

Chapter 1: Aviation and Environment Outlook



GREGG G. FLEMING

As the director of U.S.DOT/Volpe's Center for Policy, Planning, and Environment, Gregg G. Fleming has over 30 years of experience in all aspects of transportation-related issues. He has guided the work of numerous multifaceted teams on projects supporting government, industry, and academia, including the Office of the Secretary of Transportation, the United Nations' International Civil Aviation Organization (ICAO), the Federal Aviation Administration (FAA), the Federal Highway Administration (FHWA), the National Park Service, the National Aeronautics and Space Administration, the Environmental Protection Agency, and the National Academy of Sciences.

In his role as center director for Policy, Planning, and Environment, Fleming oversees seven technical areas—Economic Analysis, Policy Analysis and Strategic Planning, Transportation Planning, Environmental Measurement and Modeling, Energy Analysis and Sustainability, Environmental Science and Engineering, and Program Development and Capacity Building—as well as the CAFE Program Office. The Center for Policy, Planning, and Environment provides a full range of planning, evaluation, compliance, and implementation assistance to transportation decision makers at the local, regional, state, and federal levels.



IVAN DE LÉPINAY

Ivan de Lépinay is Environmental Protection Officer at EASA in charge of impact assessments. He is taking part in various projects and standardisation groups aiming at better quantifying the environmental impacts of aviation. Since 2018, he is co-rapporteur of CAEP's Modelling and Databases Group. Before joining EASA in 2011, he worked for ten years as a consultant in aviation and environment for several European organisations. Ivan holds a degree in civil engineering and applied acoustics and a master's degree in sociology.



DIMITRI MAVRIS

Dimitri Mavris earned his B.S. (1984), M.S. (1985), and Ph.D. (1988) in Aerospace Engineering from Georgia Tech. He is the Boeing Chaired Professor of Advanced Aerospace Systems Analysis in Georgia Tech's School of Aerospace Engineering, Regents Professor, and Director of its Aerospace Systems Design Laboratory (ASDL). He is an S.P. Langley NIA Distinguished Professor, AIAA Fellow, Fellow of the Royal Aeronautical Society, and a member of the ICAS Executive Committee, the AIAA Institute Development Committee, and the US Air Force Scientific Advisory Board. He is also the Director of the AIAA Technical, Aircraft and Atmospheric Systems Group, and co-chair of the Committee on Aviation Environmental Protection's review board of independent experts.

For the past 25 years, Prof. Mavris and ASDL have specialized in the integration of multi-disciplinary physics-based modeling and simulation tools. ASDL's signature methods streamline the process of integrating parametric simulation toolsets and enable huge runtime improvements that facilitate large scale design space exploration and optimization under uncertainty. Recent research focuses on combining these methods with advances in computing to enable large-scale virtual experimentation for complex systems design.



NICK CUMPSTY

Up until 2000 Nick Cumpsty was Professor of Aerothermal Technology and Director of the Whittle Laboratory. From 2000 to 2005 he was Chief Technologist for Rolls-Royce plc. He retired from Rolls-Royce and went as Professor in the Department of Mechanical Engineering in Imperial College London. He is a Fellow of the Royal Academy of Engineering, the ASME and the AIAA. He is a Visiting Professor in the Department of Aeronautics and Astronautics in MIT. He chaired the 2010 Independent Expert Review into Fuel-Burn Reduction Technology Goals for ICAO/CAEP.



MICHELLE R. KIRBY

Dr. Michelle Kirby is the Civil Aviation Research Division Chief in the Aerospace Systems Design Laboratory at Georgia Tech. She received her Bachelors (1995), Masters (1996) and PhD (2001) from Georgia Tech in Aerospace Engineering. She has over 25 years' experience in the development of state-of-the-art methods to forecast and assess the impact of emerging technologies on commercial aviation systems. She is has been actively engaged with NASA, FAA, and CAEP. Dr. Kirby's main areas of research fall into three broad categories and include environmental modeling and impact assessments for international policy making support, technology portfolio tracking and assessments, and strategic portfolio planning of future research and development. Lastly, Dr. Kirby was recently awarded the FAA Center of Excellence Faculty of the Year for her research contributions on metrics to support a potential CO2 standard for future aircraft certification, which was recently adopted at the CAEPI0 meeting in Feb 2016.

Chapter 2: Aircraft Noise



DARREN P. RHODES

Darren Rhodes is the Chief Technical Noise Advisor at the UK Civil Aviation Authority, where he has 25 years' experience in aircraft noise modeling and analysis projects. He provides technical advice to the UK's Department for Transport and leads development of the UK aircraft noise contour model, ANCON. He lead development on the first edition of ICAO Doc 9911 and was co-lead on the development of the second edition.



ERIC R. BOEKER

Eric Boeker is a physical scientist with the U.S. Department of Transportation's Volpe Center, where he has over fifteen years of experience in noise measurement, modeling and analysis projects for various modes of transportation. He provides technical support to the Federal Aviation Administration's (FAA) Office of Environment and Energy (AEE) as a subject matter expert on the Aviation Environmental Design Tool (AEDT) development team focusing on noise data and noise modeling capabilities. He was co-lead on the development of the second edition of ICAO Doc 9911.



