

Why I remain excited about our Department!!!

**GSI State of the Department Seminar
Manhattan, Kansas
April 4, 2014**




Presented by:
Dr. Dirk E. Maier
Professor and Head
Grain Science & Industry



KANSAS STATE
UNIVERSITY

Department of Grain Science
and Industry



THANK YOU!!!

Why I remain Excited about the Department of Grain Science & Industry!!!

Four Reasons:

1. Great faculty & staff!
2. Great students!
3. Great stakeholders!
4. Great career opportunities!

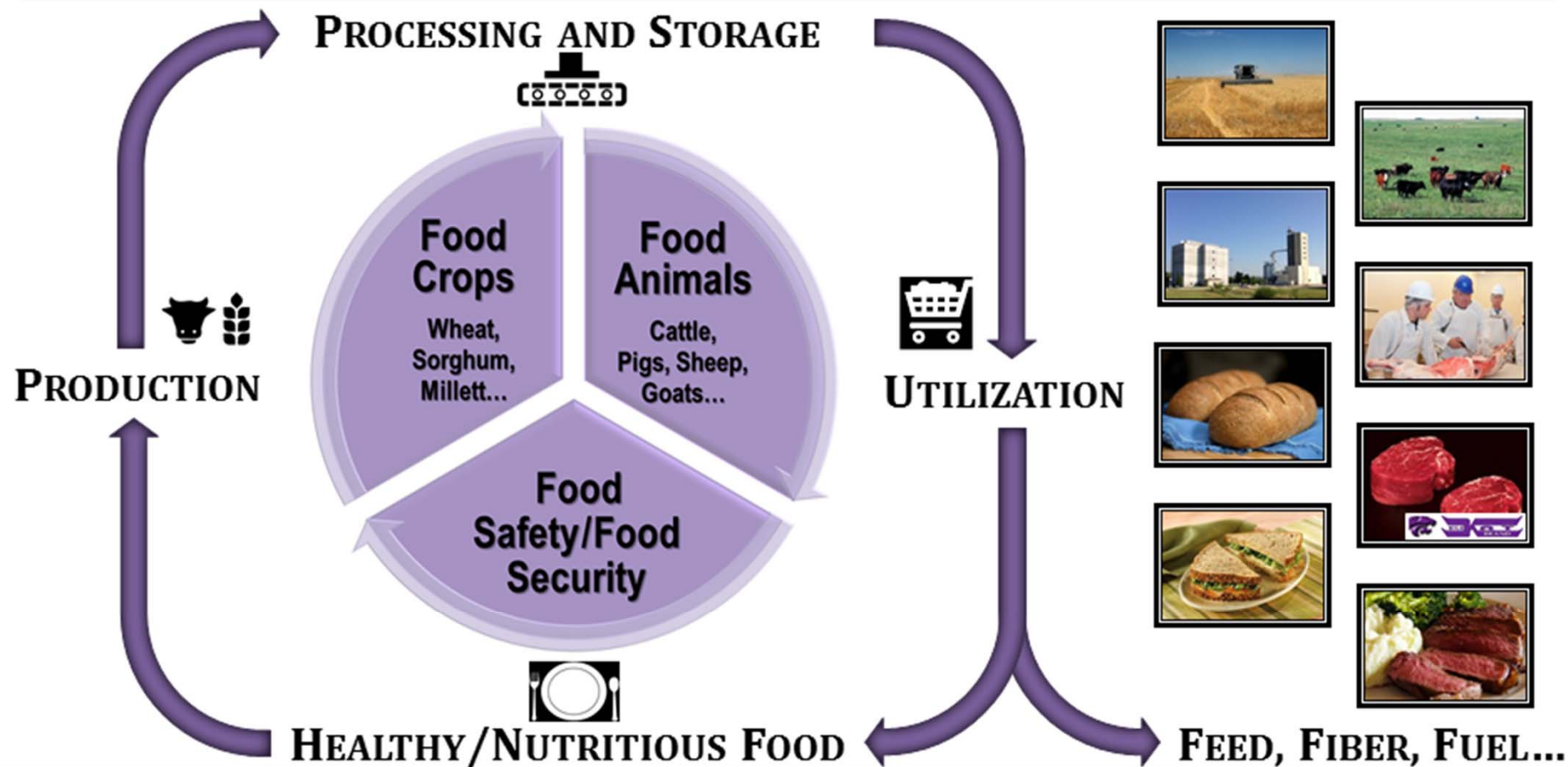


➔ Check us out at www.grains.ksu.edu

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."*





K-State 2025

KANSAS STATE UNIVERSITY SUMMARY VISIONARY PLAN

COA/KSRE Strategic Plan

Vision: *By 2025, the K-State College of Agriculture will be one of the top five colleges of agriculture in the nation, and K-State Research and Extension will be one of the world's top destinations for education, research, and extension.*

Mission: *We are dedicated to a safe, sustainable, competitive food and fiber system and to strong, healthy communities, families and youth through integrated research, analysis and education.*

1. **Provide and empower students and citizens with the knowledge and education needed to lead and advance agriculture and related fields.**
2. **Contribute integrated solutions for meeting and adapting to the “grand challenges” in dryland plant, animal, and food systems.**
3. **Enhance the quality of life and livelihoods of people, their communities and the environment.**
4. **Build our infrastructure and human capacity to meet our vision and goals.**

GSI Strategic Plan Themes

1. Educate undergraduate and graduate students, and industry professionals.
2. Conduct innovative basic and applied research, and transfer new technology and knowledge to end users.
3. Offer high-quality outreach programs and services to meet domestic and international customer needs and stakeholder expectations.
4. Recruit, retain, reward and develop high quality faculty, and professional and classified staff.
5. Develop, maintain and utilize state-of-the-art facilities and equipment.
6. Broaden funding base and improve financial stewardship.

