ATTENDING: Charles Brown, Delbert Christiansen, George Cummins, Randy Dunn, Patty Gibler, Connie Hardy, Christa Hartsook, Mary Holz-Clause, Harold Hommes, Charles Hurburgh, Nick Huston, Larry Johnson, Dan Loy, Gerald Miller, Richard Pope, Drew Sanders, Howard Shepherd, Gordon Wassenaar

GQI Organizational Update (Miller and Hurburgh)
Miller provided an update on the Agriculture and Natural Resources revised Plans of Work. IGQI is actively involved in three areas of the annually updated Plans of Work: crops; farm and risk management; and livestock (beef, swine and dairy.) Plans of Work are now more topic-oriented to be more inclusive of all faculty and staff involved in research on a particular topic.

Rapid response issues (Bioterror records)
Bioterrorism Act – Shepherd presented the FDA Bioterrorism Act and its implications for Iowa grain handlers, farmers, and grain processors. The Bioterrorism Act covers acts that affect both humans and animals, and it may include intentional acts that cause death or injury or unintentional mismanagement of a naturally occurring substance (such as aflatoxin in corn) that cause death or injury. Having a system that allows traceability is the first step to compliance with the Bioterrorism Act.

The IGQI is working with USDA and FDA to help these agencies to better understand the grain flow process. A training session is available on IGQI’s website (Power Point) to help grain handlers think through the process of maintaining sufficient records for compliance.

Hurburgh commented that FDA issued a new guidance document in June. This document states that every buyer of bulk commodities should record the first location of storage. Although farmers are exempt from compliance to date, any post farming process (drying, clean, etc.) is covered required to be documented.

Question: How are farm chemicals and pesticides documented? Shepherd replied that this not a part of the record keeping required by FDA. For farm chemicals, the farmer is not responsible for documentation because the dealer is capturing that information. If chemicals are added in a fumigating bin, for instance, there is a possibility that records must be kept.

IGQI has been very involved in developing a national training model for compliance with FDA regulations affecting the grain industry. Shepherd encourages producers, grain handlers, and processors to route questions regarding the new Bioterrorism Act through IGQI.

Aflatoxin Issue. Hurburgh provided a summary of the 2005 aflatoxin event and noted that there is some likelihood of aflatoxin in 2006. ISU has submitted a proposal to assist USDA-RMA in
monitoring mycotoxin outbreaks and controlling the flow of mycotoxin damaged grain that is unfit for food and feed.

**GQI Marketing Plan** – Hartsook presented the new structure of the IGQI web site based on the Content Management System (CMS). CMS can provide statistics on page usage so that IGQI can continue to provide helpful materials in a format that is easy to access. The new site provides better connectivity to other sites and projects.

Hurburgh commented that one goal is make more available the research activities that are addressing current public concerns and to identify researchers who may be contacted for further information.

**Research Assistance and Sample Analysis Program** - Hurburgh discussed the grain quality issues that are being driven by new markets and uses. He recommended closer contact with seed companies to update them on new markets and potential changes in seed traits.

Biodiesel fuel production and consumer demand for high quality cooking oil are two factors that will likely change traits in soybeans to yield more oil and to produce various combinations of fatty acids. In biodiesel fuel, high oleic oils are more desirable because they have less tendency to gel at low temperatures and more oxidative stability, thus preventing engine fuel filter clogging.

The rapid growth of ethanol production will likely produce high competition for corn for both fuel and feed markets. High fermentable starch corn is desirable for ethanol fermentation and more research is needed in this area. In terms of feed value, Hurburgh encouraged more research in the production of specific amino acids. Current research shows that some amino acids might be produced at higher (than normal) levels, even if the overall protein level drops.

Define markets for specific, genetic traits. We may need to talk to seed companies to let them know what markets are out there.

**Bulk Grains Traceability and Isolation** – Hurburgh defined the problems related to traceability in bulk grain shipments. In grain handling, the lots start small and increase in size, which requires a different traceability strategy than USDA uses for the meat industry, for example, where lots begin large and gradually become smaller cuts.

If the first point of storage is recorded, then one is able to determine where the grain has NOT been stored. As part of the training procedure, a mock recall exercise is being developed to assist grain handlers in setting up procedures that would help them accomplish a recall if one were necessary.

