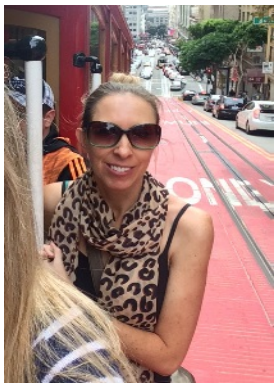
Colorado School of Mines
New Faculty 2016-2017
(Includes AY 2015-16 January Starts)

Abdul-Rahman Arkadan, PhD - Teaching Professor, Electrical Engineering and Computer Science. Before joining Colorado School of Mines as a Teaching Professor in the Department of Electrical Engineering and Computer Science (August, 2016), Dr. Arkadan was a Research Professor at Marquette University, Milwaukee WI, (Sept., 2014 – July, 2016). He also served as Professor at and President of Rafik Hariri University, Mechref, Lebanon (June 2004 to August 2014). Prior to that, he joined Marquette University as an Assistant Professor (June, 1988) where he became an Associate Professor (August, 1993) and Professor (August, 1998). He received his Bachelor of Science from the University of Mississippi, Oxford, Mississippi (May 1980), his Masters of Science from Virginia Tech, Blacksburg, Virginia (August 1981) and his Ph.D. from Clarkson University, Potsdam, New York (May 1988), all in Electrical Engineering.

His teaching and research interests are in the areas of Energy Conversion, Electric Machines and Drives, and Design Optimization using Computational Electromagnetics and Artificial Intelligence Techniques. His research applications are in Renewable and Efficient Energy and Power Systems, Micro---grids, Onboard Aerospace and Marine Power Systems, and Hybrid Electric Vehicles. By securing funding *(over a total of $2,500,000)* for his research projects from both private and government sources, such as the National Science Foundation, the US Office of Naval Research, Sundstrand Aerospace, and GM---Delphi, among others, he was able to support the graduate work of many students at the Masters and Ph.D. levels at Marquette University. Dr. Arkadan is the author of over 100 technical papers. He is a Fellow of the Institute of Electrical and Electronics Engineers (IEEE) and a Fellow of the Applied Computational Electromagnetics Society (ACES). Dr. Arkadan chaired several international conferences including the *First IEEE International Electric Machines and Drives Conference* (IEEE---IEMDC**)** held in Milwaukee, WI (May, 1997) and the *IEEE Conference on Electromagnetic Field Computations* (IEEE---CEFC**)** held in Chicago, IL (May, 2010). Currently he is the Editorial Board Chair of IEEE---CEFC 2016, to be held in Miami Florida, November 13---16, 2016. Also, he is the chair of IEEE---CEFC International Steering Committee, ACES Journal Associate Editor, and a member of ACES Board of Directors.

Michael Barankin, PhD – Teaching Assistant Professor, Chemical and Biological Engineering. Michael studied Chemical Engineering with a focus on Semiconductor Manufacturing at the University of CA, Los Angeles. While bouncing back and forth between UCLA (BS & PhD) and the Technical University of Delft in the Netherlands (MS & Postdoc), he completed research on the use of atmospheric pressure plasmas for coating deposition, along with the production of nanoparticles and atomic clusters in plasma and spark discharges, respectively. Since then, his research focus has shifted to Renewable Energy (e.g., biorefinery, power-to-gas), while working at Entrance (the Energy Transition Centre of the Netherlands) and for the EUREC (EU Renewable Energy Centres) Master's program, and more informally to Educational topics.

From 2012 until joining Mines, Michael was a lecturer/researcher at the Hanze University of Applied Sciences in Groningen, the Netherlands. Here he developed several unique tools, including flash lectures and lab videos (*mostly in Dutch*), helping to lead the implementation of blended learning in his department. Teaching courses as diverse as fluid mechanics or catalysis (Chem. Eng. core courses) to an interdisciplinary honors course (a laboratory biology/chemistry course for students from other majors), he gained crucial experience and developed his teaching style in the crucible of a foreign culture and language of instruction. These experiences have helped him to form a well-rounded educational vision.



Melanie Brandt, MH – Teaching Assistant Professor, Liberal Arts and International Studies. Melanie Brandt received her Master of Humanities from the University of Colorado Denver with emphases on American literature, history, and political science. For her thesis, she investigated the power of humor to effect political and social change. Her work necessitated multidisciplinary research and study thereby creating a platform for understanding some fundamental elements of learning and communication that can be applied to many academic disciplines. Melanie earned her bachelor's degree in literature and graduated *summa cum laude*. She is interested in combining the humanities and STEM fields of study in innovative ways that bolster and enhance learning experiences for students.

Melanie has taught a variety of writing and literature classes. Furthermore, she has taught in Mines' Design EPICS program since 2011. She was hired as a Teaching Assistant Professor in LAIS in the spring of 2016 and will be teaching Nature and Human Values (NHV) and an integrated pilot course combining NHV and Design EPICS.

