

## The State of the Department of Grain Science & Industry at Kansas State University and Its Current Priorities

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### INTRODUCTION

The Department of Grain Science and Industry at Kansas State University is unique in the United States and the world as it has the only university-based programs that offer Bachelor of Science degrees in Bakery Science and Management, Feed Science and Management, and Milling Science and Management. It also offers a graduate program for students to pursue advanced academic studies and research leading to M.S. and/or Ph.D. degrees in Grain Science. In 2010 the department will celebrate its 100-year anniversary. The past decade has been a roller-coaster period of losing and rebuilding faculty, staff and students, and of starting and stopping a quest for new facilities. Our graduates remain in high demand receiving multiple job offers and among the highest starting salaries in the entire University, our faculty rank in the top three in terms of productivity within the College of Agriculture, and our outreach programs are growing strongly in terms of new short courses offerings and the addition of distance learning program partnerships with key industry organizations. Yet, recent gains in new faculty, growing student numbers, and expanding research and outreach programs are threatened by the current economic downturn and the decline in state support for higher education in the State of Kansas and Kansas State University in particular. We are faced with three big challenges in the form of loss in scholarship funds for our students, not being allowed to refill up to five open faculty positions this year and next, and base budget cuts of 10% per year for the next two years. Key to overcoming these difficult challenges is strengthening our strategic partnership with the International Association of Operative Millers and other stakeholder groups in order to further grow our student enrollment, research enterprise, and outreach efforts. Only then can we achieve our vision of remaining the global leader in our field and fulfill our mission to educate students and professionals, conduct innovative research, transfer new technologies and knowledge, offer high-quality outreach programs and services to meet the needs of the global grain & plant-based food, feed, fiber, fuel and bio-products supply chains

### LAST DECADE OF OUR FIRST CENTURY

Exactly 10 years ago, former department head Dr. Brendan Donnelly stood before this group at the 1999 AOM Technical Conference in Fort Worth, Texas and provided a thorough overview of the Department of Grain Science and Industry, the Land Grant University system, and the department's history (AOM Bulletin, August 2000, pp7515-7518). He described the decade of the 1990s as one of transition that included changes in department leadership, the increased use of technology in the classroom, a multi-disciplinary team approach to research in order to solve more complex problems, the retirement and resignation of 14 faculty and key staff and the hiring of 12 new faculty and key staff (Table 1), and serious problems with facilities due to outdated laboratories

and aging heating, ventilation, air conditioning, water/steam, and electrical systems. He outlined a visionary plan to upgrade facilities by building an entire new Grain Science & Industry Complex with five new buildings that were to improve hands-on and in-classroom teaching, research and teaching laboratories, pilot flour and feed mills, pilot bakery and extrusion center, office space, student learning areas, and an executive training center for the International Grains Program.

About 5 years ago his successor, Dr. Virgil Smail, spoke to this group at a time when the department had bottomed out in terms of such low undergraduate and graduate student numbers that it was under pressure from the Kansas Board of Regents to combine its three unique BS degrees into a single program and to lose its MS and PhD degree programs. Additionally, several faculty and staff positions had opened due to retirements and resignations but remained unfilled; and plans and fund raising efforts for the new building projects on our North Complex had changed several times. Under Dr. Smail's leadership with support by the University and College administrations and in partnership with our industry stakeholders, state and private funds were pooled to initiate an aggressive student recruiting effort, establish a number of new scholarships, hire 12 new faculty and staff (Table 2), and complete 3 major building projects including the \$11 million Hal Ross Flour Mill, which was dedicated in October 2006. His relatively short tenure generated much needed momentum and expanded the department's expertise aggressively into the biorefining and biomaterials area. The pursuit of new opportunities also created some growing pains that have stretched the department beyond its means especially with respect to financial obligations to support start up packages of new faculty and pay off debt on the Hal Ross Mill, not being able to afford an operations manager and operating budget for the Hal Ross Mill, and not adequately fulfilling teaching and advising obligations in support of our Milling Science & Management undergraduate B.S. degree program. Dr. Smail's successor Dr. Richard Hahn, former department head from 1992-1996, did an excellent job keeping the department on course on an interim basis between February 2007 and March 2008.

