Department of Agriculture

DISPATCH

NEWS FOR ALUMNI & FRIENDS

Fort Hays State University | Volume 25 | Winter 2009

From the Chair -- Dr. John Greathouse

The University Farm is a tremendous educational resource for students and faculty on our campus. Most notably, it provides access to livestock and crop land that support the academic programs within the department and a number of extracurricular needs of our student organizations. The Department of Biological Sciences also utilizes this facility as an instructional and research site to examine characteristics and interactions of the native animal and plant ecosystems. Even the Physics and Art departments have accessed the Farm for various educational ventures.

A few years ago the Department of Geosciences constructed a small weather station in a far southwest pasture to collect local weather data. Since the initial installation, real-time data has been transmitted, via wireless signal, to Tomanek Hall and posted on that department's web site for a variety of uses. Within the past year a larger radius of the area surrounding the weather station has become home to a Super Dual Auroral Radar Network (SuperDARN) facility supported by a National Sciences Foundation grant.

The SuperDARN project is a collaborative partnership between the departments of Agriculture and Geosciences and researchers from Virginia Tech. The primary objective is to study interactions of the Earth's magnetosphere and upper atmosphere with the space environment (i.e., the impact of space weather — solar storms — on the Earth's ionospheric plasma; the aurora borealis, or northern lights, is a visual outcome of this type of interaction). Student intern projects and professional faculty interactions have been the immediate rewards of this project.

Located on the southwest horizon of the University Farm is the Super Dual Auroral Radar Network (SuperDARN). Constructed in collaboration with Virginia Tech, the paired radar systems became operational in November 2009.

The Fort Hays site is unique because its relatively flat terrain and central location allow for a paired radar system design with an almost 180 degree view of activity in the atmosphere above the northern U.S. and into the southern half of Canada. This site complements the single radar arrays currently operating in Wallops Island, VA, Blackstone, VA, and Hokkaido, Japan. Additional SuperDARN structures are scheduled for construction within the next few years in Corvallis, OR, Azores, Portugal, and Adak, AK.

Major participants in another collaborative venture that took place on the University Farm this past year include the Natural Resources Conservation Service and the Kansas Department of Health and Environment. These agencies cooperated in an extensive waste management renovation project at the Dairy that was designed to address issues of limited livestock waste storage capacity and concerns about surface drainage patterns at this facility.

Cost-share funding for the dairy project was provided by the Ellis County Conservation District, through the state non-point source pollution control program, and the Kansas Watershed Restoration and Protection Strategy (Kansas WRAPS) project funded by the U.S. Environmental Protection Agency. The renovated area has been identified as a public demonstration site for Best Management Practices in Livestock Waste Systems (see photo on page 11). A spring tour date soon will be announced as part of an upcoming Conservation Practices Tour coordinated by the Big Creek and Middle Smoky Hill River Kanopolis Lake Watersheds.

Presented in this year's newsletter are articles that detail other initiatives and activities that involve the department and our students. We hope that you will find these articles to be quite informative. Please do not hesitate to contact us if you desire additional information.

Best wishes for a very productive year!

—see Chair - page 11

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