MIKHAIL O. KARTYSHEV

As Ph.D. candidate at the Saint-Petersburg State University of Civil Aviation (Russia), and while Deputy General Director of “Civil Aviation Environmental Safety Center”, Mikhail Kartyshev carried out many experiments to study patterns of aircraft noise propagation. He supervised environmental protection projects and the organization of noise monitoring systems at Russian airports. He also conducted an experimental study of the use of standard flight data recorder (FDR) data and aircraft noise measurements for prompt determination of aircraft noise levels during takeoff and landing, and for drawing equal-loudness contours around airports.



KEVIN MORRIS

He has been involved with the aerospace industry since 1980, with the last 30 years focusing on the environmental impacts of aviation. Currently Environment Manager at ADS, Kevin spent 21 years at British Airways dealing with aircraft performance, noise, and local air quality issues. Before that, he worked as an aerodynamicist at British Aerospace. With both ICCAIA and IATA, Mr. Morris has been involved with CAEP since 1991, contributing to the original ICAO Circular 303, and Airport Air Quality Manual. He led the groups that developed the Environmental Assessment Guidance for Proposed ATM Operational Changes document, and Operational Interdependencies work for the ICAO website. He currently co-leads the group drafting a manual on Operational Opportunities to Reduce Aircraft Noise.



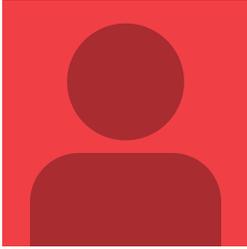
TRULS GJESTLAND

Senior research scientist at SINTEF, Norway. M.Sc Electrical Engineering. More than 50 years experience in research on effects of noise and people’s reactions to noise. Participant and project manager for several EU-funded noise research projects. Team leader of ICBEN, International Commission on Biological Effects of Noise. Temporary advisor to World Health Organization, US Federal Aviation Administration, European Aviation Safety Agency, and UN Food and Agriculture Organization. Active in International Standardization Organization: assessment of noise, soundscapes. Fellow of the Acoustical Society of America. Honorary member of Acoustical Society of Norway and of East-European Acoustical Association. Former president of the Acoustical Society of Norway. Former vice-president of European Acoustics Association.



JONATHAN BAGG

Jonathan Bagg is the Senior Manager of Stakeholder and Industry Relations at NAV CANADA. In his role, he has been leading airspace change communications and supporting policy development for Canada’s Air Navigation Services Provider. He works closely with operational deployment teams and regional project team members, overseeing community and stakeholder engagement on airspace change projects, ensuring the application of the industry’s voluntary protocol and consulting communities groups, airport authorities, elected officials and industry partners on the deployment of Performance Based Navigation and flight path changes before they are implemented.



BLAKE CUSHNIE

Blake Cushnie has been in the aviation industry for 26 years, starting as a helicopter pilot in the British Royal Navy before embarking on a career in Air Traffic Control. Starting with NATS UK, Blake worked as a controller at London Heathrow before joining NAV CANADA, where he worked as a Tracon Controller and Tower Supervisor at Vancouver International. Recently responsible for all PBN deployment nationally, working closely with airlines, operational ATC units and airport authorities, Blake is now the General Manager, Toronto Flight Information Region. Blake also co-chairs the Industry Noise Management Board; the INMB gathers technical expertise from across the industry to evaluate noise mitigation techniques at Toronto Pearson airport.

Chapter 3: Local Air Quality



THEO RINDLISBACHER

Theo Rindlisbacher serves as an advisor on environmental subjects and expert for aircraft environmental certification for the Swiss Federal Office of Civil Aviation (FOCA). He started his career as a school teacher and graduated as a physicist for atmospheric science and environmental remote sensing. He also holds a commercial pilots license. After joining FOCA in 2002, he became CAEP WG3 member for Switzerland. In 2011 he engineered and built the prototype aircraft engine PM measurement system at the SR Technics facility in Zurich, Switzerland. He was co-leading the Particulate Matter Task Group of CAEP WG3 for the development of the first ICAO particulate matter standards.



DANIEL JACOB

He is a Physical Scientist and Program Manager at the U.S. Federal Aviation Administration Office of Environment and Energy. His educational background includes engineering, earth system modeling and observing system development. His research was focused on understanding the physical aspects of weather and climate. In his capacity as Program Manager at the FAA, he oversees projects on non-volatile particulate matter emissions testing, air quality and climate impacts of aviation. He also manages the development of operational benefits-costs analyses tools that incorporate state-of-the-art science to inform policy and decision making. He co-led the Particulate Matter Task Group of the CAEP WG3 during the CAEP/10 and CAEP/11 cycles. He is currently the co-lead of Emissions Characterization Task Group of Working Group 3 and co-rapporteur of the Impacts Sciences Group.



BETHAN OWEN

Dr Bethan Owen has more than 20 years' experience in air quality and climate assessment, with particular expertise in the field of aviation. Principally her experience lies in research projects in the field of emission estimations and predictive modelling in the context of aviation, air quality and climate, providing leadership and support on a number of national and European research projects on aviation and the environment.

