

Global Pathways to Enable Innovative Materials Solutions for Urban Challenges

Speakers – Short Bios *(alphabetically by last name)*



Russell J. Composto is Professor of Materials Science and Engineering with secondary appointments in Bioengineering, and Chemical and Biomolecular Engineering at the University of Pennsylvania. His research uses polymer physics and chemistry principles to engineer interfaces, thermodynamics and dynamics of hybrid systems. Assembly-structure-property relationships in soft matter are an underlying research theme. Biomolecular and cellular studies investigate cellular adhesion and spreading, cell nanomechanics, and antiadhesive coatings for biofilms. Advanced characterization tools include ion scattering, neutron scattering and reflectivity, tof-SIMS and single particle tracking methods. He received a Special Creativity Award from NSF/ Materials Research (2012). In 2015, he became PI of the NSF sponsored “Research and Education in Active Coatings Technologies (REACT) for the Human Habitat”, which involves 37 scientists from Penn, US partner schools, industry and international partners from France in an interdisciplinary research and education program investigating water management, prevention of infection transmission and nanomaterials for energy generation and storage. He has received the Marshall Mentoring Award from the North East Association of Graduate Schools, the Provost’s Award for Distinguished Ph.D. Teaching and Mentoring, and the Ford Motor Company Award for Faculty Advising. Since 2015, he has served as the Associate Dean of Undergraduate Education in the School of Engineering and Applied Science (SEAS) at Penn. He is currently leading the review and revision of the engineering curriculum across SEAS. In July 2019, he was named the Howell Family Faculty Fellow.



Anne Fadullon is the Director of Planning & Development, a cabinet level position in the City of Philadelphia. Her department promotes well-planned neighborhoods with engaged residents, affordable housing options, protected historic resources and public art. She has 30 years development experience in both the public and private sectors. She has developed affordable, mixed-income, market-rate and mixed-use projects. She received her Bachelor of Arts degree in Urban Studies and Economics from Lehigh University. She has a Master of City Planning degree from the University of Pennsylvania.



Zahra Fakhraei is a co-PI of REACT. She received her B.Sc. and M.Sc. degrees in physics from Sharif University of Technology in Iran and her PhD from the University of Waterloo (2007). After two post-doctoral fellowships at the University of Toronto and the University of Wisconsin-Madison on an NSERC fellowship, she joined the University of Pennsylvania in January 2011, where she is now an Associate Professor of Chemistry with a secondary appointment at the Department of Chemical and Biomolecular Engineering. She also serves as the Graduate Chair in Chemistry. Her group at Penn explores the structure, dynamics, and optical properties of amorphous materials at nanometer length scale. Her activities in REACT are focused on developing coatings for energy applications.

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Mark Alan Hughes is a professor of practice at the University of Pennsylvania Stuart Weitzman School of Design and founding faculty director of the Kleinman Center for Energy Policy. He is also a faculty fellow of the Penn Institute for Urban Research, a research fellow of the Wharton Risk Center, and a distinguished senior fellow at Penn's Fox Leadership Program. He has been a senior fellow at the Brookings Institution's Center for Urban and Metropolitan Policy, a senior adviser at the Ford Foundation, and a weekly opinion columnist for the Philadelphia Daily News. Hughes holds a BA from Swarthmore and a PhD from Penn, joined the Princeton faculty in 1986 at the age of 25, has taught at Penn since 1999, and is widely published in the leading academic journals of several disciplines, including Economic Geography, Urban Economics, Political Science Quarterly, Policy Analysis and Management, and the Journal of the American Planning Association, for which he won the National Planning Award in 1992.



Kyung-Hwan Kim is a professor of economics at Sogang University where he has been on the faculty since 1988 and served as academic dean and executive vice president for research and external affairs. He is a former vice minister of the Ministry of Land, Infrastructure and Transport of the Republic of Korea (2015- 2017) and president of Korea Research Institute for Human Settlements (2013-2015), think tank affiliated with the Ministry. Dr. Kim is a fellow of the Weimer Graduate School of Advanced Studies in Real Estate and Urban Land Economic, and of the Asian Real Estate Society (AsRES), and a scholar of Penn Institute for Urban Research. He is also a member of the editorial board of Journal of Housing Economics, of the international advisory board of the Housing Studies, and an editor of the International Real Estate Review. Dr. Kim was assistant professor at Syracuse University (1986-88), urban finance advisor at the UN Centre for Human Settlements (Habitat) (1994-96), president of the AsRES (2001-02), visiting professor of real estate and urban land economics at the University of Wisconsin-Madison (2002-2003), and visiting professor at the School of Economics, Singapore Management University (2009-2010). He received his PhD in economics from Princeton University in 1987.



