

Sarav Arunachalam

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Dr. Arunachalam, Deputy Director and Research Professor with the UNC Institute for the Environment, has over 20 years of experience in developing and applying multiscale air quality models for source attribution, and connecting air pollution exposures to human health risk. During this period, he has served as the PI on projects for numerous state/regional agencies as well as for offices of the EPA and other Federal agencies, including DOJ, NASA, NSF, and FAA, and the National Academies' Transportation Research Board. Since 2006, he has directed the FAA-sponsored U.S. DOT's PARTNER COE at UNC to investigate incremental impacts of aviation emissions on ambient air quality from plume through global scales using an integrated measurement- and model-based approach, and since 2013 the Aviation Sustainability Center (ASCENT) at UNC. Dr. Arunachalam has developed multiple guidance documents for the Airport Cooperative Research Program (ACRP) on the use of multiscale air quality models in performing airport-related air quality assessments. He has extensively published his research, and has been recognized by the FAA and EPA with multiple awards.

Emissions: An Integrated Measurement and Modeling Study of UFP due to Aircraft Operations at Boston Logan

Jonathan Bagg

Senior Manager Public Affairs, NAV CANADA

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Jonathan Bagg is the Senior Manager of Public Affairs at NAV CANADA. In his role, he oversees NAV CANADA's reputation management functions, including media relations, government relations, social media, stakeholder relations and airspace change communications and policy development. 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 keeping communities groups, airport authorities, elected officials and industry partners informed and consulted on flight path changes before they are implemented.

Real World Results: Using PBN as Noise Mitigation

Terry Christenson

Manager, The Boeing Company, Flight Sciences - Noise, Vibrations & Emissions

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Terry Christenson manages the Community Noise Product Development team at The Boeing Company. The acoustic technologies of the 737MAX and the soon to be flown 777X aircraft were defined, put into production, and will or have been certified with Terry's oversight. Terry was also involved with the introduction of the 787 into commercial service. In addition, Terry leads the effort to define the acoustic designs of Boeing's next generation of commercial aircraft which must achieve future noise requirements while being more efficient than previous generation aircraft. This requires the development, maturation, and application of new technologies.

High Tech Noise & Emissions Control: Quieter Airplanes and Flight Operations – A Boeing Perspective

Blake Cushnie

National Manager, Performance Based Operations, NAV CANADA

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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. Blake's current role sees him responsible for all PBN deployment nationally, working closely with airlines, operational ATC units and airport authorities. 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.

Real World Results: Using PBN as Noise Mitigation

Joe DiPardo

Operations Research Analyst, Noise Division of the FAA Office of Environment and Energy

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Joseph DiPardo has been with the FAA Office of Environment and Energy since 2000. Joseph participated in the development of the Integrated Noise Model (INM) and led the development of the Environmental Design Space (EDS), an aircraft design tool. Joseph is currently the co-Program Manager of the Aviation Environmental Design Tool. Joseph has over 20 years of experience in modeling and 10 years industry experience in aircraft performance and

propulsion. Joseph has a Master's Degree in both Aerospace Engineering and Operations Research.

Emissions: AEDT Development Goals

Cian Fields

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Cian, which is pronounced “key-in,” supports Cadmus’ Sustainable Transportation Practice, helping clients across transportation modes with strategic planning, policy assessment, outreach, and research projects. Additionally, as part of the Sustainable Transportation Practice at Cadmus, Cian supports airport clients with a range of services, including energy assessments and sustainability planning. Cian regularly conducts in-depth research for the Transportation Research Board’s Airport Cooperative Research Program (ACRP), on topics including alternative fuels, sustainability’s role in supporting capacity improvements, diversity and inclusion—and more.

Cian holds a bachelor’s of arts in Economics from Connecticut College, where he was also a research scholar in the Goodwin-Niering Center for the Environment.

Emissions: Developing a Roadmap to Achieve Zero Emissions at Airports

Micael Gianini Valle do Carmo

Leader of Noise and Vibration Group, Chief Engineering Office, Embraer

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I am a mechanical engineer with master’s degree on acoustics and I have been working with aircraft noise for 17 years in Embraer, worked on the development and certification of several Embraer aircraft (Phenom 100, Phenom 300, E-Jets 170/175/190/195, Legacy 600 and 650E, Lineage 1000E, Legacy 450 and 500, E-Jets E2 and KC-390.), leading several noise flight tests and interfacing with noise authorities. I worked with research campaigns of airframe and engine noise sources identification, development of noise improvement concepts and flight evaluation. Program Manager of Brazilian Silent Aircraft Initiative Program, a research consortium involved 6 Brazilian universities and different research institutes around the world. Led the noise campaign of Embraer-Boeing Ecodemonstrator Program, 2017. Acoustics and Propulsion DER of Brazilian Aviation Agency.

