Colorado School of Mines
New Faculty 2013-2014

Randy Bower, PhD (Teaching Associate Professor/EECS) - Dr. Bower earned his BS from the University of Northern Iowa and his MS and PhD from Iowa State University. He has taught at Simpson College in Indianola, Iowa, and Jacksonville University in Jacksonville, Florida. Most recently he has spent three years teaching at the Air Force Academy in Colorado Springs, Colorado. Focusing primarily on teaching, Dr. Bower enjoys teaching the programming courses in the CS curriculum, from introductory courses to upper-level theory of different programming paradigms and more recently Android app development.

Boyle, Nanette, PhD (Assistant Professor/CBE) – Nanette R. Boyle was born and raised on a dairy farm in Chandler, Arizona. She attended Arizona State University and received her B.S.E. in chemical engineering in 2004. During her sophomore year, she had an excellent professor for momentum transport who inspired her to pursue an academic career. From her years on the farm, Nanette knew she wanted to do research on something related to agriculture, so she decided to pursue her Ph.D. in chemical engineering at Purdue University where there were opportunities to mix her love of chemical engineering with research on photosynthetic organisms. Her thesis work (under the supervision of Prof. John Morgan) focused on the use of metabolic models to better understand metabolism of a model green alga, *Chlamydomonas reinhardtii*. After receiving her doctorate in 2009, she moved to University of California, Los Angeles to learn more about the biology of microalgae in the laboratory of Prof. Sabeeha Merchant. Her work there focused on elucidating the regulatory mechanism behind the accumulation of triacylglycerols during nutrient starvation using RNA-Seq. After 2 years there, she wanted to learn more about the emerging field of synthetic biology in order to apply similar techniques to algae and cyanobacteria. Therefore, she moved to CU Boulder to join the group of Prof. Ryan Gill in Chemical and Biological Engineering. Her future research will combine her experience in systems and synthetic biology to engineer cyanobacteria and algae to produce petroleum replacement products and fine chemicals.

Callan, Kristine, PhD (Teaching Associate Professor/PH) – Kristine Callan earned her PhD in Physics at Duke University in the summer of 2013. She studied small networks of chaotic systems and devised methods to determine global network properties from local dynamical measurements. While at Duke, she also earned the Dean’s Award for Excellence in Teaching, in addition to attending many of the men’s and women’s basketball games. Prior to completing her PhD, Kristine spent two years teaching physics at an all-girls high school in Boston, Massachusetts. She is originally from Central Oregon and is looking forward to the similar climate and outdoor activities that Colorado will provide.

Caster, Allison, PhD (Teaching Assistant Professor/CH) – Allison Caster joins Mines as a Teaching Assistant Professor of Chemistry. Allison earned her BS in Chemistry at the University of South Dakota (2004), and her Ph.D. in 2010 from the University of California - Berkeley, where she was a National Science Foundation Graduate Research Fellow. This was followed by a Postdoctoral Fellowship at the University of Colorado Anschutz Medical Campus in Bioengineering. Allison has developed non-invasive, laser and X-ray based microscopy techniques for probing the chemistry of both natural and man-made structures. The applications of these techniques are, for example, to improve the production of smaller integrated circuits, or to identify and sort cancerous from non-cancerous cells in human blood. With a shift in focus to undergraduate education, Allison strives to highlight the applications of modern, interdisciplinary research in the classroom and laboratory, and to implement more active-learning strategies which improve student engagement, excitement, and retention.
Celik, Ozkan, PhD (Assistant Professor/ME) – Dr. Celik’s research focuses on design and development of mechatronic and haptic interfaces (such as exoskeletons) with applications in robotic rehabilitation of motor-impaired patients, human motor skill augmentation, prostheses and neuromuscular modeling. For his research, he uses the tools provided by and fall under the topics of mechatronics, robotics, haptics, control systems, system identification, mechanical design/prototyping and statistical analysis (human subject experiment design and data analysis). He was a recipient of the Best Paper Award at IEEE World Haptics Conference in 2011 and of a young researcher travel award at IEEE International Conference on Rehabilitation Robotics in 2009.

Claussen, Stephanie, PhD (Teaching Associate Professor/EECS) – Stephanie Claussen graduated in June with her Ph.D. in Electrical Engineering from Stanford. Her thesis research was on high-performance silicon-compatible optical modulators for use in optical interconnect systems. In addition to her engineering work, she also spent considerable time while at Stanford across campus in the School of Education learning about science and engineering education, which culminated in a Ph.D. Minor in Education and a journal publication. Stephanie has a Masters in EE, also from Stanford, and a Bachelors in EE from MIT. While at Stanford, she was actively involved with the Stanford Optical Society’s Outreach Committee, the Stanford student chapter of the American Society for Engineering Education, and the Stanford Triathlon team. In August, 2012, Stephanie will travel to Nepal for two months to lead a pilot project of a technology product designed for use in rural schools.