Dr Owen advises the Department for Transport in the UK government on the international policy related to aviation and international certification emissions standards for engines and

airplanes. Dr Owen is a scientific advisor to the UK government at meetings and on working groups with senior levels of industry and government. Since 2016, Dr Owen has been a co-Rapporteur of the international technical emissions working group (Working Group 3) under the International Civil Aviation Organization's Committee for Aviation Environmental Protection (ICAO-CAEP) that develops technical information for the emissions certification standard setting process. Recent successes include ICAO's new non-volatile particulate matter (nvPM) engine emissions standards.



RALPH IOVINELLI

Mr. Ralph Iovinelli has served as the Manager of the Emissions Division for the United States Federal Aviation Administration's Office of Environment and Energy since 2011. Mr. Iovinelli advises the Executive Director of Environment & Energy (AEE-1) and the Assistant Administrator for Policy, International Affairs, and Environment (APL-1). Mr. Iovinelli represents AEE and the FAA at meetings and on working groups with senior levels of industry and government, which involves coordinating with other relevant FAA offices.

Since 2013, Mr. Iovinelli serves as co-Rapporteur of the international technical emissions working group (Working Group 3) under the International Civil Aviation Organization's Committee for Aviation Environmental Protection (ICAO-CAEP) that develops technical information for the emissions certification standard setting process. Recent successes include the development and adoption of ICAO's new fuel efficiency airplane certification standard (2016) and ICAO's new non-volatile particulate matter (nvPM) engine emissions standards (2016 and 2019).

Chapter 4: Climate Change Mitigation: Technology, and Operations



KRISHA NOBREGA

Krisha is a Product Development Engineer working for the last 15 years with aircraft performance at Embraer. During the last 5 years, she has been involved with project management of executive jets. Krisha holds an aeronautical engineering degree from the Federal University of Minas Gerais - UFMG (Brazil). She is supporting CAEP-WG3 and CAEP-MDG/FESG activities within ICCAIA since 2011 and 2014, respectively.



SIMON SMITH

Simon Smith is the Technical Fellow in Aircraft Performance and Whole Aircraft Design at Rolls-Royce plc. He has more than 30 years of experience in propulsion integration with an emphasis on the impact at whole aircraft level of engine cycle and configuration choice. Simon graduated from the University of Bristol and has spent most of his career in the Aircraft Projects Group, becoming a Fellow in 2017.

Simon began CAEP 9-WG3 activities in 2010, being part of the ICCAIA team supporting the CO₂ Certification process and subsequently supported the CAEP 11 Independent Expert Reviews towards emissions goals.



JEAN-PIERRE CABANAC

Jean-Pierre is Senior Design Expert at Airbus. He has graduate degree from INSA in Lyon in structural engineering. He started his career as composite design engineer in 1989. He occupied several positions at Airbus in the field of Airframe (Architecture, stress analysis and design).

He is contributing as ICCAIA team member for materials and structure to CAEP Independent-Expert Reviews towards emissions goals since 2017.



RÜDIGER THOMAS

Rüdiger is Propulsion Performance Senior Expert in Airbus, with a main focus on future propulsion architectures, concepts and environmental impacts. Rüdiger has been working for Airbus for more than 25 years. Among the different positions, he has been Engine Performance Task Leader for several programs, Predevelopment Propulsion Architect, Head of Engine Performance Domain, Head of Acoustic Domain and more recently R&T Roadmap Owner for Propulsion with a special focus on Hybrid Electric Propulsion.

In 2017 and 2018, Rüdiger has contributed, as ICCAIA team member, to the ICAO Independent-Expert Reviews towards environmental technology goals.



PAUL VIJGEN

Dr Paul Vijgen is in the Technical Fellowship at Boeing Commercial Aircraft (Seattle) – focusing on transonic aerodynamic design of aircraft. He has graduate degrees from Delft University and the University of Kansas. Paul has over 25 years of experience in aerodynamic design and flow-control methods (including laminar flow and geometric adaptivity). He has supported CAEP-WG3 activities since 2009 – contributing as ICCAIA team member to CAEP Independent-Expert Reviews towards emissions goals.



GERD HELLER

Dr Gerd Heller is Senior Aerodynamics Expert at Airbus Operations – Commercial Aircraft. His emphasis is on applied aerodynamics and all aerodynamics aspects of transonic aircraft design and optimization. Gerd has more than 25 years of experience in aerodynamic design with focus on drag reduction measures, particularly on wing tip devices.

Gerd has graduated and received his doctoral degree at Technische Universität München.

He is supporting CAEP-WG3 activities since 2017 – contributing as ICCAIA team member to CAEP Independent-Expert Reviews towards emissions goals.



DAVID BRAIN

David previously worked as an Area Air Traffic Controller in the UK and has over 20 years extensive experience in ATC, ATM and Project Management. David currently leads EUROCONTROL's environmental efforts on reducing aviation's operational impacts. David co-chairs the European CCO/CDO Taskforce as well as leading several other European operational projects. David is a member of the ICAO-CAEP Airport and Operations Working Group where he has been responsible for estimating the global environmental benefits following the planned implementation of the operational concepts within ICAO's ASBU

framework. David also was responsible for leading the first ever global flight efficiency analysis using a harmonised surveillance data source. David has a private pilot's license, a degree in Geography, a Master's degree in Sustainable Aviation and enjoys travelling across Siberia in his spare time.



