



Engineering Biology for Solutions in Health, Food and the Environment

SPEAKER BIOGRAPHIES



Dr. Mona Nemer

Canada's Chief Science Advisor

Before becoming Canada's Chief Science Advisor, Mona Nemer was Professor and Vice-President, Research, at the University of Ottawa and Director of the Molecular Genetics and Cardiac Regeneration Laboratory.

Her research focused on the heart, particularly on the mechanisms of heart failure and congenital heart diseases. She is the author of over 200 highly cited publications that have appeared in prestigious scientific journals. Her work has contributed to the development of diagnostic tests for heart failure and the genetics of cardiac birth defects. She has trained over 100 students from various countries.

Dr. Nemer has served on several national and international advisory committees and executive boards, and is the recipient of many national and international honours. She is a Member of the Order of Canada, a fellow of the Academy of Sciences of the Royal Society of Canada, a fellow of the American Academy of Arts and Science, a Knight of the Ordre national du Québec and a Knight of the French Republic's ordre national du Mérite. She has also been awarded honorary doctorates from France and Finland.

Dr. Nemer holds a PhD in Chemistry from McGill University. Prior to joining the University of Ottawa, she was a Professor of Pharmacology at the Université de Montréal and directed the Cardiac Genetics Unit at the Montreal Clinical Research Institute.



Marc LePage
Genome Canada

Marc LePage is President and CEO of Genome Canada. Before assuming this role in January 2016, he served as President and CEO of Génome Québec since December 2011, where he led a major increase in research activity and enhanced focus on the development of genomic applications within priority sectors within the province.

He brings a wealth of experience in the innovation sector and venture capital, in addition to a broad network of international contacts.

He is an expert in international partnerships and previously served as Special Advisor, Climate Change and Energy for the Embassy of Canada in Washington, D.C. and worked as Consul General at the Canadian Consulate in San Francisco/Silicon Valley.

Marc LePage was also one of the pioneers behind the founding of Genome Canada in 2000. During his tenure as Executive Vice-President of Corporate Development, he made a significant contribution to the development of genomics in Canada.

From 1994 to 2000, he worked as Director of Business Development for the Medical Research Council, where he was in charge of building international partnerships with the pharmaceutical industry, venture capital and foundations.



Dr. Bill Peck
Twist Bioscience

Dr. Bill Peck is the Chief Technology Officer at Twist Bioscience. Bill is an expert in managing difficult technology projects and delivering robust scalable biological manufacturing processes. At Complete Genomics he developed sequencer fluidics systems, including silicon nano-array flowcell, and oversaw instrument integration into Human Genome Sequencing Factory. At Agilent, Bill architected two generations of their high density microarray manufacturing platforms. In addition to his experience in chemical process automation and hardware development, Bill's technical expertise is in nanofluidics with original research in birth evolution and decay of turbulence created by droplets. As a post-doc fellow at Stanford/NASA-Ames, Bill researched computational fluid mechanics and developed a numerical code to model free surface flows.



Alison Paprica
Vector Institute

Alison has more than 20 years of management experience in the government and private and not-for-profit sectors. Prior to joining Vector, she was Director, Strategic Partnerships at the Institute for Clinical Evaluative Sciences (ICES). In that role, she laid the groundwork for ICES analytic services for the private sector and initiated ICES' first public engagement work. Alison also developed and expanded ICES' partnerships with important provincial, national and international health data holding organizations, including establishing Memoranda of Understanding between ICES and the Farr Institute (UK), Cancer Care Ontario, the University of Melbourne and the Population Health Research Institute.

From 2010 to 2013, Alison was the Director of the Planning, Research & Analysis Branch at the Ontario Ministry of Health & Long-Term Care, responsible for up to \$60 million of annual health research investments. She also led extensive knowledge translation activities to ensure that research findings were taken up and used in policy development and planning. Within the Ontario Public Service, Alison also held the positions of founding Manager of the Planning Unit at the Ministry of Health & Long-Term Care and Manager of Performance Measurement & Results at the Ministry of Research & Innovation.

Prior to joining the Ontario Public Service in 2001, Alison worked in international pharmaceutical R&D for seven years at Eli Lilly, Astra Pharma and Genpharm Inc. She holds an Honours Combined BSc in Biochemistry and Chemistry (McMaster), a PhD in organic chemistry (Western University) and is Assistant Professor (status) at the Institute for Health Policy, Management & Evaluation at the University of Toronto. She is among the first 5% of people to obtain Project Management Professional (PMP) certification internationally, and led the development and delivery of two University of Toronto courses focused on project management for research.



Brenda Andrews

Donnelly Centre for Cellular and Biomolecular Research, University of Toronto

Brenda Andrews is the Charles H. Best Chair of Medical Research, Director of the Donnelly Centre for Cellular and Biomolecular Research and Professor of Molecular Genetics at the University of Toronto. Dr. Andrews completed her PhD in Medical Biophysics (with Paul Sadowski) at the University of Toronto, and postdoctoral training in genetics with the late Dr. Ira Herskowitz at the University of California San Francisco. In 1991, Dr. Andrews was recruited to the Department of Medical Genetics (now Molecular Genetics) at the University of Toronto. She became Chair of the Department in 1999, a position she held for 5 years before assuming a position as Chair of the Banting & Bet Department of Medical Research and as the inaugural Director of the Donnelly Centre. Dr. Andrews' current research interests include analysis of genetic interaction networks in budding yeast and mammalian cells, using high through-put genetics platforms that include high content microscopy for systematic analysis of cell biological phenotypes. Dr. Andrews is a Companion of the Order of Canada, an elected Fellow of the Royal Society of Canada, the American Association for the Advancement of Science and the American Academy of Microbiology.