### ***FIRST DECADE OF OUR SECOND CENTURY***

In April 2008 I had the distinct honor to become the department's 10<sup>th</sup> department head and to assume the great responsibility of leading us into our second century. Our vision is to be the global education, research and technology transfer leader for the grain & plant-based food, feed, fiber, fuel and bio-products supply chains. Simply put that means being the best at what we do best in the world! Our mission is to educate students and professionals, conduct innovative research, transfer new technologies and knowledge, offer high-quality outreach programs and services to meet the needs of the global grain & plant-based food, feed, fiber, fuel and bio-products supply chains

As a result of feedback received from faculty, staff, students, stakeholders and the College's administration, we established three initial priorities to support our vision and mission, which are to grow our (1) student enrollment, (2) research enterprise, and (3) outreach efforts. Under each priority we have established and pursued a number of specific initiatives during the past 12 months that are beginning to show positive results. Additionally, we have aggressively pursued solutions for addressing our overstretched financial obligations. Fund sources have been identified to meet start up obligations and debt service that while still substantial no longer disrupt our department's albeit smaller

day-to-day operating budget. The College of Agriculture provided a new staff position which has allowed us to hire an operations manager (i.e., Mr. Sam Hanni) for the Hal Ross Flour Mill. Successful efforts by faculty and staff in securing extramural research project and short course funding (including from the new IAOM-KSU Resident Milling courses and the Buhler Milling courses), and combining the management and supervision of all of the department's milling facilities under one professor-in-charge (i.e., Dr. Jeff Gwartz) are beginning to provide a reasonable operating budget for the Hal Ross Flour Mill. Together with the help of undergraduate and graduate students, Dr. Gwartz and Mr. Hanni have accomplished an incredible amount of overdue repair, maintenance, clean up, safety upgrades and fine-tuning of our Shellenberger and Hal Ross mills in the past nine months for which we are greatly appreciative!

In terms of faculty and key staff, only eight (8) or about one third remain of the 23 listed in Table 1 at the end of the Donnelly tenure in 2004 but 19 remain of the 24 listed in Table 2 at the end of the Smail tenure in 2007. Although we have had some additional faculty and staff turnover during the past 12 months, we do have an excellent base for continuing to build up our department and fulfill our Land Grant University mission of teaching, research and outreach. This is especially true considering that over half of the 22 listed in Table 3 are new faculty and staff that are especially energetic and enthusiastic to make a difference for the future of our department. Together with the more experienced faculty and staff our combined team is ready to make its mark on the first decade of our department's second century!

Table 1. Department Faculty and Key Staff (23) in 2004 at the end of Dr. Donnelly's tenure as Department Head and Director of the International Grains Program including primary responsibilities (T = Teaching; R = Research; O = Outreach including Extension, International Grains Program [IGP] or service), undergraduate B.S. degree teaching and student advising (FSM = Feed Science & Management; MSM = Milling Science & Management; BSM = Bakery Science & Management), and expertise to support the graduate program, research program, and/or outreach efforts. * Added between 1994-99; ** Left before 2004; *** Added in 2002	
Dr. Brendan J. Donnelly*	Department Head and IGP Director
Dr. Keith Behnke	T/R/O FSM; Feed Manufacturing
Dr. John Brent*,**	T/R FSM; Extrusion Process Engineering
Dr. Sajid Alavi***	T/R Extrusion Process Engineering
Dr. Dale Eustace	T/R/O MSM; Milling Technology
Mr. Fred Fairchild*	T FSM/MSM/BSM; Facility Design & Management
Dr. Rolando Flores*,**	T/R MSM/FSM; Materials Handling and Process Engineering
Dr. Jeff Gwartz	T/R/O MSM; Milling Technology
Dr. Ekramul Haque*	T/R MSM/FSM; Milling Engineering
Dr. Tim Herrman	R/O Extension State Leader; Grain Quality and Feed Manufacturing
Mr. John Howard*	O IGP Administration
Dr. Harvey Kizer	O IGP Senior Economist
Dr. Carol Klopfenstein	T/R FSM/MSM/BSM; Cereal Science and Nutrition
Dr. Finlay MacRitchie*	T/R Protein Chemistry
Mr. Pat McCluskey*	O Wheat Quality Laboratory
Dr. Moses Okot-Kotber*	T/R BSM/MSM; Cereal Science
Dr. Carl Reed	O/R Grain Quality and Stored Product Protection
Dr. Paul Seib	T/R BSM/MSM; Starch Chemistry
Dr. Bh. 'Subi' Subramanyam*	T/R/O FSM/BSM/MSM; Stored Product Protection
Dr. Susan Sun*	T/R Biomaterials Processing
Dr. Katherine Tilley*	T/R MSM/BSM; Protein Chemistry
Dr. Chuck Walker	T/R BSM; Cereal Science & Bakery Technology
Dr. David Wetzel	T/R FSM/MSM/BSM; Analytical Chemistry
Mr. Marvin Willyard*	T BSM; Bakery Technology