MARYLIN BASTIN

Marylin has been working on various technical and operational positions in the ATM world since 2002. In 2014, noise, CO2 emissions, air quality, flight efficiency became her day-to-day business as Head of Environment and Procedure Design at skeyes (Belgian Air Navigation Service Provider, former Belgocontrol). She previously chaired the Standing Committee on Environment for FABEC (Functional Airspace Block Europe Central), working on the FABEC Environmental policy and ensuring the integration of the environmental pillar into the optimized performance of the ATM-system. She also co-chairs the European CCO/CDO Task Force since 2018. Marylin has a master's degree in Industrial Engineering and a University Certificate in Environmental Management.



ALMIRA RAMADANI

Almira Ramadani holds a BS degree in Air Transportation Engineering from the University of Belgrade, and an MS degree in Civil and Environmental Engineering from the University of California at Berkeley. Strengthened by over twenty years of hands-on experience with ATM and NextGen projects in academia, private sector, and at the FAA, her expertise is in performance analysis of current and future NAS operations, and in validation of ATM concepts.



MARINA BYLINSKY

Marina Bylinsky joined ACI EUROPE in September 2015 and is responsible for the coordination of all aspects of the association's environmental strategy. In this regard, she represents ACI EUROPE in various high-level EU, ECAC and EUROCONTROL fora. She also monitors the administration and ongoing evolution of the global carbon standard, Airport Carbon Accreditation which belongs to ACI EUROPE.

Marina is a graduate of the Institute of Political Sciences in Paris where she graduated with a Masters in Comparative Politics, following a BA in Political Science. Prior to joining ACI EUROPE, Marina worked as a Senior Consultant at BearingPoint in France and in Belgium. During this time, she worked on several projects with the European Commission, the SESAR Joint Undertaking and EASA.

Chapter 5: Climate Change Mitigation: Sustainable Aviation Fuels



ROLF HOGAN

As RSB's Executive Director, Rolf Hogan has led the expansion of the RSB's best-in-class standard and certification scheme from its original focus on liquid biofuels to cover biomaterials such as bioplastics and other products derived from biomass and non-biogenic advanced feedstocks.

With an academic background in both natural and social sciences, Rolf has 20 years' experience with the non-profit sector and global environmental policy. He led a multi-country program on protected areas for WWF International and represented the organisation at the Convention on Biological Diversity. He also worked for the International Union for the Conservation of Nature (IUCN) advising the UNESCO World Heritage Committee.



NORBERT SCHMITZ

Norbert Schmitz has studied Business Administration at the University of Cologne in Germany where he also acquired his PhD. He has worked several years for a leading European management consultancy before developing and setting up International Sustainability and Carbon Certification (ISCC) in a multi-stakeholder process.

Since 2010, Norbert is Managing Director of ISCC System GmbH. Today, ISCC is a globally leading certification scheme with system users in 100 countries. More than 3,300 companies are using ISCC to proof sustainability along supply chains – from agricultural production, trade and conversion to the consumer markets. ISCC covers agricultural, forestry and alternative feedstocks and products for various markets, including bioenergy and chemical/ technical applications. The regional focus of Norbert's work is Europe, the Americas and South East Asia.



GERNOT KLEPPER

Gernot Klepper is a Senior Researcher at the Kiel Institute (IfW) (<https://www.ifw-kiel.de>) and Speaker of the Kiel Earth Institute (<https://www.kiel-earth-institute.de>). An economist by training (University of Heidelberg), he received a Ph.D. in Agricultural Economics (University of Kentucky, USA). His research interests center on climate mitigation with a focus on modeling and analyzing the impact of climate policy instruments. Especially, the role of natural resources such as land and water in the climate system and their contribution to climate change as well as mitigation are among his research topics.

He is involved in numerous networking and consulting activities: He was for many years Chairman of the National Committee on Global Change Research of the German Research Foundation (DFG) and a research fellow of the CEPR. Currently, he is Chairman of the Scientific Advisory Board of the Helmholtz Centre for Environmental Research (UFZ) (<http://www.ufz.de/index.php?en=36454>), Chairman of the International Sustainability and Carbon Certification Association (ISCC e.V.) (<https://www.iscc-system.org/stakeholders/iscc-association/>), Co-chair of the German Climate Consortium (DKK) (<http://www.deutsches-klima-konsortium.de/en/startseite.html>), among others.



CHARLOTTE HARDENBOL

Charlotte Hardenbol is Head of Programs & Solutions at SkyNRG, focusing on the development of co-funding initiatives to bridge the price gap between conventional and sustainable aviation fuel. Through the customer programs, SkyNRG involves different stakeholders including governments and end-users to create a strong SAF demand signal and enable new production capacity. Before joining SkyNRG, Charlotte worked as a senior consultant at Spring Associates, a strategy consulting firm with expertise in Energy and Sustainability. Charlotte holds a Master's degree in Economics from the University of Amsterdam, specializing in Econometrics & Management Science, graduating at the Amsterdam Center for Entrepreneurship.



