

USDA 2016 Agricultural Outlook Forum

Steering the Best Talent Towards Colleges of Agriculture

Jay Akridge
Glenn W. Sample Dean of Agriculture
Purdue University
February 25, 2016



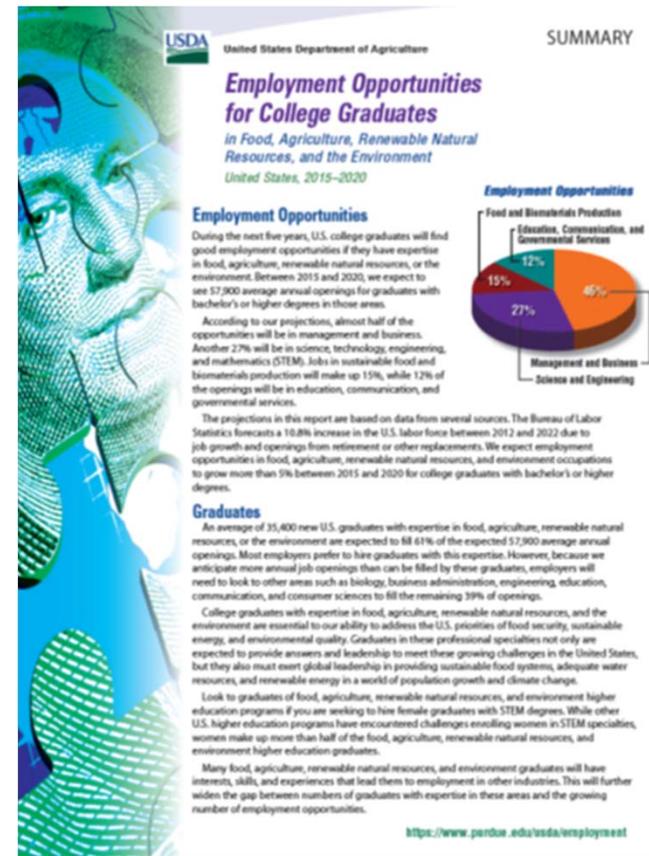
Purdue University is an equal access/equal opportunity institution.

PURDUE
AGRICULTURE

The Talent Pipeline

- Supply and demand for high potential talent:
 - **57,900** annual jobs available, B.S. and higher, food, renewable energy, environmental specialties
 - **35,400** agriculture, forestry/natural resources, and veterinary medicine graduates

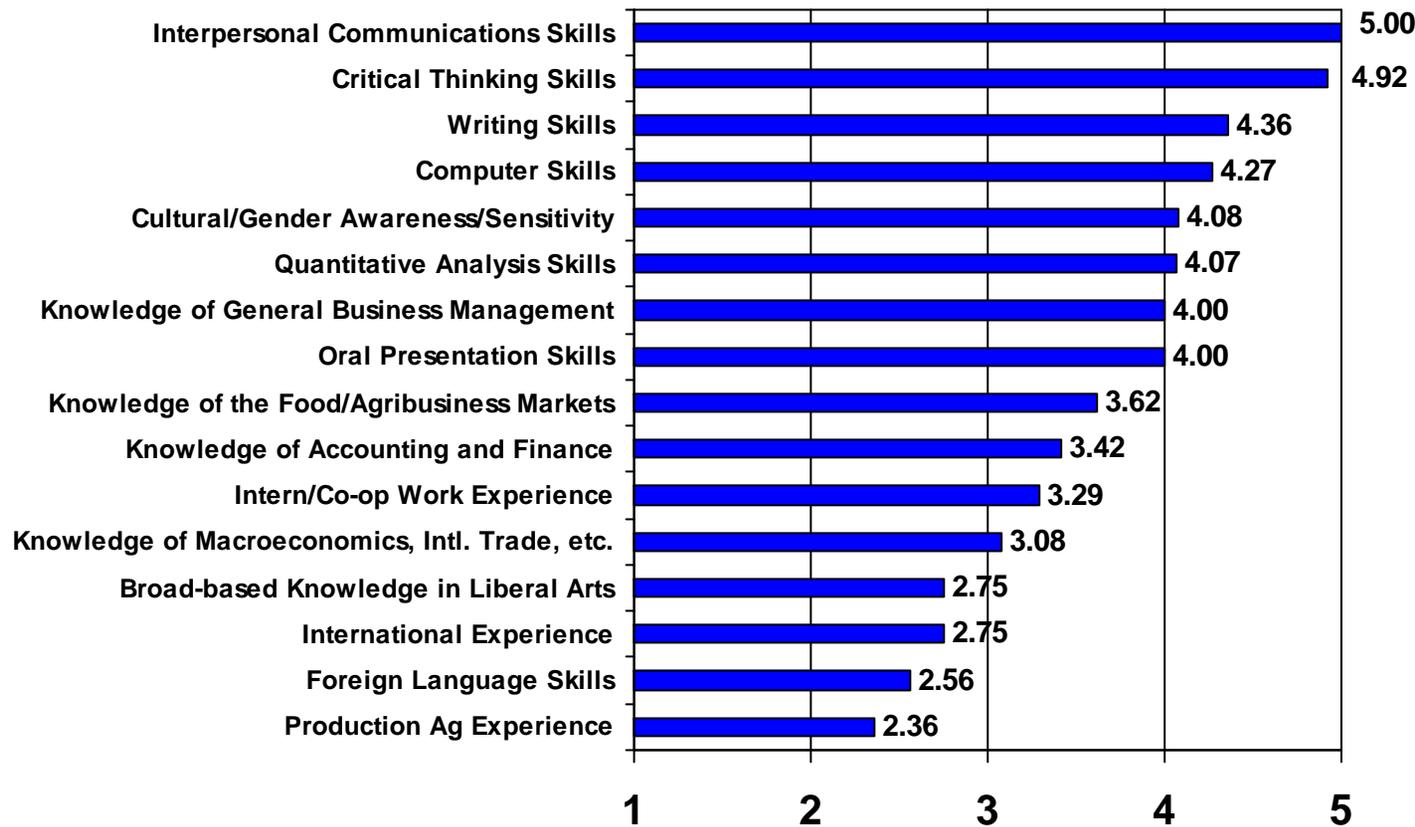
Source: Purdue and NIFA (2015)



