2013
UF-HHMI
Science for Life
Distinguished Mentor Award
Dr. Edward K.L. Chan is a Professor in the Department of Oral Biology at the University of Florida College of Dentistry. Chan completed his PhD in Medical Science at the University of Calgary in 1984. It was during his postdoctoral training at the Scripps Research Institute, La Jolla, California, that he developed lifelong interests in the significance of autoantibodies in patients with systemic rheumatic diseases and cancer. He joined the faculty at UF in 2002. His current research projects are 1) studies of microRNAs in the regulation of toll-like receptor signaling pathways in innate immune response and their relationship to autoimmune diseases, including rheumatoid arthritis and systemic lupus erythematosus; 2) identification of microRNAs as biomarkers in human whole saliva and classification of microRNAs in human oral cancers and signaling pathways regulating these tumors; 3) autoantibodies targeting cytoplasmic rods and rings that are composed of CTP/GTP biosynthetic enzyme pathway components; these autoantibodies are markers for Hepatitis C infected patients produced when undergone pegylated interferon/ribavirin therapy. Chan has published 188 peer-reviewed papers, 25 review articles, and 45 book chapters on these topics. His research has been supported by federal agencies and private entities. More than 30 undergraduate students have participated in the research projects, mentored by Chan and his group of graduate students. Those students have won many awards and honors, including 10 University Scholars and 6 UF-HHMI Science for Life Awardees, and many graduates have continued in scientific or medical/dental programs post-graduation. echan@ufl.edu

Dr. Z. Hugh Fan is an associate professor of the Department of Mechanical and Aerospace Engineering, Pruitt Family Department of Biomedical Engineering, and Department of Chemistry at the University of Florida. He is one of eight faculty members of Interdisciplinary Microsystems Group (IMG), an interdepartmental laboratory in the College of Engineering. Prior to joining UF in 2003, Dr. Fan was a Principal Scientist at ACLARA BioSciences Inc. (Mountain View, CA) and a Member of the Technical Staff at Sarnoff Corp. (Princeton, NJ). He received his B.Sc. from Yangzhou Teachers’ College in China and his Ph.D. from the University of Alberta in Canada. Dr. Fan worked as a postdoctoral fellow at Ames Laboratory of US Department of Energy at Iowa State University. His current research interests include microfluidics, Biomedical MicroElectroMechanical Systems (BioMEMS), sensors, and applying them to biomedical studies. Microfluidics is promising to reach the holy grail of “lab-on-a-chip”. In analogy to shrinking a computer from the size of a room in 1950s to a laptop today, instruments for chemical and biological analyses could be miniaturized using modern microfabrication technology. Potential applications of these devices include point-of-care testing, environmental monitoring, and detection of pathogens and other threats in the field. Dr. Fan’s research has been recognized with Fraunhofer-Bessel Research Award from Alexander von Humboldt Foundation (Germany), E.T.S.Walton Award from Science Foundation of Ireland, and Career Award from National Institute of Health. During past 5 years, Dr. Fan supervised 16 undergraduate students who have published 10 journal articles and peer-reviewed proceedings. Those students in his lab have won numerous awards and honors, including University Scholar, UF-HHMI Science for Life Award, and Chevron Products Corporation Scholarship. hfan@ufl.edu
Dr. Christine Miller

Dr. Christine W. Miller is an Assistant Professor in the Department of Entomology and Nematology at the University of Florida. She completed her PhD at the University of Montana in 2007. Dr. Miller conducts research on evolutionary biology and ecology. Many projects in her laboratory explore the evolution of behavior, morphology, or coloration in both local and tropical insects. Dr. Miller has trained 26 undergraduates in her laboratory in the past five years. Students who continue in the lab for multiple semesters have the opportunity to play a collaborative role in all aspects of research, including design, execution, analysis, and presentation. Many students have been co-authors on peer-reviewed publications and presentations at local, national, and international conferences. Awards won by students in the lab include the UF Best Undergraduate Paper Award and the Turner Award from the Animal Behavior Society. After working in her laboratory, most students have continued in scientific research or pursued graduate school, medical school, or veterinary medicine. In addition to mentoring students in her laboratory, Dr. Miller strives to reach more students by merging authentic research experiences with classroom-based learning. She recently designed an undergraduate course that was implemented by multiple members of her research team (including an undergraduate, post-graduate, graduate student, and postdoctoral researcher). The 25 undergraduate students in this course measured insects for an evolutionary genetics experiment while participating in classroom-based discussions, readings, and presentations focused on the nature of science. Dr. Miller is currently seeking funding to continue this approach with the goal of reaching a broad spectrum of student science majors early in their undergraduate years and inspiring them to continue in scientific research.

