

# Precision Convergence Webinar Series

## INAUGURAL SESSION

### Inventing a Precision Science for a World Reset on Convergence Economy

by

Series Co-Chairs [Laurette Dubé](#) and [Shawn Brown](#)

with

High-Level Panel of Leaders in Science, Technology,  
On-the-Ground Action, Investment, and Policy

June 7, 11am-1pm EDT

For Remote Participation, please register [HERE](#)

#### SESSION AND SERIES OVERVIEW:

Ten years ago, Nobel Laureate Phillip Sharp co-authored a Science policy brief foreseeing the possibilities enabled by digital-powered science. He promoted *convergence* as the next scientific revolution, celebrating the merging of knowledge, technologies, and processes in the genomic, bio-medical, computer and engineering domains to accelerate precision medicine solutions to complex clinical conditions. with clear demonstration made on the epidemiological and clinical side of COVID-19. As the pandemic is accelerating our journey in the digital transformation of science, innovation, industry, government, and society, as well as in everyday life, we propose **precision convergence (PC)** as an approach to science and action to tap into the power of human and machine intelligence, creativity and empathy for transformation at scale.

Precision convergence (PC) expands upon precision medicine to the many facets of precision, targeting the embedding in modern society, with respect to the person's behavior, product/service design, professional practices, manufacturing processes, investment, system design, or policy. PC bridges the scientific characterization of multi-scale mechanisms in human biology and brain impacting *real-world behavior in contexts*, with the scientific understanding of the multi-scale mechanisms operating throughout society to define *real-world contexts*, physical or digital. The vision is that of a [world reset on convergence economy](#), i.e. weaving the commercial, social, environmental and health/healthcare trajectories within and across sectors and jurisdictions, as well as in a person's mind, building resilience throughout, for lasting individual and collective wellbeing and fully acknowledging that *developed* and *developing* world share the same planet.

This webinar inaugurates the [precision convergence series](#), launched to catalyze unique synergy between novel partnerships across sciences, sectors and jurisdictions around targeted domains of real-world solutions on one hand, and on the other hand, a next generation convergence of AI with advanced research computing and other data and digital architectures such as [PSC's Bridges-2](#) supporting data sharing frameworks such as [HuBMAP](#). The anchor presentation by series co-chairs will first articulate the disciplinary, data open/data sharing, and data-centric computational research that serves as the foundation of precision convergence to support adaptive real-world behavior and context. They will then provide an overview of the 15-year journey of a real-world test bed taking the food domain as first entry point and progressively moving to health/healthcare and other social and economic sectors .

A high-level panel of science, technology, business, and government leaders, each from their respective perspectives, are invited to sketch pathways to create a precision science that can support a modular moonshot to convergence economy . They will be asked to comment on:

- (1) whether and how a digital-powered world reset from economic convergence to convergence economy over the course of this century appears possible from their respective professional and organizational vantage point
- (2) whether and how the different precision sciences can be brought together to convergence around adaptive real world solutions for behavioral change and ecosystem transformation at scale
- (3) What could be first key milestone (s) for a precision convergence collaboration to support a modular moonshot program for a world reset on convergence economy; taking either or both health/healthcare and agri-food as entry points for domains of transformation; and taking respective vantage points and from the perspective of key institutions that are structuring traditional and modern society.

**The McGill Centre for the Convergence of Health and Economics (MCCHE)** is a virtual world network of scientist, action and policy leaders promoting the weaving of digital-powered interdisciplinary science into person-centered domain-specific solutions at scale to global challenges faced by traditional and modern economy and society worldwide. The MCCHE stimulates lasting collaborations that bridge the many divides in the market, economy, and society that are at the root of these most pressing modern challenges through collaborativemodular convergence innovation platforms.

**The Pittsburgh Supercomputing Center** is a joint computational research center between Carnegie Mellon University and the University of Pittsburgh. Established in 1986, PSC is supported by several federal agencies, the Commonwealth of Pennsylvania and private industry. PSC provides university, government, and industrial researchers with access to several of the most powerful systems for high-performance computing, communications, and data-handling available to scientists and engineers nationwide for unclassified research. PSC advances the state-of-the-art in high-performance computing, communications and informatics and offers a flexible environment for solving the largest and most challenging problems in computational science.

## Anchor Presenters



**Laurette Dubé** is the founding Chair and Scientific Director of the McGill Centre for the Convergence of Health Economics. She holds the James McGill Chair of Consumer and Lifestyle Psychology and Marketing. Her work has been published in top disciplinary journals in Psychology, Management and Medicine as well as in multidisciplinary journals. She holds an MBA in finance, and a PhD in behavioural decision making and consumer psychology. During her 2020/2021 sabbatical, she is a visiting scholar at the National Research Council of Canada and at the Pittsburgh Supercomputing Center, Carnegie Mellon, USA. <https://thefutureeconomy.ca/interviews/laurette-dube>



**Shawn Brown** is the Vice Chancellor for Research Computing at the University of Pittsburgh and the Director of Pittsburgh Supercomputing Center at the Carnegie Mellon University & University of Pittsburgh. Prior to his appointment, Dr. Brown served as the Associate Director of Research Software Development at the McGill Centre of Integrative Neuroscience at the McGill Neurological Institute. Dr. Brown is an expert on high-performance computing and computational simulation. He has over 25 years of experience in developing software to support the use of high-performance computing for research in areas such as chemistry, bioinformatics, and public health. His research interests are also focused on how agent-based modeling and other computational techniques can be used to provide decision support in public health and chronic disease.