Agriculture Talent Pipeline Drivers Of Change

- Flat enrollments overall, growth in Agriculture enrollment could continue
- More diverse student body, more women in agriculture and higher levels of attainment
- Fewer students with 'traditional' background
- Mixed perceptions of agricultural industry
- Increased role of technology in education
- Major focus on affordability/attainment/value
- Industry looking for 'career ready' graduates
- ***Career opportunities look strong***

Ratings of Skills, Capabilities, and Experiences Sought in New Hires with the Potential to Become Future Company Leaders ^{a/}

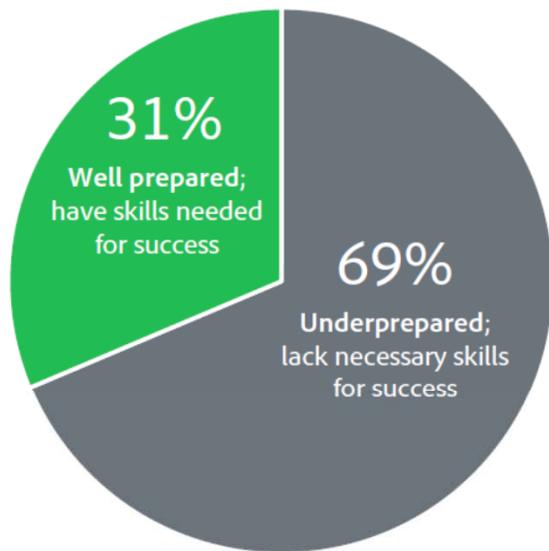


What does industry want in terms of background, skills, capabilities?

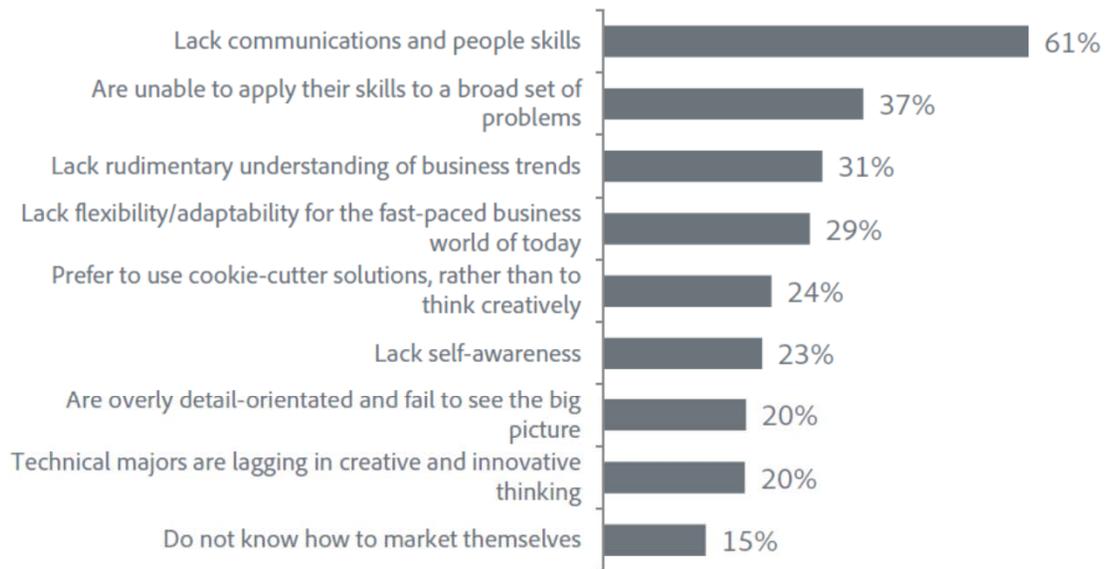
^{a/} Rated on a scale of 1 to 5, where 1 is unimportant and 5 is absolutely essential.

Seven in 10 hiring managers say students are not ready for success in the workplace of tomorrow

STUDENTS TODAY



WHY UNDERPREPARED? GRADUATES OF TODAY...

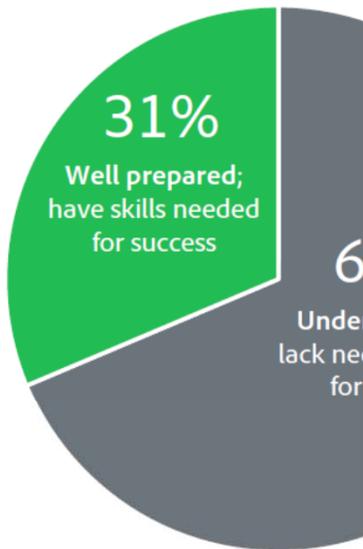


Q31. Do you feel students of today are well prepared for the workforce of tomorrow?; n=1068

Q32. (If underprepared) What are your top negative perceptions of students who are underprepared for success in their future profession? Please select up to 3; n=733

Seven in 10 hire
success in the v

STUDENTS TODAY

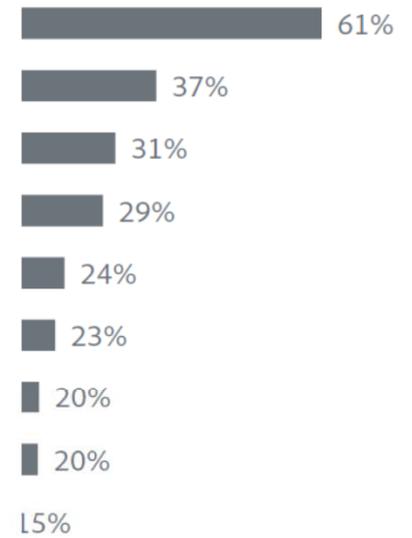


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Q32. (If underprepared) What are your



ly for

S OF TODAY...