Nathan Magarvey

Adapsyn and McMaster University

Dr. Nathan Magarvey is the Founder and Chief Scientific Officer of Adapsyn Bioscience, and is responsible for all aspects of the company's current collaboration with Pfizer. Additionally, he is an Associate Professor and Canada Research Chair in Natural Products and Chemical Biology in the Department of Biochemistry and Biomedical Sciences & Chemistry and Chemical Biology at McMaster University. He joined McMaster from Harvard Medical School and previously spent time in the pharmaceutical industry working for Wyeth Research, where he was directly involved in the discovery of new antibiotic and therapeutic microbial natural product small molecules. Dr. Magarvey's research focuses on disrupting how the discovery of

microbial metabolites is done- and how to leverage the ability to connect Genomes to Natural Products, and his research has advanced the discovery of new microbial small molecules. His work leads to research intersecting the interfaces of medicine, biology, chemistry and computer science.



Ratmir Derda

University of Alberta/CEO, 48 Hour Discovery

Ratmir Derda received his undergraduate degree in Physics from Moscow Institute of Physics and Technology in 2001, Ph.D. in Chemistry from the University of Wisconsin-Madison in 2008, under the supervision of Laura Kiessling, and postdoctoral training at Harvard University under the supervision of George Whitesides and Donald Ingber. He joined University of Alberta in 2011 as an Assistant Professor in Chemistry and was promoted to Associate Professor with Tenure in 2017. In his independent career at the U of Alberta, he raised over \$5M in funding and published 38 peer reviewed publications (53 lifetime publications, h-index 28). Since 2011, he has given more than 60 invited lectures and graduated three Ph.D. and one M.Sc. student, worked with more than 30 undergraduates and 15 high school students and trained six postdoctoral fellows; two of them continue their independent careers as Assistant Professors in Chemistry Departments in Universities in the U.S. and Brazil. Derda group currently consists of five graduate students, five postdoctoral fellows and research associates, two undergraduates, an exchange student and three high school students. In 2017 Ratmir founded 48HourDiscovery INC (Edmonton, AB) and co-founded SyntArray LLC (Salem, MA) to translate genetically-encoded libraries and other technologies developed in Derda Group. His notable awards include Melanie O'Neill Young Investigator Award in Biological Chemistry from Canadian Society of Chemistry (2018), David Gin New Investigator Award in carbohydrate chemistry from American Chemical Society (2017), Rising Star in Chemical Biology from the International Chemical Biology Society (2016); Young Investigator Award from the Boulder Peptide Society (2014); Canadian Rising Star in Global Health (2011).



Stephen Chambers

SynbiCITE

Dr. Stephen Chambers is CEO at SynbiCITE, the UK's national innovation & knowledge centre (IKC) for synthetic biology that helps early stage startup companies launch their new business ventures. SynbiCITE has overseen the dramatic growth of the UK innovation ecosystem surrounding synthetic biology with the highest rate of startup formation and record fund-raising activity.

Dr. Chambers has over twenty years' experience in research and innovation, working in biotech, pharma and academia. Previously, a founding scientist at Vertex Pharmaceuticals working on a number of drug discovery and development programmes, including the FDA approved drugs: Agenerase & Lexiva. Later he co-founded Abpro, serving as Vice President of Technology, and Bio-Start, an accelerator programme for the commercialisation of life-science companies.

Dr. Chambers also leads the entrepreneurial training in Lean LaunchPad for Synthetic Biology at Imperial College. He is board observer of several Imperial College London spinout companies and on the managerial board of the London DNA

Foundry. Dr. Chambers has also served as consultant for numerous venture capital & biotech companies. Dr. Chambers was awarded his Ph.D. from the University of Warwick and has an extensive publication history.

Catalina Lopez-Correa

Genome BC



With more than 20 years of international experience in both the academic and private sectors, Dr. Catalina Lopez-Correa's deep understanding of genomics has inspired leaders in science and industry to collaborate toward solving some of the world's greatest challenges.

Prior to joining Genome BC, Catalina was the CSO and Vice-President Scientific Affairs at Genome Quebec, where she was instrumental in developing competitive teams for national and provincial research projects raising the profile of Canadian genomics on the global stage.

Before becoming one of Canada's leading advocates for genomics research and translation, Catalina held senior research positions with pharmaceutical giant Eli Lilly and the renowned deCODE genetics lab in Iceland. From leading teams to identifying genomic biomarkers in therapeutic areas of oncology, cardio-metabolic and neurosciences to developing screening strategies associated with disease, Catalina's leadership helped drive the discovery and development pipelines.

As part of her commitment to international development, Catalina has championed several initiatives aimed at demonstrating the impact of genomics in developing countries. Since 2002 she has served as evaluator for large multinational projects funded by the European Commission and has been recognized with several awards nationally and internationally.

Catalina holds a Medical degree from the UPB in Colombia, a Master's degree in Human Genetics from Paris V University in France, a PhD in Medical Sciences from the KULeuven in Belgium, and a mini MBA from McGill University in Canada.

Rasmus Jensen

LanzaTech



Based in Chicago, Dr. Rasmus Jensen is a Senior Scientist at LanzaTech. He joined the company in 2011, in New Zealand as a scientist in the Synthetic Biology team. Over the last six years Rasmus has been a part of developing a range of new synthetic biology tools, including transformation and genome editing techniques, to expand the product portfolio of LanzaTech's gas fermenting microbes. Together with the team and external partners, he has developed omics protocols and is continuing the quest to further the synthetic biology tool box for gas fermenting organisms. Rasmus obtained a Masters in Biotechnology Engineering from the Technical University of Denmark in 2003. He was initially interested in medical microbiology and following a year in Texas researching *Mycobacterium tuberculosis* before doing moving to Nottingham, UK where he studied *Staphylococcus aureus* and was awarded his Ph.D. in 2008 from the University of Nottingham.



