

Name: **H. Christopher Frey**

Title: Glenn E. and Phyllis J. Futrell Distinguished University Professor
Department of Civil, Construction, and Environmental Engineering

Company: North Carolina State University

City/State/Province: Raleigh, NC

Join date

1989

Section/Chapter:

South Atlantic States Section
Research Triangle Park Chapter

Education and professional credentials

PhD, Engineering and Public Policy, Carnegie Mellon University
Master of Engineering, Mechanical Engineering, Carnegie Mellon University
BS, Mechanical Engineering, University of Virginia

Biographical summary

Dr. H. Christopher Frey is the Glenn E. and Phyllis J. Futrell Distinguished University Professor of Environmental Engineering in the Department of Civil, Construction, and Environmental Engineering at North Carolina State University. Dr. Frey's research includes quantification of uncertainty in engineering process technologies and emission factors, probabilistic methods for exposure assessment, measurement and modeling of human exposure to air pollution, and measurement and modeling of vehicle emissions. Dr. Frey is an adjunct professor in the Division of Environment and Sustainability at the Hong Kong University of Science and Technology.

Dr. Frey served as a member (2008-2012) and chair (2012-2015) of the U.S. Environmental Protection Agency's Clean Air Scientific Advisory Committee (CASAC), has chaired CASAC Review Panels on Lead, Nitrogen Dioxide, and Ozone, and has served on CASAC Review Panels for all criteria pollutants including Lead, Nitrogen Dioxide, Ozone, Carbon Monoxide, Particulate Matter, and Sulfur Oxides. He served on the U.S. EPA Science Advisory Board from 2012 to 2018. For the National Greenhouse Gas Inventory Program of the Intergovernmental Panel on Climate Change (IPCC), he served as a Lead Author for the chapter on uncertainties for the 2006 IPCC Guidelines on National Greenhouse Gas Emission Inventories. He contributed to the U.S. Department of Transportation's 2010 Report to Congress regarding Transportation's Role in Reducing U.S. Greenhouse Gas Emissions. He served on a World Health

Organization working group that developed guidance on uncertainty in exposure assessment. He served on two National Research Council (NRC) committees and was a member of the NRC Board of Environmental Studies and Toxicology. During 2006-2007, he was on scholarly leave as an Exposure Modeling Advisor to the EPA's National Exposure Research Laboratory. He was an AAAS/EPA Environmental Science and Engineering Fellow at U.S. EPA headquarters in 1992.

Dr. Frey currently serves on the MOVES Model Review Work Group of the Mobile Sources Technical Review Subcommittee of the EPA Clean Air Act Advisory Committee (CAAAC) and on the Transportation Research Board's Transportation and Air Quality Committee.

Dr. Frey has been the principal investigator for over 70 externally sponsored research projects. He has advised over 50 graduate students. He has published over 140 journal papers, over 210 conference papers, and over 70 technical reports. He has been an independent consultant to numerous private companies and government agencies.

Dr. Frey is a Fellow of the Air & Waste Management Association (A&WMA) and of the Society for Risk Analysis (SRA), served on the A&WMA Board of Directors (2015-2018), and was President of SRA in 2006. He received the Chauncey Starr Award from SRA in 1999, the Lyman A. Ripperton Award from A&WMA in 2012, and the Frank A. Chambers Award from A&WMA in 2019. He has a B.S. in mechanical engineering from the University of Virginia, a master of engineering in mechanical engineering from Carnegie Mellon University, and Ph.D. in engineering and public policy from Carnegie Mellon.

A&WMA activities and offices held

- 2016 – 2018 Director, Board of Directors (elected).
- 2019 Member of organizing committee, Specialty Conference on Freight & Environment: Ports of Entry, October 23-24, 2019, Newark, NJ
- 2018-present Member, Critical Review Committee
- 2018 Author and presenter of the 48th Annual Critical Review
- 2016-2020 Invited Speaker, A&WMA/ASME Information Exchange
- 2015 Member, Local Host Committee, Annual Meeting and Chair of the Student Program
- 2012-present Member, Publications Committee
- 2012 Best Reviewer, Journal of A&WMA

2011-2014 Chair, ET-1 Technical Committee, On and Off Road Mobile Sources

2008 – present Published 8 papers in EM

2002-2003 Chair, EE-1 Technical Committee, Health Effects and Exposure

1995-present Faculty Advisor, North Carolina State University student chapter

1991 - present Published 18 papers in the *Journal of the Air & Waste Management Association*, including a Critical Review.

1990 – present Presented 111 papers at A&WMA annual meetings

Honors from AWMA:

2019 Received the Frank A. Chambers Excellence in Air Pollution Control Award

2012 Received the Lyman A. Ripperton Environmental Educator Award

2008 Fellow

Goals/vision for the organization

A&WMA should be the premier “go to” organization for exchange of information between stakeholders and experts on matters pertaining to environmental science, engineering, management, law, policy, and related areas, with particular applications to air and waste management. A&WMA should foster the environmental profession and the professional growth of its members. A&WMA has a responsibility to be an “honest broker” to bring parties together to address and explore complex policy-relevant issues with the goal of engaging the best science and technological knowledge to appropriately address societal needs.

The opportunities for international leadership by A&WMA are substantial and represent a potential growth area for the Association. For example, many countries in Asia, Africa, and Latin America are grappling with air and waste management issues that are as, or more, challenging than those faced historically in the U.S. Thus, there is the opportunity to not merely leapfrog to state-of-practice solutions, but to advance the state-of-the-art.

I have previously served as President of the Society for Risk Analysis (SRA), during 2006, during which a key theme of my presidency was internationalization. A&WMA needs to be the premiere international organization for Air and Waste Management. I will leverage my existing professional collaborative contacts to increase the international visibility of A&WMA.

A&WMA needs to have an adequate reserve fund to cover at least a full year of operations in the event of an economic catastrophe. I will work with the Executive Director and the Board of Directors to promote the long-term sustainability of the organization.

A&WMA has done a good job of promoting the association to Young Professionals. YP's bring energy and excitement to the Association. We need to be proactive in recruiting and retaining YP's and to continually evaluate and refine approaches. This includes recruiting members early – as students. As a faculty advisor of a student chapter at a major university, and as a faculty advisor and mentor to many undergraduate and graduate students, I am well-positioned to provide insight and obtain information on factors that could attract students into the profession and our Association.

There are several key ways in which the Association provides value to its members, including leadership opportunities, recognition and awards, serving as a forum for exchange of information and ideas, publishing a flagship research journal and practice-oriented magazine, webinars, short courses, and others. Even during tough financial times, the reputation of the Association is critically dependent on maintaining the quality of its ongoing enterprises and on developing new products and services.