Summaries of **UW ICTR Funded Clinical and Type 1 Translational Research Pilot Awards, 2008**

ER Stress and Cytokines in Ankylosing Spondylitis
PI: Judith Smith, UW School of Medicine & Public Health
Ankylosing Spondylitis is a form of progressive arthritis that is generally difficult to diagnose and treat, and primarily affects young adults and children. This research will examine the linkage between a cellular response to misfolded protein and an increase in the secretion of an inflammatory cytokine. Testing for increased inflammation might be more economical and predictive than the current diagnostic method.

Nonhuman primate models for pandemic influenza vaccines
PI: Thomas Friedrich, UW School of Veterinary Medicine
In collaboration with a world renowned influenza viral expert, Dr. Friedrich will develop a model system in nonhuman primates (NHP) to study influenza pathogenesis and immunity. The use of NHP models could be an important tool in the design and testing of vaccines to prevent a potentially deadly pandemic.

Phylogenetics of hepatitis C virus and treatment success
PI: Robert Striker, UW School of Medicine & Public Health
Hepatitis C Virus (HCV) is a treatable cause of chronic liver disease and liver cancer. Nonetheless, treatment is often expensive and ineffective. With colleagues at the Marshfield Clinic Research Foundation, the proposed research seeks to develop databases correlating patient and viral characteristics with clinical outcomes to allow more specific tailoring of therapies that have lower risk/benefit ratios.

Innate immune response to RSV in early life (IREL Study)
PI: Theresa Guilbert, UW School of Medicine & Public Health
More than 3% of US children develop serious lower respiratory tract infections (LRIs) requiring hospitalization as a result of Respiratory Synctial Virus (RSV). Moreover, children with RSV-LRIs are considerably more likely to develop asthma and lower lung function. This research will investigate genetic variation in the innate immune system and the relationship among this variation, immune response, and RSV disease severity.

Eosinophil regulation of rhinovirus infection of epithelial cells
PI: Sameer Mathur, UW School of Medicine & Public Health
Viral infections trigger the majority of asthma exacerbations. The present study hypothesizes that eosinophil interaction with airway epithelial cells is an important component of this increased susceptibility to viral causes of exacerbations. Specifically, Dr. Mathur will assess the effects of eosinophils on rhinovirus replication in epithelial cells using an in vitro model system.

Novel techniques for analysis of bone mineral metabolism
PI: Ricki Colman, UW School of Medicine & Public Health
Age-related bone loss is universal, affecting men and women in all populations. Assembling a unique multidisciplinary team, Dr. Colman proposes to adapt a common geochemical method to develop novel, noninvasive techniques to measure bone mineral balance. These techniques, which promise to provide data on bone mineral balance not currently available, will be validated and applied to a primate model of hypoestrogenic bone mass maintenance.

Does omeprazole decrease intestinal calcium absorption?

PI: Karen Hansen, UW School of Medicine & Public Health

Postmenopausal American women represent the subgroup with the highest prevalence of osteoporosis, and account for over half of the long-term users of proton pump inhibitors (PPI). It is currently unclear whether PPI use limits calcium absorption and alters subsequent calcium homeostasis. The study will examine the effect of omperazole, a common PPI, on changes in calcium balance and bone resorption.