Table 2. Department Faculty and Key Staff (24) in 2007 at the end of Dr. Smail's tenure as Department Head including primary responsibilities (T = Teaching; R = Research; O = Outreach including Extension, International Grains Program [IGP] or service), undergraduate B.S. degree teaching and student advising (FSM = Feed Science & Management; MSM = Milling Science & Management; BSM = Bakery Science & Management), and expertise to support the graduate program, research program, and/or outreach efforts. * Added between 1999-2007	
Dr. Virgil Smail*	Department Head
Dr. Sajid Alavi*	T/R Extrusion Process Engineering
Dr. Keith Behnke	T/R/O FSM; Feed Manufacturing
Dr. Hulya Dogan*	T/R FSM/MSM; Materials Handling and Process Engineering
Mr. Fred Fairchild	T FSM/MSM/BSM; Facility Design & Management
Dr. Jon Faubion*	T/R BSM/MSM; Cereal Science
Mr. Mark Fowler*	O IGP Director of Technical Services
Dr. Jeff Gwartz	T/R/O MSM; Milling Technology
Dr. Ekramul Haque	T/R MSM/FSM; Milling Engineering
Mr. John Howard	O IGP Director
Mr. David Krishock*	T BSM; Bakery Technology
Dr. Buddi Lamsal*	T/R Food Process Engineering and Enzyme Technology
Dr. Finlay MacRitchie	T/R Protein Chemistry
Dr. Ron Madl*	R/O BIVAP Director
Mr. Kendall McFall*	T/O MSM; Milling Technology
Dr. Leland McKinney*	R/O Extension State Leader; Grain Quality and Feed Manufacturing
Dr. Becky Miller*	O Wheat Quality Laboratory
Mr. Jay O'Neil*	O IGP Senior Economist
Dr. Yong-Cheng Shi*	T/R Starch Chemistry
Dr. Bh. 'Subi' Subramanyam	T/R/O FSM/BSM/MSM; Stored Product Protection
Dr. Susan Sun	T/R Biomaterials Processing
Dr. Katherine Tilley	T/R MSM/BSM; Protein Chemistry
Dr. Praveen Vadlani*	T/R FSM; Biofuels and Fermentation Technology
Dr. David Wetzel	T/R FSM/MSM/BSM; Analytical Chemistry

Table 3. Current Department Faculty and Key Staff (22) in Dr. Maier's tenure as Department Head and IGP Director including primary responsibilities (T = Teaching; R = Research; O = Outreach including Extension, International Grains Program [IGP] or service), undergraduate B.S. degree teaching and student advising (FSM = Feed Science & Management; MSM = Milling Science & Management; BSM = Bakery Science & Management), and expertise to support the graduate program, research program, and/or outreach efforts. * Added between 2007-2009; ** Retiring June 2010	
Dr. Dirk Maier*	Department Head and IGP Director
Dr. Sajid Alavi	T/R/O Extrusion Process Engineering
Dr. Keith Behnke**	T/R/O FSM; Feed Manufacturing
Dr. Hulya Dogan	T/R FSM/MSM; Materials Handling and Process Engineering
Mr. Fred Fairchild	T/O FSM/MSM/BSM; Facility Design & Management
Dr. Jon Faubion	T/R BSM/MSM; Cereal Science
Mr. Mark Fowler	O IGP Associate Director and Technical Services Director
Dr. Jeff Gwartz	T/R/O MSM; Milling Technology
Mr. Sam Hanni*	T/R/O Hal Ross Mill Operations Manager
Dr. Ekramul Haque**	T MSM/FSM; Milling Engineering
Mr. John Howard	O IGP Program Manager
Mr. David Krishock	T BSM; Bakery Technology
Dr. Ron Madl	R/O BIVAP Director
Dr. Leland McKinney	T/R/O Extension State Leader; Grain Quality and Feed Manufacturing
Dr. Becky Miller	O/R Wheat Quality Laboratory
Mr. Chris Miller*	T/O MSM; Milling Technology
Mr. Jay O'Neil	O IGP Senior Economist
Dr. Yong-Cheng Shi	T/R Starch Chemistry
Dr. Bh. 'Subi' Subramanyam	T/R/O FSM/BSM/MSM; Stored Product Protection
Dr. Susan Sun	T/R Biomaterials Processing
Dr. Praveen Vadlani	T/R FSM; Biofuels and Fermentation Technology
Dr. David Wetzel	T/R FSM/MSM/BSM; Analytical Chemistry

