2022 MIT Build.nano Conference

April 13, 2022 9:00 am - 5:00 pm
Welcome Remarks: MIT Innovation Ecosystem
John Roberts
Executive Director (Interim), MIT Corporate Relations

John Roberts has been Executive Director of MIT Corporate Relations (Interim) since February 2022. He obtained his Ph.D. in organic chemistry at MIT and returned to the university after a 20-year career in the pharmaceutical industry, joining the MIT Industrial Liaison Program (ILP) in 2013. Prior to his return, John worked at small, medium, and large companies, holding positions that allowed him to exploit his passions in synthetic chemistry, project leadership, and alliance management while growing his responsibilities for managing others, ultimately as a department head. As a program director at MIT, John built a portfolio of ILP member companies, mostly in the pharmaceutical industry and headquartered in Japan, connecting them to engagement opportunities in the MIT community. Soon after returning to MIT, John began to lead a group of program directors with a combined portfolio of 60-80 global companies. In his current role, John oversees MIT Corporate Relations which houses ILP and MIT Startup Exchange.

David Martin
Program Director, MIT Corporate Relations

Mr. David Martin joined Corporate Relations on August 15, 2018 as Program Director for the ILP. Over time, Martin will take on more ILP members in the Middle East.

Martin comes to OCR with deep and broad knowledge and expertise in program management, innovation, commercial and government contracting, and strategic planning. In his most recent position at Altran (Burlington, MA) as the VP Programs, Dave had many major accomplishments including leading an innovation team to develop new technology in the beverage-filling industry, and managing client-facing relations supporting sales and execution of projects. Before that, he was at Windmill International as VP, Product Development, R&D. There he spearheaded the move into new markets for an innovative satellite communications product including through the SBIR program where he secured funding and sponsorship. Martin also leveraged other government programs collaborating with the DoD and congressional contacts. He began his career in the US Air Force as an Active Duty Captain and served for 10 years as an Acquisition Manager, Scientist, Test Director, and finally as Executive Officer in the Executive Office for Command, Control and Communications Systems in the Pentagon. Martin also served in the US Air Force Reserves before joining Windmill.

Mr. Martin earned his B.S., Physics from MIT, and his M.S., Systems Management from the University of Denver. He also earned a Certificate in Information Systems at the University of Denver.
Dr. Andrea Chegut is a research scientist at the MIT Center for Real Estate and the Director of the MIT Real Estate Innovation Lab, which investigates innovative products and technologies, financial value, and economic growth impacts in the built environment. Dr. Chegut also heads entrepreneurial research for DesignX, a venture accelerator for student and faculty firms from MIT’s School of Architecture and Planning that focuses on design, cities and the built environment. Her applied and published academic research is in asset pricing of innovative commercial and residential real estate products, entrepreneurial firm performance, and design and technological progress in buildings. Dr. Chegut has a PhD in financial economics with a concentration in real estate and has worked at the intersection of innovation, urban economics and real estate finance for over a decade.

In addition to research, Dr. Chegut teaches classes on technology and innovation, real estate finance, data science and machine learning at MIT. Prior to her work at MIT, Andrea had a career in securities asset pricing, mortgage back securitization and worked across Europe on developing asset pricing models for commercial real estate, green buildings and digital infrastructure.

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What We Can Learn from Roman Concrete

Admir Masic
Associate Professor of Civil and Environmental Engineering
MIT Department of Civil and Environmental Engineering

99% Air: Nanoarchitected Materials

Carlos Portela
d’Arbeloff Career Development Assistant Professor
MIT Department of Mechanical Engineering
New Lightweight Polymer
Michael Strano

Professor of Chemical Engineering
MIT Department of Chemical Engineering

Professor Michael S. Strano is currently the Charles and Hilda Roddey Professor in the Chemical Engineering Department at the Massachusetts Institute of Technology. He received his B.S from Polytechnic University in Brooklyn, NY and Ph.D. from the University of Delaware both in Chemical Engineering. He was a post doctoral research fellow at Rice University in the departments of Chemistry and Physics under the guidance of Nobel Laureate Richard E. Smalley. From 2003 to 2007, Michael was an Assistant Professor in the Department of Chemical and Biomolecular Engineering at the University of Illinois at Urbana-Champaign before moving to MIT. His research focuses on biomolecule/nanoparticle interactions and the surface chemistry of low dimensional systems, nano-electronics, nanoparticle separations, and applications of vibrational spectroscopy to nanotechnology. Michael is the recipient of numerous awards for his work, including a 2005 Presidential Early Career Award for Scientists and Engineers, a 2006 Beckman Young Investigator Award, the 2006 Coblentz Award for Molecular Spectroscopy, the Unilever Award from the American Chemical Society in 2007 for excellence in colloidal science, and the 2008 Young Investigator Award from the Materials Research Society, the 2008 Allen P. Colburn Award from the American Institute of Chemical Engineers, and recently selected as a member of Popular Science’s Brilliant 10.