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TRADITION

JUST BECAUSE YOU'VE ALWAYS DONE IT THAT WAY
DOESN'T MEAN IT'S NOT INCREDIBLY STUPID.

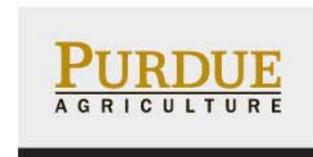
www.despair.com

Futility...

Doing the same
thing over and over
again, and expecting
different results...

Exploration of New Models

- Year-round University – Trimester Concept
- 3 Year degrees
- 2+2 programs
- Community colleges
- Distance degree programs
- Corporate sponsorships
- Corporate universities
- Competency-based degrees
- Certificate programs
-





I am CASNR

At the moment I get food on campus, that OSU put my name and colors on my family. My time as a food science major has opened my eyes to possibilities I never dreamed of for my future.

*Food Science Major
Katie Linn*

Food Science Degree

Food Safety
Education
Food Science
Methods

Continuously Evolving

OSU's program has been identified as one of the top ten best value food science degrees in the United States.

Quality of Education

Food science students have access to the Robert H. Love Food and Agricultural Products Center (FAPC), located throughout the nation for its research and extension outreach and state-of-the-art facilities.

What is Food Science?

Food scientists apply principles of biology, chemistry, microbiology, biochemistry, nutrition and engineering to create new food products, improve food processing techniques and ensure quality, safety and nutritional value of the food supply.

Why Study Food Science?

Everyone eats. Therefore, food science is a degree area that will always be in demand and will constantly be changing with new technology, new regulations and everything in between.

What Study Plan Should I Use with a Degree in Food Science?

Industry quality audit: Food technology
Controlled food processing: Food research
Innovative use of food analytical methods: Food processing validation
Food ingredients: Quality assurance supervisor
Food microbiology: Food safety manager

Food Safety

For each undergraduate degree program in CASNR, we have prepared example plans of how you may successfully complete your degree plan in four years. Click links to view examples for food science.



Creative Recruiting Approaches

- Global Youth Institute
- Borlaug-Ruan International Internship
- USDA Wallace-Carver Fellowship
- Student Work and Photos
- Youth Programs History

Iowa Youth Institute at Iowa State University



- WHY?
- HOW?
- DATES
- FAQ
- CONTACT

WHAT is the Iowa Youth Institute?

The World Food Prize Iowa Youth Institute (IYI) is a transformative experience for students held at Iowa State University each April. During this day long event students are able to immerse themselves in the world of food security while presenting their ideas and findings to professions. The below video recaps the 2015 Iowa Youth Institute.



Dates for Iowa Youth Institute:

- APPLY
- GIVE
- VISIT



HOW TO PARTICIPATE

Student Paper Resources
CLICK HERE

Teacher - Mentor Paper Resources
CLICK HERE

Traditional: IYI Paper Instructions
New: IYI Student Workbook
Poster for classroom (below):
CLICK HERE



Submit your registration information:
Student Paper & Information
Teacher-Mentor Information

University of Idaho

College of Agricultural and Life Sciences

MENU

CALS Ambassadors



The CALS Ambassadors program was the first of its type at the University of Idaho and continues to be the largest college ambassador team on campus. The team



PURDUE AGRICULTURE EXPERIENCE

765-494-8470
EXP@PURDUE.EDU

Why Purdue? Who can help? How much? What's my future? What else? Parents' questions? Student Experiences?

Daniel is a plant breeding and genetics major from Indianapolis who developed a passion for agriculture and plant breeding while at Purdue. He worked summers at Beck's Hybrids and AgReliant Genetics. During the school year he did research on mutant fatty acid synthesis genes in soybeans.

APPLY NOW

VISIT US

CHECK MAJORS

- Why Purdue?**
Show me why Purdue is the best choice.
- Who can help?**
Let me know who can help me succeed.
- How much?**
Let's talk about cost, scholarships, financial aid.
- What's my future?**
Tell me about graduates and current students.
- What else?**
Tell me about life outside of class.
- Parents' questions?**
I'm a parent wondering about...

ILLINOIS
Center for Urban Agricultural Education
College of Agricultural, Consumer and Environmental Sciences · University of Illinois



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Focus on Changing Perceptions

Current Perception vs Future Identity

Perception	Reality	Future Identity
What grandpa did	Applied science, not voc. tech.	Contributing to society
What Midwesterners do = Farming	Diverse Majority of grads don't farm	
Dull; not sexy	Opportunity for breakthroughs	Work that makes a difference
Digging in dirt, driving a combine	Field, lab, mgmt., business, marketing, international	
No perceptions	Biofuels, safe water supply	
Not scientific	Leading-edge science	Global, diverse career opportunities
"I don't fit there"	Customizable studies	
No demand; not a career	Recession-proof	Sustainability
GMOs	Solving challenges	
Describes how we are seen	Describes what we are	Describes the value we create

Major Focus on Attainment

- Expand Exploratory Studies
- Coordinated 'First Year Experience'
- Program of study maps
- Restructuring D/F/W courses
- Investments in advising
- Promotion of '4/3/2/1', 'Take 15'
- Targeted summer offerings
- Technology to monitor progress/timely interventions
- Expand residential housing
- Academic Boot Camp
- Work with High School Advisors
- Enhanced prerequisites
- ...



PURDUE-GALLUP POLL

WELL-BEING

Odds of thriving in all areas of well-being are:

4.6x Higher if ... Engaged at work

2.5x Higher if ... [College] prepared me well for life outside of college.

2.0x Higher if ... Emotionally attached to school

1.9x Higher if ... [College] passionate about the long-term success of its students.

1.7x Higher if ... I had a mentor who encouraged me to pursue my goals and dreams.

1.7x Higher if ... My professors at [College] cared about me as a person.