Hurburgh noted that the true cost of traceability in international markets is yet unknown. The IGQI is working to understand traceability requirements in various countries and what it would take to have a work food traceability standard.
Uniformity in Output-Trait Measurement (NIR calibration)

Hurburgh encouraged further development of uniform measurement systems for traits beyond those covered in USDA Grading (i.e., protein, oil, fatty acids.) As an example, he used the measurement of low linolenic in soybean oil. Currently, each genetic supplier uses their company’s own measurement system that is not matched to other suppliers’ systems, so there is no quality control within the market for these traits. If low sturates and low linolenic oils are going to be successful, uniform testing must exist. Effort must be made by scientific and regulatory agencies to encourage uniform procedures among labs and sharing of electronic data.

Impacts of Increased Local Processing (ethanol plant survey)- Hardy provided preliminary data from interviews conducted with managers of 19 ethanol plants in Iowa. The overall goals of the interviews were to determine if more on-farm storage should be encouraged and to estimate how much more livestock could be supported in Iowa with distillers grains produced in Iowa.

The interview responses show that these ethanol producers obtain more than 50% of the corn they process directly from farmers, and that two plants are currently paying premiums for grain to be delivered by farmers at a specific future date. Most ethanol plant managers encourage more on-farm storage to be built in their regions. More distillers grains are dried and shipped out of Iowa to dairies on the West coast and Southwest US. A few plants sell all or most of their distillers grains as wetcake to local cattle feedlots that are including them in diets at a rate of 50% or greater. The Distillers grains are being used at a lower rate (~10%) in some swine and poultry rations. Plant managers encouraged more education for farmers in uses of DG and DDGS for various livestock.

Wassenaar commented that a trend is starting, and that when government decides to move toward energy independence, then there will be a lot of money for research in energy areas. He also mentioned that Iowa is third behind Pennsylvan i a and Indiana in training managers and technicians for ethanol production. He encouraged ISU faculty to be alert for money that is becoming available for training.

New look of Website  Shepherd shared comments on the new web site, which is outlined as follows:
Home page:             Welcome
                        Vision
                        Recent topics
                        News
Resources  –  Lab  –  Projects  –  Staff
                        Seed technology
                        Production
                        Harvest, handling, storage – equipment, corn, soybeans, Value Added, Grain
Business and Marketing
                        Ag Links
What are current issues we have not considered that we should be considering?

Suggestions included:
Define the differences in soybeans being grown for biodiesel vs. those intended for a food source.
Developsynergy between grain whether getting oil out before, more production out of every acre. Total system synergy, if you push it one way it comes out another way.
Organize a forum to learn what is needed in the future to support bioenergy production – systems approach. This could be a strategic planning workshop which would result in projects that will be marketable.
Determine what research yet needs to be completed to convert wood chips and other lingo-cellulosic sources to ethanol.
Study the affect that price competition for corn will have on the cattle (and other livestock) industries and the growth of the ethanol industry.

Meeting was adjourned at 3 p.m.

Next meeting will be in January. In January, graduate students will be invited to share research. New direction for 2008 will be determined.
Annual Report, FY 2006

- Marketing Plan
- Current Issues:
  - Bioterror recordkeeping,
  - Aflatoxin
- Research Assistance
- Traceability Study
- Business Support:
  - Biotech poster
  - Corn protein separation
- Quality Measurement Uniformity
- Ethanol Plant Survey (Local Processing)
- Agronomic Stewardship of Biotech Products
- New Website

FY2007 Projects
- Project Management, Marketing and Information Distribution
- Research Assistance and Sample Analysis Program
- Bulk Products Traceability
- Development of ISO 22006 Production Agriculture Standard
- Training for Grain Personnel in Storage and Biosecurity Issues
- Tools for Production of Specialty Corn Protein
- Uniformity in Output-Trait Measurement
- Impacts of Increased Local Processing
- Stewardship of Transgenic Products

Activities, Outside Support, FY2007
- Marketing Plan Execution
- New Website
- Research Assistance
  - Grain Lab Service program; approx $100,000
- Traceability Study
  - USDA Special Grant; currently $587,531 for grain portion
- Development of ISO 22006 Production Ag Standard
- Training, Storage and Security Issues
  - USDA RMA grant; potentially $465,389
  - AAI Bioterror Recordkeeping; in development
- Corn Protein Separation
  - Illinois Missouri Biotech Alliance; $62,785
- Quality Measurement Uniformity
  - AOCS-SQT Project; $100,139
  - NIR Calibration Services; $40,000
- Ethanol Plant Survey (Local Processing)
- Agronomic Stewardship of Biotech Products