Howard Neukrug, PE, BCEE, Hon. D.WRE, is the Professor of Practice in Water Leadership and Innovation at the University of Pennsylvania and is the Founding Director of its new Urban Water Center. He has over 40 years of experience in the Water Industry, most recently as the CEO of Philadelphia Water. Prior to that, he was the Founding Director of Philadelphia's Office of Watersheds and creator of the city's Green Cities, Clean Waters Program. He is a national expert, advisor, lecturer and professor on water infrastructure, technology, science, policy, regulations and management and water's role in creating sustainable and resilient cities. Mr. Neukrug is a Professional Engineer, a Senior Advisor to the Global Water Leaders Group and is the Chair the Leading Utilities of the World Network. He is also the principal of CASE Environmental LLC, which provides advice to cities, water utilities and private companies on all things water.

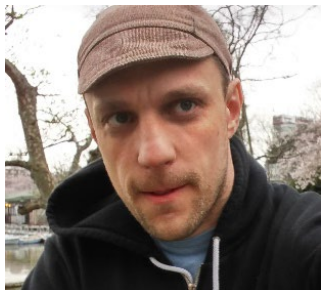


Angela Pachon, Research Director of the Kleinman Center for Energy policy, is an economist with over 20 years of experience in the energy sector. At the Kleinman Center, she oversees the research agenda, manages the research grants and the visitor scholar programs, and develops scholarship and research collaborations across campus and beyond. She is also the author and editor of various publications of the Center and has studied issues related to electricity markets in the US, gas policies in Pennsylvania and climate policies in Latin America. Prior to the Kleinman Center, she was a policy advisor at the Ontario Energy Board in Canada developing incentive regulation for electricity and gas utilities and assessing affordability measures required after the implementation of renewable generation. She also worked for NERA Economic Consulting in London, England leading electricity sector reform projects in Europe, Africa, and the Middle East. Pachon earned her master of science in local economic development from the London School of Economics, England and her B.S. degree from Pontificia Universidad Javeriana, in Bogota, Colombia.

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Francine Papillon is currently the Head of the GIANT (Grenoble Institute for Advanced New Technologies) Programs coordination Group at CEA Grenoble and member of the GIANT Executive Team. After starting her career in the applied metallurgy unit at CEA Saclay (1997-1998), she joined the Nuclear Energy Division at CEA Cadarache (1998-2001). She then was appointed as a visiting scientist at the Materials Science and Engineering Department, Carnegie Mellon University (USA), and became the associate Director of the Materials Research Sciences and Engineering Center (2001-2008). Between 2008 and 2012, she was in charge of the Research and Education Program coordination at MINATEC (Grenoble) (2008-2012). Francine Papillon holds a PhD degree in Materials Science and Metallurgy from the University of Paris XI (Musée du Louvre, 1997) and a MS in civil engineering from the Ecole Polytechnique Féminine (France, 1993).



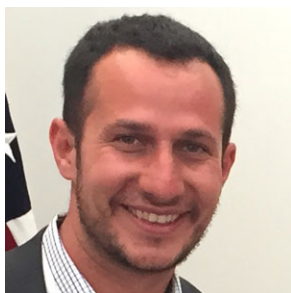
Christopher M. Puchalsky, Director of Policy & Strategic Initiatives, is a nationally recognized transportation expert with a passion for livable cities. He has Bachelor's and Master's degrees in Mechanical Engineering from Temple University, as well as a Ph.D. in Urban Transportation Systems Engineering from the University of Pennsylvania. His professional experience includes three years designing engines for the Ford Motor Company, working as a transportation consultant both in the United States and abroad, teaching and advising as an adjunct at the University of Pennsylvania and the University of Waterloo, and, most recently, serving the greater Philadelphia region as Director of Transportation Planning at Delaware Valley Regional Planning Commission (DVRPC). Chris sits on advisory panels for the Federal Highway Administration (FHWA), Transit

Cooperative Research Program (TCRP), and National Cooperative Highway Research Program (NCHRP), and he has produced numerous conference presentation and papers. While not at work, he spends his free time traveling, making furniture, and building transformative communities.



Patrice Rannou graduated from the Textile & Chemical Institute of Lyon (1993) & from University Montpellier II and E.N.S. de Chimie de Montpellier (1994). He holds a PhD in Physics from the University J. Fourier (1998) and a research habilitation (HDR) in Chemistry (2013) from the University of Grenoble. After a year spent as a visiting researcher at the R & D New Materials Center of Hitachi Chemical Co. Ltd (HCC) in Hitachi-city, Japan, he was hired in 1999 as a CNRS researcher in the UMR5819-SYMMES lab where he is serving (since 2015) as a CNRS Director of Research. Through the rational design, controlled synthesis, and advanced processing of functional soft materials aiming at encoding complex and efficient functions through hierarchical self-assembly processes across (nano->macro) length scales, his research activities deal with boosting efficiencies of electronic, ionic and protonic

transfers at work within active layers of (opto)electronic active devices (ICTs: Organic (Bio/Opto)electronics) and functional soft matter-based electrolytes of proton-exchange membrane fuel cells (Energie generation), batteries & supercapacitors (Energy storage). He combines these (bio)material science approaches with the developments of (lab & large scale facility-based) multimodal platforms allowing in depth (in situ and operando) studies to access (defect-free) intrinsic and ultimate electronic, ionic and protonic transfer performances of functional soft materials towards next generation applications within the fields of ICTs (Nano/Bioelectronics) and Energy generation and storage (Nanoionics/Nanofluidics). He is serving as the Associate Director of international research as well as the GIANT (French partner) leader of ACT3 (Energy Production & Storage) of the ANR/NSF-PIRE project REACT.