### *Student Enrollment*

Student enrollment in the department over the past 10 years, at both the undergraduate and graduate levels, are shown in Figures 1 and 2, respectively. Based on data presented by Dr. Donnelly in 2000, total undergraduate student enrollment trended upward from 159 in 1990 to 205 in 1998. Enrollment in Milling Science and Management increased from a low of 83 in 1990 to a high of 119 in 1998. Enrollment in Feed Science and Management and Bakery Science and Management fluctuated between 30 and 50 each during the decade of the '90s. Between 1999 and 2003, enrollment plummeted to below 60 in MSM and 30-40 in BSM and FSM, which placed the department on the watch list of the Kansas Board of Regents. Enrollment in MSM reached 83 last fall, which was the low in the 1990s and hopefully will be the low for the first decade of our second century. About one third of MSM students are currently enrolled in the Operations option and two thirds in the Management option. Our faculty is currently engaged in discussions about combining these two options and emphasize operations technology that would be complemented by business management. Enrollment in BSM was 45 in Fall'08 and 40 in FSM. In terms of diversity, 58% of our current undergraduate students are male compared to 42% female, or 75% male vs 25% female in MSM, 71% male vs 29% female in FSM, and 16% male vs 84% female in BSM. Enrollment of underrepresented minorities (URM) including African-American, Hispanic and Native American students remains unacceptably low despite the availability of targeted recruitment scholarships. A recent \$1 million diversity grant from the Cargill Foundation to Kansas State University is expected to help attract more URM students into the university and in particular the College of Agriculture and our department's programs. Over 85% of our undergraduate students are Kansas residents, which is a major challenge with respect to the potential for growing our enrollment further. If we were fully staffed in terms of teaching faculty, it should be possible to handle 100-120 MSM students, 60-70 BSM students, and 60-70 FSM students. The only time our undergraduate student total reached over 200 was in 1998. Our goal is to exceed that 30-year high within the next five years. To meet and exceed this enrollment goal we need at least 25 recruits into the MSM program and 15 recruits each into the BSM and FSM programs each and every fall! Current projections for our Fall'09 freshmen enrollment is 19 in MSM, 23 in BSM and 15 in FSM. Current demand for our graduates remains strong with students typically getting two or more job offers and starting salaries among the highest at KSU. Starting salaries for MSM and BSM students have been averaging around \$52,000 and around \$47,500 for FSM students. Thus, we need to continue our strong recruitment effort in Kansas to maintain our base level enrollment but improve it outside of Kansas in order to reach our target of 200 and to meet the consistent demand for our graduates.

According to Dr. Donnelly's data, the department averaged 67 graduate students per year in the 1990s with an average of 30 M.S. and 37 Ph.D. students per year. A steady downward trend occurred from a high of 82 in 1992 to below 50 in 2000, which it had never dropped below since 1977, to a 30-year low of fewer than 20 in 2004. This reflected the turnover in graduate faculty during the 1990s and into the early 2000s. That trend has been reversed with steady growth to above 40 currently. This is an indication of the new faculty hired during the past five years and their ability to obtain funding support for their research and attracting new graduate students. Given the projected loss of up to

five faculty, it will be challenging to grow this number much above 50 in the near future. Our graduate students are nearly 50-50 split between male and female; the split between domestic and international is about one third vs two thirds, respectively. The department continues to strive to admit the best quality students into the department's graduate program and is currently focusing on attracting more domestic and underrepresented minority graduate students. During the past year emphasis was placed on raising stipend levels, paying tuition waivers for all domestic students, incorporating tuition waivers into all grants to benefit all graduate students, and establishing a number of special awards to promote and recognize excellence among our graduate students.

### ***Student Recruitment***

In order to provide advice on direction and impact, we have established a new Department Advisory Board that met for the first time in October 2008 and again in April 2009. It is made up of the executive directors and board presidents of the major stakeholder organizations critical to the mission of our department including IAOM, NAMA, GEAPS, AFIA, ASB, BEMA, ABA, AACC as well as state organizations such as the Kansas Wheat Commission, Kansas Corn Commission and Kansas Soybean Commission. This group strongly suggested to develop and implement a student recruiting plan that reflects an active industry partnership in terms of getting young people excited about pursuing careers in the grain-based food, feed and fuel industry. This plan has been under development for the past several months and was presented at the April Department Advisory Board meeting where it was favorably received and endorsed. It will be presented in more detail at one of the technical sessions at this IAOM conference.

