

Membership Guidelines & Application

Application for membership in the Genetic Epidemiology Research Institute (GERI) is available to UCI Faculty who have demonstrable interest in the genetic basis of health and disease. GERI membership will be for a three-year term and reappointment can be extended where appropriate. The membership application and procedures are on the GERI website at www.geri.uci.edu. You may also contact Jason Park at (949)824-3008 or jpark@uci.edu

Privileges

All members will receive updated listings of ongoing GERI-related research and training programs, periodic announcements of GERI activities and relevant community activities (symposia, visiting speakers, GERI interdisciplinary conferences, grand rounds, etc.). Members also will be eligible to apply competitively to GERI for financial support (seed funds) of relevant collaborative pilot research projects. Contracts and grants services are available to all GERI members who apply for their grants Through GERI. GERI members can also request summer research stipends for graduate students and post-doctoral fellows.

Questions about membership can be directed to Dr. Susan Neuhausen at 949 824-5769 or at sneuhaus@uci.edu or Jason Park at 949/824-3008 or at jpark@uci.edu.



on cancer outcomes adolescents and young adults (ages 18-39.) The hypothesis under investigation is that individual social determinants (social capital, material capital, and human capital) will be significantly related to more appropriate first courses of treatment, more effective regimen types, and better availability of, access to, and participation in clinical trials.

“Genetic variation in IGFBP2 and IGFBP5 is associated with breast cancer in populations of African descent”

Dr. Chad Garner and Dr. Susan Neuhausen recently published, “Genetic variation in IGFBP2 and IGFBP5 is associated with breast cancer in populations of African descent” (Human Genetics; 2008; 123: 247-255). It reports the results of a study investigating the association of breast cancer and genetic variants in genes in the IGF signaling pathway in women of African descent. They first found significant associations at a locus encompassing parts of the IGFBP2 and IGFBP5 genes on chromosome 2q35 a population-based case-control study of African-American women, which was then replicated in a case-control study of Nigerian women. This study is the first to report associations between genetic variants in IGFBP2 and IGFBP5 and breast cancer risk.

The Genetic Epidemiology Research Institute (GERI)



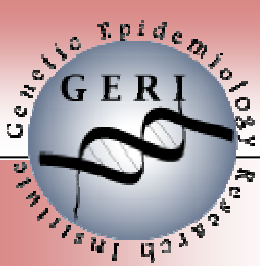
Andrew Clark, PhD

Professor, Population Genetics
Department of Molecular Biology and Genetics
Cornell University

Date and Time TBD

October 2008
Sprague Hall Room 110

Please contact
Jason Park at jpark@uci.edu / (949) 824-3008 for more information.



Schedule of Events

GERI Events

➤ Aug 21, 2008
Breast Cancer Think Tank
with Orange County
Community Doctors

University Club

➤ October 2008
Joint Organized
Research Unit Mixer
Date to be announced
University Club

➤ October, 2008
Distinguished Speaker
Series

Andrew Clark
Cornell University

The *Genetic Epidemiology Research Institute (GERI)*, an organized research unit, is dedicated to fostering a multidisciplinary research environment to study the mechanisms of diseases through integration of approaches from the molecular, genetic, biological, medical, population and behavioral sciences.

GERI MEMBER PROFILE



Anthony Long, PhD

Professor

Department of
Ecology &
Evolutionary Biology

Scientific Council
Member, GERI

Dr. Anthony Long is a Professor in the Department of Ecology & Evolutionary Biology in the School of Biological Sciences. He received his PhD in Genetics from McMaster University. His lab studies the genetic basis of quantitative variation for different phenotypes in different organisms. These include bristle number in *Drosophila melanogaster* flies, temperature adaptation in *Escherichia coli* bacteria, and eyespot size in *Bicyclus anynana* butterflies. Approaches include the use of new genomic tools, computer simulations based on population genetics theory, and pure statistical approaches that make maximal use of experimental data. The information obtained from these model systems can be used to address the basis of polygenic variation in humans. Other projects in Dr. Long's lab include: using linkage disequilibrium to dissect complex traits in drosophila, theoretical models for dissecting complex traits, and high density arrays to study adaptation.