General Aviation: Noise and Vibration Engineering Embraer: Advancements in Aircraft Technologies

John Hansman

Professor in Aeronautics, MIT

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R. John Hansman is the T. Wilson Professor of Aeronautics & Astronautics at MIT, where he is the Director of the MIT International Center for Air Transportation. He conducts research in air transportation operations and advanced technologies for operational aerospace systems. Dr. Hansman holds 7 patents and has authored over 300 technical publications. He has over 6000 hours of pilot in-command time in airplanes, helicopters and sailplanes including meteorological, production and engineering flight test experience. Professor Hansman chairs the US Federal Aviation Administration Research Engineering & Development Advisory Committee (REDAC). He is co-director of the national Center of Excellence in Aviation

Sustainability Center (ASCENT). He is a member of the US National Academy of Engineering (NAE), he is a Fellow of the American Institute of Aeronautics and Astronautics and the Royal Aeronautical Society.

Possibilities Within the Framework: Development of Approach and Departure Procedure Modifications to Reduce Community Noise

Jim Hileman

Chief Scientific and Technical Adviser for Environment and Energy, FAA

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Dr. James (Jim) Hileman is the Chief Scientific and Technical Adviser for Environment and Energy for the Federal Aviation Administration. In this capacity, he serves as the agency's technical expert for basic and exploratory research on the environmental impacts of aviation. He has responsibility for the R&D Program of the Office of Environment and Energy which includes the Continuous Lower Energy, Emissions and Noise (CLEEN) Program, the Aviation Sustainability Center (ASCENT), and the Commercial Aviation Alternative Fuels Initiative (CAAFI), among others. He also serves in various capacities within the International Civil Aviation Organization (ICAO) Committee on Aviation Environmental Protection (CAEP). Dr. Hileman holds a B.S., M.S., and Ph.D. in Mechanical Engineering from the Ohio State University.

High Tech Noise & Emissions Control: Addressing Aviation Environmental Challenges through Technology and Fuels

Yahia Ismail

Acoustics engineer, Physics, Aurora Flight Sciences

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Yahia Ismail is an Acoustics Engineer at Aurora Flight Sciences, Cambridge, MA. He had a B.Sc., M.Sc. in Aerospace Engineering from Cairo university, Cairo Egypt and Ph.D. in Aerospace Engineering from Old Dominion University, Norfolk, VA. Yahia worked as a Post-Doctoral Research Associate at the University of Notre Dame where he worked with one of the top aero acousticians. He also worked for the Boeing company in Seattle for about 10 years in the Acoustics Technology Department and worked outside the aerospace industry for about 8 years as a senior sound and vibration engineer.

High Tech Noise & Emissions Control: Passenger Air Vehicle Noise Requirements

Diane Jackson

Director of Communications and Business Development, Naples Airport

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General Aviation: Airport Successfully Demonstrating the Commitment to Being a Good Neighbor

William Johnson

Chief Engineer, Langley Research Center, NASA

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William has been an international leader in Air Traffic Management R&D for 15 years at NASA and the FAA prior to that. He has served on a number of US and international ATM R&D committees including the US/Europe ATM R&D Seminar Program Committee from 2004-2011 and the ENRI International Workshop on ATM/CNS Technical Program Committee in Asia from 2014-Present. In that time, he has focused on Trajectory Based Operations development including Performance Based Navigation and direct contributions to RTCA and EUROCAE avionics standards development and ATM global harmonization efforts.

William is currently serving as the Chief Engineer for the NASA UAS Integration in the NAS Project where he leads the NASA effort to mitigate technical and regulatory barriers that are limiting the ability for civil UAS to fly routinely in the NAS while working the FAA and Industry.

Before joining the US Government, William worked for 10 years in industry developing knowledge management systems, flight mission support systems, and air/ground sensor

platforms for government science missions. William has an undergraduate degree in Computer Science, a graduate degree in Applied Physics and Computer Science and a post-graduate Engineer's Degree in Engineering Management from George Washington University. William's work has been featured in Scientific American, Wired, Aviation Week, Aerospace America and several other media outlets.

