

Aviation After a Year of Pandemic - Economics, People, and Technology: A Workshop

Committee

John-Paul B. Clarke

Chair

JOHN-PAUL CLARKE is a professor and Ernest Cockrell, Jr. Memorial Chair at the University of Texas at Austin (UT Austin). Prior to joining the faculty at UT Austin, he was a faculty member at Georgia Institute of Technology, the vice president of Strategic Technologies at United Technologies Corporation (now Raytheon), a faculty member at the Massachusetts Institute of Technology (MIT), and a researcher at Boeing and NASA JPL. He has also co-founded multiple companies, most recently Universal Hydrogen—a company dedicated to the development of a comprehensive carbon-free solution for aviation. Clarke is a leading expert in aircraft trajectory prediction and optimization, especially as it pertains to the development of flight procedures that reduce the environmental impact of aviation, and in the development and use of stochastic models and optimization algorithms to improve the efficiency and robustness of aircraft, airline, airport, and air traffic operations. As indicated in his 2018 testimony to the Committee on Science, Space, and Technology of the U.S. House of Representatives, he is particularly interested in leveraging his expertise to enable increasingly autonomous aircraft-enabled mobility, especially in urban and regional settings. Clarke received an S.B., S.M., and Sc.D. in aeronautics and astronautics from MIT.

Edward F. Crawley

Member

EDWARD F. CRAWLEY, NAE, is the Ford Professor of Engineering at the Massachusetts Institute of Technology (MIT). Previously, he was director of the Bernard M Gordon MIT Engineering Leadership Program. He was a founder of the Systems Design and Management Program at MIT, has served as the department head of Aeronautics and Astronautics at MIT, and the executive director of the Cambridge MIT Institute. His research focuses on the domain of architecture, design, and decision support in complex technical systems that involve economic and stakeholder issues. His current domains of architectural research include energy systems, Earth observation, and human spaceflight. Crawley is a fellow of the AIAA and the Royal Aeronautical Society (U.K.) and is a member of three national academies of engineering: in Sweden, the U.K., and the U.S. He has served as chair of the NASA Technology and Commercialization Advisory Committee and was a member of the Presidential Advisory Committee on the Space Station Redesign, and the U.S. Human Spaceflight Plans (Augustine) Committee. He was a visiting lecturer at the Moscow Aviation Institute and is a guest professor at Tsinghua University in Beijing. He received an S.B., S.M., and Sc.D. in aerospace engineering from the Massachusetts Institute of Technology.

Vicki S. Hertzberg

Member

VICKI HERTZBERG is a professor at Emory University. She is an expert on "big data" and its impact on health care and is widely known for her work measuring the social contacts in emergency departments and disease transmission on airplanes. Her research has been funded by the National Library of Medicine, National Institute of Neurological Disorders and Stroke, the National Institute of Environmental Health, and the National Institute of Allergy and Infectious Disease. Her work has been published in high-impact journals, including the Proceedings of the National Academy of Science, New England Journal of Medicine, PLOS One, and Pediatrics. She earned her Ph.D. in biomathematics and health statistics at the University of Washington.

Parimal Kopardekar

Member

PARIMAL KOPARDEKAR serves as the director of the NASA Aeronautics Research Institute (NARI) at NASA's Ames Research Center. In that capacity, he is responsible for exploring new trends, collaborations, and partnership needs related to aviation enterprise. He also serves as NASA's senior technologist for Air Transportation Systems and principal investigator for the Unmanned Aircraft Systems Traffic Management (UTM) project. He is the recipient of many awards, including the NASA Government Invention of the Year, Exceptional Technology Achievement Medal, Outstanding Leadership Award, Engineer of the Year Award, and Samuel J. Heyman Service to America's Promising Innovation Award. Kopardekar was named among the 25 most influential people in the commercial drone industry by Commercial UAV News. He is co-editor-in-chief of the Journal of Aerospace Operations and a fellow of the American Institute of Aeronautics and Astronautics. He also serves as an adjunct faculty member at Colorado State University Global and teaches undergraduate and graduate courses related to operations management and supply chain management. He received his Ph.D. in industrial engineering from the University of Cincinnati.

Ilan Kroo

Member

ILAN KROO, NAE, is a professor of aeronautics and astronautics at Stanford University. He worked as an aerospace engineer in the Advanced Aerodynamics Concepts Branch at NASA's Ames Research Center before joining the Stanford faculty. He subsequently started a software company and worked to develop new aircraft, including a small supersonic concept and an electric vertical flight aircraft. His research in aerodynamics and multidisciplinary design optimization includes the study of sustainable air transportation systems. He has participated in the design of UAVs, flying pterosaur replicas, America's Cup sailboats, and high-speed research aircraft. He is a fellow of the American Institute of Aeronautics and Astronautics. Kroo was elected to the National Academy of Engineering for new concepts in design methodology and the development of unconventional aircraft. He has a Ph.D. in aeronautics and astronautics from Stanford University.

Andrew R. Lacher

Member

ANDREW R. LACHER is the director of the Aerospace Systems Research Center at Noblis where he is responsible for research strategy related to aerospace and autonomous systems. Before that, he was senior manager for Autonomous Systems Integration at Boeing NeXt and the Autonomy Integration and Adoption lead at the MITRE Corporation. Lacher is a recognized expert on assessing safety risks associated with unmanned and autonomous vehicles. He has focused on the safe and secure integration of Unmanned Aircraft System's (UAS) in civil airspace as well as methods to calibrate the trustworthiness of autonomous systems. Additionally, he played a leading role in the definition of the Next Generation Air Transportation System and the development of Collaborative Decision-Making (CDM) concepts for Traffic Flow Management (TFM). Lacher was a strategic information technology consultant working with small airlines. Lacher earned both an M.S. in operations research and a B.S. in electrical engineering at The George Washington University.

Valerie M. Manning

Member

VALERIE M. MANNING is Airbus' SVP of Training & Flight Operations Support, based in Toulouse, France. In this role she manages Airbus' flight, maintenance, cabin and structure training, its flight simulation business, its Navblue subsidiary, and its flight operations engineering, support and Training standards. Prior to taking this role, she was the SVP of Customer Support, responsible for the in-service relationships with airline, lessor, and MRO customers worldwide for operational, technical, safety, regulatory, and commercial topics. In that role Dr. Manning also led sales, marketing, consulting and contracts for the Airbus Services business, as well as the Customer Services regions around the world. Dr. Manning has held roles as the head of Airbus' Upgrade Services business, performing modifications on the in-service Airbus fleet, managing the CTO office, and leading U.S. Mergers & Acquisitions. Dr. Manning was a consultant with McKinsey & Company and also consulted privately in multidisciplinary optimization and supersonic aircraft design. An active instrument-rated pilot and Flight Instructor in Europe, Dr. Manning graduated from Princeton University with a B.S in mechanical & aerospace engineering, and earned her M.S. and Ph.D. in aeronautics and astronautics from Stanford University. Dr. Manning served a full career as an officer in the United States Air Force, both on active duty and in the reserves.