

## **MIT Industrial Liaison Program Faculty Knowledgebase Report**

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2017 MIT – Fundación Ramón Areces International Symposium

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November 30, 2017 9:15 am - 6:00  
pm

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9:15am

Bienvenida e Introduccion  
Raimundo Pérez-Hernández y Torra  
Director, [Ramón Areces Foundation](#)



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Director  
[Ramón Areces Foundation](#)

Raimundo Pérez-Hernández y Torra has been director of the Ramón Areces Foundation since 2008. A Law graduate from the Complutense University in Madrid, he joined the Diplomatic Corps in 1976.

Until he joined the Ramón Areces Foundation, his professional career was in Public Administration, where he held the positions of adviser at the Spanish Permanent Delegation to the United Nations; economic and trade adviser at the Spanish Embassy in France; Head of Protocol in the Spanish Prime Minister's Office, with the rank of director-general; executive chairman of the Organising Committee for the Spanish Presidency of the European Union Council, with the rank of under-secretary; Ambassador and permanent representative to the United Nations and other international organisations based in Geneva; chairman of the Executive Committee of the United Nations High Commission for Refugees. He has served as Spanish Ambassador to the Republic of Austria and Chief of Protocol at the Ministry of Foreign Affairs (MAEC), with the rank of ambassador.

Karl Koster  
Executive Director, MIT Corporate Relations  
Director, Alliance Management  
MIT Office of Strategic Alliances & Technology Transfer



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Karl Koster is the Executive Director of MIT Corporate Relations. MIT Corporate Relations includes the MIT Industrial Liaison Program and MIT Startup Exchange.

In that capacity, Koster and his staff work with the leadership of MIT and senior corporate executives to design and implement strategies for fostering corporate partnerships with the Institute. Koster and his team have also worked to identify and design a number of major international programs for MIT, which have been characterized by the establishment of strong, programmatic linkages among universities, industry, and governments. Most recently these efforts have been extended to engage the surrounding innovation ecosystem, including its vibrant startup and small company community, into MIT's global corporate and university networks.

Koster is also the Director of Alliance Management in the Office of Strategic Alliances and Technology Transfer (OSATT). OSATT was launched in Fall 2019 as part of a plan to reinvent MIT's research administration infrastructure. OSATT develops agreements that facilitate MIT projects, programs and consortia with industrial, nonprofit, and international sponsors, partners and collaborators.

He is past chairman of the University-Industry Demonstration Partnership (UIDP), an organization that seeks to enhance the value of collaborative partnerships between universities and corporations.

He graduated from Brown University with a BA in geology and economics, and received an MS from MIT Sloan School of Management. Prior to returning to MIT, Koster worked as a management consultant in Europe, Latin America, and the United States on projects for private and public sector organizations.

9:30am

Digital Transformation: What Got You Here Won't Get You There  
George Westerman

Senior Lecturer, [MIT Sloan School of Management](#)  
Founder, [Global Opportunity Forum](#), MIT Office of Open Learning



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Senior Lecturer, [MIT Sloan School of Management](#)  
Founder, [Global Opportunity Forum](#), MIT Office of Open Learning

Dr. George Westerman is a Senior Lecturer and Principal Research Scientist at the MIT Sloan School of Management. He helps executives understand how to help their companies thrive in a world of fast-moving technological change. As a pioneering research on digital transformation, he co-authored the award winning book *Leading Digital: Turning Technology into Business Transformation*. Another book, *The Real Business of IT: How CIOs Create and Communicate Value*, serves as the basis for the MIT Sloan CIO Leadership Award program, which he co-chairs. His recent research on workforce learning, innovation culture, and AI transformation provides tangible insights to lead successful AI transformation.

George is a digital strategy advisor to the US Library of Congress, Board of Directors member for workforce non-profit WorkCred, and advisor to executives in numerous large corporations. Prior to earning a doctorate in innovation strategy from Harvard Business School, he gained more than a decade of experience in product development and technology leadership roles.

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Fueled by technological advances such as mobility, AI, social media, and IoT, companies in every industry are charting their paths into the digital economy. Yet some firms are far outpacing others in their ability to drive strategic value from digital innovation. Why is this? Drawing from his award-winning book, *Leading Digital: Turning Technology into Business Transformation*, George will describe the capabilities required to drive digital transformation in customer engagement, operations, and business models. These capabilities will be essential to help companies in every industry to succeed in the fast-moving digital economy.

