

## **Bill Benjey, Physical Scientist, in EPA's National Exposure Research Laboratory**

Computational Exposure Division

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**Area of Expertise:** My area of expertise at EPA is the improvement and analysis of air emission data components of urban and regional air quality modeling. The focus is on the modeling of emissions to the air, including methods to fill gaps in reported data and to better temporally, spatially, and chemically allocate annual emission data to the hourly gridded form needed for air quality models, particularly the Community Multiscale Air Quality (CMAQ) model. This has included service as project officer for the Sparse Matrix Operator Kernel Emission (SMOKE) model, which is an operational modeling system maintained and improved by the EPA Office of Air Quality Planning and Standards

More recent work includes ongoing research on the current and future (ca. 2050) spatial and temporal behavior of emissions as part of the EPA Climate Impact on Regional Air Quality (CIRAQ) program, and oversight of the development of other emission tools, such as the open software Spatial Allocator for gridding and reprojecting air quality data. I also participate on the OAQPS-led team for the Emission Modeling Framework (EMF), and on the joint Emission Modeling Team. I serve as Task Order Project Officer for AMAD's primary modeling support contract, and as contract Project Officer on the Community Modeling and Analysis System (CMAS) Center. CMAS was established under a cooperative grant to the University of North Carolina (UNC) for the purpose of encouraging the modeling community to share in the support and further improvement of the CMAQ family of air quality modeling tools.

### **Select Publications:**

Ran, L., E. Cooter, V. Benson, D. Yang, R. Gilliam, A. Hanna, AND W. Benjey. "FEST-C 1.0 for CMAQ Bi-directional NH<sub>3</sub> Modeling and Apatial Allocator 4.1". Presented at CMAS Conference, Chapel Hill, NC, October 28 - 30, 2013.

LOUGHLIN, D. H., W. G. BENJEY, AND C. G. NOLTE. ESP v1.0: Methodology for Exploring Emission Impacts of Future Scenarios in the United States. Geoscientific Model Development. Copernicus Publications, Katlenburg-Lindau, Germany, 4(2):287-297, (2011).

COOK, R., V. ISAKOV, J. TOUMA, W. G. BENJEY, J. THURMAN, E. KINNEE, AND D. ENSLEY. Resolving Local-Scale Emissions for Modeling Air Quality near Roadways. JOURNAL OF THE AIR & WASTE MANAGEMENT ASSOCIATION. Air & Waste Management Association, Pittsburgh, PA, 58(3):451-461, (2007).

View more research publications by [Bill Benjey](#).

**Education:**

- B.A. Physical Geography, University of Michigan, 1966
- M.S. Climatology, University of Michigan, 1969
- Ph.D. Microclimatology, University of Michigan, 1974

**Professional Experience:**

- Physical Scientist, Air-Surface Processes Modeling Branch (previously Modeling Systems Analysis Branch), Atmospheric Sciences Modeling Division, Air Resources Laboratory, NOAA, Research Triangle Park, NC, 1990 - Present
- Oceanographer, Environmental Studies Section, Minerals Management Service, U.S. Department of the Interior, Anchorage, AK, 1982 - 1990
- Physical Scientist, Environmental Monitoring Group, Office of the Federal Inspector for the Alaska Natural Gas Transportation System (absorbed by the Department of Energy), Irvine, CA, 1981 - 1982
- Chief, Ohio Water Quality Planning Section, Water Division, Region 5, U.S. Environmental Protection Agency, Chicago, IL, 1981 - 1978
- Environmental Specialist, Ohio Water Quality Planning Section, Water Division, Region 5, U.S. Environmental Protection Agency, Chicago, IL, 1975 - 1978
- Research Specialist, Infrared Imagery Laboratory, Environmental Research Institute of Michigan (then Willow Run Laboratories), Ann Arbor, MI, 1974 - 1975