Dr. Long is an editor for "Genetics" and grant reviewer for the National Science Foundation Population Biology panel and the NIH Genome Biology panel. Dr. Long has been a member of the UC Irvine faculty since 1998 and a GERI scientific council member since 2006.

Scientific Council

Hoda Anton-Culver, PhD
Director

Susan Neuhausen, PhD
Associate Director

Council Members

Jay Gargus, MD, PhD
Physiology & Biophysics

Wes Hatfield, PhD
Institute for Genomics
& Bioinformatics

Larry Marsh, PhD
Developmental & Cell
Biology

Hal Stern, PhD
Statistics

Claudia Kawas, MD
Neurosciences

**Wendy Brewster, MD,
PhD**
Obstetrics & Gynecology,
Epidemiology

Ralph Delfino, MD, PhD
Epidemiology

Chad Garner, PhD
Epidemiology

Anthony Long, PhD
Ecology & Evolutionary
Biology

Dominik Wodarz, PhD
Ecology & Evolutionary
Biology

Steven Lipkin, MD, PhD
Hematology & Oncology,
Epidemiology

Research

Administrator
Jason Park

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www.geri.uci.edu



Message from the Director

Dear Colleagues:

Here are some of the exciting scientific endeavors that GERI has been working on for the past several months.

RESEARCH - “Coronary Artery Risk Development in Young Adults” study

GERI submitted a contract application for the “Coronary Artery Risk Development in Young Adults” (CARDIA) study that is a 20 year follow up to a Echo-Cardiography study done on children. The PIs for that study that began in 1985 were Dr. Jules Gardin, formerly the chief of Cardiology here at UCI and Dr. Hoda Anton-Culver. Dr. Jules Gardin will serve again as the PI on behalf of Hackensack University in New Jersey and Dr. Anton-Culver will be the PI of the subcontract here at UCI. Dr. Gardin will be overseeing the field centers and its performance and Dr. Anton-Culver will monitor the quality control of the data collection and its variability and validity.

RESEARCH - Autism Study

The first GERI seed grant funding program was given to GERI members Jay Gargus, Pauline Filipek, and Paul Vrana. They submitted a request to the GERI Scientific council for \$3000 in seed money to obtain preliminary data to examine the effect of folate supplementation on methylation of genes in deer mice. Their hypothesis was that higher maternal dietary folate levels result in aberrant DNA methylation at imprinted loci, and thereby underlies the etiology of some fraction of ASD cases. Their preliminary data confirmed the hypothesis. With this promising data, they applied for a 3-year, \$450,000 grant to the Autism Speaks Foundation. The investigators also presented their research to the Department of Epidemiology’s Center for Cancer Genetic Research and Prevention board and received much enthusiasm from the board members. Board member David Horowitz took a personal interest in this project and donated \$7500 for the research to continue gathering results and data that will aid in an NIH grant application. This is a very exciting venture that GERI helped initiate and we anticipate to see much success from this project.

SYMPOSIA - “Genes and the Human Environment”

On March 20, GERI hosted a mini-symposium on “Genes and the Human Environment” with Dr. Patricia Buffler from UC Berkeley School of Public Health as the keynote speaker. Dr. Buffler spoke on the “The Interplay of Genetic and Environment factors in Etiologic Studies of Childhood Cancer.” Dr. Frank Gilliland from USC spoke on the interactions of gene environment and children’s respiratory health, and GERI scientific council member, Dr. Ralph Delfino, presented a summary of the 2007 UCI symposium coordinated by Jim Swanson and Pathik Wadhwa titled “Genes, environments, and human development, health and disease: issues and approaches.” The meeting inspired in depth discussions on the role environmental factors have on genetic implications of human development. The theme for the next mini-symposium will be on aging planned by Dr. Susan Neuhausen and Dr. Claudia Kawas.