Cathy Hass

BioAmber

Dr. Cathy Hass is the lead scientist for development of emerging products at BioAmber. She graduated *summa cum laude* from the University of Florida in 2007 with a B.S. in Biochemistry. In her doctoral studies, she examined DNA repair functions of Replication Protein A at the University of Iowa and received her PhD in 2012. She joined BioAmber in 2012 and is currently developing new platforms of specialty molecules to complement BioAmber's production of bio-succinic acid.



Murray McLaughlin

Bioindustrial Innovation Canada

Dr. Murray McLaughlin is President of McLaughlin Consultants and an Advisor to Bioindustrial Innovation Canada (BIC). From 2010 to 2016 he was the Executive Director of BIC and the Sustainable Chemistry Alliance in Sarnia, Ontario, with a focus on a Sustainable Bioeconomy. Also through BIC he managed the AgSci Cluster, a national Bioproducts cluster supported by AAFC. Dr. McLaughlin has held various positions in the private, government and non-profit sectors such as Director of Business Development for the Canadian Light Source, President of Ontario Agri-Food Technologies, Deputy Minister of Saskatchewan Agriculture and Food, and President of Ag-West Biotech Inc. He was the founder of the ABIC conferences which started in 1996. He managed a Venture Capital Fund, Foragen, for agriculture and also spent 15 years with ELANCO, division of Eli Lilly in R&D and marketing. His career has focused on bioindustrial and agricultural technologies including research, development and product management and marketing and commercialization as well as economic development and cluster building. He has been and is a member of numerous Boards of Directors and Advisory Committees, including, BioNB and FPInnovations. He co-chairs the Industrial Bioproducts Value Chain Roundtable which is a partnership between Industry and AAFC for the bioeconomy. He is a graduate of Nova Scotia Agricultural College, McGill (B. Sc. Agr.) and Cornell (MSC and PhD). He has an Honorary Doctorate Degree from Dalhousie University and has received several awards including Alumni of the Year for NSAC: LSO Community Service Award; the GoldLeaf award from BioteCanada and the Queen Elizabeth Diamond Jubilee Medal. He was recipient of the LSO Lifetime Achievement Award in 2016, and CIC International Award 2017 and also recognized in the top 100 global leaders in the Advanced Bioeconomy at Biofuels Digest Conference in Washington, 2016.



David Bressler

University of Alberta/Forge Hydrocarbons

Dr. David Bressler is a Full Professor appointed within the Faculty of Agricultural, Life & Environmental Sciences where he studies the conversion of biomass to valuable materials and chemicals. His general area of research is the industrial application of chemical, thermal, and biological systems for the conversion of biomass into higher value materials, chemicals, and value-added commodities. His research program is unique in that it utilizes a multidisciplinary approach combining industrial microbiology, biotechnology, and analytical chemistry with previous experience in engineering and high temperature free radical chemistries. The program is very applied and is resourced through numerous partnerships with leading enzyme companies as well as agricultural, chemical and forestry industries. He is the holder of several patents and patent applications in the areas of renewable biofuels and in the production of renewable biomaterials.

Dr. Bressler is also the inventor and technology founder behind Forge Hydrocarbons, a novel thermochemical lipid-to-hydrocarbon based technology company, with internationally awarded patents, that has commenced building commercial facilities in Sombra Ontario with expected completion fall 2018.

Dr Bressler was named to Canada's Clean 50 for 2017 being named one of the top 50 people in clean tech in Canada.



Steven Hallam

University of British Columbia, ECOSCOPE Director

Dr. Steven Hallam is a University of California Santa Cruz and MIT trained molecular biologist, microbial ecologist, entrepreneur, and innovator with over 20 years experience in field and laboratory research at disciplinary interfaces. He is a Professor in the Department of Microbiology and Immunology, Canada Research Chair in Environmental Genomics and a Leopold Leadership Fellow. He is also a program faculty member in the Bioinformatics and Genome Sciences and Technology training programs at UBC. Dr. Hallam directs ECOSCOPE an NSERC CREATE industrial stream training program in support of the emerging bioeconomy and the Environmental Genomics (ENGEN) research cluster focused on microbial biotechnology innovation. His research intersects microbial ecology, biological engineering and big data science with specific emphasis on the creation of functional screens and computational tools that reveal hidden metabolic powers of uncultivated microbial communities. His laboratory has developed MetaPathways, a modular annotation and analysis pipeline to predict metabolic interactions from environmental sequence information. Other research areas include single-cell genome sequencing and biosensor development for environmental monitoring and high-throughput enzyme discovery.



Molly Shoichet

Ontario's first Chief Scientist

Dr. Shoichet is an expert in the study of polymers for drug delivery and tissue regeneration and a world leader in the areas of polymer synthesis, biomaterials design and drug delivery in the nervous system. Her research focuses on strategies to promote tissue repair after traumatic spinal cord injury, stroke and blindness.

Dr. Shoichet holds the Tier 1 Canada Research Chair in Tissue Engineering and is Professor of Chemical Engineering & Applied Chemistry, Chemistry, and Biomaterials & Biomedical Engineering at the University of Toronto. She joined the University of Toronto in 1995 and was appointed University Professor in 2014, a distinction held by less than 2 per cent of the university's faculty.

