RiceCAP Welcomes New Board Members

Don McCaskill

Don McCaskill is Vice President – Research for Riceland Foods, Inc., a farmer-owned cooperative headquartered in Stuttgart, AR that processes and markets approximately 100 million bushels of rice annually for its grower members. With a B.S.A. in agronomy and M.S. in food science from the University of Arkansas, he joined Riceland as Manager of Rice Research and Development in 1981. He was promoted to Director of Research and Development in 1996 and to his current position in 2001, directing the company’s applied research program focused on new products, processes, and applications to add value to rice and soybeans.

As a past member of The Rice Foundation’s Post Harvest Research & Technical Committee, Don has faithfully attended all RiceCAP meetings to date, having represented former member Dan Kennedy on the Stakeholders Advisory Board. We look forward to his continued service on the Board.

Melissa Fitzgerald

Dr. Melissa Fitzgerald leads the Grain Quality, Nutrition, Post-Harvest Centre at the International Rice Research Institute (IRRI). She joined IRRI 2 years ago after leading the Grain Quality efforts in the Australian Rice Improvement Program for 7 years. Melissa has had a long interest in grain quality - she started with wheat but soon moved to rice. She has done a lot of work on developing new tools for informative, rapid or reproducible quality evaluation, and her research program covers issues of physical, sensory and nutritional grain quality – from synthesis, to structure and to function. She has received a number of research awards and she is training students to address the global decline in rice cereal chemists.

Dr. Fitzgerald has already provided rice cereal chemistry expertise to the RiceCAP project by active participation in the February 2006 meeting in Houston. We look forward to her continued input as RiceCAP Scientific Board member.

Rice Facts & Folklore

In Indonesia, no girl can be considered for marriage until she can skillfully prepare rice. Rice barns are holy places where the rice spirit lives until it is time for the next sowing or harvest. Since the barns must be suitable dwellings for supernatural beings, they are often beautifully carved and decorated. There are strict rules about who may enter the barn and how this is to be done. Only women may go into the barn and only once a day. If unexpected guests arrive, a woman must turn the ladder over so that the spirit inside will not know she has invaded the privacy of the rice twice on the same day.

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Travel Grant Opportunity Available from the Asian Rice Foundation

The USA chapter of the Asian Rice Foundation (ARFUSA) offers a $3,500.00 study or travel grant and are asking if you would inform at least the academic members of your mailing list of this opportunity for their students. I quote the following from a brochure we have available for the asking which describes this program:

ARFUSA will grant up to $3,500.00 for travel, scientific research, education or artistic work about rice in Asia.

Applicants must be students - American or Asian - below the age of 35, be registered in an accredited institution of higher education, and have a supporting letter from their national rice foundation associated with Asia Rice Foundation, Inc. or from a faculty member of a United States university. Applications that involve travel and study of U.S.-based students in Asia are encouraged.

Submit applications before June 1, 2006 by e-mail to Freed@msu.edu.

Successful applicants will be notified by August 1, 2006.

Current application instructions are at: www.asiariceusa.org.

RiceCAP Molecular DNA Workshop Now Open to the Rice Community

Enrollment for the RiceCAP Molecular DNA Workshop is now open to the Rice Community. The workshop will be held from JUNE 4 - 9, 2006 and is titled: DNA Markers, Mapping and Beyond. The workshop is being hosted by the Samuel Roberts Noble Foundation in Ardmore, OK.

See page 4 of this newsletter for additional information about the workshop or visit us on-line at:
http://www.uark.edu/ua/RiceCAP/DNAWorkshop06.htm.

Registration is also available on-line.