Amy Clarke, PhD - Associate Professor, Metallurgical and Materials Engineering. Amy J. Clarke is an Associate Professor in the George S. Ansell Department of Metallurgical and Materials Engineering, Site Director for the Center for Advanced Non-Ferrous Structural Alloys (CANFSA), and is affiliated with the Advanced Steel Processing and Products Research Center (ASPPRC) at the Colorado School of Mines (CSM). She is also a Guest Scientist at Los Alamos National Laboratory (LANL). Her current research focuses on making, measuring, and modeling metallic alloys during processing, including x-ray, proton, and electron imaging of multi-scale solidification dynamics at national user facilities, the study of phase transformations and microstructural evolution, and non-ferrous and ferrous physical metallurgy.

Amy earned her B.S. degree from Michigan Technological University (MTU) and her M.S. and Ph.D. from CSM in Metallurgical and Materials Engineering. Prior to joining CSM, she was a Scientist and Seaborg Institute Postdoctoral Fellow at LANL and Senior Engineer – Development/Research at Caterpillar Inc. Amy has received a U.S. DOE Office of Science Early Career Research Program Award, a Presidential Early Career Award for Scientists and Engineers (PECASE) – the highest honor bestowed by the United States government on science and engineering professionals in the early stages of their independent research careers, the MTU Alumni Association's Outstanding Young Alumni Award, The Minerals, Metals, and Materials (TMS)/Federation of European Materials Societies and TMS/Japan Institute of Metals Young Leader International Scholar Awards, a TMS Young Leader Professional Development Award, and the Willy Korf Award for Young Excellence for her work on steels.

She serves on TMS Board of Directors, Argonne National Laboratory's Advanced Photon Source Users Organization Steering Committee, the Metallurgical and Materials Transactions Joint Commission, Editorial Board of Scientific Reports at nature.com, and MTU's Presidential Council of Alumnae. Amy has also served on the Association for Iron and Steel Technology (AIST) Board of Directors and as Chair of the Los Alamos Chapter of ASM International and AIST Metallurgy – Processing, Products and Applications Technology and TMS Phase Transformations Committees. She is also a member of the TMS Solidification, Shaping and Forming, ad hoc Steels, and Diversity Committees, and the lead organizer of the 2016 TMS Diversity in the Materials, Metals, and Materials Professions (DMMM2) Summit.

Kester Clarke, PhD – Assistant Professor, Metallurgical and Materials Engineering. Dr. Clarke recently joined the Colorado School of Mines as an assistant professor of metallurgical and materials engineering, engaging in research with the Advanced Steel Processing and Products Research Center and the Center for Advanced Non-Ferrous Structural Alloys. His research interests include alloy development, material deformation and fabrication processes, and the use of experimental and modeling methods to examine the effect of material processing history and microstructure on mechanical properties and performance.

Dr. Kester Clarke holds a Bachelor of Arts in Psychology from Indiana University, a Bachelor of Science in Materials Science and Engineering from Wayne State University, and M.S. and Ph.D. in metallurgical and materials engineering from the Colorado School of Mines. He conducted postdoctoral research at Los Alamos National Laboratory, has been an R&D scientist/engineer in the Materials Science & Technology: Metallurgy group serving as the technical lead for thermal-mechanical processing of metals and metal component fabrication since 2011, and is currently a Visiting Scientist at LANL.

He is active in the Association for Iron and Steel Technology (AIST), ASM International, and The Minerals, Metals, & Materials Society (TMS). He is currently on the AIST Board of Directors, after serving as chair of the AIST Metallurgy – Processing, Products and Applications Technology committee. He is a past-chair of the Los Alamos Chapter of ASM International and member of the ASM Web Committee, JOM advisor and vice-chair of the TMS Shaping & Forming committee, and a member of the TMS Nuclear Materials, Phase Transformations, and Diversity committees.

Chris Coulston, PhD – Teaching Associate Professor, Electrical Engineering and Computer Science. Dr. Chris Coulston received his B.A. in Physics in 1989 from Slippery Rock University, his B.S. 1991, a M.S. 1994 and a Ph.D. 1999 in Computer Engineering, all from the Pennsylvania State University. Dr. Coulston taught at the University Park campus from 1993-1998.

Dr. Coulston was granted tenure as an Associate Professor of Electrical and Computer Engineering at Penn State Erie in 2006. Starting in 2005 he served as chairperson of several department including Electrical Engineering, Computer Engineering, Software Engineering, and Computer Science. Dr. Coulston lead the successful ABET accreditation of these programs over 3 review cycles. In 2013 Dr. Coulston led an interdisciplinary group of faculty to start a Game Development minor across the Penn State system. The following year Dr. Coulston took a sabbatical and served as a Distinguished Visiting Professor at the United States Airforce Academy in Colorado Springs.

