

MIT Industrial Liaison Program Faculty Knowledgebase Report

2021 MIT Kendall Square Innovation Ecosystem Conference

December 1, 2021 8:00 am - 6:00
pm

8:00 AM - 9:00 AM

Registration and Light Breakfast



9:00 AM - 9:10 AM

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



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

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.

Randall Wright
Program Director, [MIT Corporate Relations](#)



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Program Director
[MIT Corporate Relations](#)

Randall S. Wright is a program director with MIT's Industrial Liaison Program. He manages the interface between the managements of companies, headquartered in the United States and Europe, and the senior administration and faculty of MIT.

As a program director for MIT, he convenes teams of researchers and faculty members to provide on-going emerging technology intelligence and strategic advice for the world's leading technology companies. He is a sought-after speaker, delivering keynote speeches focused on emerging technology opportunities and challenges, and counter-intuitive insights in executive panels and discussions. Randall draws on extensive experience advising executives on a range of emerging technology areas including digital transformation, big data, robotics, green buildings, water efficiency, energy storage, biofuels, advanced materials, and manufacturing. He provides navigation and recommendations on the emerging technologies and adoption landscapes critical to future business growth, as well as creation, development, and execution of programs of research between industry and MIT.

Randall has been bestowed by Federal President of Austria Dr. Heinz Fischer with the decoration Cross of Honor in Gold for Services to the Republic of Austria for his "outstanding contribution to the development of relations between Austria and MIT".

Prior to MIT, Randall was a marketing manager for Pfizer, Inc., a major U.S.

International pharmaceutical company. He was also a marketing manager for the U.S. pharmaceutical company, Schering-Plough.

9:10 AM - 9:40 AM

Accelerating and Engaging with Entrepreneurial Ecosystems: Lessons from Kendall Square and the MIT Regional Entrepreneurship Acceleration Program

Scott Stern

Professor, Technological Innovation, Entrepreneurship, and Strategic Management

David Sarnoff Professor of Management of Technology, [MIT Sloan School of Management](#)



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[MIT Sloan School of Management](#)

Scott Stern is the *David Sarnoff Professor of Management* at the MIT Sloan School of Management.

Stern explores how innovation and entrepreneurship differ from more traditional economic activities, and the consequences of these differences for strategy and policy. His research in the [economics of innovation and entrepreneurship](#) focuses on [entrepreneurial strategy](#), [innovation-driven entrepreneurial ecosystems](#), and [innovation policy and management](#).

Recent studies include the impact of clusters on entrepreneurship, the role of institutions in shaping the accumulation of scientific and technical knowledge, and the drivers and consequences of entrepreneurial strategy.

Stern has worked widely with practitioners in bridging the gap between academic research and the practice of innovation and entrepreneurship. This includes advising start-ups and other growth firms in the area of entrepreneurial strategy, as well as working with governments and other stakeholders on policy issues related to competitiveness and regional performance. In recent years, Stern has developed a popular new MIT Sloan elective, [Entrepreneurial Strategy](#), co-founded the [MIT Regional Entrepreneurship Acceleration Program](#), advised the development of the [Social Progress Index](#), and served as the lead MIT investigator on the [US Cluster Mapping Project](#).

Stern started his career at MIT, where he taught from 1995 to 2001. Before returning to MIT in 2009, he held positions as a Professor at the Kellogg School of Management and as a Non-Resident Senior Fellow at the Brookings Institution. Stern is the director and co-founder of the [Innovation Policy Working Group](#) at the National Bureau of Economic Research. In 2005, he was awarded the [Kauffman Prize Medal for Distinguished Research in Entrepreneurship](#).

Stern holds a BA in economics from New York University and a PhD in economics from Stanford University.