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GENERATION: Windows that harness the solar energy

Miles Barr
Co-founder & CTO
Ubiquitous Energy

STORAGE: Safer, scaleable batteries through chemistry

Eli Paster
CEO
PolyJoule
DEPLOYMENT: Energy Everywhere with Lightweight Photovoltaics
Vladimir Bulovic
Director, MIT.nano
Fariborz Maseeh (1990) Chair in Emerging Technology
Professor of Electrical Engineering
MacVicar Fellow

Vladimir Bulovic is a Professor of Electrical Engineering at the Massachusetts Institute of Technology, holding the Fariborz Maseeh Chair in Emerging Technology. He directs the Organic and Nanostructured Electronics Laboratory, co-leads the MIT-Eni Solar Frontiers Center, leads the Tata GridEdge program, and is the Founding Director of MIT.nano. MIT’s new 200,000 sqft nano-fabrication, nano-characterization, and prototyping facility. He is an author of over 250 research articles (cited over 50,000 times and recognized as the top 1% of the most highly cited in the Web of Science). He is an inventor of over 100 U.S. patents in areas of light emitting diodes, lasers, photovoltaics, photodetectors, chemical sensors, programmable memories, and micro-electro machines, majority of which have been licensed and utilized by both start-up and multinational companies. The three start-up companies Bulovic co-founded jointly employ over 350 people, and include Ubiquitous Energy, Inc., developing nanostructured solar technologies, Kateeva, Inc., focused on development of printed electronics, and QD Vision, Inc. (acquired in 2016) that produced quantum dot optoelectronic components. Products of these companies have been used by millions. Bulovic was the first Associate Dean for Innovation of the School of Engineering and the Inaugural co-Director of MIT’s Innovation Initiative, which he co-led from 2013 to 2018. For his passion for teaching Bulovic has been recognized with the MacVicar Fellowship, MIT’s highest teaching honor. He completed his Electrical Engineering B.S.E. and Ph.D. degrees at Princeton University.

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Adding Value to R Value: Aerogel insulating windows

Colorful Films: Tuning Color to Trap or Reflect Heat
Svetlana Boriskina
Principal Research Scientist, MIT Department of Mechanical Engineering

Svetlana Boriskina develops new materials and technologies to harvest and manipulate light and other forms of radiation. Her multi-disciplinary research blends nanophotonics, plasmonics, electronics, thermodynamics and mechanics. Svetlana makes smart fabrics that provide thermal comfort indoors and outdoors and stay clean no matter what, new metamaterials that exhibit color without any dyes or pigments and change it in response to external stimuli, and novel solar harvesting platforms that can provide clean energy and fresh water to off-electrical-grid and disaster-stricken communities. She is the author and co-author of more than 115 peer-reviewed papers, several award-winning courses, and multiple patents. Svetlana is a passionate advocate for science education and science public communication, which she supports via leadership in professional science organizations, conferences, and journal editorial boards, mentorship of student groups, and public outreach.
Catarina Madeira joined Corporate Relations in May 2021 as Program Director, Startup Exchange.

Madeira has been working with the Cambridge/Boston startup ecosystem for the past 10 years and joins Corporate Relations with a solid network in the innovation and entrepreneurial community. In 2010, she joined the startup accelerator IUL MIT Portugal working in Lisbon and working with the Cambridge team on all aspects related to the accelerator's launch. She held positions including Operations Coordinator, Program Manager, and Business Developer. The accelerator soon achieved steady growth in large part due to the partnerships that Catarina led with regional and global startup ecosystems. Most recently she worked at NECEC, leading a program that connects cleantech startups and industry. In this role, she developed and built a pipeline of startups and forged strong relationships with both domestic and European companies. She has also held positions in Portugal and France including at L’Oréal and Saboaria e Perfumaria Confiança as Pharmacist and Technical Director.

Madeira earned her Bachelor in Chemistry at the University of Porto and her Bachelor in Pharmaceutical Sciences at the University of Coimbra in Portugal. She went on to earn her Master of Engineering for Health and Medicines at University Lyon 1 and EM Lyon in France.