Dr. Shoichet has published over 575 papers, patents and abstracts, has given over 350 lectures worldwide, and has trained over 185 scientists in the past 22 years. She founded three spin-off companies from her lab research and is actively engaged in translational research with several industry partners. In 2015, Dr. Shoichet launched a national social media initiative, Research2Reality, aimed at engaging the public in the importance of research.

Dr. Shoichet is the recipient of 43 prestigious national and international awards. In 2015, she was the North American Laureate for the L'Oreal-UNESCO for Women in Science and in 2017, she won the Killam Prize in Engineering, the most important engineering prize in Canada. She is the only person ever to be inducted into all three of Canada's National Academies: the Canadian Academy of Sciences of the Royal Society of Canada, the Canadian Academy of Engineering, and the Canadian Academy of Health Sciences.

Dr. Shoichet was appointed to the Order of Ontario in 2011. In 2013, her contributions to Canada's innovation agenda and the advancement of knowledge were recognized with the QEII Diamond Jubilee Award.



Peter Zandstra

University of British Columbia and Centre for Commercialization of Regenerative Medicine

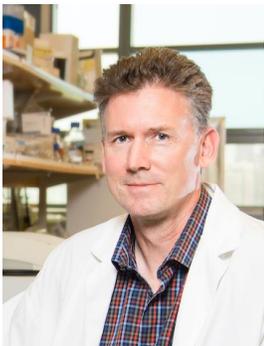
Dr. Peter Zandstra is the Founding Director, School of Biomedical Engineering, and the Director of the Michael Smith Laboratories at the University of British Columbia. Dr. Zandstra joined UBC from the University of Toronto where he is a University Professor and was the Canada Research Chair in Stem Cell Bioengineering in the Institute for Biomaterials & Biomedical Engineering and served as Executive Director of Medicine by Design. The recipient of numerous awards, Dr. Zandstra and his team have pioneered the field of stem cell bioengineering which applies engineering principles and technology to fundamental and translational problems in stem cell biology. He has also directly participated in co-founding three companies, including the not-for-profit CCRM (where he serves as Chief Scientist) and ExCellThera, a company focused on the use of blood stem cells for treatment of disease.



Krishna Mahadevan

University of Toronto

Krishna Mahadevan is a Professor in the Departments of Chemical Engineering & Applied Chemistry, and Institute of Biomaterials and Biomedical Engineering at the University of Toronto. He obtained his B. Tech from Indian Institute of Technology, Madras in Chemical Engineering in 1997 and then obtained his Ph.D. degree from the University of Delaware in Chemical Engineering in 2002. He was a research scientist at Genomatica Inc., San Diego from 2002–06 and has also held appointments as a visiting scholar and a guest lecturer at the Department of Bioengineering in the University of California, San Diego, and in the Department of Microbiology, University of Massachusetts, Amherst. His research interests are in the area of modeling, analysis and optimization of metabolism for applications in bioremediation, biochemicals production and medicine. He has received David W. Smith Jr. Best Paper Award in 2006, the Jay Bailey Young Investigator Award in Metabolic Engineering in 2010, the Society of Industrial Microbiology and Biotechnologists' Young Investigator Award in 2012, University of Toronto FASE Research Leaders Award in 2013, the Alexander von Humboldt Fellowship in 2014 and the Syncrude Innovation Award in 2014.



Rob Holt

BC Cancer Agency, University of British Columbia, Simon Fraser University

Dr. Holt grew up in the Vancouver area and studied science at the University of British Columbia. He received his PhD in Pharmacology from the University of Alberta, Canada, in 1998. After a brief postdoctoral fellowship in molecular evolution at the State University of New York Dr. Holt joined the company Celera Genomics in Rockville, Maryland where he served on Craig Venter's team as the Scientific Operations Manager for initial sequencing of the human genome. Since 2003 Dr. Holt has been a scientist at Canada's Michael Smith Genome Sciences Centre located at the British Columbia Cancer Agency (BCCA), where he is also Co-director of the BCCA Immunotherapy Program. Dr. Holt is recognized for his leadership role in decoding some of the first model organism genomes and pathogen genomes and, more recently, for developing next-generation sequencing methods for interrogating the genetics of the adaptive immune system. He has served as a scientific advisor to the NIH Human Microbiome Project and discoveries by his research group have linked new infectious agents to cancer risk. His current basic and clinical research directions are focused on synthetic immunology and immune interventions in cancer.



Adam Clore

Integrated DNA Technologies

Adam Clore is the Technical Director of Synthetic Biology at Integrated DNA Technologies. His passion for synthetic biology drives him to develop novel solutions to old and new challenges within the synthetic biology community. His background is in microbiology, biochemistry, and DNA repair. For his PhD in Biology and Systems Science, Adam studied the molecular genetics of hyperthermophilic archaea and their viruses.



B.F. Francis Ouellette

Genome Quebec

B.F. Francis Ouellette was the associate director of the Informatics and Biocomputing platform and a senior scientist at the Ontario Institute for Cancer Research (OICR) in Toronto, Ontario. Before his move to Toronto in 2007, Francis was an Associate Professor in the department of Medical Genetics at UBC and Director of the UBC Bioinformatics Centre (UBiC) at the Michael Smith Laboratories. Francis was trained at McGill University (undergraduate and graduate studies), as well as the University of Calgary and Simon Fraser University (graduate studies). After working on the yeast genome sequencing project at McGill University, he took a position at the NCBI as GenBank coordinator from 1993 to 1998. Francis currently holds a position of Associate Professor in the department of Cell and Systems Biology at the University of Toronto.

