UC Irvine atmospheric chemist receives NASA Exceptional Public Service Medal

Donald Blake honored for role in field campaigns and student research program.
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“Even more gratifying to me [than the medal] has been the opportunity provided by NASA to do work that benefits the scientific community and society as a whole and to help legions of young scientists grow and prosper in the atmospheric chemistry field,” says Donald Blake, UC Irvine Distinguished Professor of chemistry, here holding an air sample canister.

Picture Credit:

Steve Zylius / UC Irvine

Irvine, Calif., July 1, 2025 — NASA has awarded Donald Blake, Distinguished Professor of chemistry at the University of California, Irvine, an Exceptional Public Service Medal for his four decades of contributions to the federal agency's tropospheric composition field campaigns and his commitment to the NASA Student Airborne Research Program.

"I am honored to have been chosen as the recipient of an Exceptional Public Service Medal by NASA," said Blake, head of the Rowland-Blake research group in UC Irvine's Department of Chemistry. "Even more gratifying to me has been the opportunity provided by NASA to do work that benefits the scientific community and society as a whole and to help legions of young scientists grow and prosper in the atmospheric chemistry field."

A measurement system developed by Blake has been deployed on more than 15 NASA-led field campaigns and has been instrumental in quantifying naturally occurring and human-produced compounds that contribute to ozone depletion, air pollution and global warming.

Blake's research group provides measurements of the trace constituent composition of the atmosphere closest to the Earth's surface. On airborne missions around the globe, his team collects air samples in metal canisters that are returned to Blake's laboratory on the UC Irvine campus for analysis.

The measurements allow for better understanding of satellite data to support the creation and implementation of international treaties on ozone-depleting substances. Blake's work has been used in international policies on emissions of greenhouse gases, particularly methane. Finally, local and regional studies have helped improve air quality through the development of rules on emissions of pollutants and their precursors from transportation; energy generation; and other industrial, commercial and residential activities.

Since 1988, the measurements that Blake has provided on NASA field campaigns – from the skies over the Pacific and Atlantic oceans, Latin America and Earth's polar regions – have significantly enhanced understanding of the science of the atmosphere. On a recent mission, Blake's research group flew on a NASA DC-8 to study air quality over the continent of Asia.

Blake's team has studied the presence of methane in the air for more than 40 years, the longest observational record of global atmospheric methane levels. The work has focused on the effectiveness of mitigation strategies over landfills, which has led to new approaches to reducing methane emissions.

A founding faculty member of NASA's Student Airborne Research Program, Blake has been involved in the undergraduate summer internship for more than 16 years. SARP has provided 507 college students with hands-on experience in making and analyzing key atmospheric measurements. Of those, Blake has personally mentored 111 students and has enabled others, such as a developmentally challenged team member and annual SARP participant, who would not otherwise have had the opportunity to be involved.

Blake is a fellow of the American Association for the Advancement of Science and the American Geophysical Union. In addition to being part of teams garnering nine NASA Group Achievement Awards since 1993, he received the Richard C. Tolman Award from the American Chemical Society in 2021; the UC Irvine Academic Senate's Better World Award for 2020-21; the California Air Resources Board's Haagen-Smit Clean Air Award in 2014; and the ACS Award for Creative Advances in Environmental Science and Technology in 2013.

About UC Irvine's Brilliant Future campaign: Publicly launched on Oct. 4, 2019, the Brilliant Future campaign aims to raise awareness and support for the university. By engaging 75,000 alumni and garnering $2 billion in philanthropic investment, UC Irvine seeks to reach new heights of excellence in student success, health and wellness, research and more. The School of Physical Sciences plays a vital role in the success of the campaign. Learn more by visiting https://brilliantfuture.uci.edu/uci-school-of-physical-sciences.

About the University of California, Irvine: Founded in 1965, UC Irvine is a member of the prestigious Association of American Universities and is ranked among the nation's top 10 public universities by *U.S. News & World Report*. The campus has produced five Nobel laureates and is known for its academic achievement, premier research, innovation and anteater mascot. Led by Chancellor Howard Gillman, UC Irvine has more than 36,000 students and offers 224 degree programs. It's located in one of the world's safest and most economically vibrant communities and is Orange County's second-largest employer, contributing $7 billion annually to the local economy and $8 billion statewide. For more on UC Irvine, visit www.uci.edu.

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