

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

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

September 24, 2008

Dr. Dirk E. Maier
Professor and Head

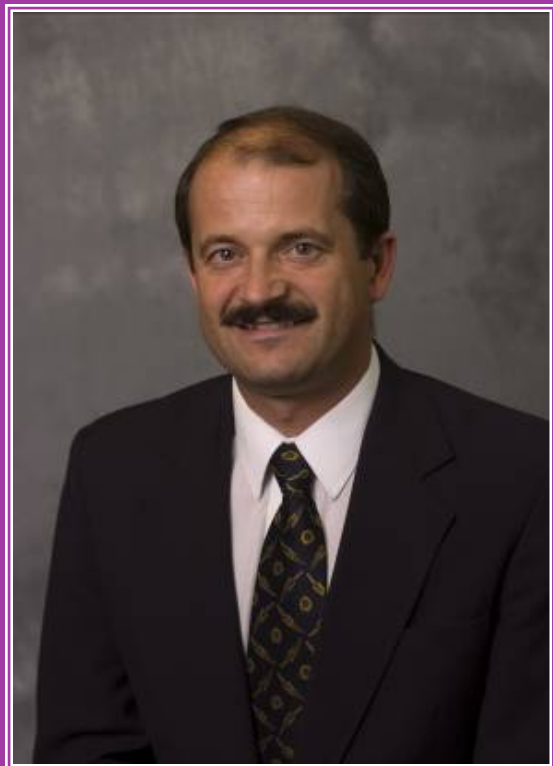


Vision for K-State's Grain Science & Industry Department

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- Facilities – mix of outdated and state-of-the-art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
 - AACCC has been invited to serve as a member
- Alumni & Friends Tailgate Party – Oct 25, 2008
 - 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**



Feed & Animal Nutrition

Dr. Keith Behnke

Dr. Leland McKinney

Prof. Fred Fairchild

Dr. Sajid Alavi



Feed Manufacturing, Ration
Formulation, Extrusion, Petfoods,
Aquafeeds, Process Efficiency,
Grinding, Mixing, Biorefinery Operation



