

### Research Projects of Note

While researchers in the Department of Family Medicine have not achieved full funding of that FTE portion dedicated to research still numbers of funded projects with FTE support are increasing dramatically. The following highlights notable scholarly accomplishments made by the Department's faculty during 2007-08.

**Dr. Best Seeks Understanding of Muscle-Tendon Injury and Repair** – The research of Dr. Tom Best focuses on the pathophysiology of muscle-tendon injuries. A team of post-docs, graduate students, and medical students has been assembled through both federal and industrial support. A two-pronged approach is taken with both basic science and clinical studies. The basic science studies utilize an animal model to study the biomechanics and pathophysiology of injury and repair following eccentric exercise. They are specifically interested in the role of leukocytes in inflammation and repair. A variety of immunological and molecular techniques are used in an effort to dissect the role of NF- $\kappa$ B and other transcription factors in the repair of stretch-injured skeletal muscle. Recently, Dr. Best has collaborated with other scientists on the OSU campus to understand more about the role of exercise in cancer-induced cachexia. An animal model is being used to explore optimal methods of attenuating muscle wasting and inflammation through modalities such as massage therapy. The role of skeletal muscle as it relates to osteoarthritis is in the early stages of experimental design for Dr. Best and colleagues such as Drs. Rebecca Jackson and Metin Gurcan. During this past year, Dr. Best has submitted the following grants: ***Massage Therapy in Eccentric Exercise Induced Muscle Weakness and Inflammation*** (PI: total direct \$1 million); ***Realistic Models of Occupational Low Back Disorder*** (submitted to NIOSH with Dr. Bill Marras, \$500,000/year; ***Core Stability and Lower Extremity Joint Loading*** (submitted to NIH with Dr. Ajit Chaudhari, \$450,000 for 3 years); Development of an ***Artificial Finger for Home Care Rehabilitation of Disuse Atrophy Due to Inflammatory Myopathies*** (submitted to NSF with Dr. Yi Zhao, \$400,000 for 3 years); ***Early Career Translational Research Awards in Biomedical Engineering*** (submitted to Coulter Foundation with Dr. Yi Zhao, \$150,000 for 3 years).

**Drs. Fahey and Welker Demonstrate Significant Downstream Revenue for Academic Medical Center** – As discussed in last year's report, Dr. Pat Fahey, with Dr. Mary Jo Welker, Tom Blincoe, Donabelle Cruz-Huffman, and Chris Welker, investigated downstream revenue that the OSU Primary Care Network (OSU PCN) generated for the OSU Medical Center (OSUMC). They assessed total billings and collections in the 2003-04 fiscal year from five revenue streams at OSUMC from the OSU PCN. These streams were compared to billings and collections from the OSU PCN. Total downstream net revenue of nearly \$115 million was more than six times the net revenue to the network. Their manuscript, ***Analysis of Downstream Revenue to an Academic Medical Center from a Primary Care Network***, was published in the August 2006 issue of *Academic Medicine*. This study was subsequently presented during 2007-08 in a poster format at the annual meeting of the Association of American Medical Colleges and at the Society of Teachers of Family Medicine Spring Conference. The latter reflected the article receiving Honorable Mention as one of the top research articles in family medicine for that year.

**Dr. Longenecker Studies Rural Health Issues** – Dr. Randy Longenecker is currently designing a community benefit project and assessing competencies for rural practice for the Group on Rural Health. He has also arranged for a Grand Rounds presentation for February 2009 to identify solutions to challenges to research in a rural practice.