MISHA VALK

Misha Valk is heading the Future Fuels department at SkyNRG, as such he is responsible for all pre-commercial supply chain development initiatives. Currently, our SAF is produced from waste oils and fats and this will also be the feedstock for our DSL-01 production facility. However, we see a need to deploy different feedstock and technology combinations in future DSL's to further scale SAF supply. Therefore, we work together with our technology partners to commercialize these technologies. In the pre-commercial supply chain development projects we work together with partners from across the supply chain to take the next step, e.g. build a pilot or demonstration scale facility. Misha completed a Bachelor in Biology and holds a Master's degree in Energy Science from the Utrecht University, specializing in bio-energy.

Chapter 6: Climate Change Mitigation: CORSIA



EVA WEIGHTMAN

Eva has over 15 years of experience in the business and environmental sector. In IETA she is currently following the developments in CORSIA and aviation. She is also responsible for membership development and recruitment. Prior to joining IETA she worked as an Investment Advisor for EEA Fund Management managing carbon projects valuation and risk assessment for an AIM listed carbon emissions fund. Eva also held a key role at the Ministry of the Environment of the Czech Republic implementing the EU Emissions Trading Scheme. She holds a master degree in Economics, with specialisation in International Trade.



MICHEL ADAM

Michel Adam is Senior Manager, Aviation Environment, at the International Air Transport Association (IATA). IATA is the trade association for the world's airlines, representing some 290 airlines or 82% of total air traffic. Michel Adam is responsible for the policy and regulatory portfolio and advocacy with external stakeholders on environmental affairs. He is also IATA's observer to the ICAO Committee on Aviation Environmental Protection where he coordinates the airlines' participation.



CUTHBERT LUNGU

Mr. Cuthbert Lungu is employed at Zambia Civil Aviation Authority as Inspector, Aerodromes-Design. He holds Master of Science and Bachelor of Science degrees in Civil Engineering obtained from Donbass State Academy of Civil Engineering and Architecture in Ukraine. He has eighteen years of experience as a practicing Civil/Structural Engineer and has worked at the Civil Aviation Authority for the past four years as Chairman of the Aviation Emissions Working Group, appointed by the Director General of Zambia's Civil Aviation Authority.



CHINGA MAZHETESE

Chinga Mazhetese is an Environmental Protection Specialist at the South African Civil Aviation Authority (SACAA) where she has worked since July 2014. She is a holder of an MSc in Environmental Engineering (University of the Witwatersrand, South Africa) and a BSc Honours Degree in Applied Environmental Science (University of Zimbabwe). She has worked as an Environmental Specialist for approximately 13 years in different sectors such as aviation, non-governmental sector, mineral processing and power generation (utilities). Her interest are in environmental protection issues associated with the operation of aircraft, airport and air transport management. She was the lead author of the first South African State Action Plan in 2016 and she represents South Africa on the CAEP as the Advisor to the CAEP Member. She is also the ACT CORSIA Technical Expert provided by South Africa under the ACT CORSIA Buddy Partnerships initiative.

Chapter 7: Climate Change Adaptation



RACHEL BURBIDGE

Rachel Burbidge joined EUROCONTROL in 2005. She has been leading EUROCONTROL's work on climate change adaptation and resilience since 2009. She is the Agency's policy officer for international aviation market-based measures for CO₂ reduction and a member of the ICAO Global Market Based Measures Technical Task Force. She is also a member of the ICAO CAEP Impacts and Science Group and Airport and Operations Working Group where she co-leads work on climate adaptation.



ANDREA SCHWARTZ FREEBURG

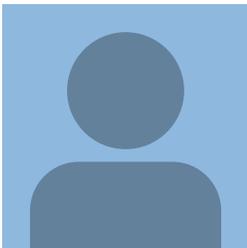
Andrea Schwartz Freeburg is a Foreign Affairs Specialist with the U.S. Federal Aviation Administration (FAA). Andrea joined FAA in 2011. During the first six and a half years with FAA, Andrea served as an Environmental Protection Specialist in the Office of Environment and Energy, where she was the agency lead on climate adaptation. Last year, accepted a new position in the FAA Office of International Affairs where she covers the Caribbean portfolio. In her new role, she works on disaster preparedness, aviation safety and efficiency, and cybersecurity projects. Andrea has represented the FAA on U.S. Transportation Research Board panels and projects. She was a contributing author to the Climate Change Adaptation Planning and Preparedness chapter of the 2014 Transportation Research Circular *Critical Issues in Aviation and the Environment*. Andrea has a Bachelor of Arts in International Relations from The College of William and Mary and a Master of Arts in International Security from George Mason University.



JULIANA SCAVUZZI

Juliana is the Senior Manager, Environment at ACI World. In her capacity, she is responsible for the Environment portfolio of ACI World, which includes wildlife trafficking. She is the observer of ACI at the International Civil Aviation Organization (ICAO)'s Committee on Aviation Environmental Protection (CAEP) where she actively represents ACI advocating airports' policies on environment and coordinates a group of experts from member airports and business partners that are nominated by ACI to collaborate with the work of CAEP. She is also the Secretary of the ACI World Environment Standing Committee (WENSC), where she supports the development of airports global environmental policy. Juliana also facilitates training on Environment provided by the ACI World Global Training Airports Developing Nations Assistance Programme (DNA) and is a visitor lecturer at the McGill Integrated Aviation Management Programme.

