

MIT Industrial Liaison Program Faculty Knowledgebase Report

2022 KPBMA-MIT Life Science Conference

March 31, 2022 - April 1, 2022

Day 1 - March 31 (Thursday) 8:30 AM - 10:40 AM KST: Oncology

8:30 AM

Opening Remarks

Hee-Mok Won

Chairman

[Korea Pharmaceutical and Bio-Pharma Manufacturers Association](#)

John Roberts

Executive Director (Interim), [MIT Corporate Relations](#)



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.

8:40 AM

Investigating Cancer Immunology using Genetically Engineered Mouse Models

Tyler Jacks

David H. Koch Professor of Biology, [MIT Department of Biology](#)



Tyler Jacks

David H. Koch Professor of Biology

[MIT Department of Biology](#)

Dr. Tyler Jacks is a world leader in the field of cancer genetics and is known for his groundbreaking work on the development of genetically-engineered mouse models of cancer (GEMMs). Over the course of his academic career, he has published over 200 peer-reviewed papers along with numerous review articles and book chapters. Dr. Jacks graduated *magna cum laude* with a BA in Biology in 1983 from Harvard College before becoming a graduate student in the laboratory of Dr. Harold Varmus at the University of California, San Francisco, where he showed that ribosomal frameshifting during translation gives rise to the *gag-pol* protein of the Rous sarcoma virus, HIV-1 virus and mouse mammary tumor virus. He went on to demonstrate that a stem-loop structure and RNA sequence making up the frameshift site are required for efficient frameshifting *in vitro*. In 1998, Dr. Jacks returned to Cambridge, Massachusetts, to join Dr. Robert Weinberg's group as a post-doctoral fellow at the Whitehead Institute, where he developed several GEMMs, including the Rb, p53 and Nf1 mice. In 1992, Dr. Jacks became an assistant professor in the MIT Department of Biology and a member of the MIT Center for Cancer Research, which became the [Koch Institute for Integrative Cancer Research at MIT](#) in 2011. In 1994, he became an Assistant Investigator at the Howard Hughes Medical Institute and was promoted to Investigator in 2002. In 2001, Dr. Jacks became Director of the MIT Center for Cancer Research, later the Koch Institute for Integrative Cancer Research at MIT, and recently stepped down as Director after leading the Koch Institute for 20 years. He also resigned as a Howard Hughes Medical Institute Investigator in order to take the role of President at [Break Through Cancer](#). Currently, Dr. Jacks is the David H. Koch Professor of Biology at MIT.

9:20 AM

Translational Research accelerating Drug Development

Youngil Koh

Associate Professor

Department of Internal Medicine, Seoul National University Hospital

[Seoul National University Hospital](#)

10:00 AM

MIT Startup Exchange Lightning Talks
Marcus Dahllöf
Program Director, [MIT Startup Exchange](#)



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Program Director
[MIT Startup Exchange](#)

Marcus Dahllöf leads MIT Startup Exchange, which facilitates connections between MIT-connected startups and corporate members of the MIT Industrial Liaison Program (ILP). Dahllöf 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.

S. Roy Kimura
Founder & CEO
[Modulus Discovery](#)

Andrew Radin
Co-founder & CEO
[Aria Pharmaceuticals](#)

Thanos Kosmidis
Co-founder & CEO
[CareAcross](#)

10:30 AM

Closing Remarks

Day 2 - April 1 (Friday) 8:30 AM - 10:45 AM KST: Neurology/CNS

8:30 AM

Opening Remarks
Jewan Bae

Program Director, [MIT Corporate Relations](#)



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Program Director, [MIT Corporate Relations](#)

Jewan John Bae comes to MIT Corporate Relations with more than 20 years of experience in the specialty chemicals and construction industries. He facilitates fruitful relationships between MIT and the industry, engaging with executive level managers to understand their business challenges and match them with resources within the MIT innovation ecosystem to help meet their business objectives.

Bae's areas of expertise include new product commercialization stage gate process, portfolio management & resource planning, and strategic planning. He has held various business leadership positions at W.R. Grace & Co., the manufacturer of high-performance specialty chemicals and materials, including Director of Strategic Planning & Process, Director of Sales in the Americas, and Global Strategic Marketing Director. Bae is a recipient of the US Army Commendation Medal in 1986.

8:40 AM

Neuroimmune Interactions Shaping Social Behavior

Gloria Choi

Mark Hyman Jr. Career Development Associate Professor, [MIT Department of Brain and Cognitive Sciences](#)



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Mark Hyman Jr. Career Development Associate Professor

[MIT Department of Brain and Cognitive Sciences](#)

Gloria Choi is an investigator at the Picower Institute for Learning and Memory and an associate professor in the Department of Brain and Cognitive Sciences at the Massachusetts Institute of Technology. She received her undergraduate degree from the University of California, Berkeley. Choi completed her Ph.D. at the California Institute of Technology where she worked in the laboratory of David Anderson. She was a postdoctoral research scientist in the laboratory of Richard Axel at Columbia University. Choi's lab studies the interaction of the immune system with the brain and the effects of that interaction on neurodevelopment, neural circuit function and behavior.

The beneficial effects of infection and the ensuing inflammation on neurological disorders have previously been noted. For example, a subset of children with autism spectrum disorder (ASD) exhibits temporary but considerable improvements in their behavioral symptoms during episodes of fever, a sign of systemic inflammation. However, a mechanistic understanding of how fever-associated immune responses translate into behavioral relief—both at the molecular and neural level—is lacking. We show that the social behavioral deficits in offspring exposed to maternal immune activation can be temporarily rescued by the inflammatory response elicited by the administration of lipopolysaccharide (LPS). We demonstrated that the behavioral rescue requires peripherally-produced IL-17a, which engages its cognate receptor (IL-17Ra) to modulate the neural activity of S1DZ, the brain regions we have identified to be central to the manifestation of sociability deficits in the MIA model. Therefore, elevated IL-17a levels are critical for rescuing sociability deficits during an immune challenge. We observed that several monogenic models for autism displayed no discernable increase in IL-17a production or rescue of sociability deficits upon an immune insult. However, direct delivery of IL-17a into the S1DZ restored social behaviors just as in MIA mice. This study provided the first insight into the molecular mechanisms underlying transient behavioral improvement observed in a subset of individuals with ASD and also suggested that the variation in inflammatory responses might stratify responders from non-responders.

9:25 AM

Reversing Motor Impairments by Blockage of T-type Ca⁺ Channels with Antisense Oligonucleotides

Daesoo Kim

Professor, Department of Biological Sciences

[Korea Advanced Institute of Science and Technology \(KAIST\)](#)

10:10 AM

MIT Startup Exchange Lightning Talks

Jaspaul Singh

Co-Founder & CEO, Interon Laboratories

Paul Le Floch

Co-founder & CEO

[Axoft](#)

Joseph Azzarelli

Founder & CEO

[Kinovi](#)

10:35 AM

Closing Remarks