

Members of the NATO Advisory Group on Emerging and Disruptive Technologies

2020-2022

The NATO Advisory Group on Emerging and Disruptive Technologies provides external advice to NATO on how the Alliance can optimise its innovation efforts. The group was established in July 2020. It consists of 12 experts from the private sector and academia across the Alliance who have led cutting-edge research, developed EDT policy and managed innovation programmes. These experts liaise with NATO's Innovation Board to give their recommendations.

Biographies



Izabela Albrycht is the Chair of the Kosciuszko Institute, a leading Polish think-tank, and heads the European Cybersecurity Forum's (CYBERSEC) organising and programme committee. She has been involved in public policy discussions and policy-making processes regarding digital transformation and cyber security for many years, including as a member of the Council for Digitization within the Chancellery of the Prime Minister of Poland (Digital Affairs Department) and on the Executive Board of DIGITALEUROPE. She is also a member of supervisory boards, including of the largest Polish information and communications technology company.



Dr Galia Angelova is the Director of the Institute of Information and Communication Technologies at the Bulgarian Academy of Sciences. She is also Professor in Computer Science at Sofia University "St. Kliment Ohridski", where her major fields of research are natural language processing, knowledge technologies and artificial intelligence (AI) applications. She has published more than 150 scientific publications in journals, book chapters and edited conference volumes. She has also served as the Coordinator or Principal Investigator of more than 25 projects with international or national funding. In 2012-2016, she coordinated the Advanced Computing for Innovation (ACOMIN) project, which was funded by a € 3.2 million grant under the European Commission's Seventh Framework Programme (FP7) and included in the book *Achievements of FP7: examples that make us proud*. A Doctor of Sciences, she teaches computational linguistics to MSc students and acts as a reviewer and evaluator for the European Commission and other institutions. In 2020, she took part in the development of the Bulgarian AI strategy.



Dr Bruno Bellier is the Head of Strategy & Defence Technologies of the recently created French Defence Innovation Agency. He is in charge of coordinating research and technology (R&T) policy and managing upstream R&T defence contracts, as well as international cooperation and partnerships with academic institutions supporting defence-oriented research and innovation. His career alternated between expertise and project management activities in his field of specialty (defence against chemical and biological agents), R&T and innovation strategy and policy in a broader scope, and international defence cooperation. He is a graduate of École Polytechnique, and has a PhD in pharmaceutical science and a master in Public Law & Administration, both from the University of Paris.



Cecilia Bonefeld-Dahl is the Director-General of DIGITALEUROPE, the leading digital technology industry association representing over 36,000 digital companies in Europe. She is the lead on the European Commission's high-level group for artificial intelligence (AI), and is a member of the Stakeholder Cybersecurity Certification Group of ENISA (the European Union Agency for Cybersecurity). She is also a board member of the European Commission's Digital Skills and Jobs Coalition, the European Parliament-led European Internet Forum, and the European Institute for Innovation and Technology (EIT). Under the Danish Foreign Ministry, she was an Executive Board Member of the Royal Danish Export Council and Chair of the Export Grant Committee. With more than 25 years of experience in the ICT industry, she previously held international positions at IBM and Oracle as well as with small and medium-sized enterprises, building businesses across Europe and China.



Prof. Deeph Chana is Co-Director at the Institute for Security Science and Technology, and Co-Director at the Centre for Financial Technology, both at Imperial College London. Prof Chana has extensive experience leading science and technology initiatives in academia, industry and government, with a focus on global risks. He is interested in high-impact, low-probability events and their ramifications on sustainable security and resilience. He has published on the use of machine learning methods for defensive and offensive cyber security, developed advanced technologies for dealing with safety and security-related problems, and has consulted and lectured internationally with companies and governments on disruptive technology and the use of science to handle disruptive events. He is actively engaged in a number of technology entrepreneurship activities. He holds MSc and PhD degrees in Physics from King's College London.



Dr Deborah Frincke is the Associate Laboratory Director for National Security Sciences at the US Department of Energy's Oak Ridge National Laboratory (ORNL). There, she contributes to overall laboratory leadership as well as specifically guiding the research and development of science-based solutions to complex threats that put public safety, national defence, energy infrastructure and the economy at risk. These include nuclear non-proliferation, cyber security threats, geospatial and human dynamics, and both operational and tradecraft missions. Dr Frincke joined ORNL from the US National Security Agency (NSA), where she worked from 2011 to 2020. While at NSA, she served in several roles advising leadership on the full range of research activities, including as the agency's Science Advisor and first Innovation Champion. She was also a founding member of the NSA Board of Directors. She also launched a cyber security company (TriGeo Network Security) and had an academic career through full professor. She has published over 200 articles and technical reports and is a Fellow of the Association for Computing Machines. Her federal awards include the United States Presidential Rank Award, NSA's Distinguished Civilian Service Medal and the first NSA Research Leadership Excellence in Intelligence Award. She was named a Distinguished Alumnus of the University of California, Davis in 2019.