**Dr. McDougle Receives Funding for Healthy Lifestyle Program for African Diabetics** – Dr. Leon McDougle received funding from the Columbus Medical Association Foundation for his project titled, ***The Urban Cardiovascular Diabetic F.I.T.N.E.S.S. Program – Fitness Improved Through Nutrition and Exercise Sustained by Support of Family, Friends, and Community Partners***. This \$80,000 15-month project investigates the efficacy of social support and culturally appropriate behavioral modification in treating African Americans who have type 2 diabetes. In addition, the OSU Crisafi-Monte Endowment Fund is providing \$61,520 in supplemental support. The protocol received final approval by the OSU IRB and the study began in August 2008. To assist him in his research with minorities, Dr. McDougle became a member of the Network of Minority Research Investigators (NMRI), which was established by The Office of Minority Health Research Coordination of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) of the National Institutes of Health (NIH). Preliminary findings have been accepted for a podium presentation at the Association for Applied and Clinical Sociology 2008 Annual Conference in Jacksonville, Florida (*McDougle L, Taylor CA, Schwirian KP, Scott J. Active Social Support and Life Style Change among Inner City Diabetics: The F.I.T.N.E.S.S. Program Intervention*) and for a poster presentation at the 2008 American Dietetics Association Food & Nutrition Conference and Expo (FNCE) in Chicago, Illinois (*Scott JM, Taylor CA, McDougle L, Schwirian KP. Examination of Dietary Intakes of African Americans by Diabetes Status*).

**Dr. Miser Studies Impact of Health Literacy on Diabetes Mellitus** – Dr. Fred Miser continues his work on ways to improve how physicians deliver health care to those with type 2 diabetes mellitus. This past year his work has focused on the role of health literacy, the ability to comprehend and use basic health information on chronic disease management. He received funding from the Crisafi-Monte Endowment Fund to study ***The Association of Health Literacy, Diabetes Knowledge, and Glycemic, Blood Pressure and Lipid Control in Patients with Diabetes Mellitus Who Receive Their Care in a Family Practice Office***. As part of this project, he mentored Kelly Jeppesen, a Med 2 medical student and a recipient of a one-year grant from the NIH Roadmap Predoctoral Clinical Research Training Program to support his work toward an MPH degree. As a result of their work, one manuscript has been accepted for publication in the *Annals of Family Medicine* (*Jeppesen KM,*

*Miser WF, Coyle JD. Screening questions to predict limited health literacy: A cross-sectional study of patients with diabetes mellitus*). This manuscript won the Most Outstanding Research Presentation Award at the 2008 Ohio Family Medicine Symposium on Research and Education and was one of two papers presented in the Distinguished Paper Presentation at the 41<sup>st</sup> Annual Spring Conference of the Society of Teachers of Family Medicine in Baltimore, Maryland.

Dr. Miser continues to be actively involved in other diabetes projects. He, along with Drs. Jim Coyle and Cari Brackett, have had numerous OSU College of Medicine students working with them on several projects, including the maintenance of a longitudinal registry of nearly 900 patients with diabetes who receive their care at the Rardin Family Practice Center. The data collected for this study have provided pilot data for future studies related to diabetes and family medicine. One such study will be the role of aspirin and aspirin resistance in primary cardioprevention for those with diabetes. He submitted a two-year \$412,500 R-21 grant application to the NIH (National Heart, Lung, and Blood Institute) **Assessing Aspirin Hyporesponsiveness in Type 2 Diabetes Mellitus**, and a three-year \$599,922 grant application to the American Diabetes Association **Optimizing Aspirin Responsiveness for Primary Cardioprevention in Type 2 Diabetes Mellitus**.

Dr. Miser has also collaborated with Dr. Carla Miller from the Department of Nutrition to submit two grant applications, 1) a two-year \$447,013 R-34 application to the NIH (NIDDK), **A Model of Self-Regulation in the Management of Food Choice, Weight and Glycemic Control among Adults with Type 2 Diabetes** and 2) a three-year \$587,633 grant application to the American Diabetes Association, **Problem Solving as a Tailoring Intervention in Nutrition Therapy for Diabetes**. Dr. Miser also collaborated with Dr. Kwame Osei from the Division of Endocrinology in their seven-year \$2,226,376 R01 grant application to the NIH, **Systolic Blood Pressure Intervention Trial (SPRINT)**.

**Dr. Post Investigates Patient-Centered Communication During Chemotherapy** – Dr. Doug Post is Principal Investigator of a three-year R21 study funded by the National Cancer Institute entitled, **Patient-Centered Communication during Chemotherapy**. Pain, dePression, and fatigue are among the most common disease and treatment-related symptoms experienced by cancer patients. Studies have indicated that communication problems between patients and clinicians are a major barrier to the effective management of these symptoms. This project is designed to address this important problem through the development and evaluation of a PDA-based patient communication intervention for breast cancer patients undergoing chemotherapy treatment.