Josh Sperling is an 'Urban Futures and Energy-X Nexus' engineer and multi-disciplinary researcher at the National Renewable Energy Lab. He is a former Fulbright Scholar, holds a PhD from the interdisciplinary Sustainable Urban Infrastructure program at UC-Denver, and co-leads 'Urban Nexus Science & Innovation' to 'Smart Cities & Energy-X Nexus' thrusts in NSF and DOE consortiums, after joining the NREL's New Concepts Incubator, Joint Institute for Strategic Energy Analysis, Integrated Mobility Systems, International teams in 2015. He co-leads DOE and NYSERDA 'smart cities' work, strategic partnerships (including with universities), and supports various urban, behavioral, decision science and early career mentoring efforts at NREL and beyond.

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Susan M. Wachter is the Albert Sussman Professor of Real Estate and Professor of Finance at The Wharton School of the University of Pennsylvania, and codirector of Penn Institute for Urban Research. From 1998 to 2001, Dr. Wachter served as assistant secretary for policy development and research at the US Department of Housing and Urban Development. At the Wharton School, she was Chairperson of the Real Estate Department until her 1998 appointment to HUD. She founded and currently serves as director of Wharton's Geographical Information Systems Lab. She was the editor of Real Estate Economics from 1997 to 1999 and currently serves on the editorial boards of several real estate journals. Academic publications include more than 200 scholarly articles and 15 books. She currently serves on the Fannie Mae National Housing Advisory Committee and on the Financial Research Advisory Committee for the Office of Financial Research in the US Department of the Treasury.

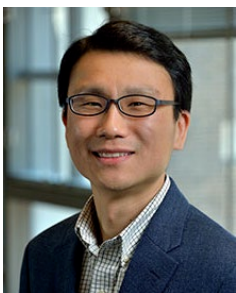


Pil J. Yoo is the professor of School of Chemical Engineering and SKKU Advanced Institute of Nanotechnology (SAINT) at the Sungkyunkwan University (SKKU) of Korea. He received his BS (1998), MS (2000) and PhD (2004) in the Department of Chemical Engineering from the Seoul National University of Korea. He has also worked as a postdoctoral associate in the Department of Chemical Engineering of the Massachusetts Institute of Technology (MIT), then he joined as the faculty of the School of Chemical Engineering of SKKU in 2007. Now, he is serving as the Provost of Industrial-Cooperation Affairs of SKKU and in charge of technology transfer to industrial partners. He has published more than 140 SCI papers and his works have been cited more than 7,500 times with h-index of 37. Currently, his research expertise includes interfacial manipulation of functionalized polymeric thin films using multiscale architecturing methods and the design of organic/inorganic hybridized materials for next-generation energy devices and environmental applications.

Additional REACT Co-PIS and members of the Symposium Organizing Team



Kristin Field is the Director of Education and Professional Development for the University of Pennsylvania's PIRE Project (REACT - Research and Education in Active Coatings Technologies) and Singh Center for Nanotechnology. For REACT, she works with French and US partners to create programs and events that advance REACT's larger research and education goals. For the Singh Center, her portfolio includes directing a summer student research program, managing a master's program in nanotechnology and running a monthly professional development series. Before joining Penn Engineering, she was at the University's Penn Genome Frontiers Institute, where she directed educational programs. She earned her PhD from The Ohio State University's Evolution, Ecology and Organismal Biology Department.



Daeyeon Lee is Professor in Department of Chemical and Biomolecular Engineering at the University of Pennsylvania. He received his BS in Chemical Engineering at Seoul National University and PhD in Chemical Engineering at Massachusetts Institute of Technology. His research focuses on developing deep understanding of the interactions between soft materials near or at interfaces and extending the obtained knowledge to direct the assembly of macroscopic structures that have designed properties and functionality. He has won numerous awards including the 2010 Victor K. LaMer Award, NSF CAREER Award, 2013 3M Nontenured Faculty Award, 2013 AIChE NSEF Young Investigator Award, 2014 Unilever Award for Young Investigator in Colloid and Surface Science and 2017 Soft Matter Lectureship Award.

More about REACT: <https://react.seas.upenn.edu/>

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