1.5x Higher if ... I had at least one professor at [College] who made me excited about learning.

1.9x Higher if ... graduates experience all three

1.5x Higher if ... I had an internship or job that allowed me to apply what I was learning in the classroom.

1.4x Higher if ... I was extremely active in extracurricular activities and organizations while attending [College].

1.1x Higher if ... I worked on a project that took a semester or more to complete.

1.3x Higher if ... graduates experience all three

Transforming the Classroom Experience

- 'Flipping' the classroom
- Intensive use of technology
- Passing 'The Pajama Test'



Farm to Fork

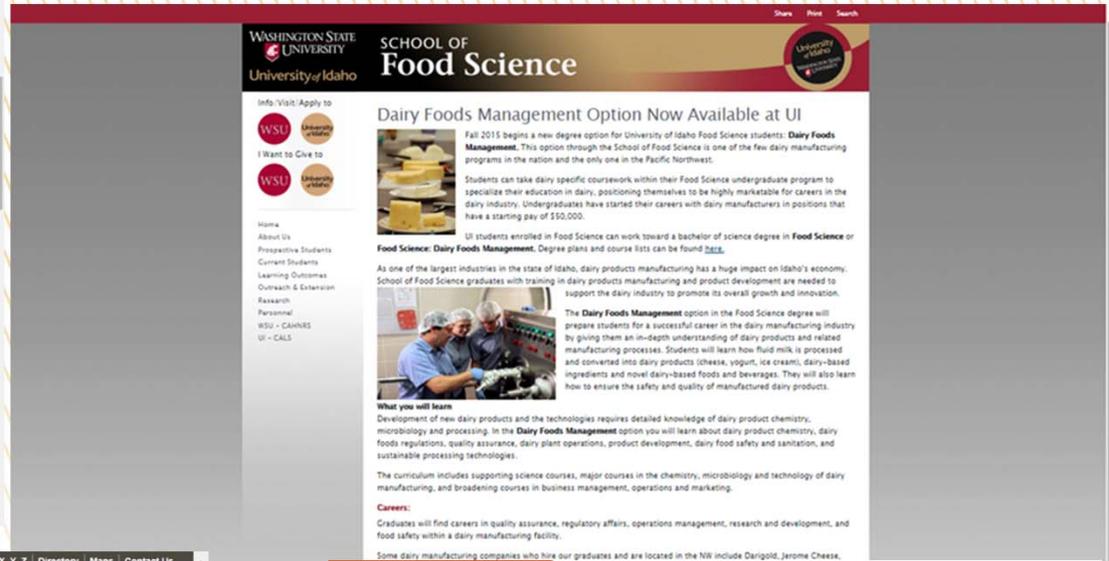


Farm to Fork
A Panoramic View
of Agriculture

Course Number: AGEC 4990; Sec 503
Course Instructor: Dr. F. Bailey Norwood
Credit Hours: 3 Credits Available
Prerequisites: There are no prerequisites for this course.

Start Date: Jan. 11, 2016
Duration: 16 Weeks
Day & Time: Fully Online
Enrollment Deadline: Jan. 19, 2016

You know what happens between the grocery store and the fork, but what about the farm and the fork?



WASHINGTON STATE UNIVERSITY
University of Idaho

SCHOOL OF Food Science

Info Visit Apply to
I Want to Clive to

Home About Us Prospective Students Current Students Learning Outcomes Outreach & Extension Research Personnel WSU - CAREERS UI - CALS

Dairy Foods Management Option Now Available at UI

Fall 2015 begins a new degree option for University of Idaho Food Science students: **Dairy Foods Management**. This option through the School of Food Science is one of the few dairy manufacturing programs in the nation and the only one in the Pacific Northwest.

Students can take dairy specific coursework within their Food Science undergraduate program to specialize their education in dairy, positioning themselves to be highly marketable for careers in the dairy industry. Undergraduates have started their careers with dairy manufacturers in positions that have a starting pay of \$50,000.

UI students enrolled in Food Science can work toward a bachelor of science degree in **Food Science or Food Science: Dairy Foods Management**. Degree plans and course lists can be found [here](#).

As one of the largest industries in the state of Idaho, dairy products manufacturing has a huge impact on Idaho's economy. School of Food Science graduates with training in dairy products manufacturing and product development are needed to support the dairy industry to promote its overall growth and innovation.

The **Dairy Foods Management** option in the Food Science degree will prepare students for a successful career in the dairy manufacturing industry by giving them an in-depth understanding of dairy products and related manufacturing processes. Students will learn how fluid milk is processed and converted into dairy products (cheese, yogurt, ice cream), dairy-based ingredients and novel dairy-based foods and beverages. They will also learn how to ensure the safety and quality of manufactured dairy products.

What you will learn
Development of new dairy products and the technologies requires detailed knowledge of dairy product chemistry, microbiology and processing. In the **Dairy Foods Management** option you will learn about dairy product chemistry, dairy foods regulations, quality assurance, dairy plant operations, product development, dairy food safety and sanitation, and sustainable processing technologies.

The curriculum includes supporting science courses, major courses in the chemistry, microbiology and technology of dairy manufacturing, and broadening courses in business management, operations and marketing.

Careers:
Graduates will find careers in quality assurance, regulatory affairs, operations management, research and development, and food safety within a dairy manufacturing facility.