➔ Department strategic plan aligns with K-State 2025 Visionary Plan and COA/KSRE Strategic Plan



“Good is the enemy of great!”

- Jim Collins

Good to Great...

- Transformation of an organization from good to great is a process of **build up** followed by **break-through**, broken into three broad stages:
 - Disciplined people (*who*)
 - Disciplined thought (*what*)
 - Disciplined action (*how*)

Disciplined People...

- First Who then What
 - Full contingent of the right **faculty** expertise
 - Optimum mix of support **staff** expertise & experience
 - Undergraduate and graduate **students** with whom we can partner to successfully complete their BS, MS and PhD degrees
 - Committed **stakeholders** who support us through thick and thin
- ➔ Focus on having the right people on the bus and in the right seats

ONE Faculty Team!!!



*KSU Grain Science & Industry Faculty
August 2013*

Outstanding Support Staff!!!



*KSU Grain Science & Industry Staff
August 2013*

Staff Remembered



Ron Stevenson
Milling Technician
Grain Science & Industry

Disciplined Thought...

- Confront the Brutal Facts
 - Lack of financial discipline
 - Indebtedness and spending beyond our means
 - Living off our past glory
 - Taking stakeholder support for granted
 - Neglecting our teaching mission
 - Failing and antiquated facilities (incl labs, classrooms)
- ➔ Identifying and acknowledging our weaknesses and threats to our future success
- ➔ This has been discussed as part of our 2025 Strategic Plan development!

Disciplined Thought...

- Hedgehog Concept
 - See updated vision and mission statements
 - See our top initial priorities
 - See our Strategic Plan
- ➔ Being the best we can be at what we are best at in the world
- ➔ Being deeply passionate about what we do
- ➔ Building on our comparative strengths; taking advantage of new opportunities (*e.g., Global Food Systems Initiative*)

Do we have a clear vision of how our future will be different from our past?

Do we have an effective strategy to make that future a reality?

Do we have a real sense of urgency to grab our opportunities?



TEAMWORK

“The real power of teamwork is achieving more than individuals could ever imagine doing alone.”

- Adapted from The Five Dysfunctions of a Team

Mission of K-State's Grain Science & Industry Department

*"To educate students and professionals, conduct innovative research, transfer new technologies and knowledge, offer high-quality outreach programs and services that **impact** the global grain & plant-based food, feed, fiber, fuel and bio-products supply chains."*

Strategic Plan Themes (SMART Goals)

1. **Educate undergraduate and graduate students, and industry professionals**
 - **Maintain enrollment through effective recruitment and retention, and assure academic preparedness, performance (quality), diversity and placement of undergraduate students**
 - 210-230 total; 80-90 MSM, 80-90 BSM, 50-60 FSM
 - Increase percentage of out-of-state students from ~20% to 25%
 - Maintain multi-cultural undergraduate student population above 10%
 - Maintain student placement at 100% and maintain 5-year average of graduating Seniors above 34 (12-15 MSM, 12-15 BSM, 8-10 FSM)
 - **Provide opportunities for UG research**
 - Increase number of undergraduate students supported in research to 5% of total enrollment
 - **Provide and encourage international experience opportunities**
 - Increase number of undergraduate student participation to 10%
 - **Undertake departmental efforts to improve the teaching skills and abilities of the faculty overall**

Strategic Plan Themes (SMART Goals)

1. **Educate** undergraduate and **graduate** students, and industry professionals
 - **Increase enrollment through effective recruitment and retention, and assure academic preparedness (minimum GRE), performance (quality), diversity and placement of graduate students**
 - 55-60 total
 - at least 40% domestic students incl at least 10% URM
 - at least 40% Ph.D. students
 - **Secure extramural funding for graduate research assistantships, USDA/NSF/other competitive fellowships, and doctoral fellowships including tuition coverage (or waivers)**
 - at least 50% fully supported by extramural grant funding
 - 100% have their tuition paid (or waived)
 - **Provide increased professional development opportunities for graduate students**
 - Increase participation of graduate students in national and international scientific meetings to 50%