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

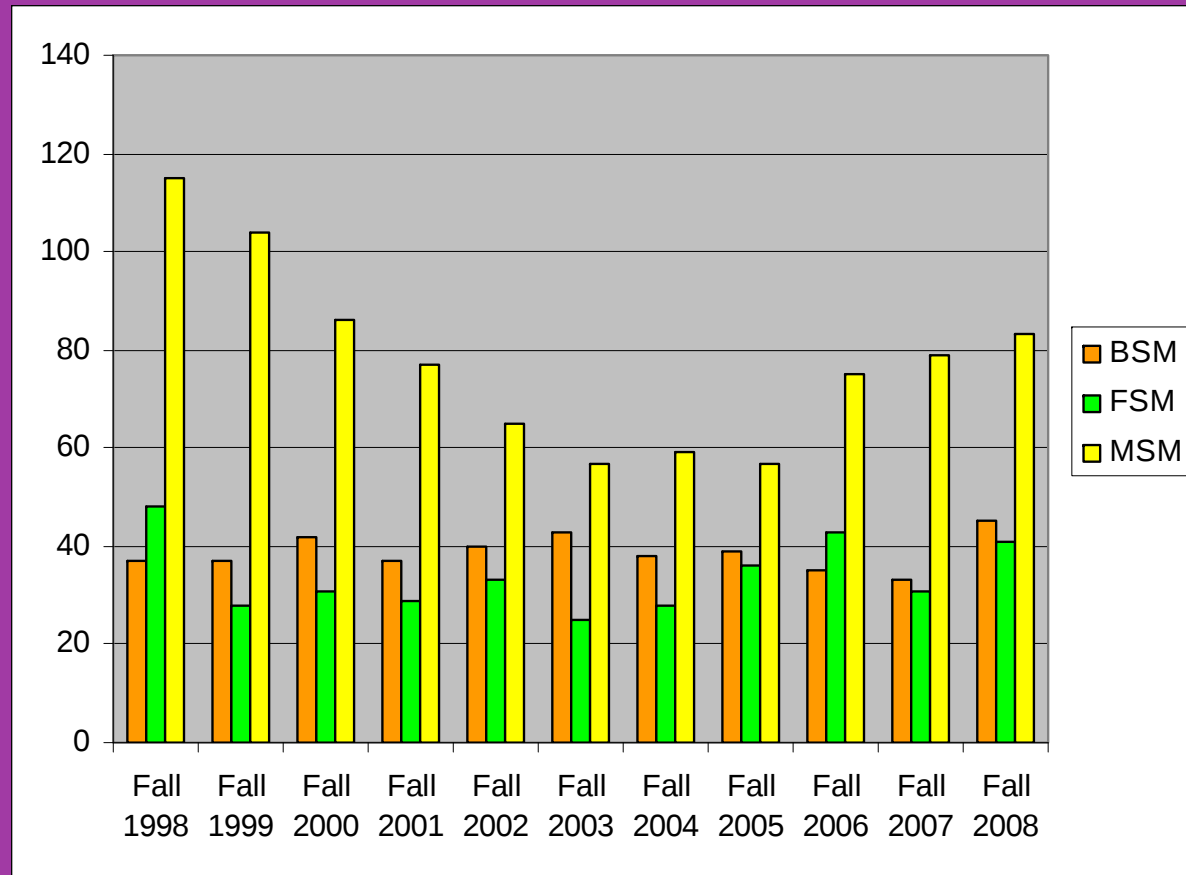


Protein Chemistry, Starch Chemistry,
Characterization, Measurement
Technologies, Ingredients, Product
Development