The *Brains for Grains Recruitment and Scholarship Program* is a partnership with your organizations and companies, and you as individual professionals to recruit, mentor, educate and grant KSU degrees in milling, bakery and feed science and management from geographic locations of importance to your business. This recruitment and scholarship program will provide companies with a steady pipeline of young, local talent with the needed training and technical skills to operate at high levels within your organization. Students in this program will return to companies during summer and semester breaks to work as interns. Turnover of these employees should be limited as they will have a greater desire to permanently reside in the areas in which your organization has operating facilities. The program asks each of you to take ownership of our recruitment and scholarship effort, and participate in the following steps:

1. Request a recruitment kit (currently under development) from us and commit to annually visit at least five local high schools in your area and one community college and/or university promoting careers in the grain industry and KSU's unique MSM, BSM and FSM programs.
2. Adopt at least one student recruit and offer him/her a job opportunity in your facility part-time during the school year and/or full-time during the summer while enrolled locally. Mentor your student recruit for a career in our industry!
3. Sponsor your student recruit taking classes at a local college/university and pay for his/her tuition to take 6-12 credits of KSU distance learning



courses in preparation for transfer into our MSM, BSM or FSM degree programs for their sophomore or junior year.

4. Accompany your student recruit and parents on at least one visit to K-State to meet our faculty and students, see our facilities, and encourage transfer enrollment. Our K-State faculty advisors would work with the respective local college advisors to choose appropriate basic coursework and facilitate transfer of up to 60 credits for those courses towards their K-State B.S. degrees in MSM, BSM or FSM.
5. Sponsor your student recruit to enroll into one of our unique degree programs as a freshman or transfer student by funding a “full-ride” scholarship (including tuition, fees, books) for the duration of obtaining their B.S. degree in MSM, BSM or FSM.
6. Offer your student recruit (and other students from our department) summer internships, and after they complete their degree, a full-time job at one of your company locations.
7. Take advantage of complimentary special K-State scholarships including the K-State Legacy Scholarship that allows children of K-State alumni who reside outside of Kansas and have a 3.0 high school GPA (and maintain it at 3.0 or above while at K-State) qualify for 150% of Kansas resident tuition; the Midwest Student Exchange Program that allows students from Indiana, Michigan, Minnesota, Missouri, Nebraska, North Dakota or Wisconsin qualify for 150% of Kansas resident tuition if they have at least a 3.5 high school GPA and a 24 ACT score; and the Cargill-sponsored Diversity Scholarship that provides a “full-ride” scholarship for one underrepresented minority student who enters their junior year with a GPA of at least 3.4 and maintains their GPA at or above that level.

Table 4 compares the current per credit hour tuition costs and fees at Kansas State University versus several Big 10 and Big 12 universities. In comparison, K-State remains an excellent higher education “bargain” especially when non-Kansas students and parents from Missouri, Wisconsin, Minnesota, Michigan and Illinois qualify for 150% of in-state tuition.

A high level of commitment to recruitment, mentorship and scholarship support is needed to attract the best and most interested students in your geographic area into our industry via a K-State degree. Only together will we be able to successfully recruit the next generation of milling industry professionals!

Table 4. Comparison of current per credit hour tuition costs and fees (2008-2009) at Kansas State University versus other Land Grant Universities. Unless stated on the website, total tuition and fees was divided by 30 credits per academic year.				
	In-state Tuition & Fees	In-state Savings vs 150% at K-State	Difference over 125 credits for typical B.S. degree	Out-of-State Tuition & Fees
Kansas State University	\$222	-	-	\$566
Kansas State University (150% in-state)	\$297	-	-	\$566
University of Nebraska	\$222	-\$75	-\$9,375	\$576
North Dakota State University	\$261	-\$36	-\$4,500	\$628
Iowa State University	\$265	-\$32	-\$4,000	\$723
Purdue University	\$269	-\$28	-\$3,500	\$805
University of Missouri	\$304	\$7	\$875	\$660
University of Wisconsin	\$317	\$20	\$2,500	\$910
University of Minnesota	\$326	\$29	\$3,625	\$774
Michigan State University	\$342	\$45	\$5,625	\$857
University of Illinois	\$385	\$88	\$11,000	\$959

### ***Current Three BIG Challenges***

We are currently faced with three big challenges. The first is the loss in scholarship funds availability, which is a reflection of a decrease in the value of our endowed scholarship funds and not a decrease in the commitment of support from our alumni and friends. The department has always enjoyed very strong scholarship support. In the 2008-09 academic year we were able to give 105 scholarships totaling \$175,000 to our BSM, MSM and FSM students. More than three quarters of that total came from departmental scholarship accounts and the rest from College of Agriculture funds. This is the largest scholarship support of any department in the College including much larger programs such as Animal Sciences and Agricultural Economics. Unfortunately, we are facing a short-fall of approximately \$42,000 in scholarship funding for the 2009-10 academic year (in comparison to 2008-09) and are hopeful that our alumni and friends will be able to make up for some of this short-fall! We are particularly thankful for the

new IMEF scholarship in the generous amount of \$2,500 provided to one of our MSM students. Thank you very much!