Steve Weikal is Head of Industry Relations at the MIT Center for Real Estate, responsible for managing relationships between the Center and its global network of industry partners and nearly 1100 alumni of the MIT Master’s in Real Estate Development (MSRED) program, in 46 countries. He is also a lecturer and researcher, and the CRE Tech lead in the MIT Real Estate Innovation Lab, focused on innovative new technology and business models that disrupt the traditional ways of developing, transacting and managing real estate.

Steve was the Founder of MIT Real Disruption, a successful series of conferences discussing the impact of emerging technology on the real estate industry that is now part of the international CREtech conference platform. He is a member of the CREtech Leadership Board, and sits on the advisory boards of three real estate technology start-ups. Steve has spoken extensively about real estate technology at conferences for AFIRE, ULI, IREM, SIOR, CCIM, CoreNet, ICSC and BOMA, and has been quoted by numerous media outlets, including BuzzFeed, TechInsider, the Boston Globe, GlobeSt, the Real Reporter, Travel Weekly, IPE Real Assets Europe and Anuario Inmobiliario LatinoAmerica.

Steve holds a Master’s of Science in Real Estate Development (MSRED) and Master’s in City Planning (MCP) from the Massachusetts Institute of Technology, and a law degree from Suffolk University Law School. He is a licensed attorney, a licensed real estate broker and a LEED Accredited Professional.

Prior to his position at the MIT Center for Real Estate, Steve was Vice President of NOW Communities, a Concord, MA based developer of new residential neighborhoods that merge the best of traditional design with 21st century energy technology. Before graduate school, Steve was National Media Tour Producer for Martin Scorsese’s The Blues, for WGBH Boston, was Manager of Partner Acquisition at Curl, a VC funded tech start-up launched to commercialize a new coding language developed at the MIT Lab for Computer Science (LCS), and was a Founding Partner of Sonoma Coast Vineyards, maker of award winning wines.
Dr. Anthony has over 25 years of commercial, research, and teaching experience in product realization and information enabled manufacturing. He has extensive experience in market driven technology innovation, product realization, and business entrepreneurship and commercialization at the intersection between information technology and advanced manufacturing. His research and product development interests cross the boundaries of manufacturing and design, medical imaging, computer vision, acoustic and ultrasonic imaging, large-scale computation and simulation, optimization, metrology, autonomous systems, sensors, and robotics. His teaching interests include the modeling of large-scale systems in a wide variety of decision-making domains and the development of optimization algorithms and software for analyzing and designing such systems. He teaches on-line and on-campus professional programs in Smart Manufacturing and Sensory Systems Beyond IoT.

Dr. Anthony spent the first part of his career as an entrepreneur. He developed and directed the development of products and solutions for the industrial and scientific video markets. His products fueled corporate growth from startup to dominant market leader. He has been awarded 20 patents, published over 100 peer reviewed articles, and won an Emmy from the Academy of Television Arts and Sciences for innovations in sports broadcast technical innovation.
Economies of (City) Scale
Ricardo Alvarez
Researcher/Post Doctoral Fellow, MIT Senseable City Lab

Dr. Ricardo Alvarez is an academic and researcher whose work focuses on exploring the boundaries of digital technologies used for urban design purposes. He has performed research and teaching work as part of the City Design and Development Group and as a member of the Senseable City Lab, at the Massachusetts Institute of Technology for the past nine years.

Dr. Alvarez has participated in urban innovation research projects that use Mixed Media, IoT, and A.I. in cities as diverse as Dallas, Laval, Cambridge, Amsterdam, Melbourne, Shenzhen, Paris, Medellin, Curitiba, and others. While his work covers a wide range of topics, from autonomous vehicles to urban innovation districts, and smart infrastructure systems, his passion lies in exploring processes that foster social imagination for spatial design, in particular on the collaborative use of VR and AR platforms for new urban systems and public spaces design. He considers himself a life-long gamer and is a strong proponent of cross-pollination between disciplines that create interactive spaces both in the physical and virtual realms, such as architecture, urban planning, video games, and synthetic simulations development.

He is also an international speaker, having lectured in several countries in America, Europe, Asia, and Australia on topics related to innovation, cities, and technology. Before MIT, he worked in the Mexican Federal Government as a founding member of ProMexico (the country's Trade and Investment promotion Federal Agency), as well as in media, retail, financial industries.