Constantine, Paul, PhD (Assistant Professor/AMS) – Paul Constantine is the Ben L. Fryrear Assistant Professor of Applied Mathematics and Statistics. He received his Ph.D. from Stanford University's Institute for Computational and Mathematical Engineering in 2009 and was subsequently awarded the John von Neumann Research Fellowship in Computational Science at Sandia National Laboratories. Paul's research interests include uncertainty quantification, dimension reduction, and high-performance computing and simulation.

Dean, Jered, MS (Teaching Associate Professor/ME) – Jered coordinates the Senior Design program and is passionate about solving real problems that matter. He joined the Mechanical Engineering faculty at Mines after a career in product development. Jered has had the privilege to design everything from complex weapon systems to children’s toys and enjoys exploring new challenges with student teams. Jered is a mechanical engineer by training and received his master’s degree in Engineering with a Systems Specialty from Colorado School of Mines.

Diniz-Bhen, Cecilia, PhD (Assistant Professor/AMS) – Cecilia Diniz Behn earned an A.B. in Mathematics from Bryn Mawr College, an M.A. in Mathematics from the University of Texas, Austin, and a Ph.D. in Mathematics from Boston University. She completed a Postdoctoral Fellowship in the Division of Sleep Medicine at Harvard Medical School and spent four years as a Term Assistant Professor at the University of Michigan. Before joining the faculty at Mines, Cecilia held a tenure-track position at Gettysburg College. Dr. Diniz Behn’s research interests focus on mathematical modeling of the dynamics of sleep-wake behavior. She has developed a research program focused on the application of mathematical modeling and analysis to key open questions in sleep research. Her research has been funded by the National Science Foundation and the Air Force Office of Scientific Research. Dr. Diniz Behn enjoys teaching mathematical biology and nonlinear dynamics, and introducing students to the joys and challenges of interdisciplinary research.
Elsherbeni, Atef, PhD (Professor/ECECS) – Atef Z. Elsherbeni received an honor B.Sc. degree in Electronics and Communications, an honor B.Sc. degree in Applied Physics, and a M.Eng. degree in Electrical Engineering, all from Cairo University, Cairo, Egypt, in 1976, 1979, and 1982, respectively, and a Ph.D. degree in Electrical Engineering from Manitoba University, Winnipeg, Manitoba, Canada, in 1987. He started his engineering career as a part time Software and System Design Engineer from March 1980 to December 1982 at the Automated Data System Center, Cairo, Egypt. From January to August 1987, he was a Post Doctoral Fellow at Manitoba University. Dr. Elsherbeni joined the faculty at the University of Mississippi in August 1987 as an Assistant Professor of Electrical Engineering. He advanced to the rank of Associate Professor on July 1991, and to the rank of Professor on July 1997. He was the director of The School of Engineering CAD Lab from August 2002 to August 2013, and the director of the Center for Applied Electromagnetic Systems Research (CAESR) from July 2011 to August 2013. He was appointed as Associate Dean of Engineering for Research and Graduate Programs from July 2009 to July 2013 at the University of Mississippi. Dr. Elsherbeni became the Dobelman Distinguished Chair and Professor of Electrical Engineering and Computer Science at Colorado School of Mines in August 2013. He was appointed as Adjunct Professor, at The Department of Electrical Engineering and Computer Science of the L.C. Smith College of Engineering and Computer Science at Syracuse University in January 2004. In 2009 he was selected as Finland Distinguished Professor by the Academy of Finland and TEKES.

Lafrancois, Becky, PhD (Teaching Associate Professor/EB) – Dr. Lafrancois joins Colorado School of Mines as a Teaching Associate Professor of Economics following three years as an Assistant Professor at Michigan Technological University. She studied at Bryant University (B.S. Finance and Economics) and Syracuse University (M.A. and PhD. Economics) and has published articles on the reduction of carbon dioxide emissions in electricity generation as well as the provision of public health services. Her main research interests explores how public policy influences investment and generation decisions in the electricity sector and how these decisions are reflected in property values. Becky is originally from New Hampshire and is excited to be back in the mountains.

Maniloff, Peter, PhD (Assistant Professor/EB)– Peter Maniloff studies the design and evaluation of U.S. energy policy and its impacts on the economy, the environment, and agriculture. Maniloff’s research empirically explores the question of what will happen as we couple environmental outcomes to potentially volatile market phenomena, whether our policies can insulate environmental outcomes and economic outcomes from one another, and whether they should. Dr. Maniloff holds a Ph.D. in environmental science and policy (with a specialization in economics) from Duke University’s Nicholas School of the Environment. He also holds a bachelor’s degree in physics and computer science and a master’s degree in environmental science and policy, all from Duke, and has worked as a scientific programmer.