PBN: What is it and why is it necessary?: PBN - The Science and Application to High Density Terminal Arrivals

Ian Jopson

Head of Environmental & Community Affairs, NATS

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Ian has over twenty years' experience in the sphere of environmental aviation issues working for the Civil Aviation Authority, the UK air navigation service provider - NATS - and in his own independent consultancy. Ian is now the Head of Environmental and Community Affairs at NATS, responsible for driving forward an industry leading corporate social responsibility programme targeting improvements to operational CO2 emissions, noise performance and a low carbon estate strategy. His work has enabled NATS to be the first air navigation service provider in the world to set operational CO2 targets. In 2012, in a world first, Ian and his team deployed a new environmental air traffic control performance metric, 3Di - as part of the NATS financially incentivised regulatory authority to operate air traffic services. On behalf of the UN body for aviation - ICAO - Ian is leading a task looking at global PBN deployment and associated community engagement and he works with airports, airlines and local communities to design and run innovative trials help manage aircraft noise impacts. Ian is a member of the UK Sustainable Aviation coalition's oversight committee and is the lead of a cross industry task group looking at ways to better manage noise impacts. Ian is a member of the UK Royal Aeronautical Society's 'Greener by Design' environmental steering group.

Keynote: Airspace Modernisation and Sustainability - A View From the UK

Todd Linder

Director, Cecil Spaceport, Jacksonville Aviation Authority

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Todd Lindner graduated from Middle Tennessee State University in 1986 with a Bachelor of Science Degree in Aerospace Technology and 1998 with a Master's of Science Degree in Aviation Management and Airline Administration.

From 1989 to 2004, Mr. Lindner served as a corporate pilot operating business jets and turboprop aircraft before transitioning into a position which included Aviation Management. In June of 2005, Mr. Lindner was employed by the Jacksonville Aviation Authority (JAA) as the Administrator of Planning before being promoted to Senior Manager of Aviation Planning and Spaceport Development. In August of 2006, Mr. Lindner was assigned the task of establishing a Spaceport to accommodate Horizontal Launch Vehicles at Cecil Airport. In this role, he was responsible for the successful completion of the Spaceport Licensing process and coordination with the Federal Aviation Administration's (FAA) Office of Commercial Space Transportation and Air Traffic Organization. In January 2010, JAA was issued Launch Site Operators License 09-012. In March 2017, Mr. Lindner was promoted to Director, Cecil Spaceport. In this capacity, he is responsible for all interests related to Cecil Spaceport including operational activity, oversight of infrastructure development and synchronization between launch providers and FAA. Additionally, Mr. Lindner provides coordination and guidance relative to aviation and space related issues to Space Florida, the Commercial Spaceflight Federation, the Authority's Board of Directors and JAA staff.

Mr. Lindner is Certified Member of the American Association of Airport Executives. Also, he is an accredited member of Airport Council International – North America, American Institute of Astronautics and Aeronautics, and serves on the Executive Committee of the Commercial Spaceflight Federation Board of Directors.

Keynote: *Horizontal Launch Operations by Reusable Launch Vehicles (RLV)*

Mike Mckee

Airport Noise Abatement Manager, Denver International Airport

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Mike is the Airport Noise Abatement Manager at Denver International Airport, where he has served since the airport opened in 1995. He chaired the DEN Aircraft Noise Task Force, that worked during the early days of Denver International to design and implement numerous changes to DEN arrival and departure procedures. These changes brought the then-new airport into compliance with its FEIS, and with the noise provisions of its intergovernmental agreement with the surrounding county. Mike currently represents DEN on local and national-level working groups, including the PBN Implementation Working Group, which reports to the NextGen Advisory Committee, and FAA's PBN NAS Strategy Ad Hoc Working Group. DEN's local NextGen working group has been successful in designing and implementing a complete set of NextGen PBN procedures, including ground-breaking use of RNP-AR. In 2013, the Denver PBN project was recognized by the Air Traffic Control Association with its Chairman's Citation of Merit Award.

Mike is also responsible for ensuring that DEN complies with unusually stringent noise limits contained in an intergovernmental agreement between Denver and Adams County, which surrounds DEN. Mike's team was honored with the 2010 AIAA/ACC Jay Hollingsworth Speas Airport Award. Mike holds a Bachelor of Science degree in Aviation Management, and is a licensed sailplane pilot.

Real World Results: Denver – A PBN Success Story

Brad Pierce

President, N.O.I.S.E.

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Brad Pierce served on the Aurora Colorado City Council for 13 years. He is President of the National Organization to Insure a Sound-Controlled Environment (N.O.I.S.E.). He also is the Chair of the Centennial Airport Community Noise Roundtable and he is a member of the FAA NextGen Advisory Committee.

While on City Council Brad served on the National League of Cities Energy, Environment and Natural Resources Advocacy Committee. He has a long history of community involvement including currently serving on the Community College of Aurora Foundation Board, as a member of the Aurora Rotary Club, as a Board member of the Aurora Economic Development Council and on the Board of his Homeowner's Association.

