State of the Department of Grain Science & Industry and its Current Priorities

K-State Alumni & Friends Breakfast
AACC International Meeting, Honolulu, Hawaii

September 24, 2008

Dr. Dirk E. Maier
Professor and Head
Vision for K-State’s Grain Science & Industry Department

“The global education, research and technology transfer leader for the grain & plant-based food, feed, fiber, fuel and bio-products supply chains.”
New Department Head

• Dr. Dirk E. Maier
• Formerly professor, associate head and extension engineer, Agricultural & Biological Engineering, Purdue University
  – expertise in grain quality, stored product protection, value-added processing
• Started April 2, 2008
• Current focus is on…
  – building upon progress made since 2004
  – following through on initial priorities
Initial Priorities

• Grow our student enrollment

• Grow our research enterprise

• Grow our outreach efforts
Initial Priorities

• Grow our student enrollment
  – target recruitment of transfer and out-of-state students
    • increase scholarship support; implement *Brains for Grains* Program
  – target recruitment of domestic & URM graduate students
    • need competitive stipends and tuition & fees scholarships

• Grow our research enterprise
  – need to submit and obtain more grants from external sources
    • compete effectively for larger external grants
  – establish strategic partnerships on and off campus (incl internationally)

• Grow our outreach efforts
  – need to expand service activities
    • Wheat Quality Lab is a state, regional and national resource
  – need to expand short course offerings
    • traditional IGP and NEW domestic opportunities
  – need to initiate distance learning programs
    • GEAPS, AFIA, IAOM, AACC, …
Key Facts

• Faculty & Staff
  – 16 tenure track, 2 non-tenure track faculty; 14 adjunct
  – 28 unclassified staff; 12 classified staff

• Students
  – 150+ undergraduate students in 3 BS programs
  – 39 graduate students in MS and PhD programs

• Facilities – mix of outdated and state-of-the-art

• Budget – Annual ~$5 mill; Extramural ~$2 mill

• Alumni – Over 4,000 world wide

• Founding – 100-year anniversary in 2010
Upcoming Events

• Dept Advisory Board meeting – Oct 23-24, 2008
  – Focus on student recruitment
  – AACC has been invited to serve as a member
  – More info at www.grains.ksu.edu
• Centennial Celebration – October 2010
  – Dr. Chuck Walker, co-chair of organizing committee
Departmental Facilities

- The GSI Department has two primary locations:
  - Main Campus
    - Shellenberger Hall
    - Waters Hall & Annex
    - Feed Tech Building
  - New Grain Science & Industry Complex
    - International Grains Program Conference Center
    - Bioprocessing and Industrial Value Added Program Building
    - Hal Ross Flour Mill
    - Biorefinery/Feed Manufacturing Facility (current project)
    - Departmental Teaching & Research Building (final project)
Areas of Expertise
Grain & Ingredient Storage & Handling

Dr. Leland McKinney

Dr. Bhadriraju Subramanyam

Dr. Dirk Maier

Identification, Quality, Preservation, Stored Product Protection, Segregation, Marketing, Rapid Analysis, Safety & BioSecurity
Milling & Extraction

Dr. Hulya Dogan
Dr. Ekramul Haque
Prof. Kendall McFall
Dr. Jeff Gwirtz

Milling, Component extraction, Purification, Characterization, Dry-fractionation
Baking & Human Nutrition

Dr. Jon Faubion
Dr. Rebecca Miller
Prof. Dave Krishock
Dr. Katherine Tilley

Formulation, Ingredients, Flour and Dough Quality, Process Improvement, Quality Testing, Prototype Testing
Biobased Products & Bioenergy

Dr. X. Susan Sun

Dr. Sajid Alavi

Dr. Ron Madl

Dr. Praveen Vadlani

Nonfood Products, Biomaterials, Biopolymers, Enzymes, Fermentation, Extrusion, BioEthanol, Formulation & Prototype Development
Basic Cereal Chemistry Research