Dr. Post is Co-Principal Investigator on a project funded by the American Cancer Society National Division, **Ohio Patient Navigator Research Program**. This five-year project is part of an NIH-funded consortium of nine sites across the U.S. investigating the effects of patient navigator programs on patient and health care delivery outcomes for cancer. Ten clinics in the OSU Primary Care Network are participants in this study. Dr. Electra Paskett of the Comprehensive Cancer Center and College of Public Health is the PI of this project.

Dr. Post is Co-Investigator on three other NIH-funded projects. **Efficacy of Web-Based Training in Skin Cancer Triage** is a five-year R01 research project funded through a subcontract from Brown University that evaluates the effectiveness of a web-based education curriculum in skin cancer detection for primary care physicians. A second project, **Reducing Cervical Cancer in Appalachia**, is a five-year P01 project based in Ohio State's Comprehensive Cancer Center that aims to increase pap smear screening among Appalachian women in Ohio, to identify factors related to tobacco use and study the effects of a cessation intervention, and to determine the social, behavioral, and biological variables that might contribute to the increased risk of cervical cancer. A third project, **Improving Colorectal Cancer Screening in Primary Care** is a 5-year R01 study with Dr. Electra Paskett of the Comprehensive Cancer Center and College of Public Health funding as the principal investigator of the project. The goal is to test a program to improve colorectal cancer screening among male and female patients over the age of 50 in 12 primary care clinics. Most of the clinic sites for this project are within the OSU Primary Care Network.

Dr. Post is Principal Investigator on two pilot research projects. **Reactions to a PDA-Based Patient Communication Tool: A Focus Group Study** is a one-year study funded by the OSU Lance Armstrong Foundation Survivorship Center of Excellence. The intent of this project is to gather information from cancer patients and clinicians who reside in Appalachia on their reactions to a communication tool for breast cancer patients who are undergoing chemotherapy treatment. **DePression in Rural Ohio Women: A Focus Group Study**, a project funded by the American Cancer Society, Ohio Division, is gathering information from women and clinicians who reside in Appalachia regarding women's experiences with dePression in their community. Pilot data from both projects will be used in future proposals to NIH and the Lance Armstrong Foundation to support more extensive studies.

Dr. Post is a mentor for Dr. Mira Katz's five-year K07 award funded by the NIH, **Patient Activation to Increase Colon Cancer Screening**. The purpose of the study associated with this award is to develop and test a patient activation intervention to improve colorectal cancer screening in a randomized controlled trial. Dr. Post is also a consultant for Dr. Alvin Wee's five-year K23 award funded by the NIH, **Intervention to Prevent Delayed Diagnosis of Oral Cancer**. The project is focused on understanding oral cancer screening and detection practices of primary care physicians, and to develop and test a web-based educational intervention.

**Dr. Wexler Continues Work on Hypertension** – Taking advantage of his sponsorship by the **Pfizer Fellowship in Health Disparities**, July 2007 to June 2009 (\$130,000), Dr. Wexler has been active in submitting grant applications in this area. His work continues on **Development of Culturally Acceptable Patient-Centered Self-Management Materials for African American Patients with Hypertension**. Grant applications that he has submitted include: 1) **Reducing Disparities in Hypertension in Low SES African American Patients** – a 2-year \$373,815 R21 application that was scored but not funded; he plans to resubmit in September 2008; 2) **A Culturally Appropriate Intervention to Reduce Hypertension in African Americans** – a 5-year \$644,087 K application to the NIH that was scored, but not funded; he plans to resubmit in February 2009; 3) **Lifestyle Behaviors and Correlates of Hypertension in U.S. African American Adults**, a one-year project funded for \$30,759 by the Crisafi-Monte Endowment Fund, and 4) **Use of BNP as a Predictor for Progression to Heart Failure in Patients with Hypertension**, a two-year project funded for \$63,649 by the Crisafi-Monte Endowment Fund. Data are being collected for these latter two studies. Dr. Wexler presented results of his initial work at the 2008 Ohio Family Medicine Symposium on Research and Education (*Community Level Issues That Impact Blood Pressure Control in African American Patients*).