## The Future of the Web

John Williams

Professor of Information Engineering, [MIT Department of Civil and Environmental Engineering](#)

John Williams

Professor of Information Engineering

[MIT Department of Civil and Environmental Engineering](#)

John Williams holds a BA in Physics from Oxford University, a MS in Physics from UCLA, and a Ph.D. in Numerical Methods from University of Wales, Swansea. His research focuses on the application of large-scale computation to problems in cyber-physical security and energy. He is director of MIT's Geospatial Data Center and from 2006-2012, was Director of the MIT Auto-ID Laboratory, where the Internet of Things was invented. He is author or co-author of over 250 journal and conference papers, as well as the books on Rock Mechanics and RFID Technology. He contributed to the 2013 report for the UK Office for Science Foresight Project- The Future of Manufacturing. Alongside Bill Gates and Larry Ellison, he was named as one of the 50 most powerful people in Computer Networks. He consults to companies including Accenture, Schlumberger, Shell, Total, Exxon, SAP Research, Microsoft Research, Kajima Corp, US Lincoln Laboratory, Sandia National Laboratories, US Intelligence Advanced Research Projects Activity, Motorola, Phillip-Morris Inc., Ford Motor Company, Exxon-Mobil, Shell, Total, and ARAMCO. His international collaborations include Oxford and Cambridge Universities, HKUST, KACST, Alfaisal University, PolyU Hong Kong, Imperial College of Science and Technology UK, Malaysia University of Science and Technology (MUST), and Masdar Institute of Science and Technology Abu Dhabi. He organized the first Cyber-Physical Security Conference in the UK (2011), and along with Dr. Sanchez, he runs the MIT Applied Cyber Security Professional Education summer course. At MIT, he teaches courses Architecting Software Systems (MIT 1.125) and Engineering Computation and Data Science (MIT 1.00/1.001).

In data engineering and data science, early work included simulation of Ford's global network, and analysis of SAP smart grid billing system. For Altria, he analyzed the performance of item level tagging and also their implementation of an anti-counterfeiting system using the Electronic Product Code (EPC)

In password security, Dr. Williams was a PI that developed the algorithms for a negative password authentication system for the Intelligence Advanced Research Projects Activity (IARPA) agency.

Dr. Williams advises companies in the Americas, Europe, the Middle East, and Asia.

Dr. Williams affiliations include:

- MIT Department of Civil and Environmental Engineering
- MIT Center for Computational Science and Engineering (CCSE)
- MIT Geospatial Data Center (GDC)
- MIT Auto-ID Laboratory
- MIT Center for Complex Engineering Systems (CCES)
- MIT Consortium for Improving Critical Infrastructure Cybersecurity (IC3)

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Abel Sanchez

Executive Director, [MIT Geospatial Data Center \(GDC\)](#)

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Executive Director

[MIT Geospatial Data Center \(GDC\)](#)

Dr. Abel Sanchez holds a Ph.D. from the Massachusetts Institute of Technology (MIT). He is the Executive Director of MIT's Geospatial Data Center, architect of "The Internet of Things" global network, and architect of data analytics platforms for SAP, Ford, Johnson & Johnson, Accenture, Shell, Exxon Mobil, and Altria. In cyber security, Dr. Sanchez architected impact analysis of large-scale cyber attacks designing Cyber Ranges for the Department of

11:30am

Coffee Break

Noon

Innovating: A Doer's Manifesto for Starting from a Hunch, Prototyping Problems Scaling Up, and Learning to Be Productively Wrong.

Luis Perez-Breva

Rafael del Pino Chair

Innovator, Educator, Author, AI Problem Solver

MIT Faculty Director, [MIT Innovation Teams](#)



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Luis Perez-Breva, PhD (<http://linkedin.com/in/lpbreva>) is an innovator, entrepreneur, educator and the author of *Innovating: A Doer's Manifesto* (The MIT Press, 2017). He is an expert in technology innovation, venture labs, taking deep tech to impact, and applying artificial intelligence to solve real-world problems. He has enjoyed success with inventions and new companies in security, telecom, fintech, and genetics to name some. Chiefly among them is the AI-based system to locate 911 calls in case of emergency deployed worldwide. His work has been featured by the [Wall Street Journal](#), [Bloomberg News](#), [BBC](#), [Wharton Business Radio](#), [Entrepreneur](#), [Zdnet](#), [Quartz](#), [Epsilon Theory](#) and several other national and international media.

Currently, Luis is the Faculty Director of Innovation Teams (iTeams <http://iteams.mit.edu>), MIT's flagship joint enterprise between MIT Engineering and MIT Sloan to put the Institute's deep tech advances to work to solve real-world problems. Through iTeams, he has helped nearly 200 MIT technologies find a path to impact leading to the formation of some 40 new, enduring deep tech companies across all industries from mining to telecommunications.

