Rising with the vision since 1969.

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One of the most pressing scientific concerns today is to understand Earth’s atmosphere and how human activity might affect the habitability of the planet. USRA researchers seek to discover how climate is changing as greenhouse gases increase, and how these changes will impact other aspects of the Earth system: the spatial extent and dynamics of the ozone layer and the Antarctic ozone hole; how anthropogenic activities contribute to atmospheric pollution on regional and global scales; the impact of long-range transport of pollutants on local air quality; and how climate change will impact local air quality.

USRA works with recognized experts from government and academia to analyze and understand climate data such as sea ice variation, sea level change, aerosols, vegetation, and ozone. Climate change research includes Earth system modeling, data analysis, and data assimilation techniques.

Data assimilation is a critical capability for weather forecasting and short-term climate research, both for specifying the optimal initial state for forecasting and to establish an accurate and consistent data record for climate simulations and diagnostic studies. In collaboration with NASA, USRA researchers are working to develop a better and more efficient data assimilation system by moving to a 4D-Var approach and improving the GEOS-5 model.

USRA is an independent, nonprofit research corporation where the combined efforts of in-house talent and university-based expertise merge to advance space science and technology. USRA works across disciplines including biomedicine, astrophysics, and engineering and integrates those competencies into applications ranging from fundamental research to facility management and operations. USRA engages the creativity and authoritative expertise of the research community to develop and deliver sophisticated, forward-looking solutions to Federal agencies and other customers - on schedule and within budget.