Our second big challenge is the replacement of faculty who have retired or resigned recently and plan to retire by the end of the 2009-10 academic year. Given the current budget cut situation Kansas State University is facing, we are forced to give up three faculty positions for the 2009-10 fiscal year and expect to have to give up the two faculty positions due to announced retirements to meet anticipated further budget cuts for the 2010-11 fiscal year. While we have already reshuffled several teaching assignments and student advising responsibilities for this academic year and plan to do yet more for the next academic year, our MSM and FSM programs will be severely affected by the planned retirements of Drs. Behnke and Haque. Already, non-state funding through the generous support of \$100,000 per year from Buhler Inc. is providing critical support for teaching key courses in the MSM program. Due to the departure of Mr. McFall in December 2008, the Buhler Instructor of Milling is being filled on an interim basis by Mr. Chris Miller. The only reason we have permission from the University to fill this faculty position is because of the non-state funds provided by Buhler Inc. in support of our undergraduate teaching mission. A search and screening committee has been established that is chaired by Dr. Jeff Gwirtz. It is our goal to fill this position in time for the start of the Fall'09 semester this August. It appears that the only way to gain back the position we will lose with Dr. Haque's retirement in June 2010 in a timely manner will be through raising additional private funds in the amount of \$2.5 million for an endowed faculty chair or a long-term commitment by an individual, company or organization to provide about \$125,000 per year to support the salary and benefits of a new Assistant Professor in the Milling Science & Management program. A similar effort may be needed to gain the position back in the FSM program with Dr. Behnke's retirement in June 2010 as it may be 3-5 years before the College of Agriculture will be able to fill open faculty positions. Unfortunately, we remain below critical mass in our cereal science expertise with a net loss of three faculty positions that we had to give up due to the current budget cut. This negatively affects teaching in our BSM and MSM undergraduate and M.S. and Ph.D. Grain Science programs as well as lost opportunity for obtaining research grants at a time when funding for research into the benefits of whole grain foods and antioxidants in grains, the development of gluten-free food products, healthy snacks and slowly digestible starches, and the need to find solutions for health concerns such as obesity and diabetes is on the increase.

Our third big challenge is the budget situation. In the middle of the current fiscal year the State of Kansas insisted on a 4.25% rescission in already appropriated state funds. While we had set aside that amount at the beginning of the fiscal year, it nevertheless was a major hardship and negatively affected our operating budget including teaching of our courses, supplies for laboratories, and limitations on purchasing grain to run our mills. For the 2009-10 fiscal year, which begins July 1 we have been asked to plan on a base budget cut of 10%. Unfortunately, we will unlikely know the final number until shortly before the fiscal year will begin. We have also been advised to anticipate an additional 10% base budget cut in 2010-11. In consultation with our faculty and staff, we decided to give up three open faculty positions in FY10 and potentially two more in FY11. While this would cover us for FY10, it would not be enough for FY11 as we would be at least \$100,000 short. Despite such dire budget projections, our faculty and

staff continues to be creative and entrepreneurial. We continue to examine our expenses closely and have identified a number of places where we were able to improve our effectiveness and efficiency, which has resulted in cost savings. We are also exploring ways to expand our services via our existing laboratories such as the Wheat Quality Lab and via reestablishing our Microbiology and Toxicology Lab. Additionally, we are expanding our professional education offerings via short courses such as the new 8-week IAOM-KSU Resident Milling Program, the GEAPS-KSU Grain and Biorefinery Operations Distance Education Program, and similar efforts in partnership with AFIA and IAOM.

### ***Update on Facilities***

Although we have made excellent progress on building three out of five buildings on our North Complex, the majority of our faculty, staff and students remain housed in aging facilities on the main campus. The old building infrastructure on campus is seriously problematic due to heating, ventilation, air-conditioning, water/steam, and electrical problems. As Dr. Donnelly stated in 1999, we cannot meet the challenges of the future “with laboratories that are inadequate for research purposes, facilities that are outdated and not up to code, classrooms that are inadequate for today’s technology, and equipment that do not serve the training needs of our students and industry”. Thus, our long-term goal is to build a classroom, laboratory, office and pilot bakery facility that will allow us to move our entire department to the new North Complex. In the near term, a unique opportunity has presented itself that might allow us to finally build our planned feed mill and biorefinery. In November 2008 the Department of Homeland Security announced that a new ~\$450 billion federal laboratory will be built on the KSU campus. Known as the National Agro and Biosecurity Defense Facility (NBAF), it will displace the old Animal Sciences Feed Mill, which currently manufactures feed for over 4,000 KSU livestock. Promised relocation funds will be combined with cash and equipment donations pledged, in-hand and yet to be obtained for our department’s long-planned feed mill and biorefinery project. The state-of-the-art O.H. Kruse Feed Mill and Biorefinery Teaching and Research Facility will be jointly operated by the Departments of Grain Science & Industry and Animal Sciences & Industry. We will only start this project if we have all needed funds in hand! We are committed not to incur any debt on this fourth building project. Anything less would be irresponsible in a time of severe budget constraints!

