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INTERGOVERNMENTAL PANEL ON  
CLIMATE CHANGE



# INTERNATIONAL CLIMATE CHANGE MEETING

## Second Lead Authors Meeting

14-16 February 2012

Preserve  
Wetlands  
for Future  
Generations



Soil scientists study how soils influence the cycling of water, nutrients, carbon, pollutants, and other materials. We also study similarities and differences among different soil types.

## Dr. Randy Kolka

Research Soil Scientist  
Ph.D., University of Minnesota  
USDA Forest Service scientist

<http://www.naturalinquirer.org>



## Dr. Randy Kolka



### Important Scientist Characteristics:

To be a good scientist you need to have creativity and solid critical thinking skills. You also need skills related to statistical analysis, experimental design, and understanding the limitations of your research. Excellent organizational skills are also critical.

### Example of a simple research question I have tried

**to answer:** How can we reduce soil erosion and nutrient loss? Erosion and nutrient loss can create dead zones in oceans. The dead zones have only a small amount of oxygen left for living things to use. In our research studies, we use strips of native prairie plants in corn and soybean fields to slow erosion and nutrient losses.

**Technology or equipment used in research:** Our climate change research, with the Spruce and Peatlands Under Climatic and Environmental Change (SPRUCE) experiment, monitors artificial heating of soil and air and elevated carbon dioxide. This experiment helps us assess the impacts of climate change on wetlands.

### • Most Exciting Discovery

• A graduate student and I analyzed  
• data on mercury pollution  
• during forest fires and where this  
• pollution was deposited. After a  
• number of attempts, we were able  
• to understand that the amount  
• of time which has passed after  
• a fire is an important variable  
• for determining the amount of  
• mercury that was deposited.

### • When did you know you wanted to be a scientist?

• At the University  
• of Wisconsin-Stevens Point,  
• all natural resource students  
• are required to take a six-week  
• summer camp between their  
• sophomore and junior years. It was  
• during the soils section of camp,  
• where we practiced the discipline  
• in the field, that I discovered a  
• passion for soil science.