His work at the OICR involved bioinformatics training, as well as biocuration and management of cancer genomic data. He plans to continue his bioinformatics training work with bioinformatics.ca at Génome Québec. Since his work at the NIH, coordinating the largest Open DNA sequence database in the World (GenBank), Francis has been dedicated to ensuring openness of Science: the data it generates, and the publications that report them. Not only through his work, but on the various advisory boards and editorial boards he serves on: PLOS Computational Biology Education Editor; Associate Editor for DATABASE, an OUP Open Access journal; a number of NIH-funded Open Source and Open Data resource projects: The Saccharomyces Genome Database SAB member, the Galaxy Project SAB member, The GenomeSpace advisory member; the Human Microbiome Project advisory member. Francis is also on the Elixir-Europe SAB. Francis, until his position at GQ, was on Genome Canada's Science and Industry Advisory Council (SIAC) for the last 4 years.



Vincent Martin

Concordia University

Vincent Martin is an Associate Professor in Microbiology in the Department of Biology at Concordia University and holds the Canada Research Chair in Microbial Genomics and Engineering. He obtained a B.Sc. in Microbiology from McGill University (1989), an M.Sc. in Environmental Biology from the University of Guelph (1993) and a PhD in Microbiology from the University of British Columbia (1999) under the supervision of Dr. Bill Mohn, where he elucidated the metabolic pathway for plant diterpene biodegradation in *Pseudomonas*. His post-doctoral studies were performed with Dr. Jay Keasling at the Department of Chemical Engineering at the University of California, Berkeley, where he engineered *E. coli* for over-production of isoprenoids. In 2003 he joined the Physical Biosciences Division of the Lawrence Berkeley National Laboratory. The same year, with help from a \$43 million grant from the Gates Foundation, he co-founded Amyris Biotechnologies where he currently serves as a scientific advisor. In 2004, he joined Concordia University as an Assistant Professor. Vincent Martin's interests are focused on the metabolic engineering of microbes for the degradation of plant biomass and the production of commodity and high value chemicals. He is the project co-leader for a recently funded \$13.6 million Genome Canada grant aimed at the commercial production of high-value plant metabolites in microbial fermentation systems. Vincent Martin is also the fermentation

theme leader for the AAFC Cellulosic Biofuels and the NSERC Bioconversion Networks. In 2004, he received the Petro-Canada Young Innovator Award. He currently serves on the editorial board of the Canadian Journal of Microbiology, Bioengineered Bugs and the Water, Air and Soil Pollution journal.



Leslie Mitchell
NYU



Bogumil Karas
Western University

Dr. Karas is an Assistant Professor in the Department of Biochemistry at Western University, London, ON, Canada and CEO at Designer Microbes Inc, London, ON, Canada. Dr. Karas received his Ph.D. degree in Biology (2010) from Western University where his research was focused on deciphering genetics of nitrogen-fixing root nodule symbiosis. Next, he worked at the Synthetic Biology and Bioenergy group at J. Craig Venter Institute (JCVI) in La Jolla, CA, USA. At JCVI his work focused on developing technologies for cloning of whole natural or synthetic chromosomes as centromeric plasmids in yeast, where they can be manipulated using powerful yeast genetic tools and then transplanted inside microbial cells of the same or different species. Currently, Dr. Karas is developing novel genetic tools for eukaryotic algae: *Phaeodactylum tricornutum*, *Thalassiosira pseudonana* and soil bacterium *Sinorhizobium meliloti*.



Vardit Ravitsky
Université de Montréal

Vardit Ravitsky, PhD, is Associate Professor at the Bioethics Programs within the Department of Social and Preventive Medicine of the School of Public Health at the University of Montreal. She is also Director of the Ethics and Health Branch of the CRE, an interuniversity research center in ethics (previously the CRÉUM: Centre de recherche en éthique de l'Université de Montréal).

Ravitsky is an elected Board member and Treasurer of the International Association of Bioethics (IAB). She is a member of CIHR's Institute Advisory Board on Research Excellence, Policy and Ethics. Previously, she was a Board Member and Ethics Designate of CIHR's Institute of Genetics (IG) and Co-Chaired this Institute's "GE3LS and Health Services & Policy Research Priority and Planning Committee" (GE3LS stands for Genomics research and its Ethical, Economic, Environmental, Legal and Social aspects). Ravitsky is member of the University of Montreal's Public Health Research Institute (IRSPUM), of the Quebec Reproduction Network (RQR), and of

the Canadian Fertility and Andrology Society (CFAS). Previously, she was faculty at the Department of Medical Ethics, School of Medicine, at the University of Pennsylvania. She was also a Senior Policy Advisor at CIHR's Ethics Office and a GE3LS consultant to Genome Canada.

Prof. Ravitsky's research focuses on reproductive ethics and the ethics of genetic and genomics research. Her research interests in bioethics also include research ethics, health policy and cultural perspectives. She is particularly interested in the various ways in which cultural frameworks shape public debate and public policy in the area of bioethics. Her research projects are funded by CIHR, FRQSC, SSHRC, and Genome Canada. She published over 100 articles, book chapters and commentaries on bioethical issues, and is lead-editor of "The Penn Center Guide to Bioethics".

Born and raised in Jerusalem, Ravitsky brings international perspectives to her research and teaching. She holds a BA in philosophy from the Sorbonne University in Paris, an MA in philosophy (with a specialization in bioethics) from the University of New Mexico in the US, and a PhD in philosophy (with a specialization in bioethics) from Bar-Ilan University in Israel. She was a post-doctoral fellow at the Department of Bioethics of the NIH and at the National Human Genome Research Institute (NHGRI).



