

Navigating the Benefits and Risks of Publishing Studies of In Silico Modeling and Computational Approaches of Biological Agents and Organisms - A Workshop

Committee

Alex John London

Co-Chair

Alex John London is the K&L Gates Professor of Ethics and Computational Technologies, co-lead of the K&L Gates Initiative in Ethics and Computational Technologies, Director of the Center for Ethics and Policy, and Chief Ethicist at the Block Center for Technology and Society at Carnegie Mellon University. An elected Fellow of the Hastings Center, London's work focuses on ethical and policy issues surrounding the development and deployment of novel technologies in medicine, biotechnology and artificial intelligence, on methodological issues in theoretical and practical ethics, and on cross-national issues of justice and fairness. He is a member of the World Health Organization Expert Group on Ethics and Governance of Artificial Intelligence (AI), a co-leader of the ethics core for the National Science Foundation AI Institute for Collaborative Assistance and Responsive Interaction for Networked Groups (AI-CARING), a member of the U.S. National Science Advisory Board for Biosecurity (NSABB), a member of the board of directors for Public Responsibility in Medicine and Research, and he has served on the board of the International Association of Bioethics and the American Society of Bioethics. London received a Ph.D. in philosophy from the University of Virginia. He previously served on the National Academies' Committee on Creating a Framework for Emerging Science, Technology, and Innovation in Health and Medicine and Committee on Clinical Trials During the 2014-15 Ebola Outbreak.

Valda Vinson

Co-Chair

Valda Vinson is the Executive Editor for the Science journals. In this role she oversees research content strategy and editorial policy at Science, Science Signaling, Science Translational Medicine, Science Immunology and Science Robotics. She started her career in publishing when she joined the Science staff in 1999 as an Associate Editor handling research papers in the areas of structural biology, biochemistry, and biophysics. In 2013 she became Deputy Editor, overseeing research content in the areas of cellular and molecular biology and biomedicine, and in 2018 was appointed Editor, overseeing research content in the life sciences and social sciences at Science. Before joining Science, she spent two years as a Senior Lecturer at the University of the Western Cape, South Africa. Vinson received an M.Sc. in chemistry from the University of Natal, South Africa and a Ph.D. in chemistry from Johns Hopkins University.

Simone Bianco

Member

Simone Bianco is Vice President of Hybrid AI and Physics Based modeling at the Altos Labs Institute of Computation. Prior to joining Altos, he was a research staff member and manager of the department of Functional Genomics and Cellular Engineering at the IBM Almaden Research Center. Bianco is an expert in computer driven design of biological systems and has contributed to the design of vaccines, antivirals, antimicrobials, and immunotherapies, and holds several patents in synthetic biology. He is the founding principal investigator of the National Science Foundation Center for Cellular Construction, which aims at transforming cell biology into an engineering discipline. He is a recipient of IBM's Outstanding Research Achievement Award and an honorary visiting lecturer for the Society for Industrial and Applied Mathematics. Bianco received a B.S. in physics and astrophysics from the Università di Pisa, Italy, an M.S. in physics from the Università di Pisa, Italy, and a Ph.D. in physics from the University of Texas at Austin.

Sarah Carter

Member

Sarah R. Carter is the Principal at Science Policy Consulting LLC where she focuses on societal and policy issues related to the bioeconomy, including government oversight and regulation, industry practices, responsible innovation, and biosecurity. In recent years, she has supported the Nuclear Threat Initiative on projects related to DNA synthesis screening and the implications of artificial intelligence (AI), including biological AI models, for biosecurity. She is also a Senior Fellow at the Federation of American Scientists, where she works on issues related to the broader bioeconomy, including U.S. government policy for biotechnology and biomanufacturing and its intersections with environmental sustainability. Previously, she worked in the Policy Center of the J. Craig Venter Institute and at the White House Office of Science and Technology Policy. She is a former AAAS Science and Technology Policy Fellow and a former Mirzayan Fellow of the National Academies. Carter received a B.S. in biology from Duke University and a Ph.D. in neuroscience from the University of California, San Francisco.

Héctor García Martín

Member

Héctor García Martín is a Staff Scientist at Lawrence Berkeley National Laboratory, and Director for Data Science and Modeling at the Joint BioEnergy Institute Biofuels and Bioproducts Division. Garcia Martin works at the intersection of machine learning, synthetic biology, and automation, trying to make biology as predictable as physics. His research has provided some of the first examples of the use of machine learning to guide synthetic. Garcia Martin received a B.S. in physics from University of the Basque Country, Spain and a Ph. D. in physics from the University of Illinois at Urbana-Champaign. He previously participated in a National Academies Meeting of Experts for the National Security Commission on Emerging Biotechnology.

