Summaries of **UW ICTR Funded Clinical and Type 1 Translational Research Pilot Awards, 2011**

PI: Daniel Jackson, MD; Pediatrics, SMPH
Title: *Epithelial Cell Allergy-Virus Interactions In Asthma*
Summary
Allergic sensitization and viral respiratory wheezing illnesses, particularly those caused by human rhinovirus (HRV), are important risk factors for asthma. The team hypothesizes a link between a person's response to viral infection and impaired interferon responses, which lead to more frequent and severe viral-induced wheezing and asthma exacerbations. To test this hypothesis, they will investigate the cross-linking of an IgE receptor present on the surface of bronchial epithelial cells on interferon responses induced by subsequent HRV infection. Understanding this relationship could lead to novel therapeutic and prevention strategies for children.

PI: Takushi Kohmoto, MD, PhD; Surgery, SMPH
Title: *The Feasibility Of Heart Transplantation From Human Donor After Cardiac Death (DCD): The First Step Toward Clinical Application*
Summary
Donation after cardiac death has been proposed as a means to expand the donor pool for heart transplantation. This project will examine the feasibility of resuscitating such donor hearts by using a novel myocardial perfusion technique. Cardiac function, hemodynamics, metabolic parameters, and histopathology will be evaluated following perfusion to determine whether this strategy is suitable to expand the donor pool.

PI: Krishna Kurpad; Radiology, SMPH
Title: *MR Spectroscopic Imaging System For Stroke Assessment*
Summary
Imaging of the brain often plays a role in determining treatment decisions for patients with ischemic stroke. Nonetheless, current techniques and imaging hardware are limited in the ability to accurately detect the severity of the stroke. The goal is to develop a new radiofrequency source technology that can be used to more accurately differentiate areas of the brain at risk from areas irreversibly damaged, and can provide reliable estimates of time elapsed since the stroke event.

PI: Michael Repplinger, MD, PhD; Radiology, SMPH
Title: *Comparison Of CE-MRI With CE-CT For The Detection Of Acute Appendicitis*
Summary
CE-CT is widely accepted as the primary imaging modality for detecting appendicitis. Given concerns about diagnostic radiation exposure, MRI is seen as a potential safe alternative. Development of CE-MRI for the reliable detection of appendicitis in patients who would normally undergo CE-CT scanning, will allow a direct comparison of these two modalities. Imaging interpretations will be compared with surgical and pathological findings, if available, as well as a follow-up phone call. If the accuracy of MRI is similar to CT, the study may avoid ionizing radiation in a primarily adolescent patient population.

PI: Tamara Scerpella, MD; Ortho Rehab, SMPH

Title: Skeletal Adaptation To Adolescent Resistance Training

Summary

Enhancement of bone mass and structure is a crucial strategy for the prevention of osteoporosis-related fracture. Furthermore, bone accrual before maturity may lead to skeletal benefits in adulthood. The aim of the research is to determine the extent to which bone mass and other parameters are improved by resistance training during adolescence. A targeted, progressive overload program will be embedded in physical education classes at one middle school and compared with standard physical education classes at a different school. Results will accelerate progress toward development of an adolescent exercise program to prevent osteoporosis-related fracture.