Dr. Finlay MacRitchie

Dr. Yong-Cheng Shi

Dr. David Wetzel

Protein Chemistry, Starch Chemistry, Characterization, Measurement Technologies, Ingredients, Product Development
Undergraduate Student Information
Grain Science Undergraduate Student Enrollment
Fall 1998-2008
Milling Science and Management
Chemistry Option
Management Option
Operations Option
Milling Science and Management Enrollment
Sorted by Gender 1998-2008
Baking Science and Management
Cereal Chemistry Option
Production Management Option
Baking Science and Management Enrollment Sorted by Gender 1998-2008
Feed Science and Management
Feed Production Option
Biofuels Production Option
Feed Science and Management Enrollment Sorted by Gender 1998-2008
Initial Priorities

• Grow our student enrollment
  – target recruitment of transfer and out-of-state students
    • increase scholarship support; implement *Brains for Grains* Program
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## Job Offer Statistics by Undergraduate Major

**Graduation Dates:** 8/06, 12/06, 5/07

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<th>Major</th>
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Information from Career and Employment Services
Graduate Student Information
Initial Priorities

• Grow our student enrollment
  – target recruitment of domestic & URM graduate students
    • need competitive stipends and tuition & fees scholarships
## Graduate Students, Domestic vs. Foreign

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Faculty Positions

- 1 budgeted but frozen position (to open Jan’09)
- 2 phased retirements (Haque, Behnke)
- 3 eligible for retirement
- 1 research assistant professor departed (Lamsal)
- 1 new needed for biofuels operations teaching/extension

- Potential for 6-8 new Assistant Professors in next 1-5 yrs

- have developed drafts for 2 positions
  - Nutritional Biochemist; Protein Chemist
- developing drafts for 2 more positions
  - Feed Manufacturing Technologist; Processing Engineer
Achievements and Recognitions

- Prof. Fred Fairchild
  - Faculty Senate President; KSU President Search Committee
- ... 
- Modern Marvels Program
  - Broadcast on History Channel since ... 
- Brabender Fellowships
  - 2-year MS and PhD Fellowships
Achievements and Recognitions

Sean Finnie
PhD Brabender Fellowship

Melissa Pickett
MS Brabender Fellowship

Shiva Garimella
2008 National Starch Outstanding PhD Graduate Student

Yanjie Bai
2008 National Starch Outstanding MS Graduate Student
Achievements and Recognitions

Yanjie Bai
2008 Ming-Long Liao / Paul Seib Graduate Achievement Award

Lauren Brewer
2008 Majel M. MacMasters Memorial Achievement Award

Jhoe Stonestreet
2008 Anheuser-Bush Company Fellowship

Chris Miller
2008 Rene Buhler Memorial Scholarship
Achievements and Recognitions

Dr. Jon Faubion
Charles D. Singleton
Professor of Grain Science & Industry

Dr. Jeff Gwirtz
G.M. Ross Associate Professor of Milling Science & Management

Prof. Dave Krishock
Bakers National Education Foundation Instructor of Baking Science & Management

Prof. Kendall McFall
Buhler Instructor of Milling
University News

• Tornado
  – Hit campus on June 11
  – ~$20 million destruction on campus
  – No damage to dept buildings but some damage to vehicles

• President Wefald retirement
  – Effective June 30, 2009
  – Accepting nominations for outstanding candidates

• KSU Budget
  – State budget asks for a 2% cut in 2008-09 fiscal year
  – State budget asks for an additional 5% cut in 2009-10 fiscal year
How our Alumni & Friends can help…

• New Buildings Campaign
  – GSI Biorefinery/Feed Mill (D26590) via KSU Foundation
  – GSI Complex (D26585) via KSU Foundation
    • [http://www.found.k-state.edu/](http://www.found.k-state.edu/)

• Scholarships in honor of our faculty
  – Ming-Long Liao/Paul Seib Graduate Achievement Award
  – David Wetzel Microbeam Achievement Scholarship
  – Okkyung Chung Scholarship
  – Majel M. MacMasters Memorial Achievement Award
  – Richard Hahn Scholarship
  – Arlin Ward Flour Milling Scholarship
  – Robert McEllhiney Memorial Scholarship
  – Robert & Evelyn Schoeff Scholarship
Dr. Dirk E. Maier, Ph.D., P.E.
Professor and Head
Dept. of Grain Science & Industry
Kansas State University
Manhattan, Kansas, U.S.A.

“Leaders & Knowledge for the Global Grain Industry”