Welcome New CECS Faculty 2014-2015

Applied Mathematics & Statistics

**Aaron Porter** received a B.S. in Mathematics from Purdue University, an M.S. in Statistics from Michigan State University, and a Ph.D. in Biostatistics from the University of Iowa. After completing his doctorate, Aaron held a two year postdoctoral fellowship in the University Of Missouri Department Of Statistics. Aaron’s research is performed in the Bayesian Hierarchical Modeling framework, and he has primarily focused on research that is spatial and spatio-temporal in nature. His emphases are on geostatistical and lattice data, with applications to infectious disease modeling, small area estimation, big data, and environmental data. He is fascinated by problems that involve conditioning and rank-reduction. Aaron lives in Arvada with his wife, Kristina. In his spare time he enjoys running and the arts, particularly drawing and making things with his hands.

Civil & Environmental Engineering

**Andres Guerra** received a B.S., M.S., and Ph.D. from Colorado School of Mines in 2002, 2004, and 2008. He is also a Colorado licensed Professional Engineer in civil engineering. Since 2009, he has taught Civil Engineering Field Session, Statics, Foundations, and Applications in Operations Research at Colorado School of Mines and Advanced Foundation Design at CU-Boulder. He has served as the faculty advisor for the Colorado School of Mines Chapter of the Society of Hispanic Professional Engineers since 2012. His teaching interests are to inspire in the students a passion for the life-long pursuit of new knowledge.

**Jeffrey Holley, PE** received a BS in Engineering from the Colorado School of Mines in 1988, a MBA from the University of Colorado in 1993, and a MS in Environmental Science and Engineering from the Colorado School of Mines in 2011. Over the course of his career as a civil engineer he became registered and designed projects in 14 western states. His specialties include planning and construction document preparation for projects that include grading, drainage, infrastructure utility, and storm water quality enhancement designs. He began as an instructor at Mines in the spring of 2011 and has had the pleasure of teaching Statics, Mechanics of Materials, Fluid Mechanics, and Water and Wastewater Treatment. He has also enjoyed being a part of Civil Field Session where he has the opportunity to share his interest in field survey, coordinate geometry, and surface modeling.

Electrical Engineering & Computer Science

**Bo Wu** has a Ph.D. in Computer Science from The College of William and Mary. His research lies in the broad field of compilers and programming systems, with an emphasis on program optimizations for heterogeneous computing and emerging architectures. He was the recipient of the IBM Center of Advanced Study fellowship from 2011 to 2013 and the Stephen K. Park award for graduate research from The College of William and Mary in 2013.

**Hao Zhang** is an Assistant Professor in Computer Science at Colorado School of Mines. He received the Ph.D. degree in Computer Science from the University of Tennessee in 2014, the M.S. degree in Electrical Engineering from Chinese Academy of Sciences in 2009, and the B.S. degree from the University of Science and Technology of China in 2006. His research interests include Human-centered robotics, visual perception, robot learning, human-robot interaction, human-robot teaming, and field robotics.
Robert Amaro is currently a research scientist and formerly a National Research Council post-doctoral research fellow in the Materials Reliability Division at the National Institute of Standards and Technology in Boulder, Colorado. He specializes in modeling of environmental-fatigue interactions in metals. His current research focuses on fatigue crack growth prediction models of pipeline steels exposed to high pressure gaseous hydrogen. Robert received his M.S. and Ph.D. degrees in mechanical engineering with a focus on materials performance from the Georgia Institute of Technology under the advisement of Professors Richard Neu (ME/MSE) and Stephen Antolovich (MSE/ME). His major graduate coursework focused on mechanics of materials while his minor focused on dynamics. Prior to attending graduate school, Robert co-owned a consulting engineering design/build firm and worked as a consulting engineer to the entertainment industry.

Leslie Light received a BS from Stanford University in Product Design Engineering, and an MBA from the Wharton School at the University of Pennsylvania. After graduating from Stanford she worked for a consumer products firm near Pune, India, followed by another two years at a product development consulting firm in the Silicon Valley working for clients such as 3Com, Philips, and Cisco. She shifted focus to entrepreneurship while obtaining her MBA, advising small business owners in Philadelphia and businesses in the informal sector in and around Cape Town, South Africa. She co-developed and taught a course on "consulting to businesses of the informal sector" at the University of Cape Town, Graduate School of Business. She joined Deere & Company in 2000, serving for nine years in a variety of strategic planning and management capacities. She moved to the greater Denver area in 2009, where she joined iDE, an international non-profit dedicated to creating income opportunities for poor rural households in Asia, Africa, and Latin America. In spring of 2014 she developed and taught a new course, EGGN 301, for the Humanitarian Engineering Minor. The experience helped spark Light’s interest in applied engineering education.

Nils Tilton’s expertise is in theoretical and computational fluid mechanics with an emphasis on hydrodynamic stability and flow through porous media. He received his Ph. D. in 2009 from McGill University, after which he was a postdoctoral research fellow at the University of Aix-Marseille (2009-2011) and the University of Maryland (2011-2014). His research focuses on developing accurate analytical and numerical models of membrane filtration, carbon dioxide sequestration, and flow control for drag reduction. These applications play central roles in the water-energy-climate nexus, as well as the food, pharmaceutical, and petroleum sectors. Dr. Tilton’s numerical work focuses on spectral methods, fractional step methods, and multi-domain methods. His analytical work focuses on perturbation method and volume-average models of flow through porous media.

Paulo Cesar Tabares-Velasco is a Research Engineer at the National Renewable Energy Lab with a background on heat and mass transfer in buildings and computational fluid dynamics (CFD). Paulo Cesar current research project is in air conditioning load reduction and demand response. He has also worked on model verification and validation for the Phase Change Materials (PCMs) model in EnergyPlus and improving accuracy in building simulation programs. Prior working at NREL Paulo Cesar was a research assistant at the Pennsylvania State University (PSU) where he developed a new heat and mass transfer model for vegetated roof systems. Paulo Cesar holds a PhD in Architectural Engineering from The Pennsylvania State University and an MSc in Mechanical Engineering from Colorado State University. Paulo’s work on vegetated roofs has been recognized with the 2009 Crosby Field Award, 2009 Willis H. Carrier Award and 2009 Best Poster Award by the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) and the 2011 Green Roof Research Award of Excellence by Green Roof for Healthy Cities (GRHC).