Charles Hurburgh Named Anderson Research Award Recipient

Fifteen universities and USDA laboratories collaborated to submit a proposal to the USDA, Initiative for Future Agriculture and Food Systems grant competition. The proposal entitled “Capacity Building in the United States Value-Enhanced Cereal and Oilseed System” is designed to capitalize on the existing structure of scientists, engineers, and economists that work together under the NC-213 multistate research project. Outputs of this project will include creation and delivery of new management and educational tools based on systems research. The delivery of these products will occur through an active web-based information service, outreach meetings, distance learning venues, including satellite downlinks, and case studies for agriculture business classes.

Special thanks go to Tim Herrman (KSU) who put the extra effort into the project concept and writing the proposal. Tim has put his heart and soul into NC-213 and this is one more example of that level of commitment. Charlie Hurburgh (ISU) also worked closely with Tim.

GMPRC Scientist to Head New APHIS Project

Ian Dowdy has been selected as the National Science Program Leader for Agricultural Quarantine Inspection and Port Technology Development for the Animal and Plant Health Inspection Service. This is the first appointment of a permanent National Science Program Leader in the Center for Plant Health Science and Technology (CPHST). Dr. Dowdy will be responsible for directing and assigning resources to research projects within CPHST. He will report for duty at APHIS headquarters in Raleigh, North Carolina, on June 18.

While at GMPRC, Dr. Dowdy conducted research on monitoring and movement of stored-product insects using spatial mapping techniques and genetic population markers. His most recent work involved the use of heat and diatomaceous earth as an alternative to methyl bromide fumigation for controlling insects in food processing plants. His current position in the Biological Research Unit will not be filled due to a lack of funds.

Ian was highlighted in the August 1999 GQN issue regarding his research and the impact it has on NC-213 science. This article outlined his research on minimizing insecticide use in food warehouses and grocery stores by identifying the specific location of insect populations. Alan is on the NC-213 Executive Committee.

You can visit Alan’s web site at: http://brs.usgs.gov/dowdy/dowdy.html
Graduate Students Play a Vital Role in NC-213 Research

Students play an essential role in conducting NC-213 research and represent the cereal and oilseeds scientists of tomorrow.

This Newsletter highlights some of the graduate students who are working with NC-213 members.

ALEXANDER BEKRIC
Advisor: Lowell D. Hill, University of Illinois
Bio: Aleksandar is a Ph.D. candidate and graduate research assistant in the Department of Agricultural and Consumer Economics at the University of Illinois, Urbana-Champaign. Prior to that, Alexander worked ten years as a production and market analyst at The Maize Research Institute “Zemun Polje”, Yugoslavia, where he developed marketing strategies for seed export. Alexander specialized in seed corn markets in Eastern Europe. His recent research interests include quality issues in commodity markets, such as grain quality in international trade and food safety in the hog industry.

Ph.D. Dissertation: “A Parametric and Semi-parametric Regression Estimation of the Effect of the U.S. Soybean Quality Attributes on Export Price.” This research builds on the soybean processors data described by Glen Bode and others. The analysis resolves many of the theoretical and statistical problems encountered by previous attempts to analyze these detailed data. As a result, the conclusions are very consistent with theoretical expectations, including the statistical significance of oil and protein and most grade factors in determining prices paid by importers. Price effects differ among importing countries.

Funding:
The Andersons, Inc.
-Grant from the Federal/State Marketing Improvement Program

JEFF REIMER
Advisor: Lowell D. Hill, University of Illinois
Bio: Jeff is currently a Ph.D. student at Purdue University. His previous experience includes two years in The Peace Corps, in Bangladesh. He holds a B.S. degree from the University of Illinois.

MS Thesis - 1999: “The Implicit Prices of Corn Quality Characteristics in U.S. Exports to Japan.” This study and his publication were based on data collected from Japanese wet nets for individual vessels to analyze the effect of quality and country of origin on yield of starch in three major wet corn milling plants in Japan. Research included a comparison of quality at origin and destination and a comparison of U.S. and South African origins based on three years of data on individual vessels and FGIS export certificates.