Feilim Mac Gabhann

Member

Feilim Mac Gabhann is a tenured Associate Professor of Biomedical Engineering at Johns Hopkins University (JHU) and a core faculty member of JHU's Institute for Computational Medicine. He is also co-Editor-in-Chief of PLOS Computational Biology and aided in the development and adoption of the journal's code availability policy to increase transparency and reproducibility. He has extensive experience in ethics education, including developing multiple interdisciplinary ethics courses, and leading annual sessions for Institute faculty and trainees on the subject of Ethics in Computational Medicine. He also serves on the Ethics Sub-Committee of the Biomedical Engineering Society and worked on the first major revision of the Society's Code of Ethics since 2004. Mac Gabhann's research is in computational systems pharmacology, using complex mechanistic computational simulations to test and optimize treatments for multiple human diseases including cancer, peripheral artery disease, endometriosis, and HIV. Mac Gabhann received a B.E. in chemical engineering from University College Dublin, Ireland and a Ph.D. in biomedical engineering from Johns Hopkins University School of Medicine.

Jaspreet Pannu

Member

Jaspreet Pannu is a Postdoctoral Scholar at Stanford University and Fellow at the Johns Hopkins Center for Health Security. She was previously a medical specialist at Google, where she worked on artificial intelligence (AI)-enabled diagnostics. She now conducts research on technology and policy approaches for global health security, including at the intersection of AI and biology. She is a member of Nuclear Threat Initiative Bio's AlxBio Global Forum Working Group on Evaluations, Capability Horizon Scanning and Risk Assessment, as well as the Frontier Model Forum's working group on AI-Bio Safety Evaluations. Pannu is a board-certified internal medicine physician and completed her M.D. and residency training at Stanford University with global health training at Mulago Hospital, Uganda.

Amina A. Qutub

Member

Amina Ann Qutub is an Associate Professor at the University of Texas, San Antonio (UTSA), Burzik Professor of Engineering Design, assistant director of strategic partnerships and research thrust lead of the MATRIX Artificial Intelligence Consortium, and Director of the UTSA – UT Health Joint Graduate Group in Biomedical Engineering. She also is a co-founder of a biotech startup PaloBio, Inc. She is pioneering methods at the interface of computer science, biology, and engineering to study the design of human cells and help eradicate diseases affecting cells of the brain and vasculature. She directs the Quantu Project, a nationwide study to optimize brain health over a lifespan using an integration of biosensing technology, artificial intelligence (AI), and experimental neurogenesis bioassays. Qutub also co-leads the iRemedyACT project to develop AI tools that can minimize time to treatment and optimize care for trauma patients. She is an American Institute for Medical and Biological Engineering Fellow, National Academies' Keck Future Initiatives Awardee, The Health Cell Honoree, and NSF CAREER Awardee. Qutub received a B.S. in chemical engineering from Rice University and a Ph.D. in bioengineering from the University of California, Berkeley and University of California, San Francisco. She is a member of the National Academies' Standing Committee on Advances and National Security Implications of Transdisciplinary Biotechnology and co-chaired the planning committees for the National Academies' workshops on AI and Automated Laboratories for Biotechnology and Transformative S&T for Assessing and Strengthening Individual-to-Population Resilience under Societal and Environmental Stress.

Richard Sever

Member

Richard Sever is Assistant Director of Cold Spring Harbor Laboratory Press and Co-Founder of the preprint servers bioRxiv and medRxiv. He trained as a scientific editor, working first at Current Opinion in Cell Biology and then Trends in Biochemical Science and later served as Executive Editor of the Journal of Cell Science at The Company of Biologists, before joining Cold Spring Harbor Laboratory in 2008. He launched the journals Cold Spring Harbor Perspectives in Biology and Cold Spring Harbor Perspectives in Medicine, for which he serves as Executive Editor, and has also edited several books, including the textbook Signal Transduction and Career Alternatives for Biomedical Scientists. In 2022, he was awarded an honorary doctorate from Cold Spring Harbor School of Biological Sciences in recognition of his work to promote scientific communication. Sever received an M.A. in biochemistry from the University of Oxford and a PhD in molecular biology from the University of Cambridge.

Audrey Thevenon

Staff Officer