Undergraduate Student Information



Grain Science Undergraduate Student Enrollment Fall 1998-2008



Milling Science and Management

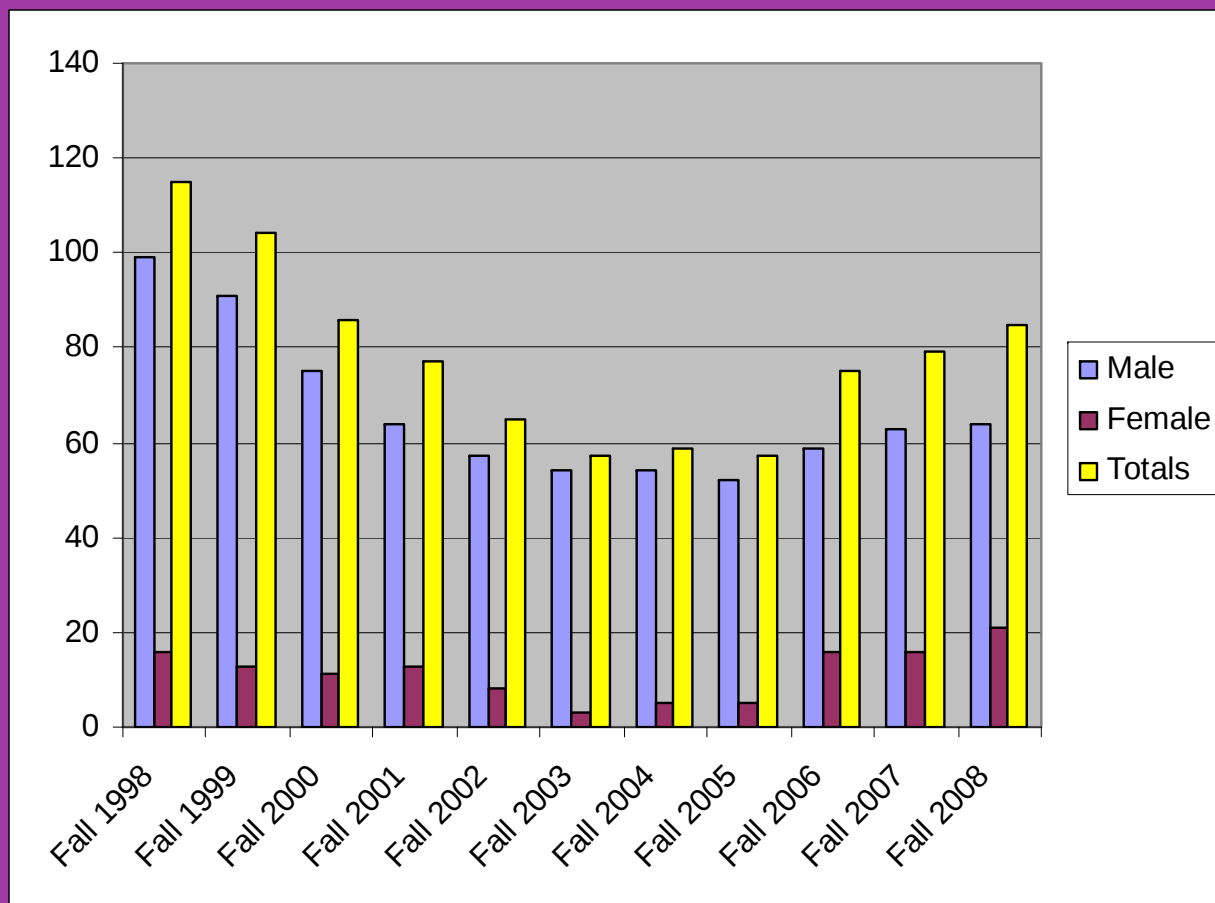
Chemistry Option

Management Option

Operations Option



Milling Science and Management Enrollment Sorted by Gender 1998-2008





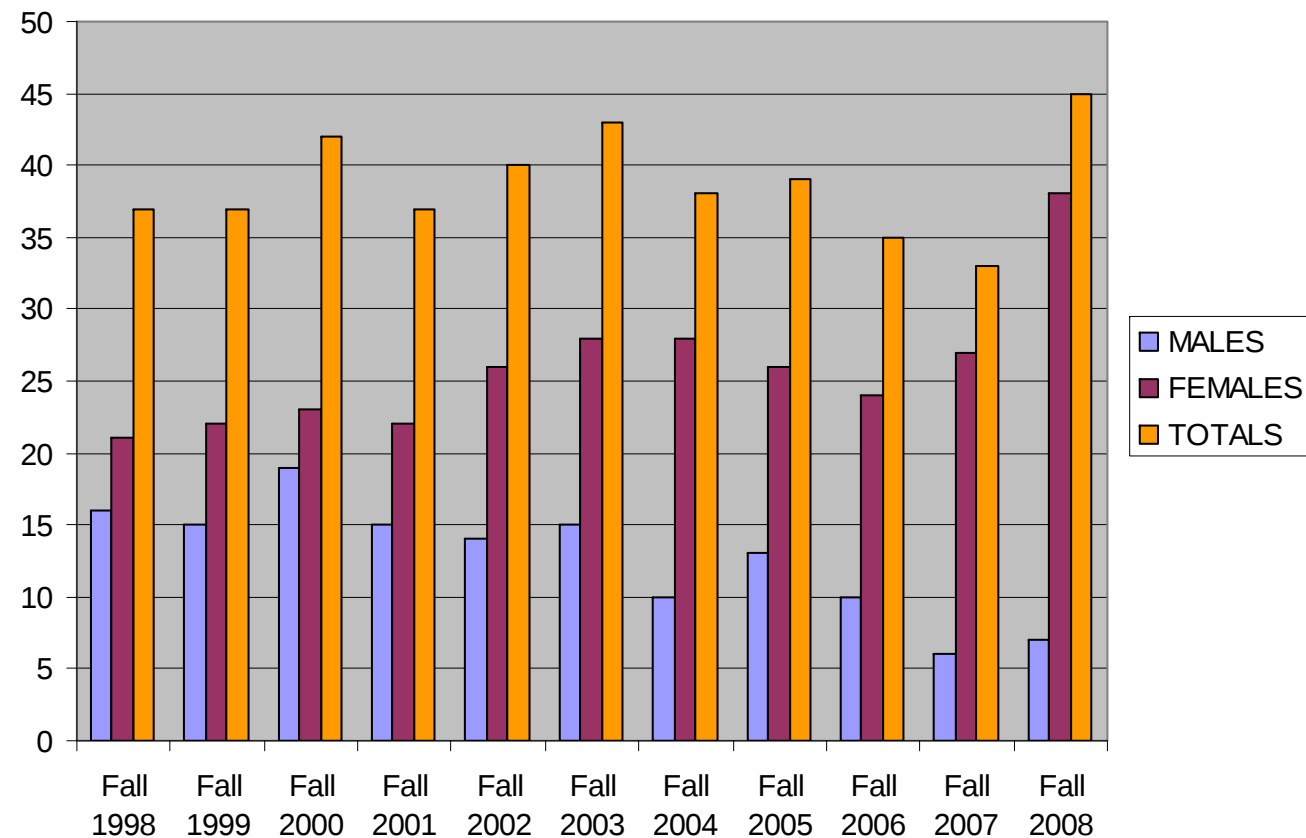
Baking Science and Management

Cereal Chemistry Option

Production Management Option



Baking Science and Management Enrollment Sorted by Gender 1998-2008



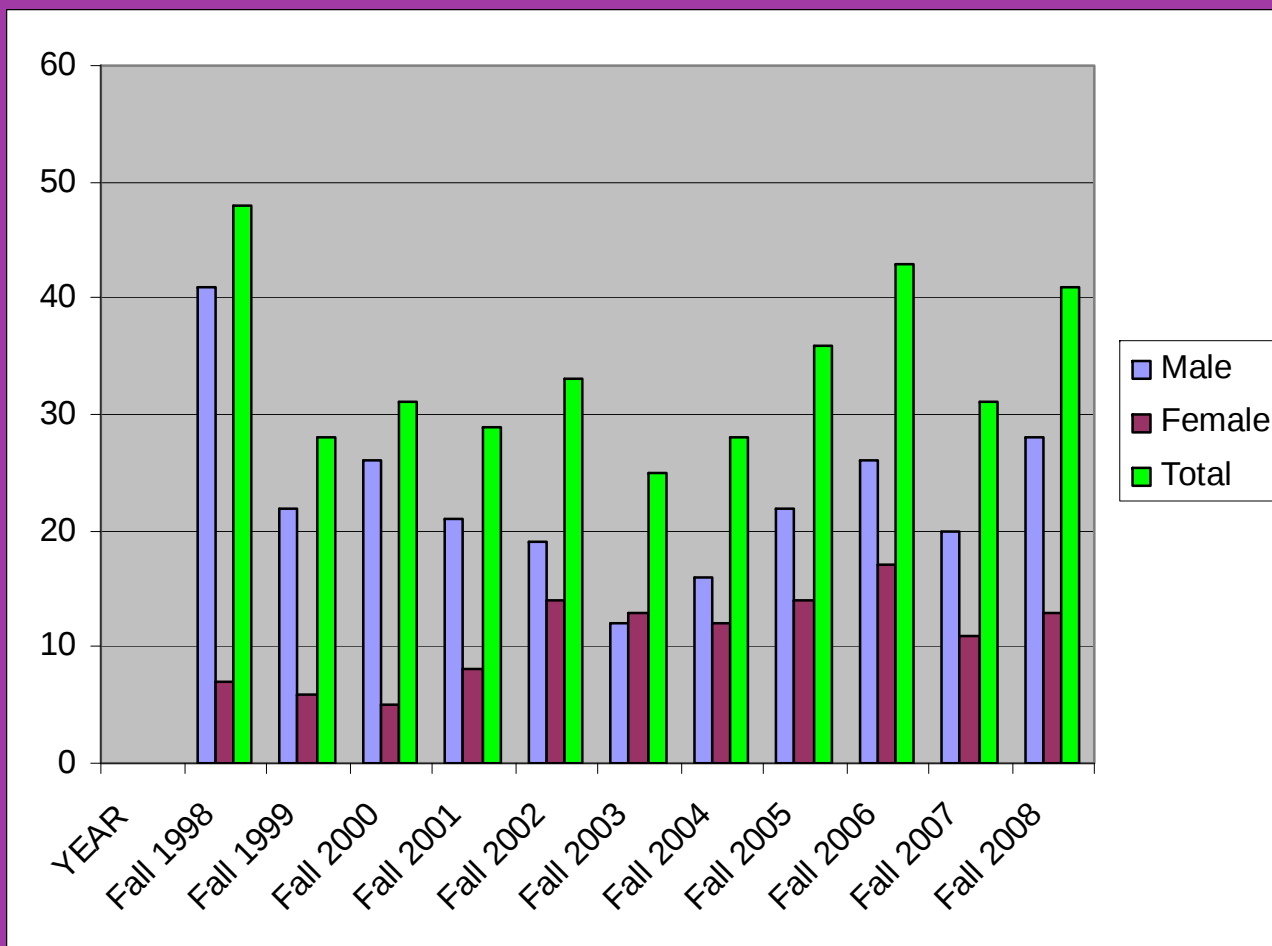
Feed Science and Management

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

Undergrad In-State vs. Out-of-State Total

	<u>In State</u>	<u>Out of State</u>	<u>Total</u>	<u>% In</u>	<u>% Out</u>
Spring 00	99	19	118	84%	16%
Fall 00	158	16	174	91%	9%
Spring 01	143	16	159	90%	10%
Fall 01	134	8	142	94%	6%
Spring 02	104	6	110	95%	5%
Fall 02	87	6	93	94%	6%
Spring 03	95	16	111	86%	14%
Fall 03	130	19	149	87%	13%
Spring 04	185	22	207	89%	11%
Fall 04	157	17	174	90%	10%
Spring 05	171	36	207	83%	17%
Fall 05	151	21	172	88%	12%
Spring 06	142	16	158	90%	10%
Fall 06	138	27	165	84%	16%
Spring 07	157	44	201	78%	22%
Fall 07	138	20	158	87%	13%
Spring 08	146	20	166	88%	12%

