

**Addendum #4**  
**Brief Biographies of New WPI Faculty**  
**Fall 2018**

**Fulbright Scholars**



**Konstantin Todorov Balashev, Visiting Research Professor (Physics)**

B.S., M.S., Biotechnology, Sofia University, 1990, 1993  
M.S., Bioengineering, Technical University of Sofia, 1993  
Ph.D., Physical chemistry, Sofia University, 1998

Dr. Balashev received his Ph.D. from Sofia University and after that he continued his research as a Postdoctoral researcher at Copenhagen University, Denmark, where he worked for two years on a project concerned with some studies of lipid-lipase interactions, enzyme kinetics, Atomic force microscopy (AFM) and Scattering of synchrotron X-ray. Later on for total period of two and a half years he also worked on some similar projects at the University of Michigan and Drexel University, respectively. In 2007, he was appointed as an Associate professor of physical chemistry at the Faculty of Chemistry and Pharmacy, Sofia University and in 2015 was promoted to Full professor. In 2017 he was awarded Fulbright scholarship and he will do research as a Fulbright scholar at WPI with host professors, Nancy Burnham (Department of Physics), Arne Gericke (Department of Chemistry and Biochemistry) and Qi Wen (Department of Physics). The title of his project is “Atomic Force Microscopy for studying the mechanical response of living cells exposed to the action of viper toxin (Vipoxin)”.

**Muhammad Aslam Buzdar, Visiting Research Professor (Chemistry and Biochemistry)**



B.Sc., Biology, University of Balochistan Quetta, Pakistan, 2003  
M.Sc., Biochemistry, University of Balochistan, Quetta, Pakistan, 2005  
Ph.D., Microbiology, UNESCO Center of Marine Biotechnology, Ocean University of China, 2012

Dr. Muhammad Aslam obtained his Master in Biochemistry at the University of Balochistan, Pakistan and performed his PhD research at the UNESCO Center of Marine Biotechnology, Ocean University of China in 2012. His thesis focused on the use of marine microbes to identify novel antibiotics and killer toxin proteins and determine their mechanism of action. He is now an Associate Professor and Dean of faculty at Lasbela University (LUAWMS-Pakistan). He teaches Biochemistry and Biotechnology to undergraduate and graduate students, supervise research thesis and he is also very involved in administrative work especially in curriculum design and policy formulation.

Supported by the Fulbright Scholar Program, Dr. Aslam joined Prof. Argüello's lab in December 2017. He is studying the homeostasis of  $\text{Cu}^+$  in the pathogenic bacteria *Pseudomonas Aeruginosa*. In particular, he is exploring the role of  $\text{Cu}^+$  distribution proteins in biofilm formation and bacterial virulence using system biology approaches and model organisms.

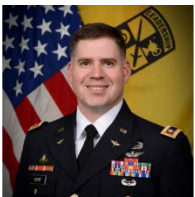
## Military Personnel



Lt. Col. Jack Skiles II

Airman Leadership School, Aviano AB, Italy, 1999  
B.S., Professional Aeronautics, Embry Riddle Aeronautical University, 2001  
Squadron Officer School, Maxwell AFB, AL, 2007  
M.S., Education, Trident University International, CA, 2009

Lt Col Jack Skiles II is the Commander, Air Force Reserve Officers Training Corps Detachment 340 and Professor of Aerospace Studies at Worcester Polytechnic Institute, Worcester, MA. His responsibilities include leading a cadre of professionals that recruit, educate, and train cadets to become officers in the United States Air Force. Lt Col Skiles entered the Air Force in 1996 as a Fire Fighter at Laughlin AFB, TX. He received his commission through Air Force Reserve Officer Training Corps upon graduating from Embry Riddle Aeronautical University with a degree in professional aeronautics. Lt Col Skiles is B-1B Weapons Systems Officer with more than 2,500 hours. Most recently he was the Deputy Director, Range Support Nevada Test and Training range, Nellis AFB, NV.



MAJ Adam D. Heppe

B.S., Science in Systems Engineering  
MBA

MAJ Adam Heppe is a native of Massachusetts and received his commission from the United States Military Academy at West Point. He has served in series of command and staff positions and currently serves as the Professor of Military Science at Worcester Polytechnic Institute. After graduating from flight training and the Aviation Officer Basic Course at Fort Rucker, Alabama, MAJ Heppe served as an AH-64 Attack Platoon Leader and Company executive officer in Katterbach, Germany where he deployed in support of Operation Iraqi Freedom with the 1st Infantry Division. After completing the Aviation Captain's Career Course, MAJ Heppe deployed again to Iraq as an intelligence officer and AH-64 Troop Commander with 4th Squadron, 3rd Armored Cavalry Regiment. MAJ Heppe then served as an Observer, Coach, Trainer (OC-T) at the Joint Multi-national Readiness Center in Hohenfels, Germany for three years. After completing the Command and General Staff College at Fort Leavenworth, KS, MAJ Heppe served as an AH-64 Battalion Operations and Executive Officer and Brigade Operations Officer in the 101st Combat Aviation Brigade at Fort Campbell, KY where he deployed to Afghanistan in support Operation Freedom's Sentinel. Along with numerous awards and decorations, MAJ Heppe has earned the Combat Action Badge, the Senior Aviator Badge, and the Air Assault Badge.

## Continuing Non-Tenure Track Faculty Members, Visiting Faculty Members, and Others with Teaching Responsibilities

### Engineering

#### **Electrical and Computer Engineering**



Yarkin Doroz, Assistant Teaching Professor

B.S., Electrical Engineering, Sabanci University, 2009

M.S., Computer Science & Engineering, Sabanci University, 2011

Ph.D., Electrical & Computer Engineering, Worcester Polytechnic Institute, 2017

Dr. Doroz was a research scientist at the New Jersey Institute of Technology after receiving the PhD from WPI. He has been collaborating with The University of Michigan and MIT on machine learning using homomorphic encryption schemes. His research work has been published in the *IEEE Transactions on Computers, Designs, Codes and Cryptography* and *Cryptographic Hardware and Embedded Systems*. Dr. Doroz will be teaching a variety of courses in the ECE Department this academic year.