Some dairy manufacturing companies who hire our graduates and are located in the NW include Danigold, Jerome Cheese,

CyMail | Outlook | WebCT | Blackboard | AccessPlus

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IOWA STATE UNIVERSITY

Global Resource Systems

Home | Prospective Students | Current Students | Resources for GLOBE Students | Faculty and Staff



Growing School Lunches

Global Resource Systems

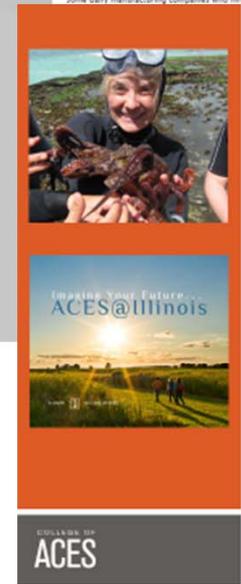
GRS Tweets

CDC CDC Emergency
Faced with local responses, Career Epidemiology Field Officers are our experts in the field: blogs.cdc.gov/publichealthnrc/pic.twitter.com/UMKWmQrtg
Retweeted by GlobalResourceSystem

Program News

Globe alum Dylan Clark featured
Globe students recognized in
Globe Grad Schaff featured fo
GRS Strengthens Partnership
Globe students participate in E
Globe Kody Olson interns at I

Innovative Courses and Majors



MINOR IN FOOD & ENVIRONMENTAL SYSTEMS

OPEN TO ALL STUDENTS AT THE UNIVERSITY OF ILLINOIS, THIS ACADEMIC MINOR FOLLOWS A SYSTEMS APPROACH TO PROVIDING STUDENTS WITH AN UNDERSTANDING OF THE WIDE RANGE OF FACTORS THAT ARE CRITICAL FOR PRODUCING HEALTHY FOODS AND ENVIRONMENTS.

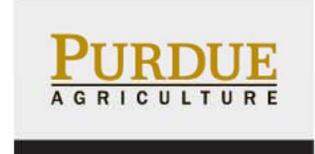
THE MINOR PROVIDES A STRONG FOUNDATION IN THE BIOLOGICAL, CHEMICAL AND ECONOMIC ISSUES THAT ARE CRITICAL FOR HEALTHY LIFESTYLES AND EMPHASIZES EXPERIENTIAL LEARNING.

ILLINOIS STATE
ACES

Minor in Food & Environmental Systems

Open to all students at the University of Illinois, this academic Minor follows a systems approach to providing students with an understanding of the wide range of factors that are critical for producing healthy foods and environments.

The Minor provides a strong foundation in the biological, chemical and economic issues that are critical for healthy lifestyles and emphasizes experiential learning.



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CATE: College of Agriculture Transformational Experiences

- Study Abroad
- Undergraduate Research
- Internships
- Leadership Development Certificate Program 2.0
- Entrepreneur Day
- Issues 360 Certificate Program
- Student Farm
- ...



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PURDUE
AGRICULTURE

Connecting with Industry, Creating Innovative Partnerships



- Internships
- Experiential learning support
 - Non-traditional students
- Classroom visits
- Field trips/experiences
- Advisory boards
- Recruiting collaboration
- Scholarships
- Mentoring support
- Blending 'work' and 'school'
- ...

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Looking Ahead: Issues/Opportunities

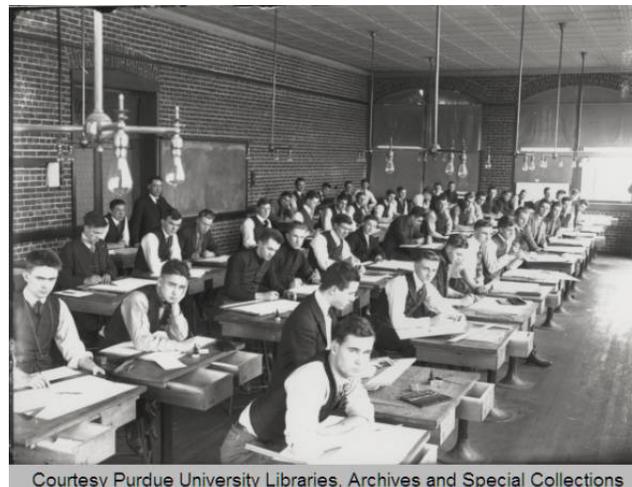
- Attracting diverse talent
- Managing cyclical nature of industry, perceptions and understanding
- Capitalizing on 'agriculture' as an area of focus
- Creating access, respecting land-grant mission
- Focus and state boundaries
- Utilizing technology in productive ways
- Blending 'work' and 'school'
- ***Managing cost, demonstrating value***

The 21st Century Land Grant

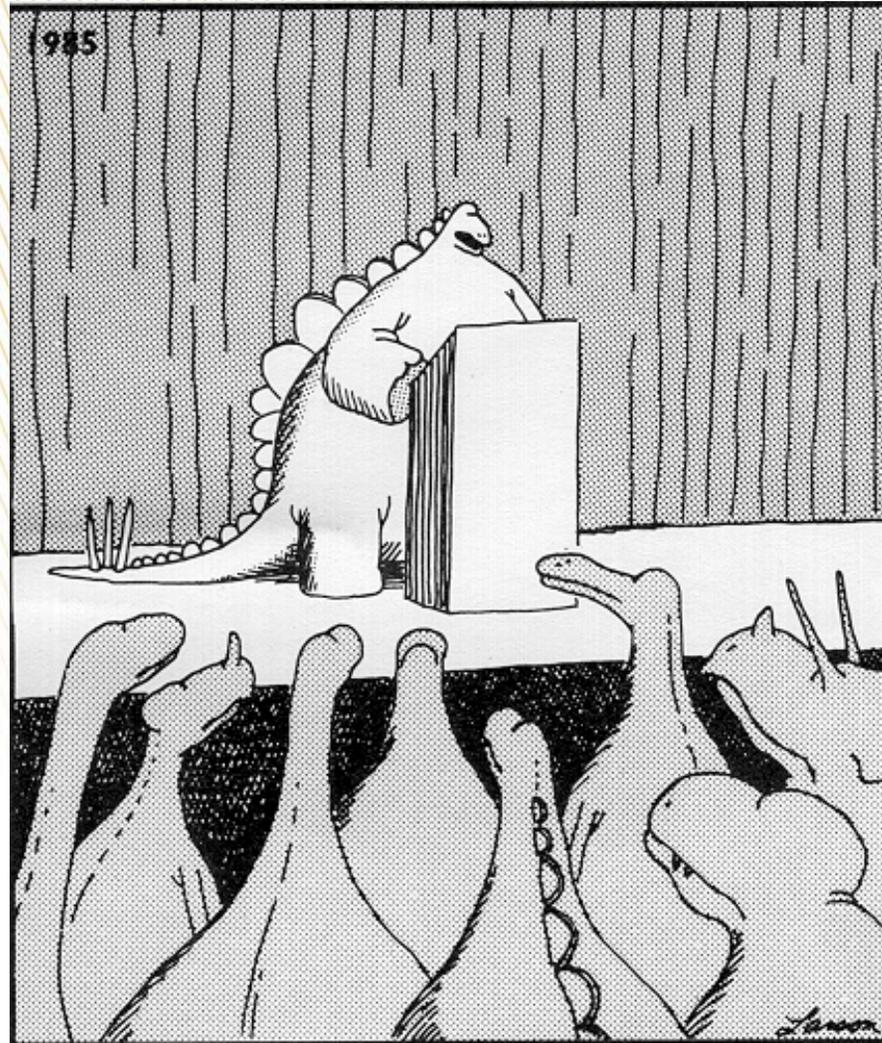
- Teaching...