From top to bottom: Dr. Christine Miller, Dr. Jennifer Hamel (Postdoctoral Associate), and Kirsten Verster (Undergraduate Researcher) measuring insects in the lab. Photo by Marisol Amador.

Dr. Max Teplitski

Dr. Max Teplitski is an Associate Professor and a University of Florida Research Foundation Professor in the UF/IFAS Soil and Water Science Department within the College of Agriculture and Life Sciences. The research in the Teplitski lab focuses on microbe-host interactions in three models: post-transcriptional regulation and small RNA-mediated interactions in the nitrogen-fixing symbiosis between bacteria and legumes, chemical ecology coral diseases and ecology of Salmonella outside of its animal host. Twenty five undergraduate students, working in collaborations with graduate students and junior faculty members have contributed to these projects over the last seven years and have authored or co-authored nine peer-reviewed publications. Undergraduate students presented over 20 poster or oral presentations at regional and national meetings, five of which were recognized as Best Presentations. Two undergraduate mentees earned American Society for Microbiology research fellowships and five were awarded travel grants to present their discoveries at scientific meetings. Four of the former undergraduate research mentees earned NSF or McKnight Graduate Fellowships to pursue Ph.D. studies.

From left to right: Dr. Mengsheng Gao, Dr. Clayton Cox, Dr. Massimiliano Marvasi, Dr. Max Teplitski, Marcos Moraes, Andree George
Dr. Marta L. Wayne is a Professor in the Department of Biology. She joined the faculty at UF in 1999, after completing a PhD in Ecology & Evolutionary Biology at Princeton University, and an NIH Post-Doctoral fellowship in the Department of Genetics at North Carolina State University. She now studies host-parasite coevolution using the sigma virus and Drosophila system as a model for human pathogenic RNA viruses that are vectored by Dipterans. She also studies the evolution of sex chromosomes, gene expression, and dosage compensation. Her research is primarily funded by NIH, though she has enjoyed NSF funding for a Young Investigators’ Workshop. She is currently chair of the NIH Genetic Variation and Evolution Study Section, as well as Councillor for the Society for Molecular Biology and Evolution, and Visiting Professor at McMaster University in Canada. Dr. Wayne has been recognized with a Colonel Allen R. and Margaret G. Crow Term Professorship, and served as the inaugural director of the UF Graduate Program in Genetics & Genomics. Dr. Wayne has been awarded the “Teacher of the Year” for the College of Liberal Arts and Sciences at the University of Florida (2002 and 2012), and has served as Associate Editor for Genome Biology & Evolution, Genetica, Evolution, and Molecular Biology & Evolution. She has also been a guest editor for PLoS Genetics the National Women's Studies Association Journal. Wayne is also an adjunct professor in the UF Center for Women's Studies and Gender Research, where she sits on the Council. Of the 55 undergraduates who have spent significant research time in my lab in the last five years, 16 are still enrolled at UF as undergraduates; of alumni, 89% are in graduate or professional school (health allied disciplines only). These students have won numerous awards and honors, including McNair Scholars, Beckman Scholars, Anderson Scholars, and UF-HHMI Science for Life Awardees while in the lab, and several have gone on to win NSF Doctoral Dissertation Improvement Grants. mlwayne@ufl.edu

Dr. W. David Wei is an Assistant Professor in the Department of Chemistry at the University of Florida. He is also associated with the NSF-CCI Center for Nanostructured Electronic Materials. David received his Ph.D. from the University of Texas at Austin with Mike White, trained as a postdoctoral researcher at Northwestern University with Chad Mirkin, and joined the faculty at UF in August, 2009. His group works in Analytical, Physical, and Materials Chemistry with research interests in novel electronic and optical properties of metallic and semiconductor nanomaterials and their applications in solar energy harvesting, conversion and storage, visible light photocatalysis, chemical and biological detection, drug delivery, and cancer therapeutics. David has published more than 40 papers, delivered 32 invited talks in universities, national labs, and scientific conferences, and currently holds 5 pending patents. His research is supported by the National Science Foundation (NSF-CHE and DMR), Oak Ridge Associated Universities, General Motors, and Novarials. David is the member of the American Chemical Society, Materials Research Society, and American Vacuum Society, and has been awarded a Summer Fellowship at PNNL, the 2010 ORAU Ralph E. Powe Junior Faculty Enhancement Award, and the 2011 Sigma Xi Junior Faculty Research Award. Numerous undergraduate students participate in the research projects, mentored by David and his postdoctoral associates and graduate students. Undergraduate students are encouraged to conduct independence research in his laboratory through the UF-HHMI Science for Life program, NSF Research Experiences for Undergraduates (REU), and the Undergraduate Scholars Program (USP). Those students have been awarded numerous fellowships and honors, won the national laboratory internships, given oral presentations in national meetings, and published as co-authors in the peer-review journals. wwei@ufl.edu