### ***CENTENNIAL CELEBRATION INITIATIVE***

In the fall of 2009, we will kick off our Centennial Year, which will culminate on September 25, 2010 with our 100-year Anniversary Celebration to which all of you are invited to! With the assistance of the KSU Foundation, we are preparing to launch a Centennial Celebration fund raising drive that will focus on our students and faculty. Specifically, we aim to increase our annual scholarship funds by \$50,000, improve our student learning environment by investing \$500,000 in Shellenberger Hall improvements, and establish two Endowed Faculty Chairs by raising \$5 million. The need to increase our scholarship funds in the expectation of increased student numbers and to keep up with the rising costs of higher education has already been mentioned above. The need to raise private funds to replace two of five lost faculty positions in a timely manner due to

the State of Kansas budget crisis has also already been mentioned. Improving the student learning environment in Shellenberger Hall is an urgent need because classrooms are outdated, students have to hang out in hallways to study, our computer room is too small, and we do not have any suitable work space for student teams to work on their projects. Upgrading the student learning environment in Shellenberger Hall would involve renovating (new drop ceilings, lighting, carpet, paint, tables and chairs) our two main classrooms (SH 301 and 311) and equipping them with state-of-the-art teaching tools (white boards, projection equipment, etc), and converting an unused laboratory space (SH 319) into a combination computer laboratory and student study and team work area. We hope all of you will join us in supporting our Centennial celebration Initiative!

### ***CONCLUDING COMMENTS***

Despite the three big challenges we are currently faced with (shortage of scholarship funds, loss of five faculty positions, and severe budget cuts), we are moving forward optimistically into our second century. We have an outstanding group of faculty and staff that is excited about the future of our department and committed to its success. Our new Brains for Grains Recruitment and Scholarship Program effort in partnership with key industry associations such as IAOM should allow us to eventually meet the demand for our students. Our Centennial Celebration Initiative is aimed at addressing the need for more scholarship funds to keep up with rising costs of higher education and growing student numbers, improving the learning environment for our students, and hiring two faculty on endowed funds to support our MSM and FSM undergraduate B.S. degree programs. Our partnership with IAOM, the milling industry and its allied trades in meeting our challenges for the immediate future is critical to build a strong base for success in our second century. Only together can we achieve our vision of remaining the global leader in our field and fulfill our mission to educate students and professionals, conduct innovative research, transfer new technologies and knowledge, offer high-quality outreach programs and services to meet the needs of the global grain & plant-based food, feed, fiber, fuel and bio-products supply chains