Job Offer Statistics by Undergraduate Major

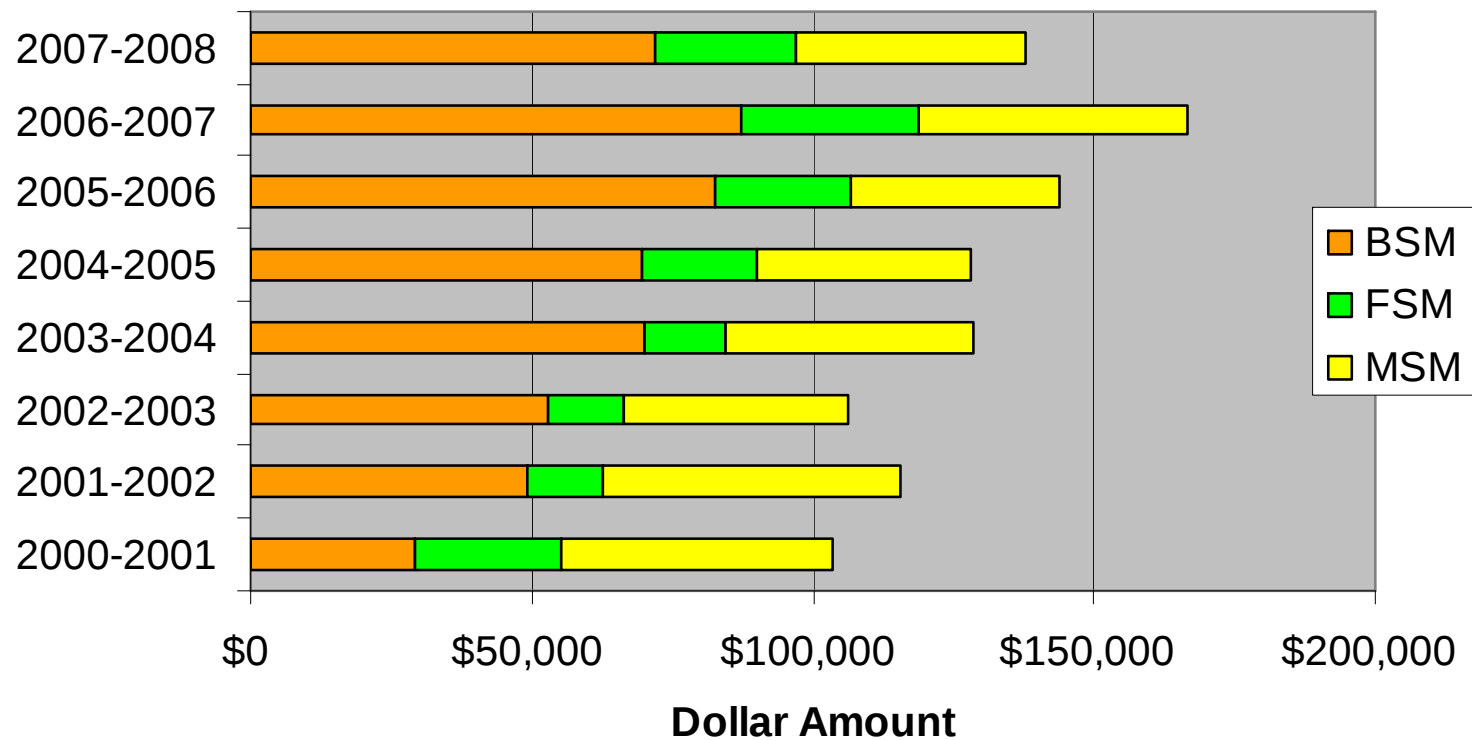
Graduation Dates: 8/06,12/06, 5/07

Major	Total Reporting	Total Offers	High Salary	Low Salary	Average Salary
AGRON	8	15	\$45,000	\$25,000	\$32,267
ASI	40	47	\$50,000	\$20,000	\$33,126
BSM	3	4	\$52,000	\$40,000	\$46,000
FDSI	7	10	\$47,000	\$25,000	\$41,096
FSM	3	7	\$50,000	\$40,000	\$44,614
HRT	26	31	\$41,000	\$14,560	\$28,687
MSM	5	5	\$50,000	\$48,000	\$49,400