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Accelerating and engaging with start-ups in entrepreneurial ecosystems has become a defining priority (and challenge) for corporations, governments, and investors around the world. For start-ups, their success and impact of start-ups is often shaped by their ability to leverage and contribute to their entrepreneurial ecosystem. Building on the acceleration of Kendall Square and engagement with more than 70 entrepreneurial ecosystems throughout the world in the MIT Regional Entrepreneurship Acceleration Program, this talk focuses on both the opportunities (and challenges) that arises through engagement with entrepreneurial ecosystems, the role of a stakeholder approach in crafting an effective ecosystem strategy, and the ability to measure and visualize ecosystem acceleration and impact.

9:40 AM - 10:10 AM

Engaging Entangled Innovation Networks

Peter Gloor

Research Scientist, Center for Collective Intelligence

MIT Sloan School of Management

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Peter Gloor is a research scientist at the Center for Collective Intelligence at MIT Sloan working on Collaborative Innovation Networks. He is also founder and chief creative officer of the software company galaxyadvisors and an honorary professor at the University of Cologne and Jilin University, China. Previously, Gloor was a partner with Deloitte and PwC and a manager at UBS. His latest books are *Sociometrics and Human Relationships* and *Swarm Leadership and the Collective Mind*. Gloor holds a PhD in computer science from the University of Zurich and was a postdoc at MIT's Lab for Computer Science.

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A Collaborative Innovation Network (COIN) is a team of self-motivated people with a collective vision, enabled by the Web, to collaborate in achieving a common goal by sharing ideas, information, and work. Hundreds of different COINs exist within the MIT Kendall Square innovation ecosystem, each representing a unique vision to shape and change our lives. Firms need to seek out and engage with members of COINs to apprehend fully the consequences of developing innovations and participate in the economic and societal movements they portend. Still, what must a firm's executives know, and what roles must they adopt, to engage successfully with members of a COIN? In our research over the last twenty years, we have been studying Collaborative Innovation Networks at hundreds of organizations, ranging from jazz orchestras, teams of surgeons, open-source communities, and startups – including biotech at MIT-Kendall Square – to Fortune 500 firms with hundreds of thousands of employees. What we find is that entanglement of executives with members of a COIN is key to engaging. What do we mean by "entanglement"? Members of a COIN have a shared context and shared values that allows them to communicate without words, through "honest signals", body language, and shared action. Consequently, executives need to be able to join with members of the COIN by uncritically and genuinely appreciating, and in some cases adopting, the same shared morals, characteristics, and outlooks of the COIN's members. Entangled members of COINs operate in an environment of positive energy. Being humble, kind, and compassionate gives positive emotional energy to the COIN, while avoiding over-confident, arrogant, and egotistical behavior that will drain energy and create a toxic work environment. This talk will introduce AI-based methods to identify entangled COINs and show what executives can do to engage productively and successfully with COIN members.

10:10 AM - 10:40 AM

Technology Scouting – A framework for engagement

Jay Paap

President

[Paap Associates](#)

As more firms are learning the value of engaging entrepreneurial and academic research hotspots, many have established formal scouting programs to manage these relationships. When done well, such efforts can accelerate their innovative efforts and avoid missing new technical advances affecting their development efforts. However, too often scouting programs are narrowly focused on merely finding a specific technology they feel they need, or fail to take advantage of the opportunities such relationships enable by not properly engaging. Drawing on five decades of helping companies set up and manage Technology Scouting programs, Dr. Paap will share insights into the steps organizations can take to realize the full potential of scouting.

10:40 AM - 11:10 AM

Networking Break

11:10 AM - 11:40 AM

How Do Corporates Interact Effectively with the Startup Ecosystem (in Kendall Square.... and Globally)

Scott Kirsner

Editor & Cofounder, [Innovation Leader](#)



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Editor & Cofounder

[Innovation Leader](#)

Scott Kirsner is a journalist who writes about innovation and entrepreneurship. His "Innovation Economy" column appears Sundays in the *Boston Globe*, and he is also editor of the site [Innovation Leader](#) (www.innovationleader.com), which focuses on R&D, product development, corporate venturing, and new initiatives within large companies. Scott has been a regular contributor to *Fast Company*, *BusinessWeek*, *Variety*, and *Wired*. His books include *Fans, Friends & Followers: Building an Audience and a Creative Career in the Digital Age*, a technological history of Hollywood. He can be reached at scott@innovationleader.com and his Twitter handle is @ScottKirsner.