He received the best paper award for Constructing Exact Octagonal Steiner Minimal Trees, at the Great Lakes Symposium on Circuits and Systems, April. Dr. Coulston co-authored *Design for Electrical and Computer Engineers: Theory, Concepts and Practic*e. New York: McGraw-Hill Higher Education, 2007, 336 pp., with Dr. Ralph Ford, chancellor and former director of the School of Engineering.

Kristine Csavina, PhD - **Teaching Professor, Mechanical Engineering.** Kristine (Kristy) Csavina has academic, clinical and industry experience that she brings to Colorado School of Mines. Dr. Csavina received a bachelor's degree in mechanical engineering from University of Dayton in 1992 and a Ph.D. in bioengineering from Arizona State University in 2003. Her research interests include motion analysis of human motion in movement disorders, orthopedics and sports, human motion aided by wearable technologies, and engineering education research in student learning and pedagogical approaches.

Csavina comes to CSM from Arizona State University, where she was associate director for engineering program innovation in The Polytechnic School Engineering and Manufacturing Engineering programs in the Ira A. Fulton Schools of Engineering. She was the lead instructor for the two-semester senior capstone design experience, where she taught design and professional skills and managed over 20 student teams on eProjects (industry-partnered capstone experiences). She was also active with the ABET accreditation, helping to develop the course assessment and program evaluation process for the department. Prior to ASU, Csavina was founding faculty in the U.A. Whitaker College of Engineering at Florida Gulf Coast University. As an assistant professor from 2007-2012, she helped develop the curriculum for the bioengineering design courses and for biomechanics, and was involved in teaching courses from the sophomore to senior levels. Csavina had active research in biomechanics in partnership with physical therapy faculty at FGCU, including studies with Parkinson's disease and stroke patients.

Brandon Dugan, PhD – Associate Professor, Geophysics. Brandon is a hydrogeologist who couples theory, experiments, and models to understand the interactions of fluids and solids in Earth's shallow crust. Brandon's research group has been using this approach to study natural resources (water, oil, and gas), natural hazards (landslides, earthquakes), and carbon storage. To inform and to test theoretical models and to collect experimental samples, Brandon regularly participates in geophysical, geological, and drilling field programs (11 total field projects, 4 as co-chief scientist). As an Earth science community member, Brandon is a member of the Environmental Protection and Safety Panel of the International Ocean Discovery Program, a member of the NSF GeoPRISMS Steering and Oversight Committee, and regularly reviews for journals and funding agencies. Brandon also served as a distinguished lecturer for Ocean Leadership to share ocean science with universities and communities. Before joining the Geophysics faculty at Colorado School of Mines, Brandon earned a bachelor's degree in geo-engineering (1997, University of Minnesota, Twin Cities) and a Ph.D. in geosciences (2003, Penn State University), completed a Mendenhall post-doctoral fellowship (2004, US Geological Survey), and was an assistant (2005-2012) and associate (2012-2016) professor of Earth Science at Rice University.

Gregory Fasshauer, PhD – Professor and Department Head, Applied Mathematics and Statistics. Greg Fasshauer is joining Mines as Professor and Head of the Department of Applied Mathematics and Statistics. Greg spent the last 19 years at the Illinois Institute of Technology in Chicago, where he was Professor and Associate Department Chair of Applied Mathematics. He holds Diplom and Staatsexam degrees in Mathematics and English from the University of Stuttgart, Germany, as well as an MA and a PhD, both in Mathematics, from Vanderbilt University. Before joining IIT he spent two years as a visiting assistant professor in the Department of Mathematics at Northwestern University.

Greg's research interests lie in computational mathematics with a particular focus on the theory and applications of kernel-based approximation methods. His research has been supported by the NSF and he has authored two major monographs on kernel-based methods. Greg is also passionate about teaching, and at IIT he was able to help create an environment for excellence in teaching and learning through his activities as Director of Undergraduate Studies of the Applied Math Department and Distinguished Teaching Fellow of the College of Science.

Tülay Flamand, PhD – Assistant Professor, Economics and Business. Tulay Flamand has received her Ph.D. from the University of Massachusetts Amherst in Management Science. Previously, she obtained her B.S degree in Mathematical Engineering at Yıldız Technical University, and her M.S degree in Industrial Engineering at Istanbul Technical University. Her research interests lie at the interface of operations management and marketing science with a strong methodological anchor in analytics and optimization. Particularly, her research focuses on retail analytics and novel optimization models for store-wide shelf space allocation and the maximization of consumer impulse purchases.

