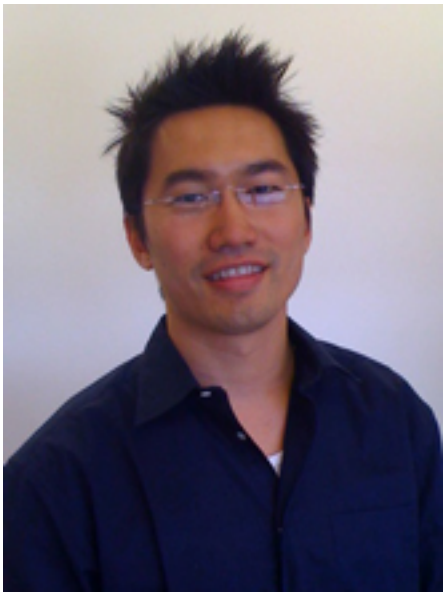
UC Merced Center for Excellence on Health Disparities Graduate Student Project Abstracts

Inaugural Cohort



Chi-Shuo Chen

Advisor Wei-Chun Chin, School of Engineering

Chi-Shuo Chen is currently a PhD candidate in Biological Engineering and Small-scale Technology at University of California, Merced. Â Since being an undergraduate student in Atomic Science, he has been interested in interdisciplinary research. After obtaining his MS in Molecular Biophotonics from National Tsing Hua University Taiwan, he changed to work on Microelectromechanical systems for several years. Â He then moved to Merced for his Ph.D. degree, focusing on biological effects of ultra fine particles on airway health and the fate of ultra fine particles in the environment.

California's Central Valley is ranked as the most polluted air basin in the US. Due to the geographic location and dairy agriculture, farmers and residents suffer from serious air pollution related health problems such as a high asthma rate. In Chui-Shuo's work, he will study the direct biological impacts of airborne particles on the respiratory system.. Because airway mucus clearance disorders are commonly found in many air-pollution related diseases, he also plans to investigate changes of microrheology within the mucus gel layer induced by airborne ultra-fine particles.

With the support of COE, Chen is pleased to have the unique opportunity to address the air pollution related health disparities in the Central Valley with his interdisciplinary training background. Due to the complex nature of air pollution, Chen plans to utilize various tools from different disciplines within the COE training program in order to take up the health disparities in the Valley. The outcomes from this project will provide reliable and convincing biological data to precisely evaluate the critical respiratory health disparities issue in the Central Valley.

Chris Fradkin

Advisor Jan Wallander, School of Social Sciences, Humanities & Arts.

Chris Fradkin has a background in community service, on both a regional and national scale. In Los Angeles, from 1994 to 1998, Fradkin served as founding director of the Craniofacial Support Network of Southern California, an organization which provided resources, community, and support to families of children born with facial anomalies. At UC Merced, Fradkin is currently investigating disparities in quality of life in children across race/ethnicity and gender.

"It's well documented," Fradkin says, "that in the United States, children of minority race/ethnicity experience a lower quality of life than Caucasian children. My research is looking into interactions between social risk factors, which, when viewed in combination, may offer explanation to this disparity." Fradkin is also looking at possible moderating and mediating variables which may shed light on disparities among pediatric populations. "The Central Valley," he continues, "is one of the most underserved and diverse environments in the country. With the Hmong and migrant-worker populations it's an ideal setting for disparities research."

Along with his enthusiasm for the opportunities the Central Valley affords, Fradkin is also interested in serving the community. "The COE gives me the opportunity to connect with the Mercedians, the families in Planada, the families in the Valley. I look forward to developing plans and strategies to improve the health of the community, which after all is my community, as I live here in Merced."

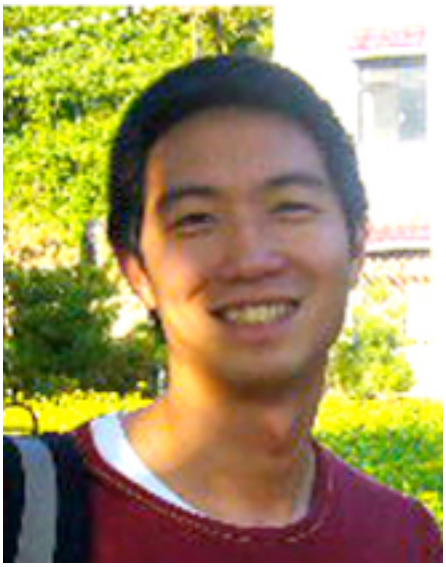
Malgorzata Skorek

Advisor Yarrow Dunham, School of Social Sciences, Humanities & Arts.

Malgorzata Skorek is currently a PhD Candidate in Social & Cognitive Sciences at University of California, Merced. She received her MA in International Communication (2008) and BA in Integrated Social Sciences (2006) from Jacobs University Bremen in Germany.

Malgorzata's major research interest is in the ways mass media portray men and women, and in the effects these portrayals have on viewers' attitudes, beliefs and consequently behavior.

During the COE Graduate Training she will explore the effects of exposure to mass media portrayals of thinness on body satisfaction, self-esteem and perception of weight-related health risks in an ethnically diverse group of women. Even though a lot of literature tackled the issue of negative effects of exposure to such imagery, almost no research looked at the effects in non-White women, who may be an even more vulnerable group. Moreover, Malgorzata will also make methodological contributions to prior research by combining common explicit measures with novel implicit methodology (implicit tasks are based on reaction times and allow researchers to analyze less conscious and thus more reliable responses of participants).



Roger Tseng

Advisor Andy LiWang, Quantitative Systems Biology, School of Natural Sciences.

Roger is a first year PhD student in Quantitative Systems Biology department. He obtained his Bachelor of Science degree in Molecular Biology and Biochemistry at UC Merced. He moved to Merced from San Diego and loves hiking in the Yosemite National Park close by. Roger wants to be a scholar in the field of biochemistry, which is to understand how proteins in our bodies carry out important reactions to perform variety of functions. As a future goal, he hopes to learn and study more about the functions and structures of proteins to gain insights on how they make life so efficient and possible.

Roger's current research project is to study 3 exciting proteins, which essentially form a clock that displays a 24-hour circadian rhythm. Combining with an energy molecule called ATP, these proteins can be taken out of a living cell and display a 24-hour period inside a test tube. With this amazing property of reconstructing a biological clock outside a living cell, he is investigating how the 3 proteins interact to produce a stable 24-hour rhythm, which is a common biological feature in many animals, insects and plants.

As a fellow of COE, his research is very relevant to the health issues affecting shift workers. People who work in shift are frequently perturbing their biological clocks. Much like what people experience in jet lag, shift workers have to adjust their sleeping patterns for their work. This often leads to development of sleep disorder. Because the biological clock also controls metabolism, cell growth and many other important processes in the body, shift workers may develop other disorders like obesity and cancer.