Seyed A. Zekavat, Visiting Professor

B.S., Communication, Shiraz University

M.S., Communication, Sharif University of Technology

Ph.D., Communication, Colorado State University

Professor Zekavat (Reza) received his PhD from Colorado State University. He is the Author of the textbook “Electrical Engineering: Concepts and Applications: published by Pearson, and the editor of the book “Handbook of Position Location: Theory, Practice and Advances,” published by Wiley/IEEE. He holds a patent on an active Wireless Report Positioning System. He has co-authored two books “Multi-carrier Technologies for Wireless Communications,” published by Kluwer, and “High Dimensional Data Analysis,” and ten book chapters in the areas of adaptive antennas, localization, and spectrum sharing. Professor Zekavat’s research interests are in wireless communications, positioning systems, software defined radio design, dynamic spectrum allocation methods, radar theory, blind signal separation and MIMO and beam forming techniques, feature extraction and neural networking. He is currently spending a year at WPI as he holds a tenured faculty position in electrical & computer engineering at Michigan Tech.

## Department of Mechanical Engineering



Hyunju Lee, Assistant Research Professor

B.S., Materials Science & Engineering, Pusan National University, 2007  
M.S., Materials Science & Engineering, Pusan National University, 2009  
Ph.D., Materials Science & Engineering, Pusan National University, 2014

Dr. Hyunju Lee has been a post-doctoral research fellow at Metal Processing Institute (MPI), Worcester Polytechnic Institute (WPI) since 2015. His current work is on the recovery of valuable metals from flue dust and other fines from mechanical treatment of e-scrap. This research will evaluate the potential for cost-effective and technologically viable methods for recovering metals and other valuable materials from the fines generated in e-scrap waste.



Carl Soderhjelm, Assistant Research Professor

M.S., Engineering Nanoscience, Lund University, 2013  
Ph.D., Materials Science and Engineering, Worcester Polytechnic Institute, 2017

Dr. Soderhjelm received his PhD from Worcester Polytechnic Institute where he continued with his research for the Advanced Casting Research Center (ACRC). As a Postdoctoral researcher he worked on particulate reinforcement of aluminum alloys as well as novel metal additive manufacturing process development. As appointed Associate Director of the ACRC his current research is focused on processing of semi-solid and liquid metals as well as incorporation of additive manufacturing into the aluminum die casting industry.



Qiang Wang, Assistant Research Professor

B.S., Chemistry, Hubei, China, 2003  
Ph.D., Chemistry, Wuhan University, 2010

My research relates to batteries, including Li-ion batteries, iron-based batteries, and copper-based batteries. My goal is to classify the electrochemical reaction process and mechanism in those batteries for the purpose of designing advanced batteries with high energy density. I also invent innovative technologies to reclaim useful elements from disused batteries, which can be used to develop new batteries.

## Arts and Sciences

### **Department of Biology and Biotechnology**

#### Benjamin Nephew, Research Assistant Professor, Biology & Biotechnology

B.S., Biology with minor in Chemistry, Hobart College, 1998

Ph.D., Biology, Tufts University Department of Biology, 2003

Dr. Nephew studies a transgenerational social stress based rodent model of postpartum depression/anxiety and associated early life stress. Current animal research includes the impact of social stress and air pollution on immune factors, neural connectivity, neuroendocrinology, and behavior. Dr. Nephew is testing the effectiveness of intranasal oxytocin and vasopressin in preventing/treating maternal and offspring depression/anxiety and social deficits. Ongoing clinical work explores the role of behavioral hormones and discrimination stress in postpartum depression/anxiety. Dr. Nephew is also using fMRI to determine the neural correlates of mindfulness based stress reduction and investigate the etiology of traumatic brain injury. Prior to coming to WPI, Dr. Nephew was an Assistant Professor at the Tufts University Cummings School of Veterinary Medicine.

### **Department of Computer Science**



#### Forrest T. Buzan, Assistant Teaching Professor

B.S., Mechanical Engineering, University of Illinois @ Urbana - Champaign, 1980

S.M., Mechanical Engineering, Massachusetts Institute of Technology, 1982

Sc.D., Mechanical Engineering, Massachusetts Institute of Technology, 1989

Dr. Buzan specializes in Robotic Systems, Automation, and Controls. He earned his doctorate at M.I.T. investigating the user interfaces for Telemanipulators operating across a time delay. Following that he taught at the University of Hawaii – Manoa where he received the 1991 Electrical Engineering Department teaching award. Returning to the main land he has worked primarily in startup companies developing controls for mobile robots and manipulators, forming and leading teams of controls engineers, and consulting in robotics, controls, and automation. His research interests are in robotic handling and path planning, localization, computerized instruction, and entrepreneurship.



#### Thérèse Smith, Assistant Teaching Professor

S.B., Physics, Massachusetts Institute of Technology, 1975

M.S., Biomedical Engineering, Iowa State University of Science and Technology, 1982

Graduate Certificate in College Instruction, University of Connecticut, Storrs, 2013

M.S., Computer Science and Engineering, University of Connecticut, Storrs, 2014

Ph.D., Computer Science and Engineering, University of Connecticut, Storrs, 2016

Dr. Smith's research interests are in computational medicine and computer science education. Her interest in data flow and other massively parallel computer architectures led to an application of Petri nets in biological networks. She is interested in finding biomarkers in datasets of relatively invasive tests such as a biopsy or blood test, and seeking a version of the biological signal in less invasive tests, such as a breath test or cheek swab. Dr. Smith

wishes to use her background as a CEO and entrepreneur to strengthen students' self-confidence. Prior to joining WPI, Dr. Smith was on the faculty at Central Connecticut State University. She earned her PhD in Computer Science and Engineering at the University of Connecticut in 2016.