Diego Armando Gomez Gualdron, PhD – Assistant Professor, Chemical and Biological Engineering. Diego A. Gómez Gualdrón, Ph.D., is a newly hired Assistant Professor in the Department of Chemical and Biological Engineering at Colorado School of Mines. A highly interdisciplinary researcher positioned at the intersection of chemical engineering, materials science and chemistry, he has contributed to the development of nanomaterials for applications in energy technologies and chemical processing. Dr. Gómez-Gualdrón has accomplished this through the application and development of molecular modeling and

other computational methods to investigate and predict the thermodynamic, kinetic and electronic properties of materials.

Dr. Gómez-Gualdrón obtained his B.S. in Chemical Engineering from Universidad Industrial de Santander in Colombia and his Ph.D. in Materials Science and Engineering from Texas A&M University. During his Ph.D., he investigated ways to design "chiral selective" catalysts that could produce structurally homogeneous carbon nanotube samples during large-scale, chemical vapor deposition synthesis. For this work he was granted in 2012 the Silver Graduate Student Award from the Materials Research Society (MRS). As a Postdoctoral Fellow at Northwestern University, Dr. Gómez-Gualdrón applied his expertise in molecular modeling, in close collaboration with experimentalists, to develop new metal-organic frameworks for applications in storage of gas fuels, carbon capture and catalysis. For this work he was granted in 2014 the Outstanding Researcher Award from the International Institute for Nanotechnology (INN).

Dr. Gómez-Gualdrón has authored or co-authored a patent, a book chapter and more than twenty peer-reviewed publications in prestigious journals. He is a passionate teacher and mentor with extensive experience advising graduate and undergraduate student researchers.

Richard Hunt, PhD – Assistant Professor, Economics and Business. Richard ("Rick") A. Hunt (Ph.D., University of Colorado at Boulder) will join the Colorado School of Mines as an Assistant Professor of Economics and Business, in January 2017. Previously, he held an appointment in Strategic Management and Entrepreneurship, at Virginia Polytechnic Institute in Blacksburg, VA, where he taught undergraduate and graduate courses in strategic management and entrepreneurship. He also served as VT's Faculty Research Director at the Center for Innovation and Entrepreneurship.

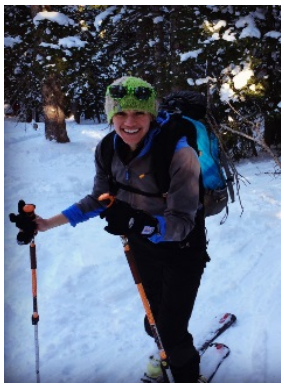
Rick's research examines the intersection of entrepreneurship, innovation and strategy, including entrepreneurial environments, advantageous knowledge, new sector formation, modes of market entry, and early-stage operational behavior. His approach employs transactions as the unit of analysis in order to capture meso-level effects, and he often juxtaposes contemporary data and distant, historical data in order to overcome proximity biases and inject a longitudinal dimension into the inquiry. Rick has published his research in *Journal of Management Studies, Organizational Science, Strategic Entrepreneurship Journal, Journal of Small Business Management, European Innovation Journal, Frontiers of Entrepreneurship Research, Journal of Entrepreneurial Finance, and the Academy of Management's Best Paper Proceedings*. His work has received more than a dozen best paper awards including recognition as the outstanding doctoral dissertation of 2014 by the Academy of Management.

Prior to his doctoral studies at CU-Boulder, Rick worked in Indonesia, Hong Kong, and the United States as a finance and planning executive in the pharmaceutical and high-tech sectors. He was also the co-founder and president of a successful start-up that provides customized environmental services throughout the Western United States. In addition to his Ph.D., Rick holds degrees from Rice (B.A.), Harvard (M.A.) and Stanford (M.B.A.).

Kristoph-Dietrich Kinzli, PhD – Teaching Professor, Civil and Environmental Engineering. Kristoph-Dietrich Kinzli joined CSM as a Teaching Professor in the Department of Civil and Environmental Engineering in December, 2016. He graduated from Colorado State University with a Bachelor's of Science in civil engineering in 2003. During his time as a Bachelor's student he also studied at the Technische Universitaet Dortmund, in Dortmund Germany. His MS in civil engineering (2005), MS in Fisheries Biology (2008), and Ph.D in Civil Engineering (2010) were also obtained at Colorado State University. His dissertation research focused on improving irrigation water use efficiency along the Middle Rio Grande. In 2008 Dr. Kinzli received the Borland Graduate Research Award in Hydraulics. He was also the recipient of National Science Foundation Fast Track Scholarships in 2006 and 2007.

Dr. Kinzli has worked on research projects in Colorado with the Department of Fish and Wildlife, and in New Mexico with the Interstate Stream Commission, the Bureau of Reclamation, New Mexico Tech, and the Middle Rio Grande Conservancy District. To date, Dr. Kinzli has presented his research at over 45 conferences and published 18 peer reviewed articles in engineering journals such as: River Research and Applications, ASCE Journal of Irrigation and Drainage Engineering, and Agricultural Water Management. He is currently an Editor for Irrigation and Drainage - Managing Water for Sustainable Agriculture. He is a member of ASCE, ASEE, AWRA, USCID, Chi Epsilon, and the American Fisheries Society.