RiceCAP Board Reports and Executive Committee Response

The RiceCAP Advisory Board reports regarding the progress of the first year of the scientific effort and the Executive Committee response is now available on-line at:
http://www.uark.edu/ua/RiceCAP/projects.htm. Please take some time to view this important document.
**Research Updates**

**Preliminary analysis of MY1 phenotypic data — Dr. Anna McClung**

In April 2006, the genotypic and phenotypic characterization was completed for the MY1 population that had been evaluated in 2005 at three locations. Because of disease occurring at the Texas site, only the Arkansas and Louisiana datasets were analyzed fully. Some 36 traits were directly measured on the 170 genotypes and checks in the MY1 population. A total of 116 traits were determined resulting in a dataset of over 80,000 observations. Dr. Kathy Yeater, USDA ARS Southern Plains Area statistician, took the lead in performing the initial analysis of the phenotypic data using An analysis of variance (picture 1). The Arkansas and Louisiana locations were significantly different for all but about a third of the traits whereas the MY1 RILs were significantly different for all traits measured.

A simple correlation showed that the traits most highly correlated with whole grain milling yield were: amount of field fissured grain following machine dehulling (r = -0.7), amount of immature or damaged kernels (r = -0.6), amount of field fissured grain following hand shelling (r = -0.5), amount of fissured grain following induced fissuring (r = -0.4), the amount of chalk in the brown rice sample (r = -0.4), the amount of pale green color in the brown rice (r = -0.4), and the amount of visual curvature of the grain (r = -.34) (picture 2).

The factors that were most strongly associated with the amount of field fissuring (r = -0.7 as above, the trait most strongly associated with milling yield), were grain length/width ration, grain moisture at milling, grain chalkiness, and amount of immature/damaged rice.

Factors that were not correlated strongly (r < 0.3) with whole milling yield included: panicle blanking, tillering ability, maturity, amylose content, grain length, grain width, grain thickness, grain volume, and grain surface area.

Thus, although there were obvious differences in grain shape between the MY1 parents (picture 3) and there was a 28 day range in maturity among the families, it appears other factors had a greater impact on milling quality. Moreover, there was little association of the coefficient of variation for grain shape traits with milling yield. This indicates that a high degree of variability in grain shape within a family was not strongly correlated with head rice yields. In summary, it appears that factors associated with grain structure and friability are important to whole milling yield.
**RICECAP WORKSHOP—“DNA MARKERS, MAPPING, AND BEYOND”**

**JUNE 4 - 9, 2006**

**AGENDA**
1. Introduction to DNA marker technology
2. DNA isolation, PCR techniques, high-throughput genotyping and marker-assisted selection
3. Assembling marker data into a genetic map
4. QTL mapping - theory
5. Data management for high-throughput genotyping and marker-assisted selection
6. Bioinformatics, BLAST searching, etc. by Gramene members, Cornell University
7. Practical aspects of QTL mapping
8. Reverse genetics – TILLING
9. Microarrays – SAGE / MPSS

**WHEN AND WHERE**

**NUMBER OF PARTICIPANTS**
Limited to 48 (Priority given to RiceCAP participants)

[http://www.uark.edu/ua/ricecap/DNAWorkshop06.htm](http://www.uark.edu/ua/ricecap/DNAWorkshop06.htm)

**Registration now open to the Rice Community.**
Registration Fees: None, but see costs for housing and meals below.

**TRAVEL**
Paid by participants. Noble will provide transportation to and from airport (Dallas, or Oklahoma City) at no charge.

**HOUSING & MEALS**
Paid by participants to Noble Foundation with VISA or MasterCard. Onsite housing at Noble Foundation: $25 per person per night, double occupancy, 6 nights available. All meals included for an additional $235. Total: $385.

**Optional 2 hr house-boat cruise on Lake Murray, Friday PM, June 9**
Sign up during online registration. Fees dependent on number of people interested.
### Calendar of Events

**May 2006**

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**Schedule of Events**

- **6/4-9/06**—RiceCAP Molecular DNA Workshop
- **6/29/06**—LSU AgCenter Rice Research Station Field Day, Field tours begin at 7:30 am
- **6/29/06**—Eagle Lake Rice Field Day, Eagle Lake, TX, Begins at 4:00 pm

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**RiceCAP**

A coordinated research, education, and extension project for the application of genomic discoveries to improve rice in the United States. A project supported by the National Research Initiative (NRI) of the Cooperative State Research, Education and Extension Service (CSREES).

**We're on the web!**

[www.uark.edu/ua/RiceCAP](http://www.uark.edu/ua/RiceCAP)