BAKERY SCIENCE
AND MANAGEMENT

FEED SCIENCE
AND MANAGEMENT

MILLING SCIENCE
AND MANAGEMENT

***“Preparing the Next Generation of Professionals
for the Global Grain-based Food & Feed Industry”***

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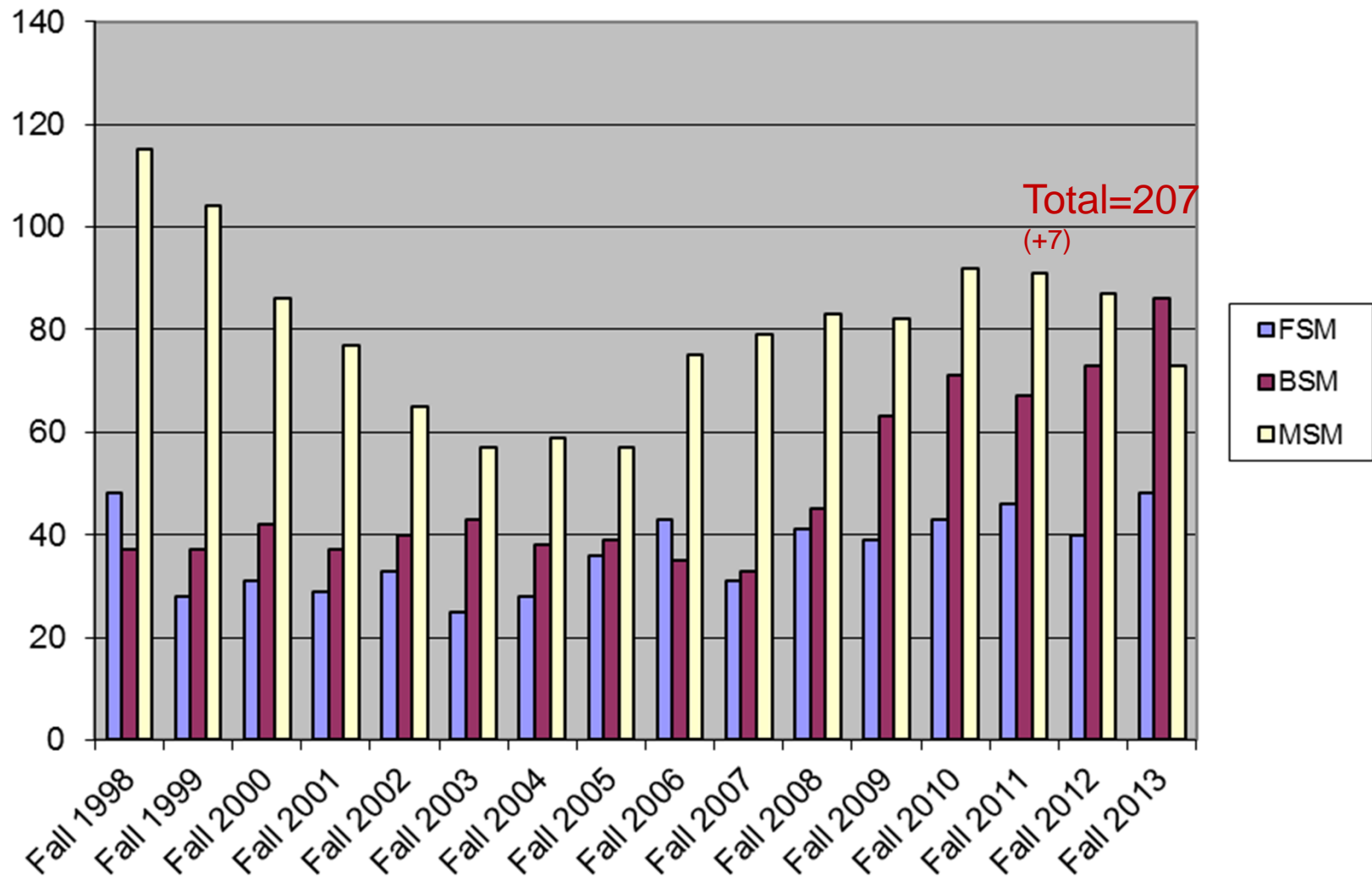
Undergraduate Program Metric 1 – Enrollment

Undergraduate student enrollment and gender diversity in the Department of Grain Science & Industry's three B.S. degree programs (2007-2013).

<i>Year</i>	<i>FSM</i>	<i>BSM</i>	<i>MSM</i>	<i>Total</i>	<i>5-yr Avg</i>	<i>Male (%)</i>	<i>Female (%)</i>
Fall 2007	31	33	79	143	136	62.2	37.8
Fall 2008	41	45	83	169	144	58.6	42.6
Fall 2009	39	63	82	184	156	59.2	40.8
Fall 2010	43	71	92	206	171	57.3	42.7
Fall 2011	46	67	91	204	181	58.3	41.7
Fall 2012	40	73	87	200	193	59.0	41.0
Fall 2013	48	86	73	207	200	53.6	46.4

Grain Science Undergraduate Student Enrollment

Fall 1998-2013 (Fall'13: 46.4%F [+5.4%] vs 53.6%M [-5.4%])