Dr. Kinzli is highly involved with the ASCE ExCEEd Teaching Workshop and has been selected as an assistant mentor three times (2012, 2014, 2016). In 2014 Dr. Kinzli was awarded the ASCE ExCEED New Faculty Excellence in Teaching Award and in 2015 he was selected to attend the NAE Frontiers of Engineering Education Symposium. His favorite classes to teach include Senior Design, Fluid Mechanics, Hydrology, Hydraulics, and River Mechanics. His research interests include engineering teaching pedagogy, open channel hydraulics, river mechanics, stream rehabilitation, groundwater, water resources, agricultural water use, fisheries biology, and ecological restoration.



Adrianne Kroepsch, PhD – Assistant Professor, Liberal Arts and International Studies. I am an environmental governance scholar with interdisciplinary training and a research focus on the relationship between extractive industries and communities in the American West. More specifically, I study unconventional oil and gas extraction in Colorado with a focus on conflict and compromise between community, industry, and state actors, as partly mediated by technology. Additional areas of study include environmental and science communication, water politics and policy, community learning and adaptation to wildfire, and the human relationship to the subsurface – all with an emphasis on the American West. I draw theoretically and methodologically from political ecology, science and technology studies, environmental history, and environmental policy. I prioritize cross-disciplinary collaboration and public engagement in my work. I earned my PhD and MA from the University of Colorado in Environmental Studies and Geography, respectively. While at C.U., I was also a graduate instructor and researcher at the Center of the American West and a co-founder of the Colorado Water and Energy Center. My undergraduate degree is in Science and Technology Studies from Cornell University. Between undergraduate and graduate studies, I worked for several years as a journalist covering science and technology policy in Washington, D.C.

Karin Leiderman, PhD – Assistant Professor, Applied Mathematics and Statistics. Karin Leiderman has been an Assistant Professor of Applied Mathematics in the School of Natural Sciences at the University of California Merced for the past four years. Prior to joining the Faculty at UC Merced in 2012, she was a Visiting Assistant Professor in the Department of Mathematics at Duke University (2010-2012) and received her Ph.D. in Mathematics from the University of Utah in 2010. Dr. Leiderman's research is aimed at understanding biological systems through the use of mathematics, mathematical modeling, and numerical computation. For her Ph.D. thesis, she developed a spatial-temporal mathematical model of the formation of blood clots under flow and was awarded the SIAM student paper prize for this work. For her postdoc, she worked to develop numerical methods for fluid/structure interaction problems involving low Reynolds number and porous media flow. Dr. Leiderman has general interest and expertise in computational modeling of blood clotting, biological fluid dynamics, biomechanics, biochemistry, flow through porous materials, and scientific computing.

Alexei Milkov, PhD - Professor, Geology and Geological Engineering. Dr. Alexei V. Milkov is a Full Professor and Director of Potential Gas Agency at Colorado School of Mines. After receiving Ph.D. from Texas A&M University (2001), Dr. Milkov worked for three E&P companies (BP, Sasol and Murphy Oil), explored for conventional and unconventional oil and gas in 30+ basins on six continents and participated in the discovery of 4 Billions BOE. He has deep expertise in exploration risk analysis, resource assessments, petroleum systems and oil&gas geochemistry. Dr. Milkov has 130 publications (including 43 peer-reviewed articles) and received several industry awards for his contribution to petroleum geosciences.

Jennifer L. Miskimins, PhD - Associate Professor, Petroleum Engineering. Dr. Jennifer L. Miskimins is an Associate Professor and Assistant Department Head in the Petroleum Engineering Department at the Colorado School of Mines. Dr. Miskimins holds BS, MS, and PhD degrees in petroleum engineering and has over 25 years of experience in the petroleum industry. Between her BS and graduate degrees, she worked for Marathon Oil Company in a variety of locations as a production engineer and supervisor. Dr. Miskimins started teaching at CSM in 2002 and was full-time until 2013 when she returned to industry. From 2013-2016, she continued to hold a part-time appointment at CSM, advising research and graduate students, while working for Barree & Associates. In 2016, she returned full-time to the university.

Dr. Miskimins specializes in well completions, stimulation, hydraulic fracturing, and associated production issues. She is the founder and current co-Director of the Fracturing, Acidizing, Stimulation Technology (FAST) Consortium and also co-directs the Center for Earth Materials, Mechanics, and Characterization (CEMMC). Her research interest focus on the optimization of stimulation treatments and the importance of such on associated recovery efficiencies.