“... the design comprehended not only instruction for those who may hold the plow or follow a trade, but such instruction as any person might need – with **‘the world all before them to choose’**”

Senator Justin Smith Morrill, 1887,
Speech to Massachusetts Agricultural College



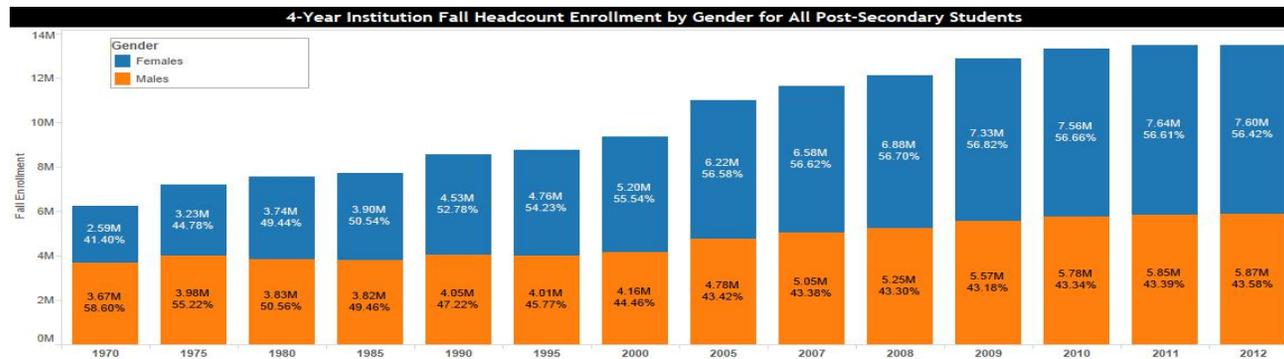
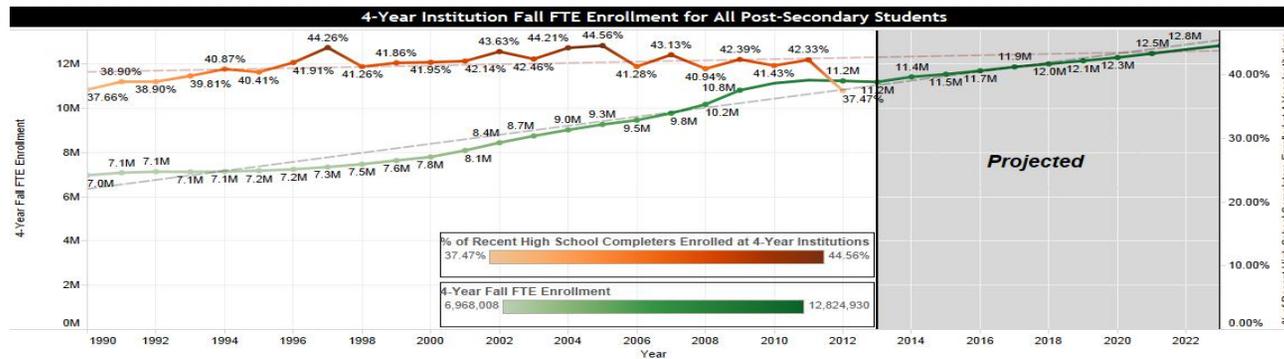
Courtesy Purdue University Libraries, Archives and Special Collections



“The picture’s pretty bleak, gentlemen. ... The world’s climates are changing, the mammals are taking over, and we all have a brain about the size of a walnut.”