Brad is a small business owner. He and his wife live on Aurora, Colorado

General Aviation: Community Roundtables

Joseph Post

Director (A), Systems Engineering & Integration, Federal Aviation Administration

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Joseph Post is the Acting Director of Systems Engineering & Integration at the Federal Aviation Administration (FAA). Mr. Post has 35 years of experience in aerospace, defense, and civil aviation. He has worked at Sikorsky Aircraft, the Institute for Defense Analyses (IDA), Princeton Consultants, TRW, and The CNA Corporation. Immediately before joining FAA, Mr. Post was the military space analyst in the National Security Division of the Congressional Budget Office. Mr. Post earned a bachelor's degree in Aeronautics and Astronautics from M.I.T., a master's degree in Engineering and Applied Science from Yale University, and a master's degree in Economics

from George Mason University. Mr. Post is a co-inventor of three patents relating to helicopter flight controls, and holds FAA commercial pilot and remote pilot certificates.

[PBN: What is it and why is it necessary?: PBN Past and Future](#)

Dan Rutherford

Director, Marine and Aviation, International Council on Clean Transportation

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Dan Rutherford, Ph.D. is the ICCT's program director for marine and aviation. In that capacity, he acts as ICCT's chief representative to the International Civil Aviation Organization's environmental working groups. He has more than 15 years of researching international policies to control mobile source air pollution. ICCT's aviation program covers a wide portfolio of research and policy engagement, including work to strengthen emission standards for new aircraft, research benchmarking the fuel efficiency of airlines, and policies to promote sustainable alternative jet fuels. Dr. Rutherford holds a B.A. in Chemistry from the University of Minnesota at Morris and a M.S. and Ph.D. in Environmental Engineering and Science from Stanford University.

[Noise Issues on the Horizon: Noise and climate impacts of emerging commercial supersonic aircraft](#)

Philip Soucacos

Senior Aviation Environmental Specialist, Booz Allen Hamilton

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Mr. Soucacos is a senior aviation environmental specialist at Booz Allen Hamilton with more than 12 years of professional experience. He currently supports the Federal Aviation Administration (FAA) with understanding the current and potential future environmental challenges and opportunities from an operational and organizational perspective to ensure that the environmental benefits of the NextGen initiatives are maximized. Mr. Soucacos is currently the Principal Investigator of Airport Cooperative Research Program (ACRP) project 02-80 "Quantifying Emissions Reductions at Airports from the Use of Alternative Jet Fuels" and was previously the Principal Investigator for ACRP 02-67 "Airport Air Quality Management Guidebook and Resource Library". He has previously been a subject matter expert for ACRP projects such as ACRP 02-07 and ACRP 02-58, has served as a ACRP Panel member in ACRP 02-54 and as an advisory board member for the Partnership for Air Transportation Noise and Emissions Reduction (PARTNER) Center of Excellence. Throughout his career, Mr. Soucacos has been working on the assessment of aviation emission impacts on local-to-regional air quality. He has extensive environmental modeling experience having assisted the FAA with the development of the Aviation Environmental Design Tool (AEDT) and Emissions and Dispersion

Modeling System (EDMS). He has conducted system design, modeling, analysis, and testing on several projects that examine the relative changes to air quality from airport-level sources.

Emissions: ACRP 02-80 - Quantifying Emissions Reductions at Airports from the Use of Alternative Jet Fuels

Ralph Tamburro

Airport Delay Reduction Manager, Aviation, Port Authority of NY/NJ

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I began my career in aviation in 1982 as an air traffic controller for the FAA at the NY Approach Control facility.(NY TRACON). During my time with the FAA I held a number of positions within the TRACON. Supervisor, Traffic management Supervisor, Operations Manager and finally The Traffic Management Officer when I retired in 2013. I began my career with the Port Authority also in 2013 as the Airport Delay Reduction manager. In addition to my duties at the Port Authority, I serve as a co-lead with the Northeast Corridor NextGEN Integration Working Group (NEC NIWG)

PBN: What is it and why is it necessary?: Why does NY need PBN

Justin Towles

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Noise Issues on the Horizon: UAS regulations/policy

Emily Tranter

N.O.I.S.E. National Coordinator, Lockridge Grindal Nauen P.L.L.P., Government Relations Specialist

Emily Tranter is the National Coordinator for the National Organization to Insure a Sound-Controlled Environment (NOISE). N.O.I.S.E. is an affiliate of the National League of Cities and has served for over four decades as America's only nationwide, community-based association committed to reducing the impact of excessive aviation N.O.I.S.E. on local communities. As the National Coordinator for NOISE, Emily coordinates policy and outreach efforts. Ms. Tranter advocates for affected communities by bringing together local airport officials and federal policymakers to work on federal policies to reduce unreasonable levels of aviation noise through a combination of quieter aircrafts, increased noise abatement resources, and opportunities for local communities to contribute to airport expansion decisions. Ms. Tranter serves as Contributing Editor for the Federal Transportation Advocate and is regularly asked to address and brief local elected officials on transportation and related

economic/infrastructure development projects. Ms. Tranter also served on the staff of former Minnesota Senator Mark Dayton.