Scott Kirsner has spent the past 20+ years covering the startup ecosystems in Boston and Silicon Valley for publications like the *Boston Globe*, *Wired*, *Fast Company*, *Variety*, *BusinessWeek*, and the *New York Times*. He now runs a research firm called Innolead, focused on how large organizations can innovate more effectively. In this session, he'll share data from a recent Innolead research report, developed in collaboration with MIT ILP and MIT Startup Exchange, on how corporates can engage with startups effectively — from both the corporate and startup point of view. How can they create win-win relationships, with a hybrid physical/digital strategy?

Read the full report on Innovation Leader:

<https://www.innovationleader.com/research-reports/the-changing-landscape-of-corporate-startup-engagement/>

11:40 AM - 12:10 PM

Absorptive capacity, ambidexterity and acuity: how established enterprises get the most

bang for the buck from MIT + KSq

Michael Davies

Chairman, Endeavour Partners

Senior Lecturer, [MIT System Design and Management](#)



Michael Davies

Chairman, Endeavour Partners

Senior Lecturer

[MIT System Design and Management](#)

Michael A M Davies teaches the engineering and business elements of the Integrated Design and Management (IDM) program at MIT

Michael A M Davies is the founder and chairman of Endeavour Partners, a boutique business strategy consulting firm that enables leaders in high-tech businesses and businesses being affected by technology worldwide to create value and drive growth through innovation. Endeavour Partners helps its clients anticipate, navigate, and innovate through insight and foresight in order to make better strategic decisions. Its clients include nearly all of the top-tier device vendors, network operators, service providers, and semiconductor businesses. Beyond high-tech, its clients include some of the world's leading e-commerce, information services, oil and gas, packaging and logistics businesses, along with world-class sports teams.

He is an expert on the connections between technology, innovation, product development, consumer choice and behavior, the adoption and diffusion of new products, intellectual property, and the emergence and evolution of platforms and business ecosystems. Michael has spent his career helping top management make strategic decisions and drive innovation. Nowadays, he is focused on the rapid shift toward smartphones, cloud services, the Internet of Things, artificial intelligence, and robotics, particularly the forces driving this shift and its impact and implications over the next few years.

Michael also runs the New Technology Ventures program at the London Business School. Additionally, he is an Advisor to the Department of Systems Engineering at the United States Military Academy at West Point.

He also is a co-founder and the Chairman of silverthread, Inc., and angel-backed business commercializing research on software engineering from MIT and Harvard Business School, a member of the Board of the Kendall Square Association, the business group for this world leading innovation hub, the Chairman of the Mobile Cluster for Massachusetts Technology Leadership Council and an advisor to several other companies on digital business.

What should you do to get the most bang for your buck from engaging with MIT and with the Kendall Square ecosystem? In this session Michael Davies will lay out an overall action plan, building on a couple of decades working as an educator, an expert advisor to leading global businesses, and a (serial) entrepreneur at MIT and in Kendall Square.

Leading global firms (ILP members) come to MIT + KSq because the unique combination of **world-leading R&D** – radical innovation that relentlessly redefines what is **technologically feasible** – together with **entrepreneurial energy** – a vibrant venture ecosystem endlessly exploring how to build new businesses that are **commercially viable**.

That's great, but most established enterprises, industrial incumbents rather than insurgents, are typically rather different places from MIT + KSq; so, what should they do to engage most effectively with this very different – and somewhat strange – world to ensure that they get the most bang for their buck?