Dr. Miskimins is currently the Completions Technical Director on the SPE International Board of Directors. She was an SPE Distinguished Lecturer in 2010-2011 and 2013-2014 on hydraulic fracturing in unconventional reservoirs. Dr. Miskimins serves on a variety of conference organizing committees and as a technical editor for various journals. She is a registered Professional Engineer in the State of Colorado (License #36193).

Ashlyn Munson, PhD – Teaching Associate Professor, Applied Mathematics and Statistics. Ashlyn Munson completed her PhD in Statistics at the Colorado School of Mines, under the advising of Dr. William Navidi, where she studied efficient methods of case-control sampling. She has spent the last seven years as an Assistant Professor in the Mathematics department at Pacific Lutheran University in Tacoma, WA, where she advised the Statistics minor within the Natural Sciences. While at PLU, her research efforts were mainly focused on the assessment and development of new curriculum methodology in the STEM disciplines. Teaching is her passion, and as an Associate Teaching Professor she hopes to collaborate with her new colleagues in a variety of classes. Although she will miss the Pacific Northwest, she and her family are very excited about returning to Golden, CO and Colorado School of Mines.

Oyvind Nilsen, PhD – Teaching Associate Professor, Mechanical Engineering. Dr. Oyvind Nilsen grew up in Tønsberg, Norway. He has extensive background as an engineer, scientist, and educator, with interests in product development and innovation. He earned his PhD from University of Colorado in Mechanical Engineering, and also has mechanical engineering degree from his home country of Norway. His research experience includes mechanics of materials, optics, sensors, physical modelling and MEMS and micro fluidics.

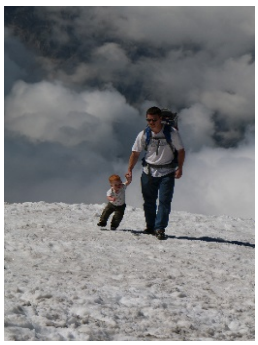
He was recently the Director of Manufacturing and Co-founder of BiOptix Diagnostics Inc. in Boulder, Co, as well as an adjunct faculty at the University of Colorado, Boulder, in the Mechanical Engineering Department. During his time at BiOptix he took a technology developed earlier in graduate school and developed it into a commercial product, an optical biosensor system. His key expertise is in design, manufacturing, advanced system integration, thermal and fluidic system design and optics and sensors. In addition to the professional experience at BiOptix, Dr. Nilsen has industrial experience from Norway, working mainly designing tools for the oil industry, as well as time as a Naval Officer.

Andrew Pederson, MT – Teaching Associate Professor, Economics and Business. Andy Pederson, age 31, has been working with Investment Evaluations Corporation since March of 2010. In 2007 he received his B.A. in Economics from Pacific Lutheran University and has a Masters degree in Taxation from Denver University in the College of Law, August 2012.

From 2012 thru 2015 Andy has worked as an Adjunct Professor in the Division of Economics and Business teaching Engineering Economics to undergraduate students at Colorado School of Mines (CSM). In 2011 Andy served as a Teaching Assistant for the academic courses taught in the Division of Economics and Business, and the Division of Chemical and Biological Engineering at CSM. As an Adjunct Professor, Andy lectured and worked in course development and assisting students in building their understanding of the concepts presented in class. More than 1200 combined undergraduate and graduate students have taken this course over the last three years at CSM.

While working with Investment Evaluations Corporation, Andy has lectured in the Colorado School of Mines public short courses through SPACE, as well as in-house courses for over 20 companies teaching Economic Evaluation and Investment Decision Methods. Andy is also responsible revision work leading in part to the 15th Edition of the course textbook Economic Evaluation and Investment Decision Methods 14th Edition by Stermole & Stermole

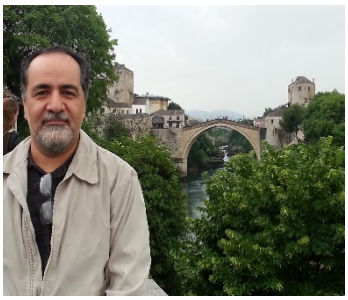
Prior to working for Investment Evaluations Corporation Andy worked for the YMCA of Pierce and Kitsap County's where Andy gained management and budgeting experience, managing a branch, writing the budget, and developing and teaching programs for adults as well as running youth development programs for inner city youth.



Andrew Petruska, PhD – Assistant Professor, Mechanical Engineering. Andrew Petruska graduated from Carnegie Mellon University, Pittsburgh, USA in 2005 with dual B.S. degrees in Mechanical Engineering and Physics as well as an M.S. degree in Mechanical Engineering. For the next four years, he worked as a Design Engineer at ATK Launch Systems in Utah, USA and was responsible for designing, testing, and qualifying solid rocket motor components. In 2010, he enrolled at the University of Utah, Salt Lake City, USA and was awarded an NSF IGERT Fellowship to study noncontact magnetic manipulation. He received his PhD in 2014 after developing the first real-time reconfigurable magnetic manipulation system. In 2014, he joined the Multiscale Robotics Laboratory in the Institute of Robotics and Intelligent Systems at ETH Zurich and was awarded a Max Planck ETH Center for Learning Systems fellowship, where he currently investigating the magnetic manipulation of needles, endoscopes, and catheters. His research interests are in the areas of complex system modeling and design, dynamics and control, advanced magnetic manipulation, and search and rescue robotics.