Painter-Wakefield, Christopher, PhD (Teaching Associate Professor/EECS) – Christopher Robert Painter-Wakefield was born Christopher Robert Wakefield in 1968 in Manila, The Philippines. Most of his later childhood and youth was spent in Richmond, Virginia. He met Patty Painter, his eventual wife, while in college at Wake Forest University. He obtained a B.S. in Physics from Wake Forest in 1990, after which he moved to Oklahoma for his first try at graduate school (in Physics). After leaving graduate school and working various jobs, he eventually found his way into computer programming, pursuing that career for over a decade before heading back to graduate school in Computer Science. He obtained his Ph.D. in Computer Science from Duke University in May 2013.
Pei, Shiling, PhD (Assistant Professor/CEE) – Dr. Shiling Pei received his Ph.D. degree from Colorado State University in 2007. He joined Colorado School of Mines as an Assistant Professor in the Department of Civil and Environmental Engineering in Fall 2013 after serving as Assistant Professor at South Dakota State University from 2010-2013. Dr. Pei is the recipient of ASCE Raymond C. Reese Research Prize in 2012 for his work on wood frame building seismic hazard mitigation. He is the Outstanding Reviewer for Journal of Structural Engineering in 2012. Dr. Pei also participated in the damage assessment of the 2011 Tuscaloosa and Joplin tornados. His research focuses on light frame wood structure performance under earthquake loading, large-scale dynamic testing, performance-based seismic design, mechanistic modeling of structural systems, and seismically induced loss analysis. He is a member of ASCE SEI technical committee on design of wood structures and the committee on multi-hazard mitigation. Dr. Pei is one of the key researchers in NEESWood Capstone test program, in which a full-scale 7-story wood-steel hybrid building was tested at Japan’s E-defense shake table (the world’s largest shake table test on building structures so far). Dr. Pei plans to expand his sustainable structure and hazard mitigation research at CSM through building an earthquake shaking table for research and education. Dr. Pei is a registered Professional Engineer in State of California.

Pini, Ronny, PhD (Assistant Professor/PE) – Ronny Pini, a Swiss citizen born in 1980, has been a postdoctoral scholar in the Department of Energy Resources Engineering at the Stanford University since October 2010. He holds a Diploma (M.S., 2004) in Chemical Engineering from the Swiss Federal Institute of Technology (ETH) in Zurich, Switzerland, and a PhD (2009) in Mechanical and Process Engineering from the same university. The title of his thesis was “Enhanced Coal Bed Methane Recovery Finalized to Carbon Dioxide Storage”. His research activity deals with single- and multiphase flow in porous media and high-pressure adsorption in synthetic and natural porous materials. The application areas of interests are recovery and storage operations in the subsurface and adsorption-based separation processes. He has been an instructor for lab courses in Process Engineering and taught a class on Laboratory Measurements of Reservoir Rock Properties for several quarters. To date, he has co-authored 1 book chapter and published 21 peer-reviewed articles (11 as a first author) in journals such as Water Resources Research, Geophysical Research Letters, Langmuir and Polymers.

Stebner, Aaron, PhD (Assistant Professor/ME) – Professor Stebner joins the CSM faculty in 2013. He also serves as a board member of the ASM International Organization on Shape Memory and Superelastic Technologies. He received his Ph.D. from Northwestern University and B.S. and M.S. degrees from The University of Akron. Concurrent to his PhD program, he held an appointment as a Lecturer of the Segal Design Institute at Northwestern University. He has been awarded numerous fellowships including being named a Toshio Mura fellow, a NASA Graduate Student Researcher fellow, a Walter P. Murphy fellow, and a fellow of the Predictive Science and Engineering Design Cluster at Northwestern. He has also held several positions in industry, most recently as co-creator of a research and development laboratory for TZ, Inc. - a company specializing in intelligent, networked fastening and sensing solutions using shape memory alloys.

Swidinsky, Andrei, PhD (Assistant Professor/GP) – Andrei Swidinsky earned his Bachelor’s Degree in Theoretical Physics from the University of Guelph (Canada) in 2005. In 2006 he completed his Master’s Degree in Geophysics at the University of Toronto; his Master’s thesis focused on the integration of marine electromagnetic and heat flow measurements for gas hydrate exploration. He received his Ph.D. from the University of Toronto in January 2011. His Ph.D. thesis, supervised by Professor Nigel Edwards, focused on several electromagnetic theory problems, including 3D forward modelling, imaging and inversion. From February 2011 until March 2013, Andrei was a postdoctoral fellow in the marine electromagnetics group at the Helmholtz-Zentrum für Ozeanforschung Kiel (Geomar) in Germany where he became involved in the electromagnetic exploration for seafloor massive sulfide deposits. He was also a research associate at the
University of Toronto from October 2012 to March 2013. Starting April 2013 he has been an assistant professor of electromagnetics at the Colorado School of Mines Department of Geophysics. His current research interests include data integration of electromagnetic and reflection seismic methods for oil, gas and gas hydrate exploration as well as geophysical methods for seafloor mineral exploration.