Joško Bobanović

Sofinnova Partners

Joško Bobanović joined Sofinnova in 2010 as Partner dedicated to activities in renewable chemistry and industrial biotech. He currently sits on the boards of Metgen Oy, Synthace Ltd, Cellucomp Ltd, Comet Biorefining Inc. and DNA Script. Prior to joining Sofinnova he spent eight years in venture capital with iNovia Capital in Montreal, Canada. Joško focused on seed and early stage investments in cleantech and information technology. Prior to his venture capital career he created an internet start-up and a software company. After completing his PhD studies Joško developed real-time ocean forecasting systems still used at Environment Canada for coastal ocean management. Joško holds a BSc. in physics from University of Zagreb, a PhD in physical oceanography from Dalhousie University and an MBA in finance and marketing from McGill University.



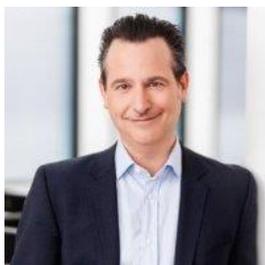
Ken Nickerson

OMERS Ventures

Known for his innovation and visionary thinking, Mr. Nickerson is an active investor specializing in research and development, software engineering and business strategy. He is the CEO of private investment and R&D firm iBinary LLC.

His many achievements include bringing Hotmail to Microsoft as GM of Microsoft Network Canada, early Internet and Network Management to Rogers as VP Development and research in emergent systems for banking and insurance. Mr. Nickerson is an active and past board member at companies including Kobo, Atomic Reach, Synbiota, Agora Mobile, Synaptop, SKULogix, docSpace, Chapters Online, OpenCola and several others.

Mr. Nickerson is a member of the IEEE and ACM and is actively engaged in philanthropy focused on early education needs.



Jean-François Pariseau

BDC Venture Capital

Jean-François Pariseau is Partner in the Healthcare Fund. He joined BDC Venture Capital in 2001 and has over 20 years of investment and entrepreneurial experience in the healthcare sector.

Prior to joining BDC, Jean-François was an investment manager with CDP Capital Technology Ventures, a \$2 billion global fund investing in healthcare, information technology and advanced technologies, where he was responsible for healthcare investments in Canada and the US. He has invested and managed more than \$200 million in biopharmaceutical and medical device companies in North America. His experience includes transactions in private and in public companies, IPOs, M&A and fund investments. Prior to this, he was CEO of a consulting company specializing in regulatory affairs, and was VP, R&D for a pharmaceutical-product distribution company, both of which he founded.

Jean-François currently sits on the Board of Directors of AngioChem, Imagia Cybernetics, Clementia Pharmaceuticals (NASDAQ: CMTA) and Profound Medical (TSXV: PRN).

Jean-François holds a Bachelor of Science in Biotechnology from Université de Sherbrooke, a Master of Science in Biomedical Sciences from Université de Montréal, and an MBA from HEC Montréal.



Sean O'Sullivan

SOSV

Sean O'Sullivan is managing partner of SOSV, the world-leading "Accelerator VC". SOSV invests \$50 million per year and backs more than 150 new startups annually through its accelerators. Recognized in 2017 as the world's #1 most active global early stage investor and the #2 most active global seed investor*, SOSV is also the #1 most active investor in hardware and life sciences, helping startups get further and go faster.

* Crunchbase: "Global Innovation Investment Report - 2016 Year in Review"



Andreas Jurgeit

M Ventures

Andreas Jurgeit is Investment Director in the Life Sciences team at M Ventures, the strategic, corporate venture capital arm of Merck KGaA, Darmstadt, Germany.

He previously held positions as investment manager at the Zurich-based VC Redalpine, active across various industries with investments in life sciences and ICT, and business development at the Swiss-based Redbiotec where he was instrumental to the trade-sale of its subsidiary RedVax to Pfizer in 2014.

Andreas received his MSc in Molecular Biology from the University of Innsbruck (Austria) and his PhD in Cell Biology and Molecular Virology from the University of Zurich (Switzerland) where he worked with the Menlo Park-based 3V Biosciences on the discovery of host factor-based antiviral strategies and drug development by

applying Systems Biology approaches. Andreas lectures on Business Strategy (IFJ, ETH Zurich) and advises academic institutes on the commercialization of research findings.



Jenny Rooke

Genoa Ventures

Jenny Rooke brings a combination of strategy, operating, and investing experience to her work with life sciences companies, specializing in research tools, diagnostics, and synthetic biology. Dr. Rooke is founder and Managing Director of Genoa Ventures, which invests in early-stage companies innovating at the intersection of biology and technology. Her previous investing roles include Venture Partner at F-Prime Capital (formerly Fidelity Biosciences), where she also served her Kauffman Fellowship, and Anterra Capital, the world's largest food and Ag-focused fund. Previously, Jenny served as a Senior Program Officer of the Global Health Discovery group at the Bill & Melinda Gates Foundation. Operationally, she held multiple executive positions at U.S. Genomics, a venture-backed biotech start-up advancing single molecule detection technologies for diagnostics, biodefense, and research. Jenny made her transition from the lab to business as a management consultant with McKinsey & Co., where she advised leading pharmaceutical and biotech companies on business strategy. Jenny earned her Ph.D. in genetics from Yale University and her B.S. in physics from Georgia Tech.



Jun Axup

Indie Bio

As Director of Science at SOSV, Jun supports program logistics and lab operations. She advises teams on technical issues and evaluate applicants. She also works to broaden the IndieBio ecosystem through community events and outreach.