Angus Rockett, PhD – Professor and Department Head, Metallurgical and Materials Engineering. Angus Rockett is the Head of the Department of Metallurgy and Materials Engineering and the Colorado School of Mines and an Emeritus Professor in the Department of Materials Science and Engineering at the University of Illinois. Angus holds a Sc.B. in Physics from Brown University (1980) and a Ph.D. in Metallurgy/Materials Science and Engineering from the University of Illinois (1986). He has won numerous awards for teaching and advising from the

College of Engineering at the University of Illinois. He was President in 2011 and is a Fellow of the American Vacuum Society; was the 2012 Program Chair and the 2016 General Chair of the IEEE Photovoltaic Specialists Conference; and was a rotating Research Program Administrator at the Office of Basic Energy Sciences at the U.S. Department of Energy in 2000. He has studied the basic science of solar cell materials and the operation of solar cell devices for 28 years using virtually all of the common materials microchemical and microstructural analysis techniques from SIMS and TEM to STM and photoluminescence. Angus' group has also developed numerical models of photovoltaic and photoelectrochemical cells. He has also worked on self-assembled nanostructures, MEMS devices, silicide reactions for VLSI contacts, Si-Ge oxidation kinetics for gate dielectrics, superconducting cavity resonators as temperature probes, and optical spectroscopic analysis of combustion. He is an AVS Short Course Instructor for the Photovoltaics and Sputter Deposition of Thin Films short courses and has given short courses at the IEEE Photovoltaic Specialists Conference, the Materials Research Society, and in China, Mexico, Sweden, Israel, Brazil, Argentina, Korea and elsewhere. He has published over 200 papers and has given many invited and plenary talks on subjects related to his research. Angus is also a program evaluator for the Accrediation Board for Engineering and Technology (ABET) and an associate editor of the Journal of Photovoltaics.



Jamal Rostami, PhD – Associate Professor and Timothy J. Haddon/Alacer Gold Chair, Mining Engineering. Dr. Rostami was born in Tehran and was admitted to university of Tehran (UT), Faculty of Engineering (Fanni) in 1983 and started his studies towards Mining Engineering and graduated first in his class in 1987. He subsequently started his graduate degree at Colorado School of Mines (CSM) in 1989 and got his MSc and PhD in mining engineering in 92 and 97, respectively. He was hired as a research faculty at CSM immediately after his graduation and continued at this position till 2000. Simultaneously, he was a faculty at Univ. of Tehran from 1988 through 2002 teaching in mining engineering dept. Dr. Rostami was a full time consultant with major A&E companies from 2002 till 2007 when he joined the Pennsylvania State University (PSU), as Centennial Chair of Carrier Development in Mining at the department of Energy and Mineral Engineering. He has over 26 years of experience in design, management, research, and teaching in the field of mining, tunneling, and underground construction. Dr. Rostami is a registered Professional Engineering (PE) in Maryland, Pennsylvania, and Virginia. He has published over 50 peer reviewed journal publication and 150 conference papers and many technical reports. He is a member of SME, ASCE, ARMA, ISEE, IRSME, IRRMS, and TRB AFF-60 tunneling committee. He is the 2013 chair of the professional engineering exam committee, and has been a member of the structure and governance (S&G) as well as Education and professional development strategic committee of the society of mining engineers (SME). Dr. Rostami was named the recipient 2014 of the Pittsburgh Coal Mining Institute of America (PCMIA) 2014 Stephen McCann Memorial Educational Excellence Award. He is one of the editors of Tunneling and Underground Space Technology, and member of editorial board of Mining Engineering and Rock Mechanics and Rock Engineering journals. He is also the founder of Professors Without Borders (PWOB) and a founding member of Iranian American Academics and Professionals (IAAP), and member of the board of directors of the Child Foundation.

Gregory Rulifson, PhD – Teaching Assistant Professor, Liberal Arts and International Studies. Greg Rulifson earned his PhD at CU Boulder by studying how students' understanding of the relationship between social responsibility and engineering changed throughout college. Before his PhD study, he worked as a structural engineer in the San Francisco Bay Area where he earned his professional engineer license and a healthy

respect for contractors in urban contexts. Greg earned his bachelor's degree in Civil Engineering with a minor in Global Poverty and Practice from UC Berkeley where he developed a strong desire to use engineering to facilitate developing communities' capacity for success. He brings significant global experience: with GeoHazards International, he helped coordinate design between stakeholders for the Tsunami Evacuation Raised Earthen Park in Padang, Indonesia; in Western Nicaragua, he engineered the structure of a rammed-earth community center in a rural village by collaborating with US and Nicaragua-based NGOs, contractors, and community.

