

BIOSKETCH
Russell R. Dickerson
Professor and past Chair
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Russell R. Dickerson received his Ph.D. in 1980 from The University of Michigan, where he studied the interaction of radiation and trace gases in the atmosphere. After graduation, he worked in the Air Chemistry Division at NCAR and in the Abteilung Luftchemie at the Max Planck Institute in Mainz, Germany. Professor Dickerson began working in the Department of Meteorology (now AOSC) as an Assistant Professor in 1983 as the sole atmospheric chemist. He built the program in atmospheric chemistry and air pollution to include six faculty, several post docs and more than a dozen graduate students. His research has expanded to include the interactions of various weather phenomena such as thunderstorms and atmospheric chemistry, ocean-atmosphere interactions, air pollution, the links between particulate and gaseous chemistry and global biogeochemical cycles.

His research group, composed of meteorologists, engineers, and chemists, develops analytical instruments (for species such as NO_x, CO, NH₃, aerosols, and for photolysis rate measurements) employs these instruments in the laboratory, field, and on ships and aircraft, and interprets the results in terms of photochemistry, heterogeneous processes, and atmospheric physics with the aid of numerical chemical transport and cloud models. Remote sensing from satellites has been added to better extrapolate from in situ observations to large-scale processes and climate impacts. The research group enjoys fruitful collaboration with colleagues in UMD Departments of Aerospace Engineering, Chemistry, Chemical Engineering, Physics, Chemical Physics, ESSIC, and MEES, and with outside colleagues from NASA/GSFC, MPI, several universities, and NOAA's ARL, PMEL, and AOML Labs. Among the more exciting recent discoveries are smoke pall from South Asia, rapid ozone destruction in the marine boundary layer, and the impact of aerosol radiative forcing on air quality.

He has helped define, plan, and execute the Atmosphere Ocean Chemistry Experiment (AEROCE), and the Indian Ocean Experiment (INDOEX). He served on numerous EPA air quality panels, the steering committees of Center for Clouds Chemistry and Climate (C4), INDOEX, NARSTO, and SOLAS. Professor Dickerson was a member of the National Academy of Sciences National Research Council Committee on Animal Feeding Operations and has helped write a NRC Report on the impact of agriculture on air pollution in the US. He heads the Regional Atmospheric Measurement, Modeling and Prediction Program (RAMMPP) which acts as the scientific arm of the Maryland Department of the Environment and Department of Natural Resources concerning air quality issues in the Mid-Atlantic region. RAMMPP leads policy relevant research and helps develop plans for compliance with the Clean Air Act.

In teaching, Professor Dickerson developed courses in Air Pollution (METO 434), Atmospheric Chemistry (METO/CHEM 637) and Laboratory Techniques (METO/CHPH 634). Most recently he has helped revise the core courses to include the fundamentals of the chemistry and physics of the atmosphere (METO 620 and METO 621). He has directed research for 12 B.S., 15 M.S. and 26 Ph.D. degrees in AOSC, CHEM, CHPH, and METO.

Professor Dickerson was elected a Fellow of the AGU and AAAS, and has received numerous awards and honors, including recognition as one of the top 100 researchers at UMD every year since 1999, as well as various fellowships such as a Max Planck Visitors Program. At the end of his 7-year tenure as Chair, the National Academies ranked UMD's Atmospheric and Oceanic Sciences Department in the top five in America.