ENROLLMENT

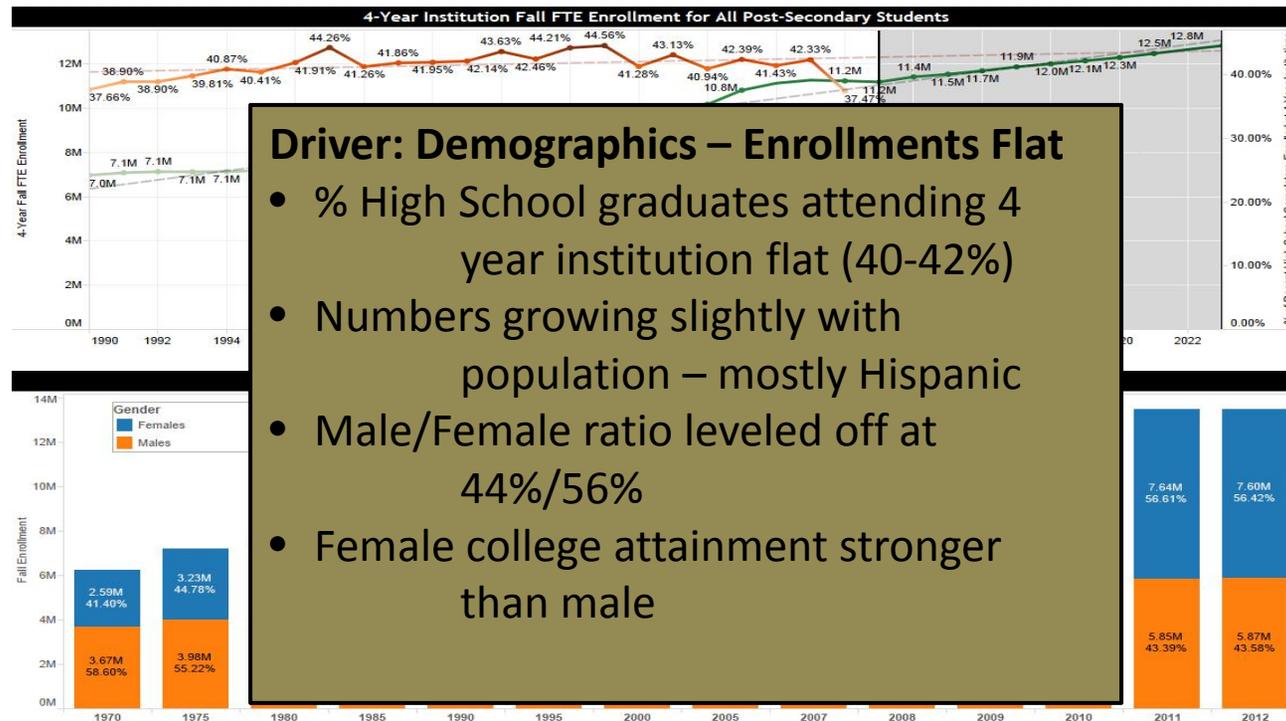
4-YEAR INSTITUTION FALL ENROLLMENT TRENDS & FORECAST



Data provided by the National Center for Education Statistics Database

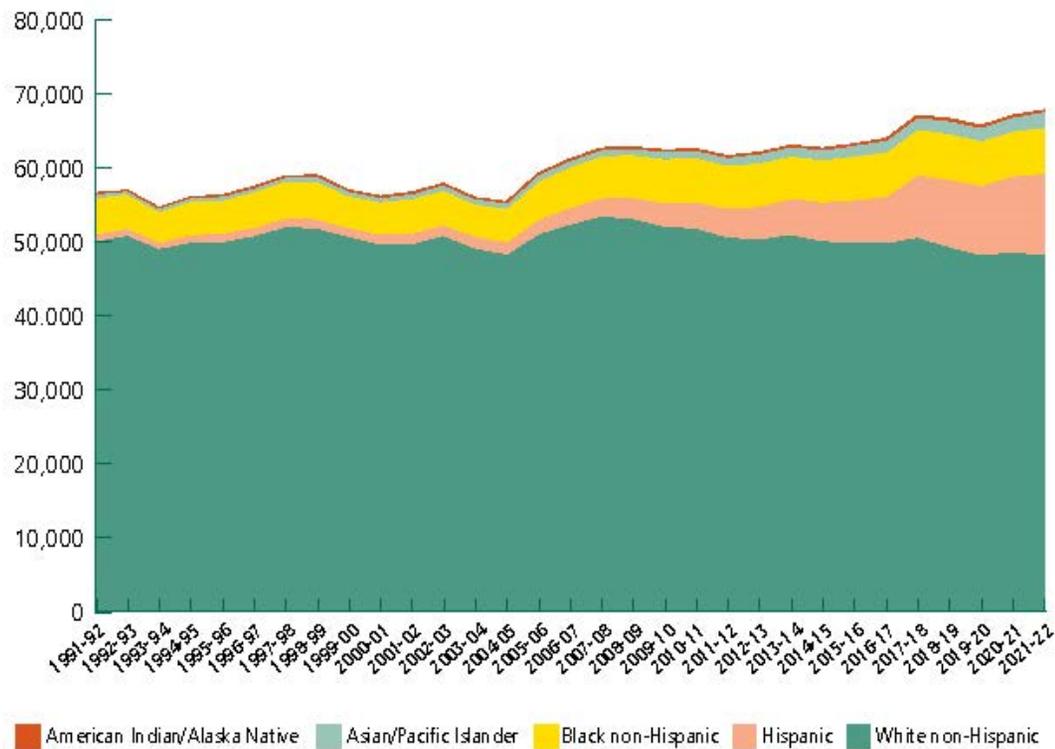
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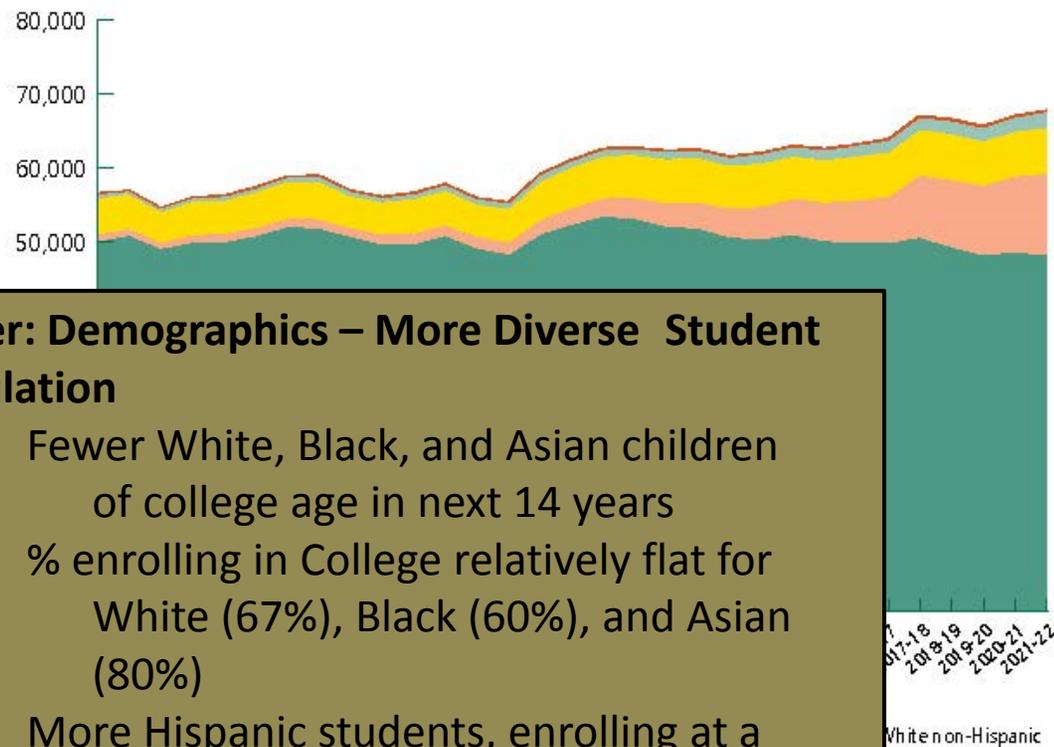
Data provided by the National Center for Education Statistics Database