Celebrating 50 years of BSM at K-State at 2014 Bake Tech

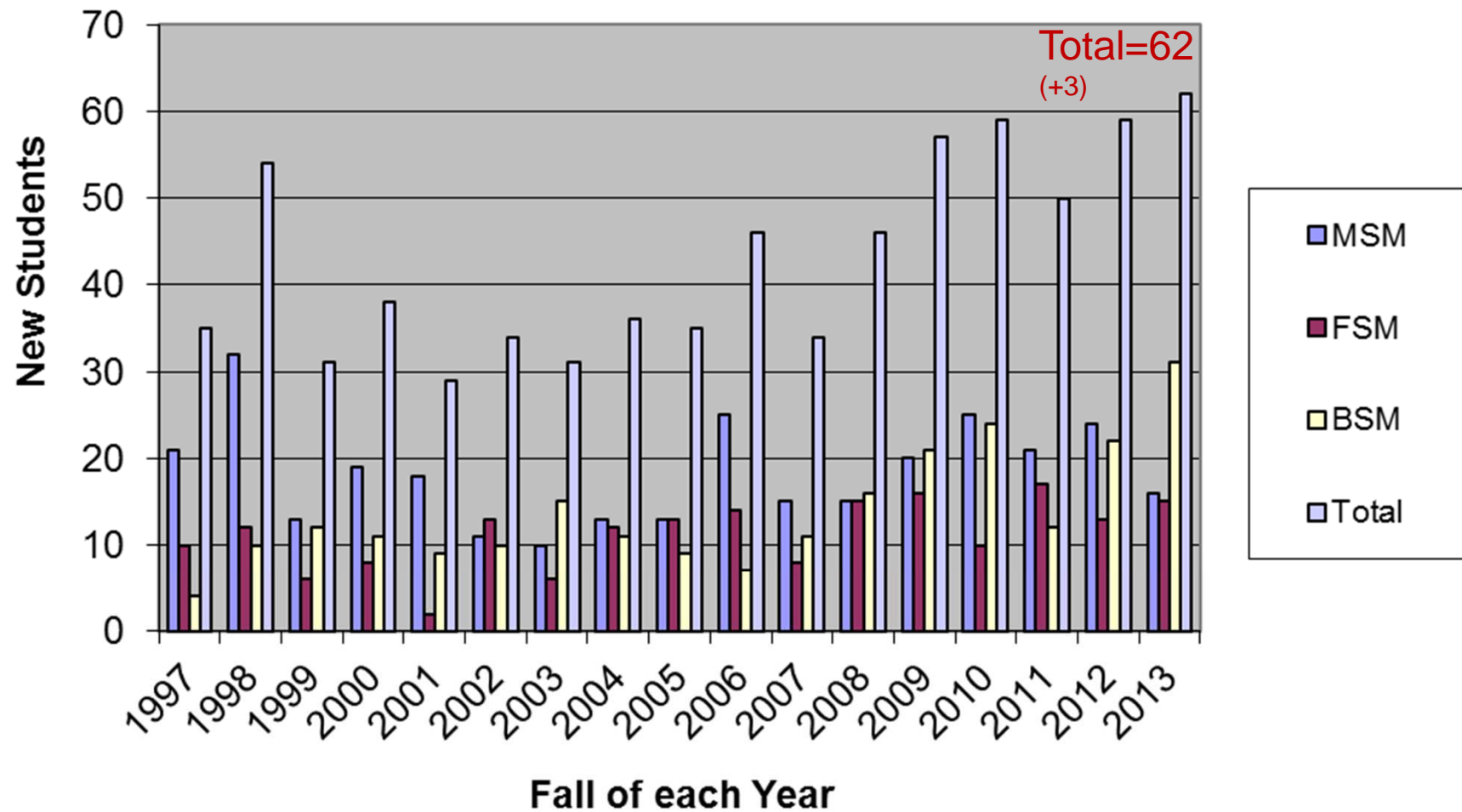


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Happy Anniversary!!!

New Student Enrollment - Fall 1997-2013



Graduate Program



“Preparing the Next Generation of Researchers and Innovators for the Global Grain-based Food, Feed & BioProducts Industry”

Graduate Program Metric 1 – Enrollment

Graduate student enrollment and multi-cultural domestic (URM) students in the Department of Grain Science & Industry's M.S. and Ph.D. degree programs (2007-2013).

<i>Year</i>	<i>M.S.</i>	<i>Ph.D.</i>	<i>Totals</i>	<i>5-Yr Avg</i>	<i>URM</i>	<i>URM (%)</i>
Fall 2007	23	23	46	31	1	6.7%
Fall 2008	24	20	44	34	2	12.5%
Fall 2009	27	26	53	40	3	13.6%
Fall 2010	27	28	55	47	3	15.8%
Fall 2011	27	21	48	49	3	13.0%
Fall 2012	35	19	54	51	2	7.1%
Fall 2013	37	22	59	54	2	6.9%

Graduate Program Metric 2 – Graduates

M.S. and Ph.D. graduates from the Department of Grain Science & Industry's graduate degree programs (2007-2013).

<i>Year</i>	<i>M.S.</i>	<i>Ph.D.</i>	<i>Totals</i>	<i>5-Yr Avg</i>	<i>URM</i>	<i>Domestic PhD (URM)</i>
2007	7	2	9	7	0	0
2008	11	2	13	9	0	0
2009	6	3	9	8	1	1
2010	8	2	10	10	0	0
2011	5	7	12	11	1	0
2012	7	3	8	11	2	2 (1)
2013	4	5	9	10	0	1

Strategic Plan Themes

1. Educate undergraduate and graduate students, and industry professionals.
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6. Broaden funding base and improve financial stewardship.

Strategic Plan Themes (SMART Goals)

2. Conduct innovative basic and applied research, and transfer new technology and knowledge to end users

- **Increase extramural funding support and faculty expenditures**
 - Maintain 5-year average extramural support to above \$3 million annually and maintain a COA Top 3 rank
- **Strengthen and promote high-impact research programs in four areas of core expertise – feed technology and grain operations, milling and grain processing, cereal and bakery sciences, biobased products and bioenergy – in support of the COA/KSRE Global Food Systems Initiative**
 - Increase 5-year average peer journal manuscript publications to above 45 and continue to lead COA in invention disclosures and patent filings
 - Increase tenure-track faculty to 15 by filling 2 vacant positions
 - Maintain non-tenure research faculty at current 2
 - At least 50% of research intense faculty support at least 1 post-doctoral research fellow

Research Program Metric 1 – Grants & Contracts

	2008	2009	2010	2011	2012	2013	5yr Avg
HORT	\$1,046,426	\$1,082,763	\$514,216	\$368,293	\$755,787	\$610,161	\$666,244
ENTM	\$2,075,416	\$1,560,774	\$1,898,520	\$2,316,683	\$1,361,623	\$1,641,243	\$1,755,769
ASI	\$2,855,594	\$1,882,156	\$1,327,458	\$2,425,820	\$1,463,992	\$3,264,082	\$2,072,702
AGEC	\$2,529,003	\$1,350,847	\$2,408,959	\$2,179,162	\$3,275,769	\$1,897,073	\$2,222,362
GSI	\$1,408,563	\$3,396,240	\$1,582,167	\$1,376,246	\$2,165,610	\$10,118,056	\$3,727,664
AGRY	\$3,402,577	\$4,892,905	\$6,779,713	\$4,911,685	\$6,135,014	\$6,317,145	\$5,807,292
PP	\$3,714,770	\$7,607,972	\$6,754,886	\$5,451,762	\$7,375,691	\$9,373,376	\$7,312,737
COA Totals	\$19,324,431	\$28,888,737	\$31,743,036	\$23,830,745	\$36,537,015	\$38,454,478	\$31,890,802

GSI faculty & staff generated about \$19 million in extramural support during the past 5 years!

