

## JOHN C. MASCARO FELLOWSHIP

### International Development Policy (IDP) BADGE

Dr. David Fraser & Dr. Müge Kökten Finkel



**Dr. Müge Kökten Finkel** is the Director of the Masters in International Development Program and a faculty member at the Graduate School of Public and International Affairs, and the Co-Director of the Gender Inequality Research Lab (GIRL) at the University of Pittsburgh. Her expertise includes gender and development, poverty and inequality, and Japanese politics. Previously, she worked as a Social Development Specialist for the MENA Region at the World Bank. Since 2015, she has worked with the United Nations Development Programme (UNDP) to analyze global trends in gender equality in public administration. Dr. Finkel holds a Ph.D. in Political Science from the University of Virginia.



**Dr. David Fraser** is a Scholar Mentor in the University Honors College. His areas of research interest include implicit learning, the effects of stress on memory and cognition, and the neurophysiological basis of post-partum depression. He was previously a faculty member at a small liberal arts college where he was director of the honors program and taught neuroscience, biology, and scientific literacy. At Pitt, he focuses on mentoring, teaching, and building undergraduate programs that help students move across traditional academic boundaries. Dr. Fraser holds a Ph.D. in Neuroscience from Northwestern University.

### A new approach to decision making under uncertainty with applications to electric grid operation



**Dr. Oliver Hinder** is an assistant professor in the Industrial Engineering Department at the University of Pittsburgh. Before joining the University of Pittsburgh, he was a visiting postdoctoral researcher at Google in the Optimization and Algorithms group in New York. In 2020, he received a Ph.D. from the Department of Management Science and Engineering at Stanford University, where Professor Yinyu Ye was his advisor. His research focuses on optimization: a field that creates software tools for making predictions and decisions in complex environments. He is motivated by problems in network optimization and machine learning that push current capabilities. For example, he aims to build new tools for electricity grid operators to handle the uncertainty created by wind and solar energy sources. These tools will help accelerate the transition to a fully renewable electricity grid.

## JOHN C. MASCARO SCHOLARSHIP

### Development of a Digital Twin for Green Energy Management and Security in a Picogrid Laboratory



**Dr. Robert Kerestes** is an assistant professor in the Electrical and Computer Engineering department and the director of the electrical engineering undergraduate program. His research is balanced between the classroom and the laboratory: engineering education, innovative stem curricula development, mathematical modelling and simulation of physical systems, power systems control and stability, electric machinery, power quality, renewable energy technologies, and smart grid technology. Prior to his appointment as assistant professor in 2016, he was an adjunct professor in the Department of Electrical and Computer Engineering and a Senior Engineer at Emerson Process Management, where he was the project lead for the dynamic simulation of thermal power plants, electrical power systems, and microgrids.

### Electric Motor Materials and Designs for a Sustainable Electrified Future

#### **Paul Ohodnicki & Brandon Grainger**



**Dr. Brandon Grainger** is currently an Eaton faculty fellow and an assistant professor and associate director of the Electric Power Engineering program in the Department of Electrical and Computer Engineering at the University of Pittsburgh (Pitt), Swanson School of Engineering. He is also the associate director of the Energy GRID Institute. He holds a PhD in electrical engineering with a specialization in power conversion. He also obtained his master's degree in electrical engineering and bachelor's degree in mechanical engineering (with minor in electrical engineering) all from Pitt. He was also one of the first original R.K. Mellon graduate student fellows through the Center for Energy at Pitt.



**Dr. Paul R. Ohodnicki Jr.** is currently an associate professor in Mechanical Engineering and Materials Science department at the University of Pittsburgh and the Engineering Science program director. Prior to his current role, he was a materials scientist and technical portfolio lead in the Functional Materials Team of the Materials Engineering & Manufacturing Directorate of the National Energy Technology Laboratory. He graduated from the University of Pittsburgh in 2005 with a B.Phil. in engineering physics and a B.A. in economics and subsequently earned his M.S. (2006) and Ph.D. (2008) in materials science and engineering from Carnegie Mellon University. Ohodnicki has published more than 130 technical publications and holds more than 10 patents, with more than 15 additional patents under review. He also is the recipient of a number of awards and recognitions, including the Federal Employee Rookie of the Year Award (2012), Presidential Early Career Award in Science and Engineering (2016), and the Advanced Manufacturing and Materials Innovation Category

Award for the Carnegie Science Center (2012, 2017, 2019). In 2017, he was a nominee for the Samuel J. Heyman service to America Medal.

### Introduction to Engineering for Humanity



**Ian Nettleship** is an associate professor in the Department of Mechanical Engineering and Materials Science at the University of Pittsburgh. He is the Chair of the Engineering for Humanity Certificate Program at the University of Pittsburgh and a Chair of the Humanitarian Activities Network of the American Ceramics Society. He teaches materials processing and manufacturing, sustainable materials production and powder processing of materials. As a member of Pitt- Non-Conventional Materials and Appropriate Technologies group (Pitt-NOCMAT), he combines materials research with service learning. His projects include manufacturing of ceramic water filters for water treatment in low-income communities and bamboo construction materials for low-cost housing. He is the founder of the Ceramic Filter Project and the Vice President of a Pittsburgh based NGO, Ceramic Water Filter Solutions, that establishes and supports small filter factories in low-income

communities. They currently have factories in Mexico, Nigeria, Nepal and Honduras.

## JOHN C. MASCARO LECTURESHIP

### Sustainable Food Systems Course



**Corey Flynn's** passion for nutrition and sustainability has led her in many directions. She holds a Master's degree in Public Policy and Management from the University of Pittsburgh where she concentrated her studies on food systems and food policy. During this time, she also received the 2019 University of Pittsburgh Staff Sustainability Award. She is a registered Nutrition and Dietetics Technician and Certified Dietary Manager. Corey grew up in Northern California in a rice farming family surrounded by fresh food. In addition to her degrees in nutrition and public policy she holds a Bachelor of Art in Journalism and Photography from California State University, Sacramento and spent time as a journalist in Lodi, California home of the Grape Festival. Food has always been a central part of her life.

### Writing Sustainability



**Steven LeMieux** teaches composition, digital media, and professional communication courses. His research is focused on rhetorical theory, environmental and digital rhetoric, experimental design, and ecocomposition. He is currently working on a book project that argues for the rhetorical importance of interruption and the necessity of exploring new modes of relation in a world undergoing radical climate change. He earned his PhD in Rhetoric and Composition from The University of Texas at Austin.

### Citrus juices as an environmentally benign catalyst for chemical transformations.



**Dr. Manisha Nigam** is an associate professor at the University of Pittsburgh Johnstown. Her research is mainly pedagogical in nature, focused on promoting green chemistry and sustainability education in the real world. Her overall vision is to raise awareness of green and sustainable principles and practices within the campus community. She is engaging students in a broad, interdisciplinary manner that will enable them to apply their education to their everyday lives on and off campus and in their personal and professional worlds. She is also striving to leverage student efforts at promoting the long-term sustainability of the campus community.