

## Great Plains Regional Center for Global Environmental Change

### Director

*Shashi B. Verma, 1997-present*

*William Easterling, 1993-1997*

### Vision and Mission

*The Great Plains Regional Center for Global Environmental Change (GPRC) is devoted to interdisciplinary research that develops quantitative information on the role of key ecosystems as sources and sinks of carbon dioxide (CO<sub>2</sub>). Through understanding gained by such research, the GPRC will provide scientific information required for accurate prediction of future CO<sub>2</sub> concentrations and climate.*



### Background

The GPRC was established in 1993 by the Board of Regents of the University of Nebraska. It became one of the six regional centers of the National Institute for Global Environmental Change (NIGEC). The overall vision of NIGEC, which was active from 1990 to 2007, was to foster academic research on regional interactions between ecosystems and climate, in support of the climate change program of the U.S. Department of Energy. One of the most enduring research directions to come out of the effort was the measurement of the exchanges of carbon and energy between the atmosphere and terrestrial ecosystems and the use of those observations

to evaluate climate and carbon cycle models. Other areas of emphasis were atmospheric radiation and aerosols, modeling the response of regional ecosystems to climate change, and integrated assessment of the impacts of environmental and ecological changes.



### Faculty and Staff

Shashi Verma  
Andy Suyker  
Todd Schimelfenig  
Dan Hatch  
Amy Rung

*Director/Professor*  
*Research Assistant Professor*  
*Research Technologist*  
*Data Processing Technician*  
*Office Associate*



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### Funding

Support for the GPRC during the last five years has come mainly from the U.S. Department of Energy, USDA, and NASA.

### Future Prospects

The GPRC is addressing critical questions related to climate change with its research on carbon sinks and sources and related processes. Fully understanding how various ecosystems exchange carbon could enhance our ability to mitigate climate change.

### Publications

GPRC research has yielded peer-reviewed publications in diverse journals, including *Agricultural and Forest Meteorology*, the *Journal of Geophysical Research*, and *Agronomy Journal*.

### Collaboration

The GPRC personnel collaborate with a number of scientists within and outside SNR. A joint project with SNR's Center for Advanced Land Management Information Technologies (CALMIT) relies on tower flux and satellite observations to extrapolate carbon dioxide exchange to regional scales.



UNL collaborators are from various departments, including Agronomy and Horticulture, Biological Systems Engineering, Biological Sciences, and Biochemistry.

GPRC collaborates in large-scale, multi-disciplinary research projects, such as the North American Carbon Program (Mid-Continent Intensive). The effort is supported by several key federal agencies and incorporates researchers from across the country.

GPRC uses data from national and international carbon flux networks to better understand carbon dioxide and water vapor exchanges in a variety of ecosystems.



### Contact

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