Funding:
The Andersons, Inc.
-Various Grain Quality Projects

TOD BRAMLE
Advisor: Timothy J. Herrman, Kansas State University
Bio: Tod is from northern California and is working on his Master’s degree in Grain Science. Tod earned a B.S. in Biology from the University of California in Santa Barbara. Before coming to Kansas State University, he worked at the American Institute of Baking in Manhattan, Kansas and Standard Baking Company in Portland, Maine. Tod is married and has one son.

Summary of M.S. Thesis: Tod is quantifying the sources of wheat variation in the Kansas wheat crop by performing a variance component analysis of a hierarchial design using the single kernel characterization system. These results will enable Tod to identify sampling and segregation strategies, which best quantify and control variability respectively.

Funding:
USDA
-Kansas Ag. Exp. Station

BENJAMIN ARIZMENDI SHO
Advisor: Timothy J. Herrman, Kansas State University
Bio: Benjamin is the Director of Operations for Trimes Milling Company in Mexico City, Mexico. He is completing his Master’s degree in Grain Science at Kansas State University. Benjamin earned a B.S. degree in Food Engineering in August 1994 from the University of Mexico.

Summary of MS Thesis: Benjamin is investigating commercial optimization of Kansas identity preserved wheat in two commercial flour mills in Mexico.

Funding:
-Kansas Wheat Commission

ROBERT P. CODYL
Advisor: Charles R. Hurburgh, Jr., Iowa State University
Bio: Robert worked as an undergraduate lab assistant for Dr. Carl Bern. After which, Robert joined Dr. Charlie Hurburgh as a dual-enrolled graduate/undergraduate in the fall of 1998. Robert received his undergraduate degree in December of 1999 and is on track to graduate with his master’s degree in May of 2001. Robert is interested in the combination of machine vision, spectroscopy, and artificial intelligence. Robert has a background in PC and microcontroller based automation.

MS Thesis - 2000: To build a NIR imaging system for analyzing single kernels of corn with the intent of rapidly predicting constituent values.

Funding:
-Frazier & Associates

SAFIR MOIZUDDIN
Advisor: Charles R. Hurburgh, Jr., Iowa State University
Bio: Safir is from Bangladesh and holds a B.S. in Food Science Technology from Iowa State University. Safir has expertise in the utilization of soybean for food use. In addition, he has a strong background in soy milk and tofu production.

MS Thesis: To investigate the relationship of soybean meal quality and soybean quality.

Summary of Work: Safir is currently analyzing the annual soybean quality survey data to estimate inbound new crop quality to the 70 U.S. soybean processing plants. To further enhance the research, Safir is also reviewing meal samples provided by the FBA sampling program. Safir is working with the FBA in the comparison of soybean quality to meat quality.

Funding:
-Soybean Research & Development Council
-Various Grain Quality Projects

The Impact of NC-213 Science

ISSUE: The continued elimination of chemical pesticides that are suitable for application to stored commodities has left few effective alternatives for insect control. Insect growth regulators, especially juvenile hormone agonists, are effective alternatives to conventional pesticides.

WHAT’S BEEN DONE: The development and reproduction of the Indian meal moth is adversely affected by the juvenile hormone agonists fenoxycarb and pyriproxyfen. NC-213 scientists have developed and tested a method that allows treatment of the early stages of flour moth and requires lower doses of the agonist to interfere with flour moth development and minimize grain damage.

We have formulated and tested in small warehouses, an approach that protects packaged commodities from flour moth infestation during storage. We found that flour moths lay infertile eggs when the vertical surfaces in a warehouse are treated with either fenoxycarb or pyriproxyfen. Treated warehouse walls greatly reduce the indigenous moth population prior to commodity storage; in addition to the wall treatment, treating the outer case material that encloses packaged commodities prevents commodity infestation during warehouse storage. This treatment was effective for six months in preventing infestations by Indianmeal moths, Almond moths and Mediterranean flour moths.

THE SCIENTIST: Don Silhacek, USDA ARS CMAVE, Gainesville, FL

World Center for Crop Production of Food &工业期货研究 & 发展 Council

NC-213 Grain Quality Projects

Funding:
- Soybean Research & Development Council
- Various Grain Quality Projects