Research Program Metric 3 – Peer Journal Manuscripts

	2007	2008	2009	2010	2011	2012	2013*	5-yr Avg
Asst Profs	8	12	6	10	23	4	6	10
Assoc Profs	0	2	9	7	12	18	10	11
Full Profs	20	24	21	35	45	33	24	32
Total	28	38	36	52	80	55	40	53

*published that year so far

**GSI faculty published 263 peer
manuscripts in the past 5 years!**

Strategic Plan Themes

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Strategic Plan Themes (SMART Goals)

3. Offer high-quality outreach programs and services to meet domestic and international customer needs and stakeholder expectations
 - Enhance and expand the number of IGP on-site, off-site and distance courses and participants
 - Increase number of IGP-led education and technical programs in the U.S. and abroad
 - Increase number of IGP-developed distance courses in each curriculum
 - Offer credentialing options in each IGP curriculum
 - Increase the number of peer-reviewed and numbered KSRE outreach publications
 - Increase involvement and leadership of IGP Institute in international development and technical assistance projects in support of KSU/COA/KSRE Global Food Systems Initiative
 - Develop a sustainable business model for the IGP Institute

Feed the Future Innovation Lab for the Reduction of Post-Harvest Loss

Funded by:

**USAID: Global Hunger and Food Security Research Strategy:
Climate Resilience, Nutrition, and Policy
(RFA-OAA-12-000036)**

**Program Area 5:
Reduced Post-Harvest Losses and Food Waste**

**University Partners:
Kansas State University
University of Illinois at Urbana-Champaign
Oklahoma State University
Fort Valley State University
South Carolina State University
University of Nebraska, Lincoln
University of Kentucky**

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International Grains Program
Department of Grain Science and Industry



USAID
FROM THE AMERICAN PEOPLE



USAID
FROM THE AMERICAN PEOPLE

BASIC LWA AWARD INFORMATION

Period of Performance: Jan. 1, 2014 to Dec. 31, 2018

Current Total USAID Obligated Amount: \$1,250,000

Total Estimated Program Amount: \$8,215,516

Total USAID Amount: \$25,000,000

Total KSU Leverage: \$3,215,516

- Budget information (22 CFR 226.25 “Revision of Budget and Program Plan”)

LWA = Leader with Associate Award



Feed the Future Innovation Lab for the Reduction of Post-Harvest Loss

Purpose: To provide global leadership in food security by reducing post-harvest loss (PHL) and food waste of durable staple crops (grains, oilseeds, legumes, root crops, seeds) and their processed value-added products through a strategic and applied research and education program aimed at confronting constraints on integrating smallholder and subsistence farmers, producer cooperatives and agribusiness enterprises with market-based value chains from seed to end-user.

Strategic Plan Themes

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Strategic Plan Themes (SMART Goals)

4. Recruit, retain, reward and develop high quality faculty, and professional and classified staff

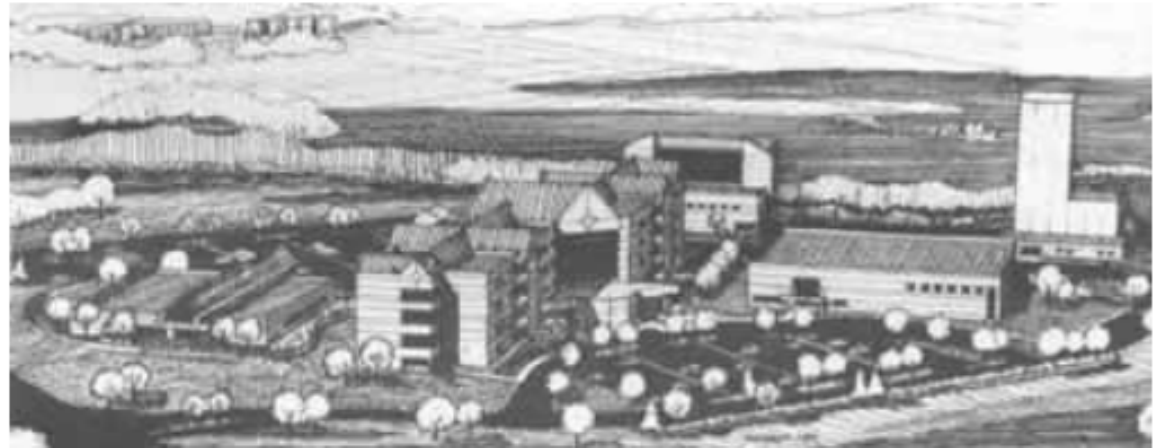
- Fill 2 open tenure-track faculty positions
- Secure substantial number of tenure-track faculty positions in our four core areas of expertise to embark upon proactive searches in support of COA/KSRE Global Food Systems Initiative
- Solicit funding to establish and expand named professorships
- Support and nominate faculty and staff for university, national and international awards
- Support, encourage and reward professional development and advancement opportunities for unclassified and classified staff, as well as individual faculty

Strategic Plan Themes

1. Educate undergraduate and graduate students, and industry professionals.
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4. Recruit, retain, reward and develop high quality faculty, and professional and classified staff.
5. **Develop, maintain and utilize state-of-the-art facilities and equipment.**
6. Broaden funding base and improve financial stewardship.