## Department of Humanities and Arts



### Joseph R. Aguilar, Assistant Teaching Professor of English/Writing

B.A., English, Westmont College, 2001  
M.F.A., Fiction Writing, Oregon State University, 2007  
Ph.D., Literature and Creative Writing, University of Missouri, 2013

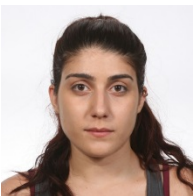
Joe Aguilar's teaching and research interests include fiction, poetry, creative nonfiction, folklore, science fiction, and the contemporary American novel. He's the author of *Half Out Where* and has published in *The Iowa Review*, *DIAGRAM*, *Tin House*, and *The Threepenny Review*. He's currently writing a novel about a boy band.



### Lindsay G. Davis, Assistant Teaching Professor of U.S. History

B.A., University of Vermont, 2005  
M.A.L.S., Dartmouth College, 2009  
Ph.D., American Studies, George Washington University, 2018

Lindsay Davis is an interdisciplinary historian whose research focuses on race, gender, and incarceration in the United States. Her dissertation interrogates the gendered and racial foundations of the American prison state and explores the cultural roots of the imprisonment of women from the 1930s to the 1970s. More specifically, Lindsay's research analyzes common sense understandings of American female prisoners, prisons, and carceral technologies depicted in news media, novels, and popular film. Lindsay's teaching and research interests include critical prison studies, 20th century American cultural history, feminist theory, and critical race theory. She is also interested in pedagogies of writing and incorporates these inquiries into each of her courses. Lindsay will be teaching a variety of courses at WPI, including *Law, Justice, and Society*, *American Social History*, and *The Shaping of Post-1920 America*. Prior to joining the faculty at WPI, Lindsay taught in the Women's and Gender Studies Department at the University of Massachusetts Dartmouth. She is also a member of *Telling My Story*, a prison theater non-profit organization based in Vermont.



### Despoina Giapoudzi, Visiting Instructor of Drama/Theatre

B.S., Architectural Engineering, Worcester Polytechnic Institute, 2016  
B.S., Humanities and Arts; Drama/Theatre, Worcester Polytechnic Institute, 2016  
M.A., Performance Design and Practice, University of the Arts London, 2019 (ongoing)

Despoina has worked on projects in Greece, Italy, New Zealand, UK and the US. She is returning to WPI as an instructor while working on her MA dissertation, focusing on Scenography and Directing (Technical and Creative), as well as Site-specific/Site-responsive Performance. She is currently beginning her research on the development and implementation of contemporary and student-centered curricula that take a more interactive approach to learning, through constant self-reflection and experimentation on one's work.



Adryen J. Gonzalez, Visiting Instructor of Humanities (IMGD)

B.F.A., California College of the Arts, San Francisco, 2016

B.F.A., California College of the Arts, San Francisco, 2016

Adryen J. Gonzalez is an artist whose works range from figurative ceramic sculptures to poetry and film. Driven to make work as a way to interpret the modern world, dreams and her displaced cultural past, Adryen blends mediums and universally shared Paleolithic motifs into works of art. Her work confronts her own cultural and social issues while also commenting on the broader issues of cultural displacement, forced assimilation and loss of identity. Adryen is currently working on a book of poetry and embarking on her first novel. Outside of her own practice she is also co-directing a short animated film about microwave radiation. As an educator Adryen strives to instill a developed sense of “the self” and an understanding of provenance in each of her students through personal reflection and cultural exploration.

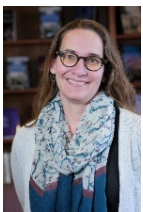
Mohammed El Hamzaoui, Instructor/Lecturer of Arabic and Writing

B.A., English Studies, Sidi Mohamed Ben Abdellah University, 2006

M.A., Applied Language Studies and Research in Higher Education, Sidi Mohamed Ben Abdellah University, 2011

CELTA (Cambridge Certificate of English Language Teaching to Adults), British Council Casablanca, 2014

Mohammed El Hamzaoui is a first-generation college graduate; he relies on the intellectual and practical obstacles he faced to help students acclimate to different learning environments. He has been teaching English as a foreign and second language and writing for over 6 years in both public and private schools in the U.S. and Morocco; he also teaches Arabic to non-native speakers. In both contexts, Mohammed uses a communicative and interactive approach to help students overcome persistent fears about learning new languages. He has also been part of a number of transliteration projects related to academic research in the fields of Religion, Film and Applied Linguistics. His research interests revolve around language learning and acquisition, language learning strategies, teaching English as a Foreign Language (EFL), teaching English as a Second Language (ESL), English for Specific Purposes (ESP) and the development of anti-languages as forms of anti-societal behavior. At WPI, Mohammed is looking forward to being an asset to the Humanities and Arts, especially the Arabic and ESL programs.



Rebecca A. Moody, Assistant Teaching Professor of Philosophy/Religion

B.A., English, Oklahoma State University, 1998

M.A., Women's and Gender Studies, University of Texas at Austin, 2006

M.A., Religion, Syracuse University, 2010

Ph.D., Religion, Syracuse University, expected August 2018

Rebecca Moody's research interests reside at the intersection of religion, cultural studies, feminist theory, film theory and affect theory. She uses this interdisciplinary axis to explore visual representations of women. Her dissertation grew out of her recent experience in Fes, Morocco; in it, she analyzes filmic representations of Moroccan women in recent fiction films by Moroccan women filmmakers as sites of resistance to dominant narratives and normative structures, both of which differ, sometimes markedly, from women's quotidian realities. She contends that women filmmakers actively resist the rhetorical and structural violence of the monarchy's narratives and local norms about women through cinematography rather than dialogue. That is, through film form viewers experience economic, political, cultural and religious realities that cannot be argued overtly in spoken word. Her work in religion focuses around the study of religion in North Africa and the Middle East, including

Islam, Judaism and indigenous traditions, with a specific focus on the colonial and post-colonial periods. At WPI, she looks forward to teaching a range of religion courses in which she works with students to collectively unsettle some of the deep-seated ideas we all bring into the classroom about race and ethnicity, gender and religion.