At the School of Mines, Greg teaches in Humanitarian Engineering, EPICS, and core LAIS courses. He co-advises the Mines Without Borders team and is a liaison to poverty alleviation organizations through the Posner Center for International Development in Denver.

Joseph Samaniuk, PhD – Assistant Professor, Chemical and Biological Engineering. Joe recently completed a postdoc in the Soft Materials group within the Department of Materials at ETH Zürich. His research there focused on the dynamics of soft matter systems at fluid-fluid interfaces for the purpose of developing advanced materials such as conductive thin films, and 2D polymer membranes.

Joe obtained his PhD in Chemical Engineering at the University of Wisconsin-Madison for his work investigating the rheological properties of lignocellulosic biomass in the laboratory of Daniel Klingenberg. His MS and BS degrees in Chemical Engineering were earned at Virginia Tech. After obtaining his doctorate he was awarded a Pegasus Marie Curie Postdoctoral Fellowship from the Belgian science foundation Fonds Wetenschappelijk Onderzoek (FWO) to investigate the use of microrheological methods at fluid-fluid interfaces in the laboratory of Jan Vermant, within the Department of Chemical Engineering at KU Leuven.

At ETH Joe continued to work on interfacial phenomena with a greater focus on developing advanced materials from systems at fluid-fluid interfaces. His research interests focus on linking microstructure and material behavior; links that enable one to design new experimental methods for the laboratory, formulate novel advanced materials, and propose new strategies for solving important industrial problems.

Meenakshi Singh, PhD - Assistant Professor, Physics. Meenakshi Singh is a post-doctoral scholar at Sandia National Laboratories. Her research targets the development of semiconducting quantum computers with a focus towards donor based spin qubits. She graduated with a Ph. D. in Physics from the Pennsylvania State University in 2012. Her Ph. D. thesis was focused on quantum transport in nanowires. Meenakshi has co-authored more than a dozen publications including an invited chapter to the book “Superconductors – Properties, Technology and Applications” and has received several awards for excellence in coursework and research. In addition to research, Meenakshi is interested in science education and outreach. She has mentored five undergraduate students participating in NSFs Research for Undergraduates (REU) program. Her service record includes serving as treasurer for the Physics and Astronomy for Women Society at Penn State that provides a forum to discuss issues facing women seeking scientific degrees and careers. She has continuing research interest in superconductivity and macroscopic quantum phenomena - with a view towards hybridizing superconductors with other systems to access novel phenomena and applications.

Bethany Wilcox, PhD – Teaching Assistant Professor, Physics. After completing her B.A. in physics and astronomy, Bethany received her Ph.D. in Physics from University of Colorado Boulder. Her thesis research was in the field of Physics Education Research with a specific focus on student learning in upper-division undergraduate physics courses. During her graduate career, she studied

students' use of sophisticated mathematical tools during physics problem solving in order to better understand the challenges that students encounter in this process. She also developed and demonstrated the statistical validity of a multiple-response conceptual assessment designed to measure students' reasoning around topics in upper-division electrostatics. After completing her Ph.D. in 2015, Bethany accepted a post-doctoral position during which she was responsible for the statistical validation of another research-based assessment, this time targeting students views on the nature of experimental physics. This work involved the collection, management, and analysis of student responses from multiple courses and institutions across the country. In addition to her research activities, Bethany has also engaged in a number of teaching, service, and outreach activities. She is an organizing member of the University of Colorado Women in Physics group and has volunteered with several of University of Colorado's physics and astronomy outreach programs. She is also a strong advocate for working to make physics a discipline that explicitly supports and encourages the participation of historically underrepresented groups, such as women and minorities.

Jennifer Wilcox, PhD – Associate Professor, Chemical and Biological Engineering. Jennifer Wilcox is an Associate Professor in the Chemical and Biological Engineering Department at the Colorado School of Mines. Her Ph.D. in Chemical Engineering in 2004 is from the University of Arizona, and her B.A. in Mathematics in 1998 is from Wellesley College. She received an ARO Young Investigator Award (Membrane Design for Optimal Hydrogen Separation), an ACS PRF Young Investigator Award (Heterogeneous Kinetics of Mercury in Combustion Flue Gas), and an NSF CAREER Award (Arsenic and Selenium Speciation in Combustion Flue Gas). Within her research group, she focuses on trace metal and CO_2 capture. Her research involves the coupling of theory to experiment to test newly designed materials for sorbent or catalytic potential. She has served on a number of committees including the National Academy of Sciences and the American Physical Society to assess CO_2 capture methods and impacts on climate. She is the author of the first textbook on Carbon Capture, published in March 2012.