

DEPARTMENT OF CHEMISTRY AND ENVIRONMENTAL SCIENCE
SEMINAR SERIES
SPRING 2023

WEDNESDAY, MARCH 8, 2023
TIERNAN HALL – LECT. HALL 2
1:00PM-2:20PM

GUEST SPEAKER

Dr. David T. Allen

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Director, Center for Energy and Environmental Resources
The University of Texas at Austin
Austin, TX

TOPIC

Increased Oil and Natural Gas Production, Methane Emissions, and Climate

ABSTRACT

Hydrocarbon products derived from horizontal drilling and hydraulic fracturing of shale formations (shale gas and shale oil) have greatly expanded US oil and natural gas production, and have made the US the world's largest natural gas and petroleum producer. Collectively, these resources have transformed North America's energy landscape. However, the environmental impacts associated with "fracking" for shale gas and oil have made the process controversial. This presentation will focus on one of the environmental issues associated with shale gas and oil production: the emissions of methane, a potent greenhouse gas. Data from recent field studies will be summarized and the role of "super-emitting" sources will be described. Super-emitting sources are often due to equipment malfunction, so quickly identifying and repairing these sources can significantly reduce emissions. The potential role of continuous emission measurements in identifying super-emitting sources will be described and the design and deployment of a first of its kind methane sensor network in the Permian Basin of west Texas will be discussed.

BIO



Dr. David Allen is the Gertz Regents Professor of Chemical Engineering, and the Director of the Center for Energy and Environmental Resources, at the University of Texas at Austin. He is the author of 7 books and over 300 journal articles and book chapters. Dr. Allen has been a lead investigator for multiple air quality measurement studies, including studies that

made some of the first measurements of methane emissions from unconventional oil and gas production.

He has served on a variety of governmental advisory panels and from 2012 to 2015 chaired the U.S. Environmental Protection Agency's Science Advisory Board. In 2017, he was elected to the US National Academy of Engineering and in 2020 he received the ENI Energy Transitions Award. Dr. Allen received his B.S. degree in Chemical Engineering from Cornell University in 1979. His M.S. and Ph.D. degrees in Chemical Engineering were awarded by the California Institute of Technology in 1981 and 1983.

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