Strategic Plan Themes (SMART Goals)

- 5. Develop, maintain and utilize state-of-the-art facilities and equipment**
- **Complete the O.H. Kruse Feed Technology Innovation Center**
 - **Ensure classroom and lab space for the Hal Ross Flour Mill and the O.H. Kruse Feed Technology Innovation Center, and initiate planning for additional construction on the Grain Science Innovation Campus**
 - **Develop concept and funding proposal for Cereal Science & Bakery Technology Building (aka Global Center for Grain-Based Foods)**
 - **Complete Shellenberger classroom renovations and modernize select departmental laboratory space**
 - **Provide additional safe, non-lab office space for graduate students, visiting scholars and post-doctoral researchers; create additional meeting room space; and improve space for administrative support staff**



Vision for KSU Grain Science Innovation Campus (ca. 1999)



KSU Grain Science Innovation Campus Fall 2011

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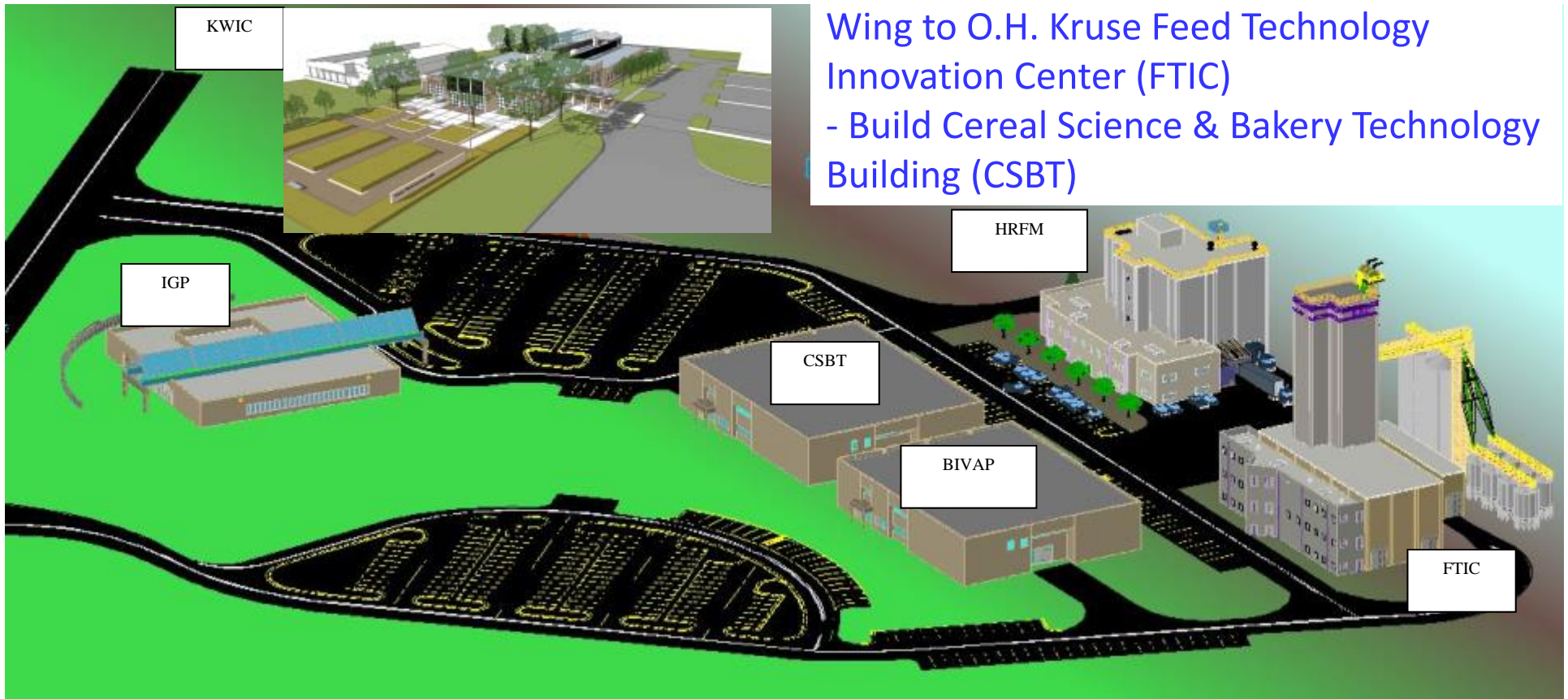
KSU Grain Science Innovation Campus Summer 2013

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Final Projects:

- Add Milling Science & Education Wing to Hal Ross Flour Mill (HRFM)
- Add Feed & Petfood Science & Education Wing to O.H. Kruse Feed Technology Innovation Center (FTIC)
- Build Cereal Science & Bakery Technology Building (CSBT)