Juliana is an attorney from Brazil. She has a Bachelor of Laws from UNICAP, where she is a member of the Brazilian Bar, a Master of Science (MSc) in Juridical Science from UNIVALI and a Master of Laws (LLM) in Air and Space Law from the Institute of Air and Space Law (IASL) at McGill University, where she is a Board Member of the IASL Alumni Association. Juliana is also an elected member of the International Institute of Space Law (IISL), a member of the Brazilian Association of Aeronautical and Space Law (SBDA), and she has several publications, including book chapters, addressing aviation, environmental and space policy and law issues.



JEEYOON JUNG

Jeeyoon Jung is an Assistant Manager, Environment, at Airports Council International (ACI) World, working on the advocacy of airports' environmental stewardship worldwide and acting as an advisor to the ACI's observer to ICAO CAEP. She has over 5 years professional experience in the area of environmental affairs for international aviation, and the international development. Prior to joining ACI, she was affiliated with ICAO, Ministry of Foreign Affairs (Republic of Korea), and the United Nations Office for Project Services (UNOPS), and has degrees in public administration, business, and engineering from London School of Economics and Political Science (LSE) and Korea Advanced Institute of Science and Technology (KAIST).



ULKU OZEREN

Being Environmental and Sustainability Director for Istanbul Airport, Ulku Ozeren has 22 years- environmental engineering background. Since January 2014, she has been responsible for conducting all construction and operation phases of Istanbul Airport Project related to environment, social, sustainability, biodiversity and wildlife in accordance with IFC and international sectoral standards and guidance. She holds master's degree from Istanbul Technical University and continues her doctoral studies at the same university studying on impacts of Climate Change related sea level rise.

In her previous occupations, she has gained experience and knowledge in GHG calculations and management, energy efficiency measures, environmental and energy legislation, eco-labeling in addition to the environmental management experience, working heavily at infrastructure and industrial projects.

Chapter 8: Towards a Circular Economy



THOMAS ROETGER

Dr. Thomas Roetger joined IATA in 2008 as Assistant Director Environment Technology. His main activity is to implement IATA's strategy to reduce aviation's environmental impact through technological measures. He is a member of various CAEP working groups, namely WG2, where he co-led the Task Group on aircraft end-of-life and recycling, WG1 and ISG. Until CAEP/11, he was also a member of WG3 and AFTF, where he co-led the Sustainability Task Group. He is rapporteur of the Environment and Energy working group in the Advisory Council for Aviation Research and Innovation in Europe (ACARE) and was chairman of the end-users chamber in the Roundtable on Sustainable Biomaterials (RSB).

From 1988 to 2008 he worked at Airbus in Toulouse and Hamburg. A main focus of his activities was on environmental aspects such as noise and emissions reduction, in particular for the A380. He also has expertise in the areas of airport compatibility and cabin technology. He studied physics and chemistry in Heidelberg and Hamburg (Germany) and Grenoble (France) and holds a doctoral degree in physics.



ABDELGHAFAR ELSAYED

Eng. Abdelghafar Elsayed joined the Egyptian Civil Aviation Authority (ECAA) in 1998, as Airworthiness Inspector. In 2013, he acted as Technical Researches & Environmental Development Manager and was responsible for the implementation of ECAA's strategy on aviation's environmental impact, as well as the point of contact for Egypt's first Action Plan for Emission Reduction (APER) that was submitted to ICAO in 2016. He was hired as the general director of ground handling facility equipment in ECAA in January 2017.

He is a member of CAEP/11 working group WG2, where he co-led the Task Group on aircraft end-of-life and recycling. He attended the CAEP/10, CAEP/11 and its Steering Groups meetings as Alternate Egypt CAEP member and was an advisor in CAEP/9. He is the Egyptian representative of the Environment Committee of the Arab Civil Aviation Organization (ACAO, previously ACAC) and was Vice chairman then Chairman of this Committee from 2014 to 2018 respectively. He is the Egyptian CORSIA focal point of contact and has experience as an instructor on ACAO course on ICAO Annex 16 Vol. III. He holds a LWTR maintenance (Elect. & Avionics) for large aircraft and holds a B.Sc. In "Power & Electrical machines" from the Faculty of Engineering in Shoubra (Egypt) as well as a post graduate 2-years specialized diploma in information's systems and computers management (Egypt).



AMY BANN

Amy Bann serves in Boeing's environmental strategy group leading efforts to improve environmental performance across the aircraft product life cycle from manufacturing to emissions and end of service parts reuse and recycling. She has served in previous leadership roles at Boeing including Director of Environmental Policy focusing on sustainable biofuels commercialization and greenhouse gas emissions reduction, representing industry to global stakeholders and United Nations climate change agreement negotiations. Bann is a licensed attorney and worked in the public, private and nonprofit sectors prior to joining Boeing. Bann holds a Juris Doctorate from the University of Miami and a Bachelor / Master of Arts from Virginia Tech in Political Science / International Development.