William San Martín, Assistant Teaching Professor of Global History

B.A., History, Universidad Católica de Chile, 2006

M.A., History, Universidad Católica de Chile, 2011

Ph.D., History (Latin America, World), University of California Davis, 2017

William San Martín is a historian of global science and technology, socio-ecological change, and public policy. He specializes in inter-American politics and relations, and Latin America in a global context. Prior to joining WPI, he was a Postdoctoral Associate, joint affiliated with the program of Science, Technology, and Society and with History at the Massachusetts Institute of Technology. His research explores the uses of history to inform contemporary debates on environmental sustainability and policy change. His book manuscript, *Nitrogen Revolutions: Agricultural Expertise, Technology, and Policy in Chile*, studies the transnational history of nitrogen science and policy in Chile, and explores how the lessons learned address the global ecological effects of nitrogen fertilizers today. He has taught courses on the history of Latin America, the water-energy-food nexus, and comparative environmental sciences, technologies, and policies. At WPI, he will teach courses on the history of quantification and metrics, science and politics of animal rights, innovation hubs, and race and environmental conflict, among others. As a Fulbright Scholar, William obtained his Ph.D. at the University of California-Davis. Beyond teaching and research, he co-founded, and runs an international non-profit organization focused on the science-policy interface in environmental and animal welfare issues in Chile.



Yunus D. Telliell, Assistant Teaching Professor of Philosophy/Religion

B.A., Cultural Studies, Sabanci University, Istanbul, Turkey, 2004

Ph.D., Cultural Anthropology, City University of New York, The Graduate Center, New York, NY, 2017

Dr. Telliell joins WPI from the University of California, Berkeley, where he was a postdoctoral fellow at the Center for the Study of Religion. He is working on a book manuscript, *What is the Language of Islam?*, in which he examines the politics of secularism and religious difference in Turkey, through the lenses of language and translation. He also has a long-standing interest in debates around science, religion, and modern knowledge practices. He serves on the steering committees of the “Contemporary Islam” and “Science, Technology, and Religion” program units in the American Academy of Religion. He will be teaching courses in religion and philosophy in the Department of Humanities and Arts at WPI.



## Department of Mathematical Sciences

### Tatiana Doytchinova, Senior Instructor/Lecturer

B.S./M.S. in Mathematics Moscow State University, 1987

M.S. in Applied Mathematics, Carnegie Mellon University, 1999

M.S. in Applied Statistics, Worcester Polytechnic Institute, 2001

Before joining WPI faculty Tatiana worked as a reliability engineer at Maxtor Corporation and as a statistician at Allegro Microsystems. Since 2008 Tatiana has taught several undergraduate and graduate courses at WPI as an adjunct instructor.



### Vladimir Druskin, Research Professor

M.S., Geophysics, Moscow Oil and Gas Institute, 1979

Ph.D., Applied Mathematics, Moscow State University, 1984

An expert in inverse problems, the main result of his dissertation was the first proof of the Calderon problem for electrical impedance tomography in multidimensional setting. Dr. Druskin spent his entire career in research centers of oil & gas industry, first at the Central Geophysical Expedition, Moscow and then Schlumberger-Doll. His interests are focused on model order reduction for linear time-invariant dynamic systems with applications to electromagnetic and seismic hydrocarbon exploration and also related methods of remote sensing in defense and medical fields. Most recently he became involved in investigation of new graph Laplacian algorithms for unsupervised machine learning on big data sets with applications in oil exploration, biology and finances. Dr. Druskin is a member of the Society of Exploration Geophysicists (SEG) and the Society for Industrial and Applied Mathematics (SIAM). Dr. Druskin has been elected in 2014 as a Fellow of the Society for Industrial and Applied Mathematics (SIAM).



### Carolyn Mayer, Postdoctoral Scholar

B.A., Mathematics and Physics, Bowdoin College, 2013

Ph.D., Mathematics, University of Nebraska - Lincoln, 2018

Dr. Mayer's research interests are in the areas of coding theory, information theory, and applied discrete mathematics. Her thesis work focused on partial erasure channels, which model applications in which some information remains after an erasure event. In the setting of partial erasures, Dr. Mayer has investigated channel decompositions, fountain codes, and relay channels. She is also interested in graph-based codes in a distributed storage setting.



### Hussein Nasrallah, Postdoctoral Scholar

B.S., Mathematics, University of Michigan, 2012

Ph.D., Mathematics, Wayne State University, 2018

Dr. Nasrallah's research interests are in the application of probability theory and stochastic

processes to mathematical finance. In particular, his previous work lies in the area of portfolio optimization under the assumption of a stochastic volatility model and for general utility functions. Currently, he is investigating the area of options pricing under the framework of dynamic monetary convex risk measures given by backward stochastic differential equations.

Yevgeniy Ptukhin, Postdoctoral Scholar

B.S., Economics and Management, Kharkiv State Polytechnic Institute, Ukraine, 1997

M.S., Mathematics, Southern Illinois University at Carbondale, 2006

Ph.D., Quantitative Methods, Southern Illinois University at Carbondale, 2018

Dr. Ptukhin's research in statistics is in the fields of finite mixture models and Monte Carlo methods. In particular, he is interested in non-normal distributions with specified cumulants and correlation matrices. His current work focuses on investigating the algorithms in terms of cluster accuracy determination and parameter recovery effectiveness. Dr. Ptukhin has taught various courses including Inferential Statistics, Basic Statistics, and Introduction to Statistics, Statistical Methods, College Algebra, Intermediate Algebra, and Contemporary Mathematics.

