

## **Research products, information, and services and an assessment of their impact by end users (1g)**

An NSSL scientist was a Lead Author, U.S. Climate Change Science Program Synthesis and Assessment Program 3.3 (Extreme Weather and Climate Change), 2008. Results will be used to help government and communities manage the risks associated with climate change, including expected changes in severe weather.

An NSSL scientist was a contributing Author, Intergovernmental Panel on Climate Change Third Assessment Report, 2001. This report provided a comprehensive and objective summary of the latest scientific literature on climate change, bringing to light a serious global challenge that continues to have a profound effect on global policy decisions.

Two NSSL scientists were expert Reviewers, Intergovernmental Panel on the Climate Change Third Assessment Report, 2001, and the Fourth Assessment Report, 2007. These reports provided a comprehensive and objective summary of the latest scientific literature on climate change, highlighting a serious global challenge that continues to have a profound effect on global policy decisions.

An NSSL scientist was a member of the NWS Integrated Lightning Prediction Team (2004-2005) to evaluate the technology and science of lightning predictions and warnings for the NWS. As a result, the NWS has initiated the use of lightning warnings and forecasts, leading to improved public safety.

An NSSL scientist has served approximately 30 years on the NASA Lightning Advisory Panel to develop Lightning Flight Commit Criteria. The goal is to avoid natural and rocket-triggered strikes to the space shuttle and unmanned space vehicles. The long-term work by this small committee has led to increased launch availability, safety, and significant cost savings.

NSSL scientists led the Joint Polarization Experiment (JPOLE) to document improved rainfall estimation from dual-polarization radars. This assessment helped the NWS to decide to upgrade the WSR-88Ds to dual-polarization capability, which will greatly improve rainfall estimation.

NSSL scientists are leading in the exploration, evaluation, and assessment of multi-function phased array radar (MPAR) as potential successor to WSR-88Ds with applications to NWS, Federal Aviation Administration, Department of Human Services, and Department of Defense operations. This assessment will help the NWS determine the successor to the aging WSR-88D network and partner with other federal departments to reduce the costs to the taxpayer.