Dr. Héctor Guerrero has served as a Defence Senior Researcher at the Spanish Ministry of Defence since 2003. He has lectured on Applied Optics and Physics at public and private universities for a decade, and has also funded start-ups as an entrepreneur. He joined the Instituto Nacional de Técnica Aeroespacial (INTA) in 1999, where he led the Space Optoelectronics Laboratory. He worked in optical communications for the European Space Agency (ESA), including on optoelectronic, magnetic and radiation sensors for low-earth orbit nanosatellites and small stations for Mars exploration. He was seconded as national expert to the Space Policy and Research Unit at the European Commission from 2012 to 2016. Since 2019, he has led the Office of Strategic Alliances at IMDEA Nanociencia, a non-profit research foundation funded by the Regional Government of Madrid. He is currently involved in activities related to corporate intelligence, strategy direction and institutional partnerships focused on the development of applications based on nanoscience and nanotechnology.



Dr Kash Khorasani is a Professor and Concordia University Tier I Research Chair in the Department of Electrical and Computer Engineering, and at the Concordia Institute for Aerospace Design and Innovation (CIADI). His main areas of research are in nonlinear and adaptive control; cyber-physical systems and cyber security; intelligent and autonomous control of networked unmanned systems; fault diagnosis, isolation and recovery (FDIR); diagnosis, prognosis and health management (DPHM); satellites; and neural networks and machine learning. He has authored or co-authored over 450 publications in these areas and has also led to the training of over 125 highly qualified personnel. He has served as an Associate Editor of the Institute of Electrical and Electronics Engineers' (IEEE) *Transactions on Aerospace and Electronic Systems*. He received B.S., M.S., and Ph.D. degrees in Electrical and Computer Engineering from the University of Illinois at Urbana-Champaign in 1981, 1982 and 1985, respectively. From 1985 to 1988 he was an Assistant Professor at the University of Michigan at Dearborn. Since 1988 he has been at Concordia University in Montreal, Canada.



Dr Mark Mattingley-Scott is a Principal at IBM, where he is specialised in the identification, nurturing and development of technological innovation, with a primary focus on big data analytics, neuromorphic computing and quantum computing. In his 31 years at IBM, he has developed several new business areas and transferred these into IBM's services and solutions business. He has been a leading member of IBM's Quantum Ambassador team since its inception in 2017, and is responsible for raising awareness of quantum computing and developing business opportunities throughout Europe, the Middle East and Africa (EMEA). Beginning in 2019, he became Quantum Ambassador Leader for EMEA, adding AP (Asia Pacific) to this in 2020, and became IBM Quantum Business Leader for the DACH countries (Germany, Austria and Switzerland) in 2020. He currently teaches human & machine learning and quantum computing at the Institute for Cognitive Science at the University of Osnabrück and quantum computing at the Kirchoff Institute for Physics at the University of Heidelberg, Germany. He has a Bachelor of Science with Joint Honours in Computing and Electronics, and a Doctor of Philosophy on the subject of Code Division Multiple Access Local Area Networks from the University of Durham, combined with 36 years' experience in the commercial exploitation of technology and research.



Prof. Mart Noorma is the Science and Development Director of Milrem Robotics, and Professor of Space and Defense Technology at the University of Tartu, Estonia. He leads strategic research and development at Milrem Robotics, a manufacturer of unmanned ground vehicles for defence and civilian applications. Milrem Robotics works together with armed forces to be better prepared for the changes modern robotics technology will introduce to military operations. Noorma is a member of the Institute of Electrical and Electronics Engineers' (IEEE) Autonomous Weapon Systems Expert Advisory Committee, Estonian representative to the NATO Science & Technology Organization's Applied Vehicle Panel, and team lead for several NATO Industrial Advisory Group and Science & Technology Organization study groups.



Dr Silviya Seres is a mathematician and a technology investor. She has worked on research in algorithm optimisation at the University of Oxford, development of the search engine Alta Vista in Silicon Valley, product strategy at Fast Search & Transfer in Oslo and Boston, and later operational and strategic management in Microsoft. She is now Chair and Board Member in several large companies and she manages an investment fund. She is also keen on popularising new technologies and is the founder of the Norwegian technology podcast LØRN.TECH with more than 2 million listeners.



Dr Angelo Volpi has worked as a researcher at the National Research Council of Italy (CNR) since 1988, focusing on laser diagnostics applied to the combustion of solid rocket propellants. He spent 12 years in Japan as visiting scientist and as Head of the Science Office of the Embassy of Italy in Tokyo. Since 2011, he has been at CNR Liaison Office in Brussels. He has been a Bo Stokes Fellow to the NATO Munitions Safety Information Analysis Center, and member of the Italian national delegations at intergovernmental and G8 meetings. He is also the Italian governmental expert for the CapTech Aerial System of the European Defence Agency.