How do they focus their time, energy and resources? What does this require?

While visits to MIT and to KSq are vital and invaluable, they're just one (albeit very important, perhaps the most important) part of the puzzle. Realizing the full value that can be created and captured from MIT + KSq demands that you do much more than just 'innovation tourism'.

Critically it also requires building *absorptive capacity*, making consistent investments in-house that are complementary to those made at MIT and the KSq venture ecosystem. This involves learning-by-doing, hands-on technical and business experiments, so that your company has the rich and deep understanding needed to create and capture the full potential value from these innovations, and from partnering with new ventures.

It also needs *ambidexterity*, organizing so that your firm can explore – finding and pursuing the breakthrough innovations that are the basis for building and growing significant new businesses, creating new value – while at the same time you continue to exploit resources built up over time in the current core.

12:10 PM - 1:00 PM

Lunch

1:00 PM - 1:30 PM

Panel: Insights on Engaging the MIT Kendall Innovation Ecosystem with MIT ILP

Katrina Khalil
Communications Specialist
[MIT Corporate Relations](#)

Randall Wright
Program Director, [MIT Corporate Relations](#)



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Program Director
[MIT Corporate Relations](#)

Randall S. Wright is a program director with MIT's Industrial Liaison Program. He manages the interface between the managements of companies, headquartered in the United States and Europe, and the senior administration and faculty of MIT.

As a program director for MIT, he convenes teams of researchers and faculty members to provide on-going emerging technology intelligence and strategic advice for the world's leading technology companies. He is a sought-after speaker, delivering keynote speeches focused on emerging technology opportunities and challenges, and counter-intuitive insights in executive panels and discussions. Randall draws on extensive experience advising executives on a range of emerging technology areas including digital transformation, big data, robotics, green buildings, water efficiency, energy storage, biofuels, advanced materials, and manufacturing. He provides navigation and recommendations on the emerging technologies and adoption landscapes critical to future business growth, as well as creation, development, and execution of programs of research between industry and MIT.

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Prior to MIT, Randall was a marketing manager for Pfizer, Inc., a major U.S. pharmaceuticals company. He was also a strategic planning analyst for Pennzoil Company--a Fortune 500 oil and natural resources company. Randall is an invited lecturer at Northeastern University's Executive M.B.A. Program where he lectures on innovation and corporate strategy. His column Innovation Counterculture looks at ideas and perspectives on strategy, organization, and thinking to help executives connect to the world of innovation outside their organizations and he is published regularly in Research-Technology Management, the award-winning journal of the Industrial Research Institute.

Timothy Swager
John D. MacArthur Professor of Chemistry



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Timothy M. Swager is the John D. MacArthur Professor of Chemistry the Department of Chemistry at MIT and the Faculty Director of the Deshpande Center for Technological Innovation. In this latter role, Professor Swager works with the Center's Executive Director to define the Center's strategy for fostering innovation, assists with the commercialization of MIT technologies, and plays a key role in the grant selection process. Professor Swager also serves as the Center's liaison to the MIT academic community, and senior leadership, sitting on faculty and academic committees. Following Professor Swager's postdoctoral appointment at MIT, he joined the chemistry faculty at the University of Pennsylvania, returning to MIT in 1996 as a Professor of Chemistry, and served as the Head of Chemistry from 2005-2010. Professor Swager's research interests are in design, synthesis, and study of organic-based electronic, sensory, high-strength and liquid crystalline materials. He has published more than 400 peer-reviewed papers and more than 80 issued/pending patents. Professor Swager is the founder of four companies (DyNuPol, Iptyx, PolyJoule, and C2Sense) and has served on a number of corporate and government boards. He received a B.S. from Montana State University in 1983 and a Ph.D., from the California Institute of Technology in 1988.