Jun is an entrepreneurial scientist with a PhD in chemical biology from The Scripps Research Institute. She has worked at several startups in the fields of immunology, protein engineering, lab automation robotics, CRISPR, and precision medicine. Jun is passionate about using the intersection of biology, technology, and design to increasing human healthspan.



Jennifer Kuzma

Genetic Engineering and Society Center at NC State University

Jennifer is the Goodnight-NCGSK Foundation Distinguished Professor in the School of Public and International Affairs, and co-director of the Genetic Engineering and Society Center at NC State University. Prior to this, she was associate professor in S&T policy at the University of Minnesota (2003-2013); study director at the U.S. National Academies of Science (NAS) (1999-2003); and an AAAS Risk Policy Fellow at the USDA (1997-1999). She has over 100 publications in areas surrounding emerging technologies and governance. Kuzma currently serves on the World Economic Forum's Council on Technology, Values, and Policy and has held other leadership positions, including the NAS Preparing for Future Biotechnology Committee, Society for Risk Analysis Council Member and Secretary, Chair of the Gordon Conference on S&T Policy, Member of the US FDA Blood Products Advisory Committee, and a Member of the UN WHO-FAO Expert Group for food

nanotechnology. In 2014, she received the SRA Sigma Xi Distinguished Lecturer Award for outstanding contributions to the field of risk analysis and in 2017 she was awarded the Fulbright Canada Research Chair in Science Policy.



Ian Affleck

VP, Plant Biotechnology CropLife Canada

Ian Affleck is the VP of plant biotechnology for CropLife Canada. In this role, Affleck works with domestic and international agricultural stakeholders and governments on the development of policies, regulations, and science related to plant biotechnology. Prior to joining CropLife Canada, Affleck worked at the Canadian Food Inspection Agency for 10 years. His work there focused on the regulation of novel plants and new varieties.

Affleck holds a bachelor of science in agriculture from the Nova Scotia Agricultural College, concentrating on agronomy and pest management. He also holds a master's degree in agriculture from the University of Guelph, specializing in horticulture and plant breeding.

Affleck has been involved in agriculture from an early age, having grown up on a potato farm in Bedeque, Prince Edward Island.



Neal Carter

Okanagan Specialty Fruits

Neal and Louisa Carter are the innovators behind Okanagan Specialty Fruits Inc. (OSF) and nonbrowning Arctic® apples. As apple and cherry orchardists who have lived in the Okanagan Valley for over twenty years, they know their fruit. They also know that apple consumption has been flat-to-declining for decades, and wanted to offer the industry and consumers something that can help reverse this trend, which is why they founded OSF in 1996.

Neal is a bioresource engineer with over thirty years of experience working around the world – largely on efforts to enhance food security in the third world. It was through this firsthand experience that Neal was convinced that biotechnology can help farmers meet ever-expanding global food demand.

The Carter's take a hands-on approach in their orchard and are actively involved in field operations through the year. Their love for the outdoors extends beyond their long hours in the orchard; their downtime is spent enjoying hiking, mountain biking and back-country skiing.



David Conley

AquaBounty Technologies

Dave joined AquaBounty Technologies as Director of Communications in July 2013. AquaBounty is an aquaculture biotechnology firm that has developed the AquAdvantage® Salmon (AAS), a precision bred (genetically engineered) Atlantic salmon that grows quickly and reaches market size in half the time of conventional farmed Atlantic salmon while using 20-25% less feed. When approved by the U.S. FDA on November 19, 2015, AAS became the first transgenic food animal in the world.

Dave is a native of Montreal. His career in aquaculture grew out of his interests and training in agriculture, renewable resources development, and parasitology. Dave has over 40 years of diverse practical experience in food and fibre production, research, journalism, public policy development, public education, and communications.



Anita Ludwar

Business Analyst, Genome Alberta (Moderator)



Hans-Joachim Wieden

SynBridge

Dr. Hans-Joachim (HJ) Wieden is Professor of Physical Biochemistry in the Department of Chemistry and Biochemistry at the University of Lethbridge. He is the founding Director of the Alberta RNA Research and Training Institute (ARRTI), home to one of the largest groups of primarily RNA-focused research labs in Western Canada, as well as the SynBridge open synthetic biology maker space. Dr. Wieden holds an Alberta Innovates Strategic Research Chair with a focus on RNA Bioengineering. Research in his group comprises a broad range of topics, including the rational design of biological nanomachines, the design and reprogramming of genetic circuits, and the development of novel antibiotics.

Dr. Wieden received his Ph.D. in Biochemistry from the University of Witten/Herdecke in 2000, followed by a post-doctoral diploma in Bioinformatics from the Ruprecht-Karls-University in Heidelberg in 2003. Following his time as a visiting scientist in the Department of Cellular Biochemistry at the Max-Planck-Institute for Biophysical Chemistry from 2001-2004, he joined the University of Lethbridge as an Assistant Professor in 2005.

Dr. Wieden is dedicated to teaching and training the next generation of scientists. In addition to the undergraduate and graduate students in his research group, he has also been a team leader for iGEM teams since 2006, both at the collegiate and high school levels. The collegiate iGEM teams have won gold medals at 9 of the last 11 jamborees, and the high school team was the World Championship winner in 2013. He has been recognized for his dedication to teaching by receiving both the University of Lethbridge Distinguished Teaching Award and the University of Lethbridge Student's Union Teaching Excellence Award in 2011.



