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**University of Minnesota computer scientists to help track global climate change through new data mining tools
- University of Minnesota is one of the first academic partners to join Planetary Skin Institute**

MINNEAPOLIS / ST. PAUL (12/15/2009) — The University of Minnesota and the Planetary Skin Institute have announced a new partnership to use data mining tools to track historical changes in the Earth's forest ecosystems and better determine their relationship to climate change. The University of Minnesota is one of the first academic partners to join the Planetary Skin Institute. The partnership was announced today at COP15, the United Nations Climate Change Conference in Copenhagen.

The Planetary Skin, started as a joint collaboration between NASA and Cisco Systems, Inc., aims to develop a global "nervous system" that will integrate land-, sea-, air- and space-based sensors, helping the public and private sectors make decisions to prevent and adapt to climate change. The Planetary Skin platform was recently named as one of TIME magazine's 50 Best Inventions of 2009. PSI will provide \$3.2 million over three years to the University of Minnesota.

The Planetary Skin will use novel data mining methods developed by University of Minnesota computer science and engineering professor Vipin Kumar and his research team to identify and characterize global land use changes. These new data mining methods have dramatically advanced our ability to monitor global land cover using satellite data. Initially the Planetary Skin will focus on global forests, but the project is expected to expand to cover agriculture and degraded lands to examine vital global issues such as energy use, water scarcity, and food security.

By applying the data mining methods developed at the University of Minnesota on a global scale, the researchers are creating comprehensive histories of large-scale changes in the ecosystem due to fires, logging, droughts, flood, farming, and other events. Kumar's team is also developing a planetary information system under the Planetary Skin initiative that can help researchers study these ecosystem disturbances and their relationship to global climate variability and human activity.

"We are excited to be an academic partner of Planetary Skin Institute," Kumar said. "This will allow us to greatly expedite the development and integration of advanced data-mining capabilities for the monitoring of the global ecosystem that is urgently needed in the context of climate change."

Researchers say changes in forests account for as much as 20 percent of the greenhouse gas emissions, an amount second only to fossil fuel emissions. Yet, the contribution of greenhouse gases from the degradation of forests is one of the most uncertain elements of the global carbon cycle. Software and events produced by University of Minnesota computer scientists will be a key part of the first prototype of the Planetary Skin to be released in 2010 that will track how much and where carbon is held by rain forests.

"We are honored to have this new academic partnership," said Juan Carlos Castilla-Rubio, president of the Planetary Skin Institute. "The University of Minnesota Department of Computer Science and Engineering's unique expertise and global reputation will be key to developing the infrastructures that the world urgently needs to address climate change."