## Panelists



**Mehmood Khan, M.D.**, is Chief Executive Officer and Board Member of Life Biosciences Inc and Chair of the U.S. Council on Competitiveness. In his role as CEO, Dr. Khan provides strategic direction and operational oversight across Life Biosciences and its six daughter companies. Dr. Khan previously served as Vice Chairman and Chief Scientific Officer of Global Research and Development at PepsiCo, where he played a pivotal role in the company's global R&D efforts to incorporate healthier and more nutritious offerings in their portfolio. Dr. Khan also oversaw PepsiCo's global sustainability initiatives based on the belief that success in business is inextricably linked to the sustainability of the world we share. Before moving into industry, Dr. Khan had a distinguished medical career as a faculty member in endocrinology at the Mayo Clinic and Mayo Medical School. He also led programs in diabetes, endocrinology, metabolism and nutrition for the Hennepin County Medical Center in Minneapolis.



**Paul Donato** is the Chief Research Officer, Advertising Research Foundation (ARF) since October 2017. Paul is a highly-regarded leader in media and advertising research with more than two decades of industry experience. Earlier in his career he co-founded WPP's Media Research Business Unit, served as CEO of Kantar Media, and Technical Director of IBOPE Latin America. He was the EVP and CRO for The Nielsen Company for more than a decade, overseeing Nielsen retail, consumer, mobile, and media measurement methodologies. Upon leaving Nielsen, Paul founded Jatopond, a media and market research firm. He currently sits on the Future State Committee of the National Air and Space Museum. In addition to leading the research team, Paul will also play an active role in overall ARF leadership, helping to guide our future direction.



**Darío Gil, Ph.D.** is Senior Vice President and Director of IBM Research. As a technology and business leader, Dr. Gil is responsible for IBM Research, one of the world's largest and most influential corporate research labs, with over 3,000 researchers. Dr. Gil leads the technology roadmap and the technical community of IBM, directing innovation strategies in areas including hybrid cloud, AI, quantum computing, and exploratory science. Dr. Gil co-chairs the MIT-IBM Watson AI Lab, which advances fundamental AI research to the broad benefit of industry and society. He also co-chairs the COVID-19 High-Performance Computing Consortium, which provides access to the world's most powerful high-performance computing resources in support of COVID-19 research. Dr. Gil is a member of the National Science Board, the governing body of the National Science Foundation (NSF), a member of the Board of Governors of the New York Academy of Sciences, and a trustee of the New York Hall of Science.



**Alan Bernstein, Ph.D.** President and CEO, Canadian Institute for Advanced Research. Alan has been President & CEO of CIFAR since 2012. He is one of Canada's leading scientists and was an early champion of women in science and young scientists. In 2000, he became the founding President of the Canadian Institutes of Health Research (CIHR), Canada's federal agency for the support of health research. In that capacity, he led the transformation of health research in Canada. Author of over 225 scientific publications, Alan made landmark contributions to the study of stem cells, blood cell formation (hematopoiesis), and cancer. He serves as co-chair of the Scientific Advisory Committee for Stand Up 2 Cancer Canada, is a member of the Sabin-Aspen Vaccine Science and Policy Group, and the Scientific Advisory Committee of the Bill and Melinda Gates Foundation. In May 2020 he was appointed to Canada's COVID-19 Vaccine Task Force and in February 2021, he was appointed Chair of the Variants of Concern, Scientific Advisory Council.



**Fadel Ndiame, Ph.D.** is Deputy President of AGRA (Alliance for a Green Revolution in Africa), Representative to the African Union & Senior Advisor of the President; Interim Vice President of Policy and State Capability; Regional Director in West Africa, Lead Coordinator of the Farmer Organization Support Center in Africa (FOSCA), Dr Ndiame has been keen to provide leadership in the context of AGRA mandate to contribute to agricultural transformation on the African Continent by matching economic opportunities available to smallholder farmers, rural entrepreneurs and agribusinesses with policies and agricultural investment programs that have impact. Prior to his appointment in AGRA, he was a Program Director at the W.K. Kellogg Foundation in Southern Africa. In this capacity he led the conceptualization and content design of the Foundation's Investment programme in Southern Africa, with a particular focus on economic opportunities and agricultural investment programs. Prior to that, he served as Executive Regional Director of the West Africa Rural Foundation (WARF), Program Coordinator at the Local Organization Support Program (LOSP), and a Program Coordinator, Senegalese Institute of Agricultural Research.