THOMAS CUDDY

Thomas Cuddy is an Environmental Protection Specialist at the U.S. Federal Aviation Administration (FAA), and serves as the lead for the airport sustainability initiative. In this role, Tom promotes environmental principles and sustainability with industry and international partners through policies, airport infrastructure financing, and research and development. Over the course of his career, Tom has developed extensive knowledge of the environmental impacts of aviation ranging from noise and emissions to climate change issues and community involvement. Since 2010, Tom has served on ICAO's Airports and Operations working group, part of the Committee on Aviation Environmental Protection (CAEP). He has led FAA research studies on the implications of climate policies and market-based scenarios, and has worked with the U.S. Transportation Research Board on projects such as Climate Resilience and Benefit Cost Analysis, and Climate Adaptation Planning: Risk Assessment for Airports. His involvement in emerging technologies includes planning of spaceports and other commercial space transportation facilities, as well as assessments of sustainable alternative jet fuels. He has applied this expertise to special assignments with the White House Council on Environmental Quality, the U.S. Global Change Research Program, and other organizations.



RACHEL THOMPSON

Rachel Thompson leads Gatwick's Decade of Change sustainability strategy and reporting. She also coordinates Gatwick's action plans on carbon and air quality. She is a member of Gatwick's Managing Corporate Responsibility Committee and chairs the Decade of Change working group. Prior to joining Gatwick in 2015, Rachel spent a decade in sustainability roles with a focus on technology, transport and retail sectors. Rachel began her career in Australia's Department of Foreign Affairs and Trade, specialising in international trade negotiations.

Chapter 9: States' Action Plans and Capacity-building



LARISSA PAMELA DIANGA NZENGUE

Larissa Pamela DIANGA NZENGUE is a civil engineer. She is graduated from the Masuku University of Sciences in Technical Sciences and in Mathematics and Physics.

She is the Head of the Environmental Protection Service at the National Civil Aviation Agency of Gabon (ANAC) where she works as a civil aviation inspector for aerodromes and ground aids (AGA). She is also the Gabonese focal point for the CO2 reduction emissions from aviation and national coordinator of the CORSIA.



MAZARIN HERVÉ MINTSA

Mazarin Hervé MINTSA is the Director Safety, Quality and Environment of Aéroports du Cameroun (ADC) SA, the Cameroon airport management company. He has an MSc in IT Engineering from National Advanced School of Engineering Yaoundé (Cameroon) and an MSc in IT Engineering and Air Traffic from ENAC (French civil Aviation University) Toulouse (France). His 16 years of experience in aviation includes Middle and Senior Management on

the following areas: IT, Passenger Handling, Airport Construction and Maintenance, Aviation Safety, Quality and Environment.

Mazarin has been one of ADC SA focal point for the solar-at-gate project implementation at Douala International Airport. He is also currently working on the following projects: construction of a solar power plant of 30MW at Garoua International Airport, tree planting for ecological restoration at Garoua International Airport, and aerodrome certification of Yaounde-Nsimalen and Douala International Airport.



JUAN JOSE VERAS CUEVAS

Juan José Veras Cuevas was born on September 8, 1974 in Santo Domingo, Dominican Republic. Raised in Santo Domingo, and San Cristobal, Dominican Republic, received the diploma of Electrical Technician from Loyola Technical School in 1993, received the Airframe & Powerplant (A&P) license from Federal Aviation Administration in 2000, received the B.Sc. Degree (Electrical Engineering) from UNAPEC University in 2008.

In 2012, he transitioned to the role of national coordinator of emissions reduction resulted from international aviation activities, with the responsibility of preparing the first action plan on emissions reduction (APER) of the Dominican Republic. In 2014, participated in the ICAO-EU joint project on Capacity Building to Mitigate Emissions of International Aviation, working in the preparation of feasibility studies of alternative fuels, implementation of mitigation measures and integration of stakeholders of the aviation sector. In 2018 worked in the preparation of the regulatory framework for CORSIA in Dominican Republic (DR). Currently, Mr. Juan Veras, is an aviation safety inspector (Airworthiness) within the Flight Standards Directorate of the Dominican Institute of Civil Aviation.



DORSA SABET-RASEKH

Dorsa Sabet-Rasekh graduated from the Technological University of Panama as an Environmental Engineer and began work on climate change action in 2014 with research into managing small scale watersheds for climate change adaptation. She recently obtained a Master's Degree in Renewable Energy, and has also worked in quality control and environmental protection at an industry level. She currently works as an Emissions Analyst at the Civil Aviation Authority of Panama, where her primary tasks include the elaboration of carbon emission reports for international and domestic aviation and serving as the Focal Point between different aviation stakeholders. Her future plans include the pursuit of a specialization in global governance, and work around the social components of climate change awareness.

Chapter 10: Cooperation



JOYCE MSUYA

Joyce Msuya is the Deputy Executive Director of UN Environment. She was appointed by UN Secretary-General António Guterres in August 2018.

Between November 2018 and June 2019, Ms. Msuya served as Acting Executive Director, overseeing UN Environment's portfolio in 33 countries and administering nine Multilateral Environmental Agreements on critical environment issues.

Ms. Msuya has more than 20 years of extensive experience in international development strategy, operations, knowledge management and partnerships, across Africa, Asia and Latin America. Prior to joining UN Environment, Ms. Msuya served as Adviser to the World Bank's Vice President, East Asia and Pacific Region in Washington, D.C.