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1:30 PM - 2:00 PM

Innovating with Deep Tech Startups at MIT

Marcus Dahlöf

Program Director, [MIT Startup Exchange](#)



Marcus Dahlöf

Program Director

[MIT Startup Exchange](#)

Marcus Dahlöf leads MIT Startup Exchange, which facilitates connections between MIT-connected startups and corporate members of the MIT Industrial Liaison Program (ILP). Dahlöf manages networking events, workshops, the STEX25 accelerator, opportunity postings, and helps define the strategic direction of MIT Startup Exchange. He is a two-time tech entrepreneur (one exit in cybersecurity), and has previously held roles in finance, software engineering, corporate strategy, and business development at emerging tech companies and Fortune 100 corporations in the U.S., Latin America, and Europe. Marcus was a member of the Swedish national rowing team and he is a mentor at the MIT Venture Mentoring Service.

MIT has a rich history in entrepreneurship. According to a 2015 study, MIT alumni have founded companies that are generating revenues of \$1.9 trillion, equivalent to the 10th largest economy in the world. However, what exactly does this mean for corporates that come to MIT regularly to solve challenging business problems? What is the opportunity at hand for these corporates to work with MIT startups?

Today, supported by a strong ecosystem, deep tech startups thrive at MIT with hundreds of startups being founded every year. Sitting at the intersection of startup innovation and industry, MIT Startup Exchange is a platform that offers access to over 1,400 active deep tech MIT-connected startups. Each year, Startup Exchange facilitates hundreds of targeted introductions between MIT-connected startups and our corporate ILP members. Why and how do these corporates engage with startups at MIT? What are the success stories? What are the lessons learned on how to effectively partner with deep tech?

2:00 PM - 2:30 PM

48 Hours in Kendall Square – A Value Stream approach for getting the most out of your company's visit
John Carrier
Senior Lecturer, System Dynamics, [MIT Sloan School of Management](#)



John Carrier
Senior Lecturer, System Dynamics
[MIT Sloan School of Management](#)

John Carrier is a senior lecturer in the System Dynamics Group at the MIT Sloan School of Management and Managing Director of 532 Partners. His expertise is in shaping the dynamics of operating environments to improve productivity, quality, safety, and morale simultaneously. He has helped companies save hundreds of millions of dollars by helping them find and eradicate the hidden systems lurking inside every operation. His current focus is to help prepare companies to compete in the new environment of Industry 4.0.

He has educated over five hundred top-level leaders in the MIT Sloan Executive Education program in Oil & Gas, petrochemicals, mining, and healthcare. When not teaching, he spends most of his time in the operating environment, working directly with the front line to deliver measurable results in less than sixty days.

Dr. Carrier holds a B.S. in Chemical Engineering from the University of Michigan, a Ph.D. in Control Systems from MIT, and an MBA from the Harvard Business School.

Kendall Square is literally bursting with innovative thinkers, advanced laboratories, startup companies, and entrepreneurial activity across all industries and disciplines. This wealth of opportunities creates its own problem: how can companies best identify and build lasting connections into the Kendall Square nexus to support and extend their future technological vision?

In this discussion, we will review the best practices from our ILP members in successfully realizing transformation value from company visits to campus. We will focus the discussion around the following process:

- **Preparation:** Clearly identify your company's needs, and the 'story' you need to tell before arrival.
- **Execution:** Time with researchers and entrepreneurs is a scarce resource; get the most by using a team-based, interview guide driven approach
- **Re-Entry:** Engage the organization by conducting an on-site debrief with senior leadership within one week of your visit.

Finally we will focus on the key principles for a successful corporate-MIT relationship, including:

- Look to construct a new vision for your company, not to find a contract laboratory
- Compare the artifacts of your own company's innovation culture, with leading practitioners, and identify your company's hidden assumptions holding you back from innovating at speed
- Build a network of relationships, rather than one-on-one interactions

2:30 PM - 2:50 PM

Networking Break

2:50 PM - 3:20 PM

Information Flows for More Effective Creative Performance and Technology Transfer

Ralph Katz

Senior Lecturer, Technological Innovation, Entrepreneurship, and Strategic Management
MIT Sloan School of Management

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Senior Lecturer, Technological Innovation, Entrepreneurship, and Strategic Management
MIT Sloan School of Management

Ralph Katz is a Senior Lecturer in Technological Innovation, Entrepreneurship, and Strategic Management at the MIT Sloan School of Management.

