in over 85 presentations at national or international meetings. ■

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