ANGELA GITTENS

Angela Gittens began her tenure as Director General of Airports Council International (ACI World) in 2008. She was formerly airport CEO for Miami and Atlanta and Deputy at San Francisco International Airport. In other previous roles, Gittens served as Vice President, Airport Business Services for HNTB Corporation, where she led the firm's practice in airport business and strategic planning. And as Vice-President at TBI Airport Management, she oversaw the transition to private ownership of London Luton Airport and managed operations contracts at several airports in the US and Canada. Gittens is a Fellow of the Royal Aeronautical Society, and has served on numerous aviation industry boards and committees including the FAA Management Advisory Committee, the FAA Research, Engineering and Development Committee, the National Civil Aviation Review Commission ("the Mineta Commission"), the Executive Committee of the Transportation Research Board, the Airport Cooperative Research Program Oversight Committee and the Board of Directors of JetBlue Airways.



SIMON HOCQUARD

Simon Hocquard, Director General, CANSO (Civil Air Navigation Services Organisation) was appointed on 1 July 2019. In leading and managing CANSO as the global voice of air traffic management, he is responsible for delivering CANSO strategies, expanding worldwide membership, and enhancing CANSO's relationship with its industry peers and stakeholders. Prior to this role, he was responsible for overseeing all CANSO operations globally to ensure CANSO fulfilled its commitments and deliverables in a timely, efficient and customer/partner focused manner.

Simon previously served at NATS, the UK air navigation service provider. His roles included Operations Director, Strategy and Director Operations, where he was accountable for creating and implementing the business, technical, operational strategies and vision for the entire regulated business. Previously he ran the largest air traffic control centre in Europe, leading 1,500 people through the successful air traffic management for the 2012 London Olympics and other change programmes.

Simon has significant experience of working with governments and international institutions. He is appointed by the European Commission as Chairman of the Network Management Board, which governs the overall European Air Traffic Network, and drives performance improvement across Europe as well as within EUROCONTROL.



ALEXANDRE DE JUNIAC

Alexandre de Juniac became the seventh person to lead the International Air Transport Association (IATA) when he took on the role of Director General and CEO from 1 September 2016. De Juniac has almost three decades of experience in both the private and public sectors. This includes senior positions in the airline and aerospace industries and the French government. De Juniac served as Chairman and CEO of Air France-KLM (2013-2016) and prior to that as Chairman and CEO of Air France (2011-2013). Under de Juniac's leadership Air France and Air France-KLM underwent a successful restructuring that improved efficiency and strengthened performance. He has also served on the IATA Board of Governors (2013-2016). De Juniac has broad aviation sector experience, including 14 years at French aerospace, space, defense, security and transportation company Thales, and its predecessor companies Thompson-CSF and Thompson SA (1995-2009). In his last position at Thales, de Juniac was responsible for the company's operations and sales in Asia, Africa, the Middle East and Latin America. De Juniac has also held positions in the French government. His career began with the Conseil d'Etat (State Council) from 1988 to 1993. Subsequently, he served in the Department of Budget (1993-1995); and in the Ministry of Economy, Industry and Employment as Chief of Staff to then Minister Christine Lagarde (2009-2011). A French citizen, de Juniac was born in 1962.



ERIC FANNING

Eric Fanning is President and CEO of the Aerospace Industries Association (AIA), the leading advocacy organization for the American aerospace and defense industry. In this role, Fanning also currently serves as the Chair of the International Coordinating Council of Aerospace Industries Associations (ICCAIA). Fanning joined AIA after serving as the 22nd Secretary of the U.S. Army, providing leadership and oversight of the nation's largest military service. He previously served as Chief of Staff to the Secretary of Defense, Acting Secretary of the Air Force and Under Secretary of the Air Force, and Deputy Under Secretary of the Navy/Deputy Chief Management Officer. He is the only person to have held senior appointments in all three military departments and the Office of the Secretary of Defense.

During more than 25 years of service, Fanning worked on the staff of the House Armed Services Committee, was Senior Vice President of Strategic Development for Business Executives for National Security, was Deputy Director of the Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism, and was associate director of political affairs at the White House.

**TIM JOHNSON**

Tim is the Director of the UK-based Aviation Environment Federation (AEF), an NGO dedicated to tackling aviation's environmental impacts, and has nearly thirty years expertise in the aviation and environmental field. He is a lead representative for the International Coalition for Sustainable Aviation (ICSA) at ICAO's Committee on Aviation Environmental Protection (CAEP). He is a member of the UK Department for Transport's Airspace Strategy Board (ASB) and Noise and Airspace Engagement Group (ANEG), UK Sustainable Aviation's Advisory Panel and ACI's Airport Carbon Accreditation Advisory Board.

**DIRK FORRISTER**

Dirk Forrister is President and CEO of the International Emissions Trading Association (IETA), a non-profit business association dedicated to market-based climate policies. With 140 member companies, IETA is known globally as a thought leader in strategies to harness the power of markets to bring climate protection.

Dirk brings a long history of public and private sector engagement in energy and environmental policy. He spent a decade as Managing Director at Natsource LLC, the manager of carbon funds valued at \$1.2 billion. Earlier in his career, Mr. Forrister served as Chairman of the White House Climate Change Task Force in the Clinton Administration, and Assistant U.S. Secretary of Energy for Congressional and Public Affairs.