Katz is also a professor of innovation and entrepreneurship management at Northeastern University's College of Business.

For more than 35 years, he has been carrying out extensive management research, education, and consulting on how to build, lead, and sustain the innovation process, with a particular interest in the management and motivation of technical professionals and high-performing groups and project teams. During these years, Katz has conducted numerous workshops and seminars on innovation and R&D management in many organizations, and has worked with them to improve their management and leadership of innovation, including their practices, processes, and cultures. Among his more recent clients are major industrial corporations, including Procter & Gamble; Lockheed Martin; Goodrich; EMC; Nokia; Novartis; Medtronic; Tetra Pak; Master Foods, Inc.; Ciba Specialty Chemicals; and the Lawrence Livermore and Los Alamos National Laboratories. He teaches in two MIT Sloan executive programs and leads the Management of Technology and Innovation executive program at Cal Tech. For more than 10 years, he led the Management of Technology and Technical Professionals courses at IBM's Corporate Technical Institute. Katz has taught in the executive programs of many other universities and was a visiting scholar at INSEAD in Paris during the 2003-04 academic year.

His most recent book is *The Human Side of Managing Technological Innovation*, second edition (Oxford University Press, 2004). In 1981, Katz was awarded the New Concept Award by the National Academy of Management for "Most Outstanding Contribution to the Field of Organizational Behavior." He also was the 1986 recipient of *R&D Management Journal's* Best Paper Award and the 1990 and 1991 recipient of the Academy of Management TIM Division's Best Paper Award. In 2004, his paper in the IRI-sponsored journal, *Research-Technology Management*, was selected as the Holland Award Winner for that year's most significant and original contribution to the field of research management. Katz serves on many journal editorial boards and was the research and development/innovation and entrepreneurship departmental editor for *Management Science* from 1991 to 2001.

Katz holds a BS in mathematics and physics from Carnegie Mellon University and an MBA and a PhD from the Wharton School of the University of Pennsylvania.

To keep informed about relevant developments, technical professionals must collect and process information from a large variety of sources. In short, RD&E professionals have to both utilize the new relevant technical advances that are required for their products and services of tomorrow while also functioning efficiently at the same time for the organization's current business requirements and pressures. Since communication processes play such an important role in fostering these kinds of creative work activities, we will examine and discuss in this presentation research findings that have shown not only how formal organizational structures and procedures influence information flows and innovative activities but also how the more informal interpersonal exchanges both inside and outside the organization can be enhanced and managed for more effective creative exchanges. The ideas and findings from past research studies need to be better understood especially in light of the pervasive role that electronic media has been playing within all of our work environments.

3:20 PM - 3:50 PM

Wrapping Up and Next Steps: How have Leading Enterprises Engaged With Kendall Square and What Are Your Options?

Tim Rowe

Founder and CEO

[Cambridge Innovation Center](#)

Tim Rowe has spent the past 20+ years leading one of the largest innovation facilities in the world, Cambridge Innovation Center. Over the years, CIC has been home to 1,000s of startups, investors, and corporate innovation teams, and is where Google, Facebook, Amazon, and Apple first launched their presences in Kendall Square, as well as such enterprises as Analog Garage and the venture arm of GlaxoSmithKline. In this session, Tim will share his observations on how global enterprises have successfully leveraged proximity to MIT, relationships with the Institute, and the Kendall Square ecosystem to their global benefit.

3:50 PM - 4:30 PM

Adjournment with Networking Reception