FOSTERING COMMUNITY &
COLLABORATION

Research Applications Laboratory (RAL)

We conduct fundamental and use-inspired research that contributes to the understanding of the Earth system; extends the capabilities of the scientific community; and transfers knowledge and technology for the betterment of society.

RAL is a world-class leader in performing end-to-end research, development, and technology transfer. Expanding the reach of atmospheric and related sciences and bringing them to bear in addressing important problems that impact society is its mission. Achieving this vision requires partnering with colleagues, collaborators, and stakeholders in the public and private sectors.

OPPORTUNITIES

Collaborative Research

RAL scientists and engineers actively seek opportunities to collaborate with university investigators in developing proposals in a wide range of application areas including short-term weather forecasting, hydrology, water cycle, renewable energy, aviation, and surface transportation. Particular R&D is focused on developing and refining in areas such as connected vehicles, dispersion modeling, weather decision-support systems, communication of weather risk, weather data analytics, human health, GIS, community support for numerical weather prediction, data assimilation, urban meteorology and modeling, agriculture, wildland fire, artificial intelligence and machine-learning applications.

Connect With Us

- Collaborative research

- Visitor programs

- Graduate student & post-doctoral opportunities

- Fellowships, workshops, & tutorials
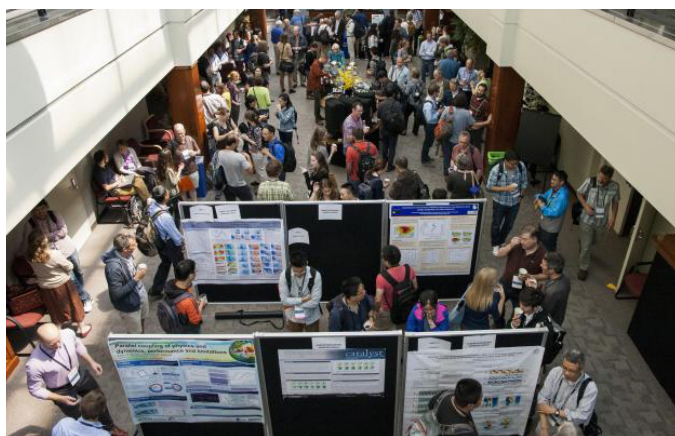
- GIS resources

- Model evaluation tools

- Data sets

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NSF NATIONAL CENTER FOR ATMOSPHERIC RESEARCH
Research Applications Laboratory

Science in Service to Society

RAL Visitor Program

RAL encourages and supports collaboration with colleagues within the U.S. and abroad. To further those interactions, we offer a variety of opportunities to visit RAL and work with our talented staff. We offer administrative and computing support as well as travel and per diem support for selected visitors.

DTC Visitor Program

The Developmental Testbed Center (DTC) solicits research proposals to test new forecasting and verification techniques, models, and model components for numerical weather prediction (NWP). Selected visitors receive salary support, travel, and per diem. Graduate student opportunities are also provided.

Graduate Student and Post-Doctoral Opportunities

RAL provides support for graduate research assistants and post-doctoral scientists in partnership with NSF NCAR's Advanced Study Program (ASP) and sponsors such as NOAA, BOR, and the USACE.

Halaby Fellowship

RAL awards this graduate student Fellowship annually for conducting research to mitigate aviation weather sensitivities and enhance the management of air traffic. The fellowship covers travel, living expenses, and a stipend.

WISE Fellowship

RAL's Warner Internship for Scientific Enrichment (WISE) Fellowship offers a graduate student visitor opportunity in memory of Professor Tom Warner, and his commitment to the role of science in service to society. Students receive travel support and a monthly stipend to support their visit to NSF NCAR and enhance work on their Ph.D. theses.

Workshops and Tutorials

RAL hosts a number of workshops and tutorials to which members of the community are invited. Regularly scheduled trainings are focused on the Weather and Research Forecasting (WRF) model, the Model Evaluation Tools (MET), and WRF-Hydro.

COMMUNITY RESOURCES
GIS Program

The GIS program fosters interdisciplinary science, spatial data interoperability, and knowledge sharing using GIS. The goal of our program is to promote and support the use of GIS as both an analytical and infrastructure tool in atmospheric research. GIS is also used to address broader issues of spatial data management, interoperability, and geoinformatics within the geosciences.

Model Evaluation Tools (METplus)

METplus is a verification framework developed in the DTC that is used widely in the international research and operational communities, and is well supported with thorough documentation and training materials. It assesses model performance across a wide range of temporal and spatial scales with a variety of traditional and advanced verification methods and diagnostics.

Data Sets

RAL datasets are available through NSF NCAR's Digital Asset Services Hub (DASH).

WORK WITH US

Tapping into the scientific expertise at NSF NCAR and UCAR's university partners, RAL conducts directed research and development focused on tailored solutions to specific weather and climate problems. From the aviation, energy, and defense industries, to the government's operational forecasting entities, RAL builds and maintains strong relationships with decision-makers.

RAL scientists and engineers work broadly across disciplines by collaborating with colleagues in the research and operational science communities. RAL participates in all phases of the R&D cycle, with careful assessment of the science and its readiness for application. Thoughtful discussions with the user community are vital to address real needs and readiness to exploit new capabilities.

WORK WITH US!
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