PROGRAMS - Middle East Cancer Consortium (MECC)

GERI was recently awarded a grant by Dr. Joe Harford, Director of International affairs at the National Cancer Institute to operate the Middle Eastern Cancer Consortium (MECC) activities. These activities entail visits to the middle east for the MECC steering committee meetings, cancer registry workshops, awards for the Visiting Scholar Program for statistical analysis and cancer registry training here at UCI, and small grants for research projects. This consortium was founded by Drs Hoda Anton-Culver, Joe Harford, John Young from Emory University, and Michael Silbermann from the MECC in Israel.



Celiac Disease: From Genetic Risk to Disease Development

Dr. Susan Neuhausen received an R21 NIDDK award entitled, Celiac Disease: From Genetic Risk to Disease Development. Celiac disease (gluten-sensitive enteropathy, celiac sprue) is caused by sensitivity to the dietary protein gluten, which is present in wheat, rye and barley. It is a common disease with significant complications if untreated. There are several unaddressed public health concerns that will be addressed in this proposal, including: do individuals at high risk of celiac disease warrant continued screening, are there putative stress events that trigger celiac disease in susceptible individuals, and are individuals diagnosed with celiac disease at higher risk of developing other autoimmune diseases and additional symptoms if they do not adhere to a gluten-free diet. It is impractical to address these questions in a general population-based sample, because the prevalence of CD in the general population is 1% at most. However, by retesting people at high-risk of the disease, who have previously tested negative, we can assess the development of disease. Furthermore, by studying those previously diagnosed with celiac disease, we can follow the path of the disease. Therefore, we will retest participants from two large family studies, one at the University of California Irvine and one at Mayo Clinic.

“Diet and Nondiet Predictors of Urinary 3-Phenoxybenzoic Acid”

Dr. Scott Bartell along with his colleagues Anne Riederer, Dana Barr, and Barry Ryan published a paper in the Environmental Health Perspectives Journal titled, “Diet and Nondiet Predictors of Urinary 3-Phenoxybenzoic Acid in NHANES 1999-2002”. This study examined the importance of diet versus nondiet predictors in explaining the variability in urinary 3PBA. A secondary objective was to explore whether the NHANES data could be used to identify particular foods driving 3PBA levels.

The results found that household pesticides was not significantly associated with Urinary 3PBA though among adults, tobacco was positively associated with it. Diet was significant for all three groups, and certain foods seemed to contribute more than others.

"Clinical and Pathological Studies in the Oldest Old"

GERI scientific council member Dr. Claudia Kawas recently had her grant, *The 90+ Study* renewed. This five-year, \$7 million NIH R01 grant titled, "Clinical and Pathological Studies in the Oldest Old" is a collaborative effort lead by Principal Investigator, Claudia Kawas, M.D., Co-Investigators, Maria Corrada, Sc.D., and Annlia Paganini-Hill, Ph.D. Initiated in 2003, the goal of *The 90+ Study* is to perform prospective clinical, pathological, and genetic investigations in a population-based sample of people aged 90 years and older. With a wealth of cognitive tests, laboratory studies, physical performance measures, genetic and other data in *The 90+ Study*, plus survey information collected on these individuals since 1981 as part of the Leisure World Cohort Study, the study will further examine incidence rates and evaluate risk and protective factors for dementia, functional disability and frailty, as well as cognitive and functional decline in the oldest-old.

The findings from the first 5 years of this study was published in the journal "Neurology" in a paper titled, "Prevalence of dementia after age 90". This study aimed to look at whether dementia increases after age 90 with age or sex specificity. 911 elderly were investigated from a population-based study of aging and dementia in people aged 90 and above. The results found that the overall prevalence of all cause dementia was higher in women (45%, 95% CI=41.5-49.0) than men (28%, 95% CI=21.7-34.2) The prevalence among women essentially doubled every 5 years. A lower prevalence of dementia was significantly associated with higher education in women but not in men.

UC Mexus Study: Socioeconomics and Cancer Outcomes (SECO) Study

Erin Kent, a doctoral student in, was recently awarded a UC Mexus dissertation research grant to explore individual socioeconomic status impacts