Interdisciplinary Global Studies Division



Jefferson A. Sphar, Assistant Teaching Professor

B.S., Mechanical Engineering, Wichita State University, 2002

M.A., Latin American Area Studies, University of Kansas, 2007

MBA, International Business, University of Kansas

Ph.D., Geography, Clark University

Dr. Alex Sphar's research and teaching focus on the politics and practice of contemporary economic governance. His research addresses how uneven development is continually produced and reproduced; how alternate development models may be created at various scales; how economic spaces and scales are themselves created; how our understandings of the economy interact with actual policies to shape modern state action; and, how political and economic ideas intersect in the current global conjuncture to forge the specific forms of uneven development and increasing inequality that we see today. He conducts qualitative and quantitative research on these issues in Latin America at both the State scale and Urban/Regional scales to understand better the possibilities for socially and economically just outcomes across the Global South. Specifically, Dr. Sphar has investigated these issues through long-term field research in Brazil, in which he analyzes the opportunities for, and limits to, altering the nature of economic governance and the role of the State under the successive Workers Party governments.

## Foisie Business School



Ajit Appari, Assistant Teaching Professor

B.Tech., Production Engineering and Management, National Institute of Technology Calicut, India, 1993

M.Tech., Indian Statistical Institute, India, 1996

Ph.D., Business Administration, Syracuse University, 2008

Dr. Appari joins the faculty of the Foisie Business School at WPI in August 2018. Prior to joining WPI, Dr. Appari was an Assistant Professor of Healthcare Management and Policy at the University of Texas Health Science Center at Houston (UTHealth); and served as Research Fellow at the Tuck School of Business at Dartmouth College. He serves as Senior Editor on the editorial board of Electronic Commerce Research and Applications, and served as reviewer in the NIH Early Career Reviewers program. His research interests include economics of health information technology, and socioeconomics of health and health care delivery particularly for people with multiple chronic conditions. His research has been published in prestigious journals such as Health Services Research, JAMIA, Journal of Health and Social Behavior, American Journal of Managed Care, International Journal of Medical Informatics, and Electronic Commerce Research and Applications; and presented at national/international conferences including INFORMS, AcademyHealth, American Public Health Association, Academy of Management, Organization Theory in Health Care Association, and Workshop on Health IT and Economics.

At UTHealth, he led the design and launch of a new minor 'Health Information Technology Management' for the doctoral program in public health and taught several doctoral courses including Healthcare Management and Policy Research Methods, Policy Issues in Health Information Technology, Operations Technology and Decision Management, and graduate courses including Information Technology in Healthcare Management, and Capstone. Additionally, he has taught Management Information Systems courses in the undergraduate business program at Syracuse University including Principles of Database Management, and Introduction to Information Systems for Managers.



Edward Gonsalves - Full Time Instructor

B.S., Electrical Engineering, Worcester Polytechnic Institute - 1981

M.S., Management Science, Worcester Polytechnic Institute – 1994

Professor Gonsalves' career has spanned thirty five years in the technology field, having held positions in design, applications, sales, marketing, business development and management. He is the holder of 9 patents and has presented at a variety of industry conferences in the area of RFID. For the past twenty five years, Professor Gonsalves has been teaching undergraduate and graduate marketing classes and has been involved in executive education at Worcester Polytechnic Institute. During this time, Professor Gonsalves has also taught at a variety of other schools in the New England area, including work at Boston College, Babson College and Providence College. He serves as a Digital Factory Consultant for McGraw Hill Higher Education, where he has reviewed and developed a variety of materials, with a focus on simulations and digital content. His areas of interest are in the marketing and development of high technology products and he retains an active consultancy practice in these areas.



Shari LS Worthington, Instructor

B.S., Biology and Psychology, St. Lawrence University, 1980

M.A., Psychology, Framingham State University, 1985

M.B.A., Marketing, Babson College, 1990

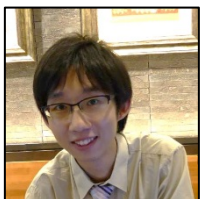
Ph.D. Candidate, Business Administration with a concentration in Entrepreneurship, WPI

Shari has been teaching entrepreneurship and marketing courses at WPI for the past 10 years. She brings to the table more than 25 years of experience working with tech companies in management and marketing, from startups to the Fortune 500. She is currently pursuing her Ph.D. at the Foisie Business School at WPI. Her research focuses on entrepreneurial decision-making in tech ventures. Her work blends theory and practice at the intersection of entrepreneurship, marketing, and psychology. Her current studies examine the motivations, social identities, and market orientation of tech venture founders and nascent tech entrepreneurs. She is a member of the Executive Board of the International Society of Automation (ISA) and is a recipient of ISA's Rising Star Award (2007). She was also a member of the Board of Directors of the WPI Venture Forum (1990-2010). She is co-author of the book, *e-Business in Manufacturing* (2002), and has contributed to hundreds of technology feature articles in such publications as *Photonics Spectra*, *R&D*, and *InTech Magazine*.

## Tenured and Tenure-Track Faculty Members

### Engineering

#### **Department of Biomedical Engineering, Robotics Engineering Program**



Haichong “Kai” Zhang, Assistant Professor

B.S., Health Science, Kyoto University, 2011  
M.S., Human Health Science, Kyoto University, 2013  
M.S., Computer Science, Johns Hopkins University, 2015  
Ph.D., Computer Science, Johns Hopkins University, 2017

Dr. Zhang received his Ph.D. from Johns Hopkins University where he continued his research as a Postdoctoral researcher in the Department of Radiology, and Laboratory for Computational Sensing and Robotics. Dr. Zhang’s research is at the interface between medical robotics and medical imaging. His work includes the use of cooperative robotics in the control of medical ultrasound imaging. He is also engaged in cutting edge research on the photoacoustic imaging of the brain. His appointment will strengthen the connections between our BME research on the use of ultrasound in the imaging and RBE programs in the exciting area of medical robotics.