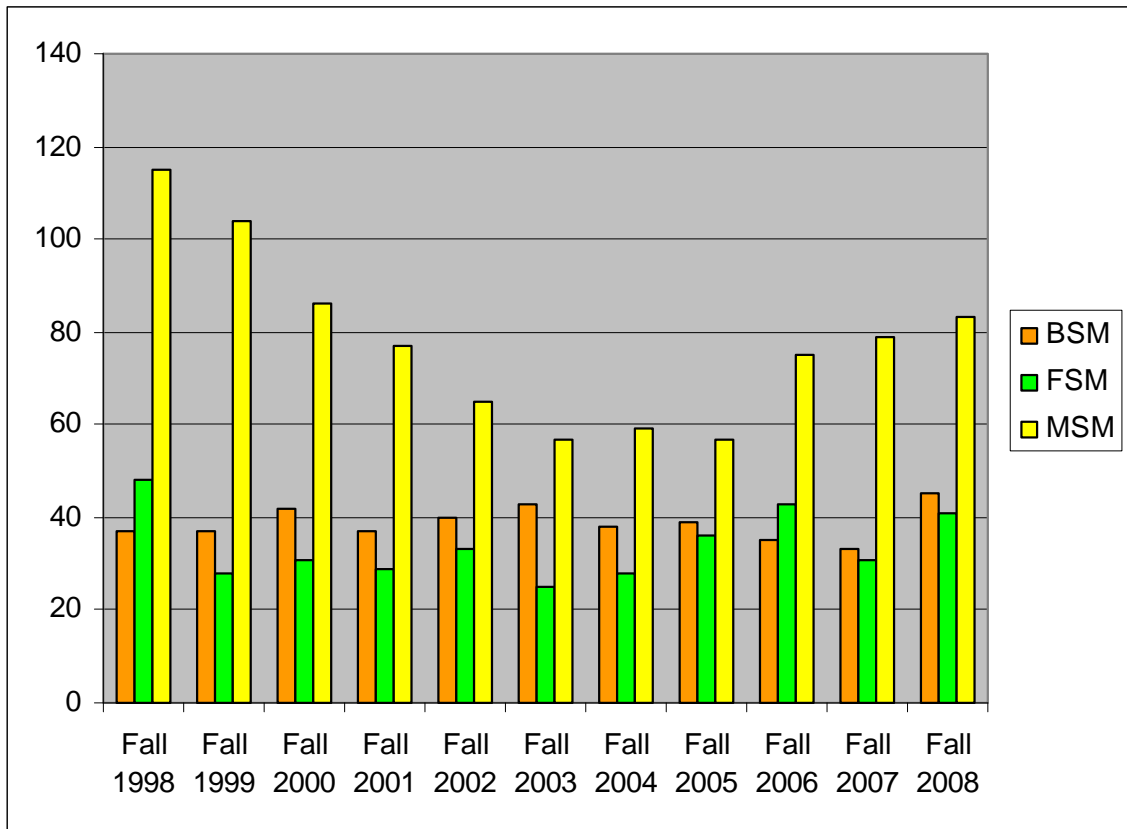


Figure 1. Enrollment trends in our Milling Science & Management (MSM), Bakery Science & Management (BSM) and Feed Science & Management (FSM) undergraduate B.S. degree programs from 1998 to 2008.

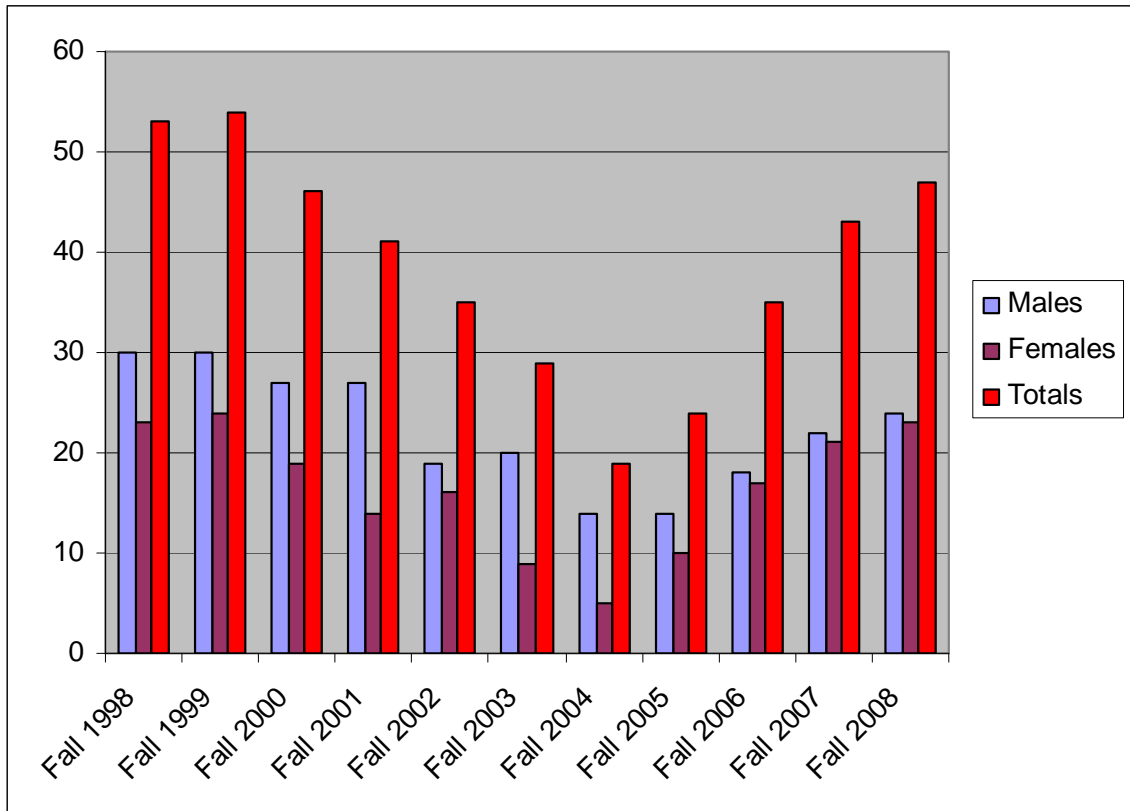


Figure 2. Enrollment trends in our M.S. and Ph.D. Grain Science graduate degree programs from 1998 to 2008.