David Lloyd

FREDsense

David Lloyd is the CEO and cofounder of FREDsense Technologies, a synthetic biology startup looking to commercialize water instrumentation for the utility and mining sector. With multiple business plan competition awards and technical accolades FREDsense is positioned to change the way we think about what is in our water. David has been a part of numerous technical teams and been integral in

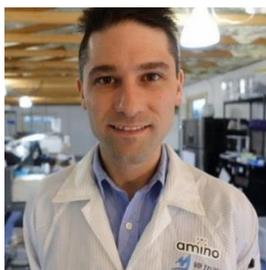
establishing FREDsense's market entrance, client relationships and partnerships across the environmental sector.



Pratish Gawand

Ardra Bio

Pratish Gawand is the CEO of Ardra Inc. Dr. Gawand holds a PhD in Chemical Engineering from the University of Toronto and M. Tech in Bioprocess Engineering from ICT, Mumbai. His previous experience includes his role as a Development Scientist at Biocon Ltd., India's largest biotech company, where he was responsible for fermentation scale-up for small-molecules production. Dr. Gawand started Ardra during his post-doctoral fellowship at the University of Toronto, and is leading business development as well as financing effort for the start-up.



Justin Pahara

Amino Labs

Over the last decade Justin has worked in pure and applied life sciences, inside academia and out. Justin's foray into professional science included earning a B.Sc. (Immunology and Infection), an M.Sc. (Cell Biology) and a Ph.D. (Biotechnology & Bioelectronics) from the University of Cambridge. Since his participation in a synthetic biology competition called the International Genetically Engineered Machines (iGEM) competition in 2007, Justin has become an active voice for responsible adoption of synthetic biology by corporations, the academy, and independents. Justin has received fellowships from the Emerging Leaders in Biosecurity Initiative (Johns Hopkins University), the Natural Sciences and Engineering Research Council of Canada (NSERC), Google Inc./Singularity University, and the Mozilla Foundation. In 2012/13, as Justin obtained his Ph.D, he founded the infotech/biotech startup, Synbiota, to develop fundamental synthetic biology technology. In 2015, Justin co-founded Amino Labs, an MIT Media Lab spinout that builds hardware and synthetic biology products to make genetic engineering accessible to children and non-scientists. Justin has participated in and has mentored in several entrepreneurship environments such as IndieBio (biotechnology startup accelerator), Mozilla WebFWD (open source software startup accelerator), and helped start several do-it-yourself biology labs in Canada. Justin is passionate about the simplification of synthetic biology as a means to spur "the personal computer revolution" in the world of life science. In the long term, Justin aims to grow the biotechnology industry on the Driftpile Cree reservation, where he is a member.



Bogumil Karas

Designer Microbes

Dr. Karas is an Assistant Professor in the Department of Biochemistry at Western University, London, ON, Canada and CEO at Designer Microbes Inc, London, ON, Canada. Dr. Karas received his Ph.D. degree in Biology (2010) from Western University where his research was focused on deciphering genetics of nitrogen-fixing root nodule symbiosis. Next, he worked at the Synthetic Biology and Bioenergy group at J. Craig Venter Institute (JCVI) in La Jolla, CA, USA. At JCVI his work focused on developing technologies for cloning of whole natural or synthetic chromosomes as centromeric plasmids in yeast, where they can be manipulated using powerful yeast

genetic tools and then transplanted inside microbial cells of the same or different species. Currently, Dr. Karas is developing novel genetic tools for eukaryotic algae: *Phaeodactylum tricornutum*, *Thalassiosira pseudonana* and soil bacterium *Sinorhizobium meliloti*.



Kevin Chen
Hyasynth Bio

Kevin is an entrepreneur and scientist who cofounded Hyasynth Bio, a startup that is focused on the production of cannabinoids using engineered yeast, without having to grow cannabis plants. Since starting the company in 2014, he and his team have raised close to 2M\$ in seed funding, graduated from world-class accelerator programs, made critical discoveries in cannabinoid biosynthesis, and are well on their way to bringing their products to market. Kevin is also a strong supporter of the maker movement and community biotech as a cofounder and director of Bricobio, a makerspace for biotechnology.



Leo Wan
Ranomics

Leo Wan is the CEO and co-founder at Ranomics, a provider of synthetic DNA libraries for enabling transformative discoveries. As part of Ranomics, Leo is leading the charge on building new tools and workflows for making biological discovery faster and more cost-effective. Leo has received multiple awards for his work, including the prestigious Vanier Canada Graduate Scholarship. Leo holds a Ph.D in Molecular Genetics from the University of Toronto.



Bettina Hamelin
President and CEO of Ontario Genomics

Before assuming her current role in August 2017, Bettina served as Vice-President of NSERC's Research Partnerships Directorate, where she was responsible for a range of programs designed to stimulate increased public/private sector collaboration and technology transfer by connecting the Canadian research enterprise to Canadian and global innovation stakeholders. Bettina has more than 15 years of experience in the biotech and international pharmaceutical industry as well as 10 years of academic experience as a tenured professor at the Faculty of Pharmacy at Université Laval.

Prior to joining NSERC Bettina held a variety of leadership positions at Pfizer Canada, most recently as Canadian Medical Lead, Vaccines, and Head, Strategic Research Partnerships, Western Canada. Passionate about R&D, she excels at bringing together unlikely partners to attract and leverage funds from diverse sources. She is known for pioneering novel public-private partnership models, and breaking down barriers between federal, provincial and private sector stakeholders.

Early roots in biology and chemistry (Vordiplom, Universität Kaiserslautern, Germany) have led Bettina to complete a B.Sc. in pharmacy and a Doctor of Pharmacy, both from the University of Kentucky, U.S. and an EMBA in Healthcare from the University of British Columbia, Canada.