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Noise Issues on the Horizon: UAS regulations/policy

Kevin Walton

Airspace Strategy Manager, Heathrow

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Kevin served for 18 years as a Royal Air Force Air Traffic Control Officer throughout the UK and middle east in Terminal and En-Route ATC roles. Highlights included ATC General Manager at a fast-jet main operating base, airspace subject matter expert for the UK Ministry of Defence and operational tours of duty in Saudi Arabia, Iraq and Afghanistan. These included: operational planning for a new build ATC tower and programme management for the transition of the UK air hub to Bastion Airfield, implementation of a wide-ranging airspace change project working closely with USAF and USMC colleagues, developing and leading procedures for recovering from rocket/mortar attacks on the airfield and the safe integration of fixed and rotary wing aircraft, UAVs and artillery/missiles.

Between leaving the Service and joining Heathrow, Kevin was Airside Operations Manager at London Gatwick Airport. As the accountable manager for the airfield he was responsible for all aspects of the airside operation, stand planning and apron control at, arguably, the busiest single runway airport in the world. Kevin joined the Expansion Team at Heathrow in 2018 as Airspace Strategy Manager where he leads on the technical aspects of Heathrow's airspace change within the UK's Airspace Modernisation Strategy. He also leads on the development of independent parallel approaches for use within the current 2-runway operation and the permanent implementation of a recent trial to introduce slightly steeper approaches of 3.2 degrees.

Away from work, Kevin enjoys mountaineering, the theatre and is a keen private pilot flying a Vans RV6 and TEAM Eurostar whenever time and the weather allow. He has 2 sons and lives in West London with his wife, Deb.

Possibilities Within the Framework: Heathrow Airport Airspace and Future Operations Consultation

Kevin Welsh

Executive Director, FAA, Office of Environment and Energy

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Kevin Welsh is the Executive Director of the Office of Environment & Energy at the Federal Aviation Administration. In this role, he leads the development of aviation environmental and energy policies, goals, and priorities, and oversees research, engineering and development projects and initiatives. In this capacity, he also represents the United States at the International Civil Aviation Organization Committee on Aviation Environmental Protection to develop recommendations for international standards and policies for aviation environment and energy issues. Prior to assuming his current position in November 2017, Kevin held several roles within the United States Government working on aviation, environment, and energy issues, including serving for two years as a Director at the National Security Council in the White House. Kevin also previously worked in FAA's Office of Environment & Energy as Senior International Advisor, where he led the development of FAA's international environmental strategy and coordinated U.S. engagement in the Committee on Aviation Environmental Protection. Prior to joining the federal government, Kevin was a member of the Environmental Affairs team at Airlines for America where he represented U.S. airlines in addressing environmental laws and policies related to aircraft noise, climate change, local air quality and sustainability. Kevin began his career as an associate attorney in the real estate and environmental practice of the Paul Hastings law firm. Kevin holds a Bachelor of Arts degree from Tufts University and a law degree from the University of Connecticut School of Law.

Possibilities Within the Framework: FAA efforts to understand and address aviation noise challenges

Brian Will

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Brian is an independent researcher and marine scientist working primarily on a contractual basis for the National Oceanic and Atmospheric Administration (NOAA). He is also the Vice President of Queens Quiet Skies and a member of the Port Authority of NY/NJ Technical Advisory Committee. Brian has written extensively on the subject of NextGen and Airspace Redesign. He lives in Queens, NY and Pasadena, MD.

Real World Results: Cost-effectiveness of the year-round use of the 'TNNIS Climb' in Queens, NY, USA.

Zafar Zafari

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Dr. Zafar Zafari is an Assistant Professor of Pharmaceutical Health Services Research at the University of Maryland School of Pharmacy. He is a trained mathematician with a PhD in Health Economics/Quantitative Epidemiology from Department of Medicine. Dr. Zafari's cafe time is to contemplate innovative epidemiological techniques to help with improving public health.

Real World Results: Cost-effectiveness of the year-round use of the 'TNNIS Climb' in Queens, NY, USA