Luis has worked with venture capital and numerous corporations and adapted his work to develop innovating factories. Currently, Luis is developing a technology repurposing fund to rescue, recycle, and, in essence, turn around technologies analogous to how private equity seeks to turn around companies.

Dr. Perez-Breva holds a PhD in artificial intelligence from MIT and degrees in chemical engineering, physics, and business from leading universities in Spain ([Institut Químic de Sarrià](#)), France ([Ecole Normale Supérieure](#)), and the United States ([MIT](#)). In 2011, the Spanish government recognized his career achievements by awarding him the Order of Civil Merit of the Kingdom of Spain.

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What if innovation wasn't just about searching for the idea? What if innovation was just the outcome, neither a process nor a product? What if innovating was a skill you can practice and get better at?

Innovating can be about something other than making an idea look disruptive, earth-shattering, or exponential before you even start. You can aim for meaningful impact, you can solve real world problems. Entrepreneurship is about creating new companies, innovating is about solving real world problems and progress. Being more entrepreneurial is not how you get to innovate.

Come join the conversation about how you start innovating and set yourself or your organization to do it continually. We'll discuss innovating as a way to discover a path to scale for any idea; it starts with what you have; it is for corporations and non-profits as well as for entrepreneurs. Innovating by making real world problems tangible offers an alternative to "entrepreneurial" recipes and beliefs that would have you stress over coming up with "the perfect idea," and direct your attention toward marketing an idea instead of figuring out how to evolve that idea to market. You get to learn by being productively wrong, no need to embrace failure in your culture. We'll conclude with an overview of how to set up innovating as a continuous practice inside existing organizations.

12:45pm

The Age of Cryptocurrency: How Bitcoin and Digital Money are challenging the Global Economic Order  
Michael Casey

Senior Advisor for Blockchain Opportunities, Digital Currency Initiative (DCI)  
MIT Media Laboratory

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MIT Media Laboratory

Michael Casey is a senior advisor at the MIT Media Lab's Digital Currency Initiative and a senior lecturer at MIT Sloan School of Management. He and his colleagues are seeking to build awareness around digital currencies and their underlying blockchain technology, helping shape scholarship around the topic and exploring dedicated research projects that use this emerging technology to achieve social impact goals.

Before joining MIT, Michael was a senior columnist covering global finance at The Wall Street Journal, where he culminated a two-decade career in print journalism that spanned various roles and stints on five continents. He also hosted online TV shows for WSJ Live and frequently appeared on various networks as a commentator, including CNBC, CNN, Fox Business, and the BBC. He recently revived his involvement with media, taking on a role as Chairman of the Advisory Board at blockchain news outlet CoinDesk and this year founded his own media company, Streambed Media, which focuses on themes of innovation and society.

Michael is the author of five books on the digital economy and Internet culture. In 2015, he and co-author Paul Vigna published the critically acclaimed *The Age of Cryptocurrency: How Bitcoin and Digital Money are Challenging the Global Economic Order* and three years later published its sequel, *The Truth Machine: The Blockchain and the Future of Everything*. He has also collaborated with documentary filmmakers on the same topic and is frequently called on to speak about these issues at conferences and other public events.

Michael has written three other books: *The Social Organism: A Radical Understanding of Social Media to Transform Your Business and Life*, which he co-wrote with social media entrepreneur Oliver Lockett, *The Unfair Trade: How our Broken Global Financial System Destroys the Middle Class*, an analysis of the global dimensions of the 2008 financial crisis, and *Che's Afterlife: The Legacy of an Image*, about the famous photo of Ernesto "Che" Guevara by Alberto Korda.

A native of Perth, Australia, Michael is a graduate of the University of Western in Australia and has higher degrees from Cornell University and Curtin University.

Bitcoin became a buzzword overnight. It pops up in headlines and fuels endless media debate. Cryptocurrency and the "blockchain" technology behind it holds the promise of a financial system without middlemen—it could put that system in the control of the people who use it and safeguard them from a 2008-type crash. More than a digital form of currency, this technology could integrate billions of hitherto excluded people into the global economy, restore individuals' control over their private data and identities, and change the way organizations and business relationships are governed.