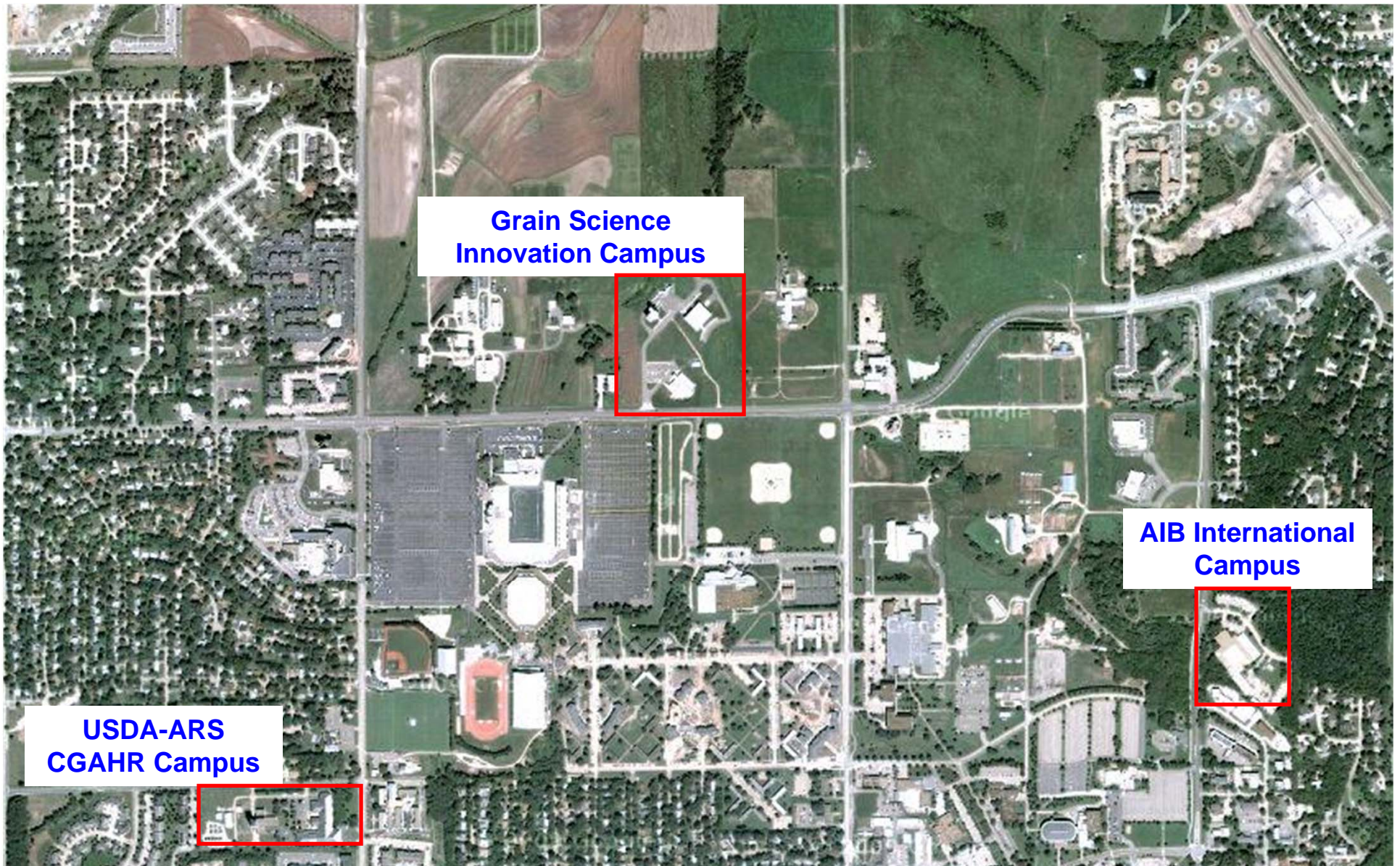
Envisioned completion of new Grain Science Innovation Campus



“We already have a significant number of great assets in place, including the USDA Center for Grain and Animal Health Research, **the Grain Science and Industry north complex, the future home of NBAF, the Biosecurity Research Institute and the new Kansas Department of Agriculture building under construction. When these entities are joined with a **creative and dynamic faculty, a highly experienced staff and a diverse student population**, we have a tremendous set of tools to help ensure that NBAF is a force multiplier for economic growth.”**

- KSU President Kirk Schulz

Concentration of Globally Unique World Class Grain Science Infrastructure



K-State and AIB Partnership Opportunities

Kansas State University and AIB International's public-private partnership with the grain-based food industry will focus on ...

- talent development and acquisition
- applied research solutions
 - Baking/cereal science/engineering and food safety
- continuing education and training
 - IGP Institute, AIB School of Baking

How? Through leveraging of...