Information from Career and Employment Services



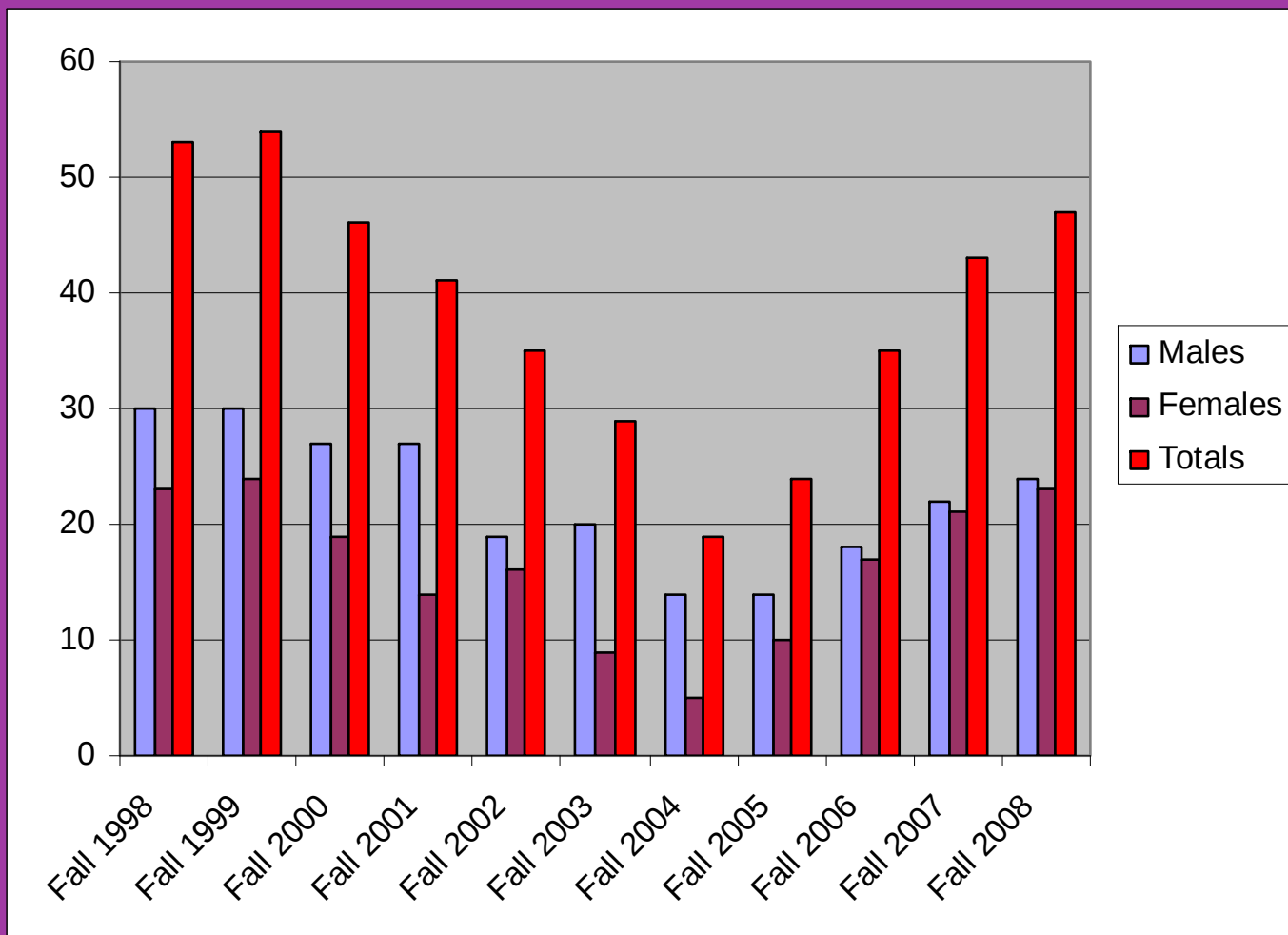
Scholarship Dollar Amounts



Graduate Student Information



Grain Science Graduate Student Enrollment - Fall 1998-2008



Initial Priorities

- Grow our student enrollment
 - target recruitment of domestic & URM graduate students
 - need competitive stipends and tuition & fees scholarships