#### **Department of Chemical Engineering**



Jennifer Wilcox, James H. Manning Professor

B.S., Mathematics; Pre-med Wellesley College, 1998  
M.A., Physical Chemistry, University of Arizona, Tucson, 2004  
Ph.D., Chemical Engineering, University of Arizona, Tucson, 2004

Professor Wilcox returns to WPI as the James H. Manning Professor of Chemical Engineering. Professor Wilcox left WPI in 2008 to join the Stanford faculty as an Assistant Professor of Energy Resources Engineering. She later moved to the Department of Chemical and Biological Engineering at the Colorado School of Mines where she also served as the Interim Department Head. Professor Wilcox is a world leader and innovator in carbon capture. She has recently taken on leadership roles in the DOE and in her authoring of the National Research Council Report on Carbon Dioxide Removal sponsored in part by the NAS. Her work and perspective has been highlighted in Nature, Science, The Economist, Rolling Stone Magazine and Advanced Science News. Her work in carbon capture is unique and will immediately enhance WPI’s reputation as a leader in the field of sustainability.



## Department of Civil and Environmental Engineering



### Harold W. Walker, Schwaber Professor of Environmental Engineering

B.S., Environmental Engineering, California Polytechnic State University, San Luis Obispo, 1991  
M.S., Civil Engineering, University of California, Irvine, 1994  
Ph.D., Environmental Engineering, University of California, Irvine, 1996

Dr. Walker has a long history of academic posts beginning with his first appointment at The Ohio State University as an Assistant Professor in the Department of Civil, Environmental, and Geodetic Engineering. He rose through the ranks to become a Full Professor, and in 2006 was appointed as the Director of the Ohio Water Resources Center at OSU. In 2012 Dr. Walker moved on to Stony Brook University where he was appointed as a Professor and Founding Chair of the Department of Civil Engineering. He also held the titles of Co-Director, NYS Center for Clean Water Technology and Professor of Marine and Atmospheric Science at Stony Brook. Dr. Walker has a strong record of scholarly publications. These include a book entitled, *Harmful Algae Blooms in Drinking Water: Removal of Cyanobacterial Cells and Toxins*, a title that is relevant to our modern day issues.

## Department of Electrical and Computer Engineering



### Shamsnaz Virani Bhada, Assistant Professor

B.S., Electrical Engineering, University of Pune, India, 1999  
M.S., Human Factors Engineering, Wright State University, 2002  
Ph.D., Industrial and Systems Engineering, University of Alabama at Huntsville, 2008

Dr. Bhada brings the opportunity to look into research in the area of modeling and analyzing policy, an area in which she has over 10 years' experience researching. Before coming to WPI as an assistant teaching professor Dr. Bhada was a member of the faculty at Penn State-Great Valley in the School of Graduate Professional Studies. She was also a Research Assistant Professor at the University of Texas at El Paso, Research Institute of Manufacturing and Engineering Systems. Dr. Bhada's multidisciplinary education (electrical, human factors and software engineering) and research (mental models, software quality and engineering education) helps to institute systems thinking in the students at WPI.



### Ulkuhan Guler, Visiting Assistant Professor (pending visa approval)

B.Sc., Electronics and Communication Engineering, Istanbul Technical University, 1999  
M.Sc., Electronics Engineering, University of Tokyo, 2003  
Ph.D., Electronics Engineering, Bogazici University, 2014

Dr. Guler has been a post-doctoral research fellow at the Georgia Institute of Technology since 2015. Her research at Georgia Tech focused on the development of SoC ASIC for implantable medical devices (IMDs) with wireless power and data transmission. Here at WPI Dr. Guler will be working on a fairly new topic to electrical and computer engineering, the Internet of Things (IOT). IOT works on the circuit design of sensing interfaces for applications and she is developing work on energy harvesting, wireless power transmission and power management.

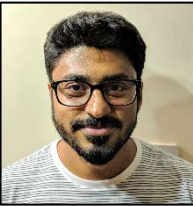
## Department of Mechanical Engineering



Danielle L. Cote, Assistant Professor

B. S., Chemical Engineering, University of New Hampshire, 2005  
M.S., Materials Science & Engineering, WPI, 2010  
Ph.D., Materials Science & Engineering, WPI, 2014

Dr. Cote has been working for the last five years as an Assistant Research Professor and director of the Army Research Laboratory at WPI. During this time she was also appointed the Director of the Center for Materials Processing Data (CMPD). CMPD is the fourth research center of the Metals Processing Institute (MPI) at WPI. This center currently includes of faculty from WPI, the University of Connecticut, SUNY Buffalo and ASM International. Dr. Cote's research and teaching is focused on two emerging fields in materials science and engineering, integrated computational materials engineering (ICME) and additive manufacturing (AM). Bringing these two new areas into our undergraduate and graduate programs will better prepare our graduates for future leadership roles in the fields of materials and manufacturing engineering. Dr. Cote is a member of many professional societies which include: Alpha Sigma Mu Honor Society, Sigma Xi Scientific Research Society, the American Ceramic Society, the American Institute of Chemical Engineers, the Association for Iron and Steel Technology, the Materials Information Society, the Materials Research Society, the Minerals Metals and Materials Society, and the Society of Women Engineers.



Jagannath Jayachandran, Assistant Professor

Bachelor of Technology, Mechanical Engineering, Vellore Institute of Technology, 2007  
M.S., Mechanical Engineering, University of Southern California, 2013  
Ph.D., Mechanical Engineering, University of Southern California, 2016

Dr. Jayachandran has research interests that focus on four areas, combustion at engine-relevant thermodynamic conditions; low dimensional reacting flow studies; transient effects to understand unsteady effects of non-uniform flow; and multicomponent fuel effects that looks at the ignition of multi-component fuels with relevance to operation of diesel and gas-turbine engines, especially at high altitudes. After his Ph.D., Dr. Jayachandran worked at USC as a postdoctoral scholar and research associate in the Combustion and Fuels Research Lab.