- faculty and staff expertise
- research labs and pilot facilities

Global Center for Grain-Based Foods



**Partnership opportunity with AIB International to complete the new
Grain Science Innovation Campus**

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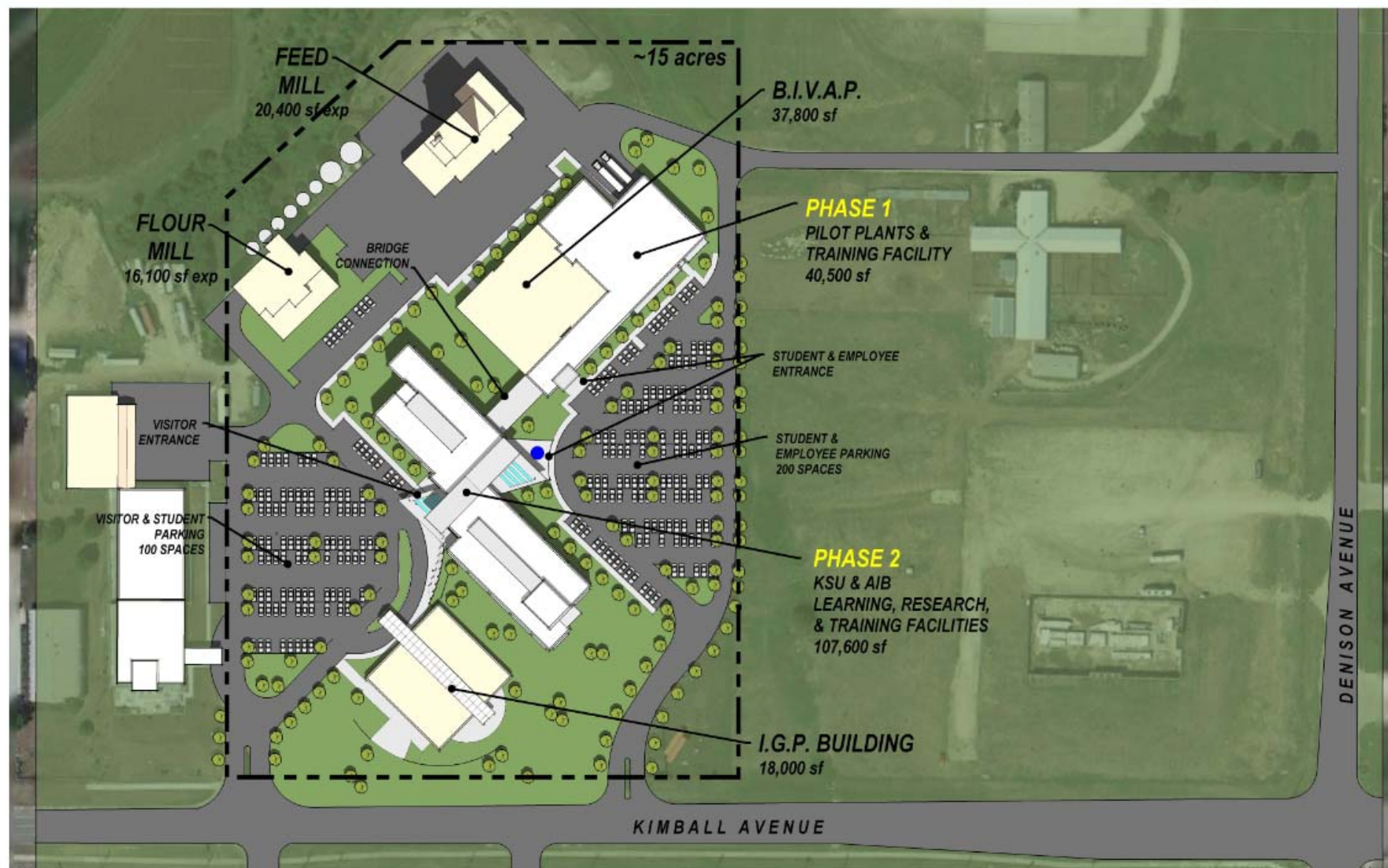
Department of Grain Science
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K-State and AIB Partnership Opportunities

Global Center for Grain-Based Foods will become the global destination and knowledge center that:

- Leverages strengths of both to create stronger, unified approach for supporting food safety and baking/grain science industry innovation
- Creates unified joint-use center where shared facilities and equipment can support expanded opportunities for collaboration, teaching, training, research in partnership with industry
- Further establishes KSU/GSI and AIB International as international resource for leadership and innovation
- Co-develops next generation of R&D, food safety, operations, and quality assurance professionals for the grain-based food industry

Global Center for Grain-Based Foods





KSU Foundation

HOEFER WYSOCKI
Architecture

11460 Tomahawk Creek Parkway, Suite 400, Leeswood, KS 66211

Strategic Plan Themes

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5. Develop, maintain and utilize state-of-the-art facilities and equipment.
6. **Broaden funding base and improve financial stewardship.**

Strategic Plan Themes (SMART Goals)

6. Broaden funding base and improve financial stewardship

- Complete and promote stand-alone minors (SAM) and make them available to students via distance
- Grow for-college credit distance education program offered by the department
- Grow non-college credit distance education program offered by the IGP Institute
- Solicit additional funding for scholarships, fellowships and professorships
- Replace current KSURF royalty income
- Develop plan and secure funding to complete the building projects of the new Grain Science Innovation Campus
 - Initiate funding plan for Hal Ross Flour Mill addition
 - Initiate funding plan for O.H. Kruse Feed Technology Innovation Center addition
 - Initiate funding plan for Cereal Science and Bakery Science Technology building (aka Global Center for Grain-Based Foods)
- Pay off loan for the Hal Ross Flour Mill

Disciplined Action...

- The Flywheel

- No single defining action
- No one killer innovation
- No miracle moment
- No one single person




➔ Relentlessly pushing a giant, heavy flywheel in one direction, turn upon turn, building momentum until a point of breakthrough, and beyond...



**“Greatness is largely a matter of conscious
choice, and discipline!”**

- Jim Collins



“When you have **disciplined people, you don’t need hierarchy; when you have **disciplined thought**, you don’t need bureaucracy; and when you have **disciplined action**, you don’t need excessive controls.”**

- Jim Collins

Upcoming Events

2014 Students, Staff & Faculty Recognitions

- *Pls come and join us for the...*
- ➔ **Scholarship and Awards Banquet** April 23, 2014 at 6:30p at IGP Conference Center

2014 Alumni & Friends Recognitions

- *Pls come and join us for the...*
- ➔ **Outstanding Alumni & Service Awards Luncheon** April 23, 2014 at 11:00a at IGP Conference Center

Upcoming Events

- Open House – April 5, 2014
 - Great team effort, lots of opportunities to volunteer
- Spring Awards Banquet – April 23, 2014
 - Recognize our awardees and scholarship recipients & donors
 - Recognize Outstanding Alumni & Supporters
- Dept Advisory Council meeting – April 24, 2014
 - Present Strategic Plan as submitted to COA/KSRE
 - Update on recruiting efforts, DH search etc.
- COA Distinguished Alumnus [Bill Barr](#), FSM'67
- COA David Mugler Teaching Awardee Prof. [Dave Krishock](#)
 - May 3, 2014
- New Department Head Search – 2014

Global Center for Grain-Based Foods



**Partnership opportunity with AIB International to complete the new
Grain Science Innovation Campus**

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and Industry

Questions? Comments?