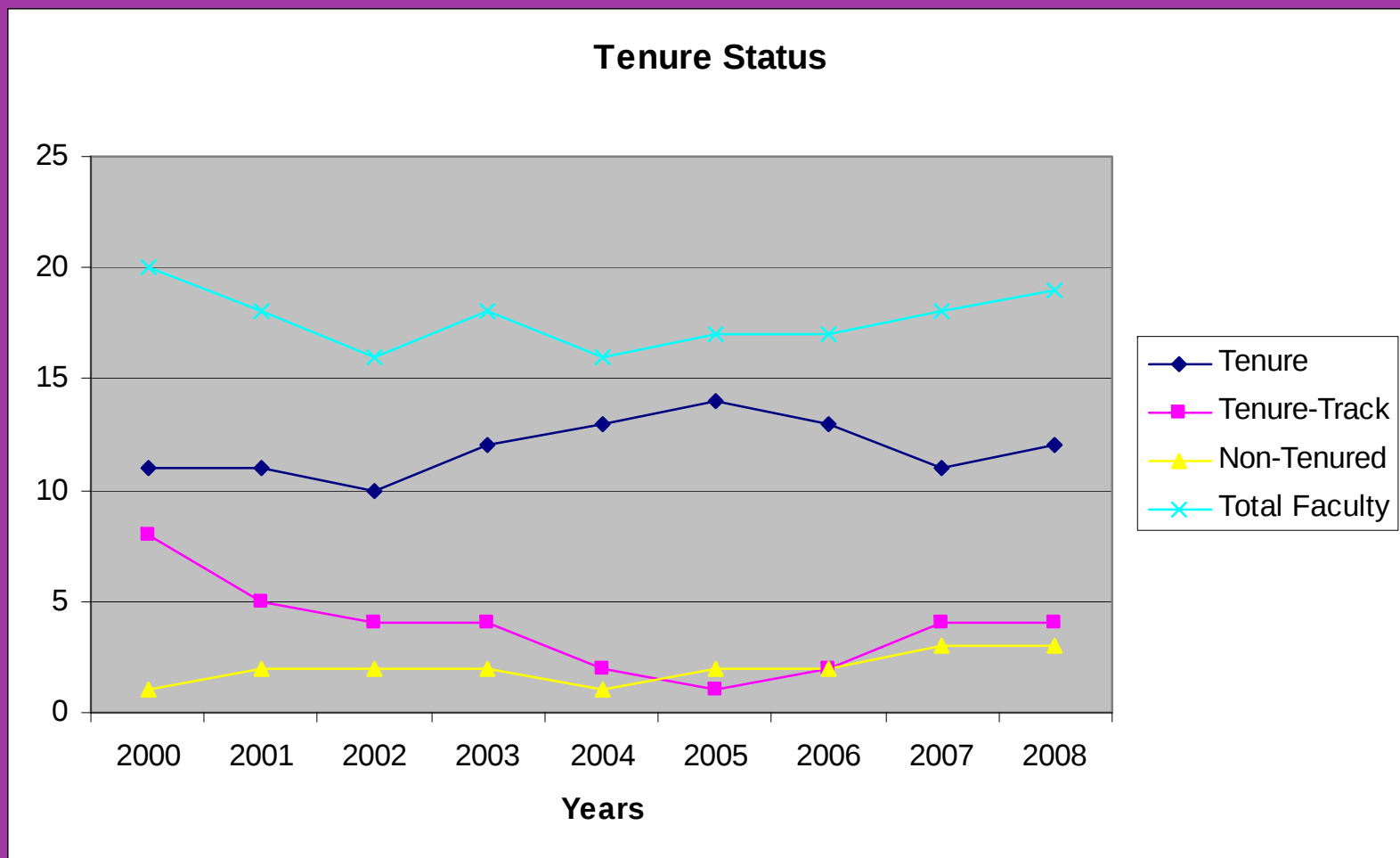
Graduate Students, Domestic vs. Foreign

	<u>Domestic</u>	<u>Foreign</u>	<u>Total</u>	<u>% Dom</u>	<u>% For</u>
Spring 99	22	38	60	37%	63%
Fall 99	19	40	59	32%	68%
Spring 00	19	39	58	33%	67%
Fall 00	19	34	53	36%	64%
Spring 01	15	33	48	31%	69%
Fall 01	16	34	50	32%	68%
Spring 02	15	32	47	32%	68%
Fall 02	17	35	52	32%	67%
Spring 03	15	29	44	34%	66%
Fall 03	15	26	41	37%	63%
Spring 04	11	17	28	39%	61%
Spring 05	12	13	25	48%	52%
Fall 05	12	13	25	48%	52%
Spring 06	12	23	35	34%	66%
Fall 06	11	26	37	30%	70%
Spring 07	11	29	40	28%	72%
Fall 07	15	31	46	33%	67%
Spring 08	14	28	42	33%	67%
Fall 08	14	33	47	30%	70%