Sneha P. Narra, Assistant Professor

B.E., Civil Engineering, Osmania University, 2012  
M.S., Computational Mechanics, Carnegie Mellon University, 2013  
Ph.D., Mechanical Engineering, Carnegie Mellon University, 2017

After receiving her Ph.D., Dr. Narra was appointed a Postdoctoral Research Associate in the NextManufacturing Center at Carnegie Mellon University where she conducted research on how to improve the lives of additively manufactured components and the manufacturing of non-standard materials and powders. Dr. Narra is joining a team of faculty that will be adding courses and developing new research in the area of additive manufacturing using her experience from CMU with working in an interdisciplinary research environment that includes faculty from engineering, arts & sciences, and the Foisie School of Business.



Adam C. Powell IV, Associate Professor

S.B., Materials Science & Engineering, MIT, 1992

Ph.D., Materials Engineering, MIT, 1997

Following his Ph.D. from MIT, Dr. Powell joined NIST as a postdoctoral fellow in the area of metallurgy at the Center for Theoretical and Computational Materials Science where he carried out research on metallurgy for medical devices and high-throughput gene testing. In 1999, he was appointed as the Thomas B. King Assistant Professor of Materials Engineering at MIT. Dr. Powell joined the industrial world of materials science in 2006 as a Managing Engineer at Veryst Engineering. He later established his own company, Infinium, Inc., inventing and scaling up new low-cost clean technologies for primary production and recycling of magnesium rare earths, aluminum and other metals.

## Arts and Sciences

### Department of Computer Science



Berk Calli, Visiting Assistant Professor (pending visa approval)

B.S., Mechatronics Engineering, Sabanci University, 2006

M.S., Mechatronics Engineering, Sabanci University, 2008

Ph.D., BioMechanical Engineering, Delft University of Technology, 2015

Dr. Calli's research primarily focuses on problems related to robotic grasping and manipulation, which are key functionalities largely missing from the current state of the art in robotics for unstructured environments, including homes, modern warehouses, and collaborative manufacturing stations. He develops multi-modal robotic manipulation strategies mainly focusing on the role of visual feedback for coping with uncertainties of unstructured environments. He integrates advanced control methods, active vision framework, machine learning and intelligent mechanical design to provide robust dexterous manipulation capabilities. Prior to WPI, Dr. Calli worked in the Grab Lab at Yale University on robust within-hand manipulation techniques. With that work, he became a finalist for the Best Manipulation Paper Award in the International Conference on Robotics and Manipulation (ICRA). He is also one of the founders and the main administrator of the Yale-CMU-Berkeley (YCB) object set project, which facilitates benchmarking efforts worldwide for robotic manipulation. Dr. Calli's current focus is to utilize robots in sustainability projects by solving complicated manipulation problems therein.



Lorenzo De Carli, Assistant Professor

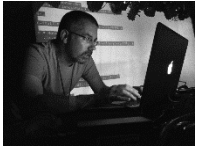
B.S., Computer Engineering, Politecnico di Torino, Turin, Italy, 2005

M.S., Computer Engineering, Politecnico di Torino, Turin, Italy, 2007

M.S., Computer Science, University of Wisconsin-Madison, Madison, WI, 2010

Ph.D., Computer Science, University of Wisconsin-Madison, Madison, WI, 2016

Dr. De Carli's work focuses on issues in network security and traffic analysis. In particular, he is broadly interested in solving challenges that arise when designing network-based security systems that are performant, effective and usable. A sample of his research work includes reverse engineering of malware communications, and parallelization strategies for network traffic analysis. He also worked on hardware acceleration for networking-related workload and instruction scheduling on spatial processor architectures. For his work on the latter topic he received – together with collaborators - a Best Paper Award at the 2013 ACM Conference on Programming Language Design and Implementation (PLDI). Before joining WPI, Lorenzo worked as an Assistant Professor of Computer Science at Colorado State University.



Charles Roberts, Assistant Professor

B.M., Music Industry, James Madison University, 1997  
M.A., Instructional Technologies, Columbia University, 2005  
M.A., Media Arts & Technology, University of California, Santa Barbara, 2009  
Ph.D., Media Arts & Technology, University of California, Santa Barbara, 2014

Dr. Roberts' research explores human-centered computing in digital arts practice. He performs music internationally in the genre of live coding, where performers create audiovisuals by coding them live in front of audiences. Dr. Roberts designs and develops the tools he uses to perform, and shares them with the greater digital arts community as free and open-source software. The primary environments he develops, Gibber & Gibberwocky, have been used around the world to teach computational media in summer camps, workshops, afterschool programs, and in curricula at over twenty colleges and universities. Dr. Roberts comes to WPI from the Rochester Institute of Technology, where he was faculty in the School of Interactive Games and Media. He earned his PhD in Media Arts & Technology from UC Santa Barbara, where he investigated human-computer interaction in large-scale virtual reality environments as part of the AlloSphere Research Group.



Erin T. Solovey, Assistant Professor

A.B., Computer Science, Harvard University, 2001  
M.S., Computer Science, Tufts University, 2007  
Ph.D., Computer Science, Tufts University, 2012

Dr. Solovey's research expertise is in human-computer interaction, with a focus on next-generation interaction techniques, such as brain-computer interfaces, physiological computing, and reality-based interaction. She designs, builds and evaluates interactive systems that use machine learning approaches to adapt and support the user's changing cognitive state and context. She also investigates effective human interaction with complex and autonomous systems and vehicles. Her work has applications in areas such as education, transportation, medicine, creativity support, gaming, and complex decision making. Her research has received awards including the NSF/CRA Computing Innovation Fellowship and three ACM CHI Best Paper Award Honorable Mentions. She serves on several editorial boards and program committees including the International Journal of Human-Computer Studies and the ACM CHI conference on Human Factors in Computing Systems. She comes to WPI from Drexel University where she was an Assistant Professor of Computer Science and co-director of RETHinkCS, an NSF-funded Research Experience for Teachers Site on Machine Learning to Enhance Human-Centered Computing. Before joining the Drexel faculty, she was a postdoctoral fellow in the Humans and Automation Lab at MIT.