4:15pm

Let's get personal: Millennials and Custom Consumer experiences

Federico Casalegno

Executive Vice President at Samsung Electronics

Former MIT Associate Professor of the Practice



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Former MIT Associate Professor of the Practice

Federico is Executive Vice President of Design at Samsung Electronics. He heads the Samsung Design Innovation Center (SDIC) in San Francisco CA Next-Generation Experience Planning Team in Seoul and Experience and Insights teams within Samsung Research. Federico leads global multidisciplinary teams in the USA Asia and Europe to design new generation of experiences and envision future products. As a designer innovator and social scientist he focuses on the impact of networked digital technologies on human behavior and society and designs products services and meaningful experiences to improves people's lives. Before joining Samsung Federico was an Associate Professor of the Practice at the Massachusetts Institute of Technology teaching at MIT and MIT Media Lab. He also founded and directed the MIT Design Lab and the MIT Mobile Experience Lab. He previously worked at Motorola Inc. and Philips Design envisioning and creating innovative product experiences. He has been awarded honorary professorships at the Glasgow School of Art University of Glasgow and the Jiangnan University School of Design in Wuxi China. He has published several scientific papers in peer-reviewed journals along with books and articles and he has won several awards for his design and innovation work. Federico earned the PhD degree in Sociology of Culture and Communication from the Sorbonne University Paris V with a focus on mediated communication and social interaction in networked communities and smart cities.

Empowered by ubiquitous information technology, the generation that has come of age in the digital era has learned a very different consumer experience than their parents. From media and financial services to hospitality and transportation, Millennials expect flexibility and responsiveness across sectors to customize their transactions to fit their needs as individuals. Those expectations may only grow as the exchange of data between consumers and sellers continues expanding, fostering even greater personalization through the emergence of bioproducts.



5:00pm

Increasing Profits: Leveraging Consumer Behavior to Optimize Promotions  
Georgia Perakis

William F Pounds Professor of Management  
Professor of Operations Research and Operations Management  
MIT Sloan

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Perakis teaches courses and performs research on analytics, optimization, dynamic pricing, revenue management, and supply chain, among others. At MIT over the years, she has taught in a variety of programs such as MBA, EMBA, undergraduate, MSc, and PhD programs across MIT. For her teaching, Perakis won the Graduate Student Council Teaching Award in 2002 as well as the Jamieson Prize in 2014 for excellence in teaching and the Teacher of the Year award (among all faculty at the MIT Sloan School) in 2017. In her research, she investigates the theory and practice of analytics. She is particularly interested on how to solve complex and practical problems in pricing, revenue management, supply chains, logistics and energy applications among others. Perakis has widely published in some of the flagship journals of the field such as Operations Research, Management Science, POM, Mathematics of Operations Research, and Mathematical Programming, among others. She has received the CAREER Award from the National Science Foundation and the PECASE Award from the Office of the President on Science and Technology. In 2016, she was elected as an INFORMS Fellow, a group that recognizes individuals for lifetime achievement to the field. In addition to the above, her work has received recognition with awards such as the TSL Best Paper Award, the Best Paper competition of the INFORMS Service Science Section several times, as well as Best Application of Theory Award from NEDSI (Northeast Decision Sciences Institute) Conference. Her work on promotions with the Oracle RGBU was a finalist at the Practice Award of the RMP Section of INFORMS in 2015. In addition, her work on predicting demand for new products that was tested with Johnson and Johnson won first place at the Applied Research Challenge Competition in 2018.

Perakis has a passion for supervising PhD, master's, and undergraduate students, and builds lifelong relationships with them. So far, she has graduated twenty-one PhD and forty-eight master's students. In 2012, she received the Samuel M. Seegal Award for inspiring student to achieve excellence.

From 2009 to July 2015, Perakis served as the Sloan faculty CoDirector of the Leaders for Global Operations (LGO, former LFM) Program at MIT (joint program between the Sloan School and the School of Engineering). She has also served as the group head of the Operations Management group at MIT Sloan School from 2010-2017. Currently, she is serving as the faculty director of the Executive MBA (EMBA) program at MIT Sloan. She also currently serves as an associate editor for the flagship journals of the field: Management Science, Operations Research, MSOM, the INFORMS Journal on Optimization, and as a senior editor for POM. She has served as the chair of the RMP Section of INFORMS and as the VP of Meetings of the MSOM Society of INFORMS. Perakis holds a BS in mathematics from the University of Athens, as well as an MS in applied mathematics and a PhD in applied mathematics from Brown University.

[View full bio](#)

Retailers know it is crucial to optimize the timing and promotion of sales to maximize profit. But how do you process the large amounts of data necessary to determine optimal pricing and timing? Left to the intuition of product managers, retailers risk missing out, but a new method created by Georgia Perakis and her team of PhD students in collaboration with Oracle RGBU, aims to change that. Using models that analyze price effects, promotion effects, and general consumer behavior data, this approach has the potential to help retailers increase their profits by an average of 3-10 percent. In a world of slim profit margins and ever-increasing competition, this could be a game changer for retailers in any industry.

Conclusiones y Cierre  
Raimundo Pérez-Hernández y Torra  
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