Faculty/Staff Information



Faculty Tenure Status – FY 2000-2008



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 Gwartz
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

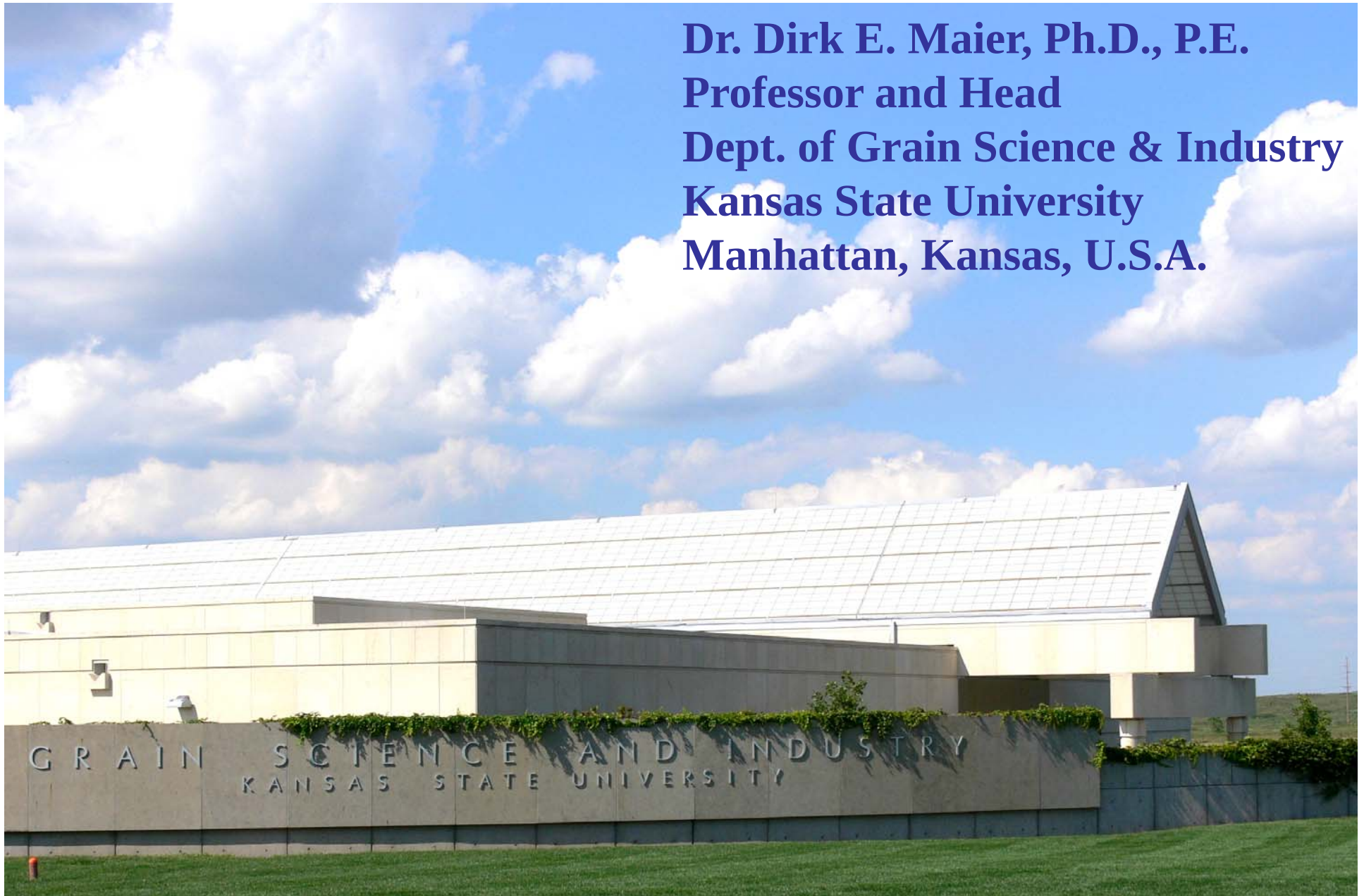


How our Alumni & Friends can help...

- New Buildings Campaign
 - GSI Biorefinery/Feed Mill (D26590) via KSU Foundation
 - GSI Complex (D26585) via KSU Foundation
 - <http://www.found.k-state.edu/>
- 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 McElhiney 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”