## Department of Humanities and Arts



Daniel A. DiMassa, Assistant Professor of German

B.A., German and Theology, University of Notre Dame, 2006 (cum laude)  
M.A.R., Yale Divinity School, 2008 (magna cum laude)  
M.A., German, University of Pennsylvania, 2010  
Ph.D., German, University of Pennsylvania, 2014

Daniel DiMassa is a scholar of German literature and culture from the eighteenth century to the present. His research interests center on the intersection of literature, religion, and aesthetics in the wake of the Enlightenment, with a particular interest in how literary texts participate in religious and mythical enterprises. His articles have appeared in *German Quarterly*, *Religion and Literature*, and the *Goethe-Jahrbuch*. He's finishing a book manuscript that charts the significance of Dante as a poetic muse among German Romantics, Idealists, and Neo-Romantics. At WPI, Professor DiMassa teaches courses on German language, literature, and film history. Students in his recent seminars have explored literary accounts of classical German science, as well as filmic meditations on the rise of fascism during and after the Weimar Republic. In addition to his teaching, DiMassa is an avid participant in WPI's Global Studies Division. He has twice advised projects in Switzerland, and once in Thailand. In fall 2018, he will advise a group of students completing a project on the integration of refugees in Warstein, Germany.



Edward R. Gutierrez, Assistant Professor

B.F.A., California Institute of the Arts, Valencia, 1988  
M.F.A., Academy of Art University, San Francisco, 2007

Professor Gutierrez is an educator and independent filmmaker with a focus on the improvement of animation education, the development of personal voice in students, and use of art as both self-expression and social activism. Born and raised in California's central valley, Prof. Gutierrez grew up with a love of drawing and art while surrounded by social activism at home and in the fields. His early passion for drawing and art propelled him through a long and successful career as an animator and designer in studios, most notably Walt Disney Feature Animation beginning with *The Little Mermaid* (1989). His tenure at Walt Disney Feature Animation saw Prof. Gutierrez in key roles on *Pocahontas* (1995) through *Home on the Range* (2004). He has since shifted to the education of animation to share his passion and give others an artistic voice to make their own statements. As a professor of animation, he is committed to not only teach the process of animation, but to develop a students' sense of self, their humor, concerns and passions. Many of Professor Gutierrez's students have gone on to have successful careers in the animation industry working on music videos for Cage the Elephant, on the game *Cuphead* and at studios such as Nickelodeon and Disney. As an independent filmmaker, Prof. Gutierrez uses the freedom of being outside of the industry to make films that are about what is important to him. In 2017 Prof. Gutierrez completed his independent short film project "A Day at the Beach" the precursor to his current projects commenting on social and environmental issues.



Katharine L. McIntyre, Assistant Professor of Writing

B.A., English, Harvard University, 2004

M.F.A., Fiction Writing, Oregon State University, 2006

Ph.D., English and Creative Writing, University of Missouri, 2013

Dr. McIntyre's research interests include fiction and creative nonfiction, collaborative writing, narrative theory, literary magazine publishing, the contemporary novel, the intersection of literary and genre fiction, and the gothic. Her fiction and essays have appeared or are forthcoming in journals including *Denver Quarterly*, the *Cincinnati Review*, *Copper Nickel*, and the *Cimarron Review*. She has a Notable Essay in *Best American Essays 2014* and a Special Mention in the 2016 Pushcart Prize anthology. Her new project is a literary caper novel about the theft of rare plants.

### Department of Mathematical Sciences



Qingshuo Song, Associate Professor

B.S., System and Control Theory, Nankai University, 1996

Ph.D., Mathematics, Wayne State University, 2006

Dr. Song's research interests include stochastic analysis and its applications in mathematical finance and engineering. His current work focuses on the interplay of the stochastic exit control problem driven by alpha-stable process and nonlocal Hamilton-Jacobi-Bellman equations. The theory is also applicable to portfolio selection problems and credit risk theory in a broad sense. He held an associate professorship at City University of Hong Kong by 2018. Prior to joining City University of Hong Kong in 2010, Dr. Song had been working as a PostDoc at University of Michigan in 2009 and Department of Mathematics of University of Southern California during 2006-2009.

### Department of Social Science and Policy Studies



Angela C. Incollingo Rodriguez, Assistant Professor

B.A., Psychology & Spanish, Rutgers University, 2012

M.A., Psychology (Health), University of California, Los Angeles, 2015

Ph.D., Psychology (Health), University of California, Los Angeles, 2018

Prof. Incollingo Rodriguez will join WPI in August 2018 after recently completing her Ph.D. in Psychology at the University of California, Los Angeles where she studied in the Health Psychology program. Her research interests include examining biopsychosocial predictors of eating behavior, weight changes, and obesity, with an emphasis on weight-based stigma as a stressor that affects physiology, psychological well-being, and health behaviors. The research program led by Prof. Incollingo Rodriguez uses a biopsychosocial approach to study health and health behaviors. She conducts research at the intersection of social phenomena – such as weight stigma, biomarkers – such as the stress hormone cortisol, and psychological factors – such as depression and self-perceived weight. Her work follows two core arcs investigating (1) biopsychosocial predictors of eating, not

eating (i.e. dieting), and obesity; and (2) the phenomenon of weight stigma and its consequences. Her current work is extending the study of weight stigma specifically into the novel context of pregnancy and postpartum health. Prof. Rodriguez's overarching goal through her research is to achieve an understanding of health and health behaviors through integrating the entire person and the environment so as to ultimately improve overall physical and mental health and address societal factors that may undermine health. In advancing this goal, she will work with highly interdisciplinary teams of individuals with expertise in psychology, biology, healthcare, sociology, and public health.