Van Bossuyt, Douglas, PhD (Assistant Professor/ME) – Douglas L. Van Bossuyt comes from a stint in industry as a probabilistic risk assessment engineer at NuScale Power, LLC where he helped in the development and commercialization of small modular reactor technology and helped to guide risk-informed design at the company. Van Bossuyt’s research interests encompass complex system design, risk and reliability engineering, conceptual design, prognostics and health management, sustainable design, and design for the developing world which he approaches from a systems perspective. He has recent seminal papers on measuring engineering risk attitudes and on implementing methods of risk trading in design trade studies. Research applications include aerospace, civilian nuclear power, automotive, robotics, and other complex systems. He earned his Ph.D in mechanical engineering from the Complex Engineered Systems Design Laboratory at Oregon State University, his masters in mechanical engineering in the National Center for Accessible Transportation at Oregon State University, and HBS in mechanical engineering and HBA in international studies at Oregon State University. Van Bossuyt has previously conducted research at the NASA Jet Propulsion Laboratory, the University of Sydney, Universität Karlsruhe, and conducted research in collaboration with the Boeing Company.

Yang, Dejun, PhD (Assistant Professor/EECS) – Dejun Yang is the Ben L. Fryrear Assistant Professor in Computer Science of the Department of Electrical Engineering and Computer Science at Colorado School of Mines. Before joining Mines, he received the PhD degree in Computer Science from Arizona State University in 2013, and the BS degree in Computer Science from Peking University, China in 2007. His research interests include Algorithmic Game Theory, Incentive Mechanism Design, Algorithm Design, and Optimization, with the focus on applications to Networks, Crowdsourcing, Cloud Computing, Smart Grid, and Security and Privacy. He has published papers in top journals including IEEE/ACM Transactions on Networking, IEEE Journal on Selected Areas in Communications, IEEE Transactions on Mobile Computing, IEEE Transactions on Smart Grid, and IEEE Transactions on Wireless Communications, as well as prestigious conferences including ACM MobiCom, ACM MobiHoc, IEEE INFOCOM, and IEEE ICNP.

Zhang, Xiaoli, PhD (Assistant Professor/ME) – Dr. Xiaoli Zhang joined the Department of Mechanical Engineering at Colorado School of Mines as an Assistant Professor in August 2013. Dr. Zhang received her PhD in Biomedical Engineering at University of Nebraska-Lincoln in 2009, and Master and Bachelor degrees in Mechatronics and Mechanical Engineering at Xi’an Jiaotong University. Dr. Zhang’s research expertise lies in medical robotics including surgical robotics, medical device designs, intelligent human-robot cooperation, smart healthcare and wellbeing, medical cyber-physical systems. She has published more than 15 high quality papers in peer-reviewed journals and more than 25 conference papers in her research areas. She has multiple patents on her surgical robots. Dr. Zhang serves as the Committee Member of the ASME Design of Medical Devices conference and the track chair of the ASME International Design Engineering Technology Conference. Dr. Zhang serves as a professional reviewer for many referred journals and international conferences. She won the Best Poster Award of the 2008 Sigma Xi. She was the awardee of 2008 Milton E. Mohr Fellowship at the University of Nebraska Lincoln, the awardee of 2009 Pierson Doctoral Graduate Research Award at the University of Nebraska Lincoln, and the sole awardee of the 2012 Outstanding New Faculty Award at Wilkes University. Dr. Zhang is the member of American Society of Mechanical Engineering, the member of Institute of Electrical and Electronics Engineers, and the member of Biomedical Engineering Society.
Zerpa, Luis, PhD (Assistant Professor/PE) – Dr. Zerpa joined the CSM Petroleum Engineering Department in April 2013. Before joining CSM, Luis was an Assistant Professor at the University of Zulia, Venezuela. He has consulting experience leading the reservoir simulation studies of an industrial offshore chemical EOR pilot project developed by the Venezuelan National Oil Company (PDVSA). He holds a B.S. (2001) and M.S. (2004) in Mechanical Engineering from the University of Zulia, and a Ph.D. in Petroleum Engineering from the Colorado School of Mines (2013). His research interests are in the areas of reservoir engineering, fluid flow in porous media, enhanced oil recovery, flow assurance and multiphase flow modeling, and natural gas hydrates as potential energy resource. He is a member of the SPE, ACS and ASME.