Indiana High School Graduates



<http://www.wiche.edu/info/knocking/1992-2022/Indiana.pdf>

Indiana High School Graduates



Driver: Demographics – More Diverse Student Population

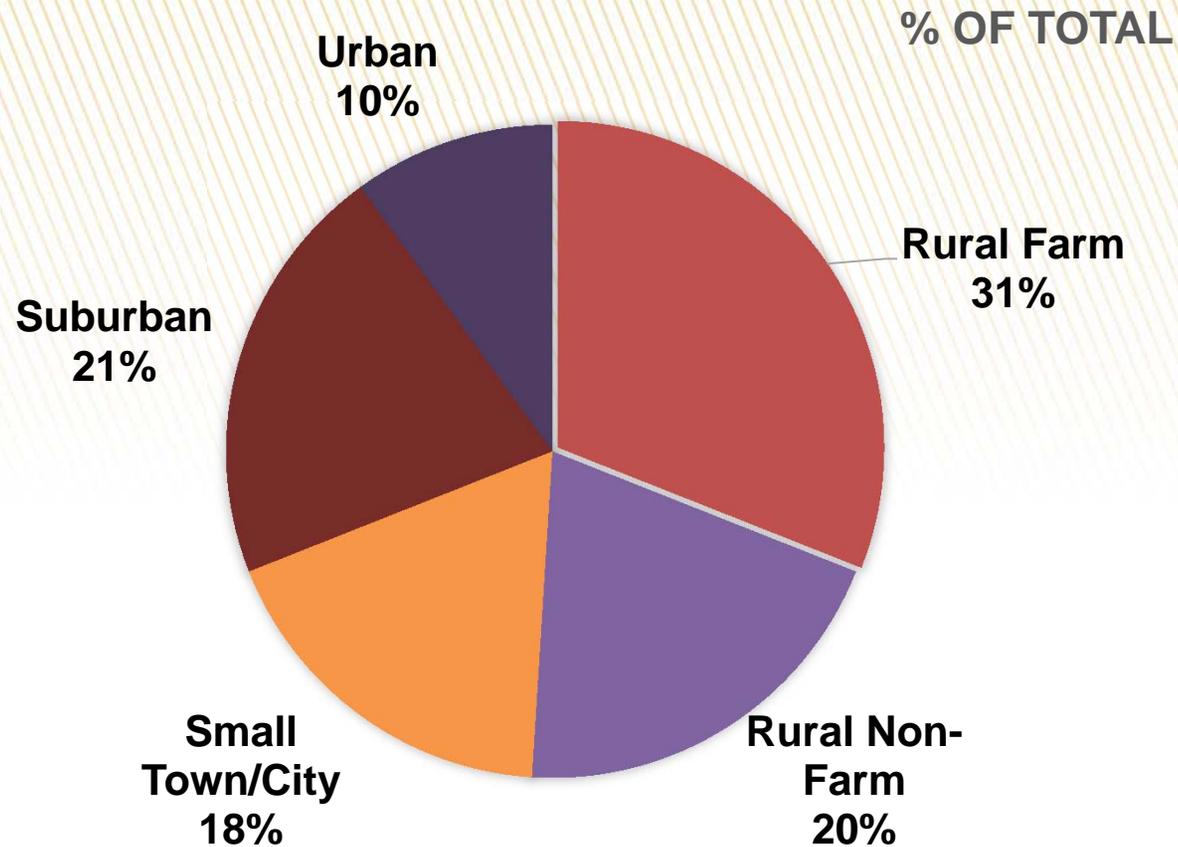
- Fewer White, Black, and Asian children of college age in next 14 years
- % enrolling in College relatively flat for White (67%), Black (60%), and Asian (80%)
- More Hispanic students, enrolling at a higher rate (70% in 2013)

White non-Hispanic

</info/knocking/1992-2022/Indiana.pdf>

Student Backgrounds Changing

Purdue College of Agriculture





College Majors That Are Useless

Are you going back to school in hopes of graduating to more job opportunities? You might want to avoid these degrees.

By Terence Loose

Useless Degree #1 - Agriculture

Number of Students Awarded Degree in 2008-2009: 24,988

Typical coursework: Crops, plant diseases, animal husbandry, basic veterinary science

When schools such as the University of Idaho cut their agriculture programs, you know times are tough for this degree. The state has more than 25,000 farms, for cow's sake, according to the most recent U.S. Department of Agriculture census, in 2007.

Still, if your idea of a good day is getting up with the sun and working till it sets as an agricultural manager, a degree in agriculture might be your calling.

Just don't expect farms and ranches to be calling you, says Laurence Shatkin, Ph.D., and author of "The 10 Best College Majors for Your Personality." "It's true that farms are becoming more efficient now and so there is less of a need for farm managers," he says. That means less jobs. In fact, the U.S. Department of Labor projects 64,000 fewer jobs in this field over the next seven years.

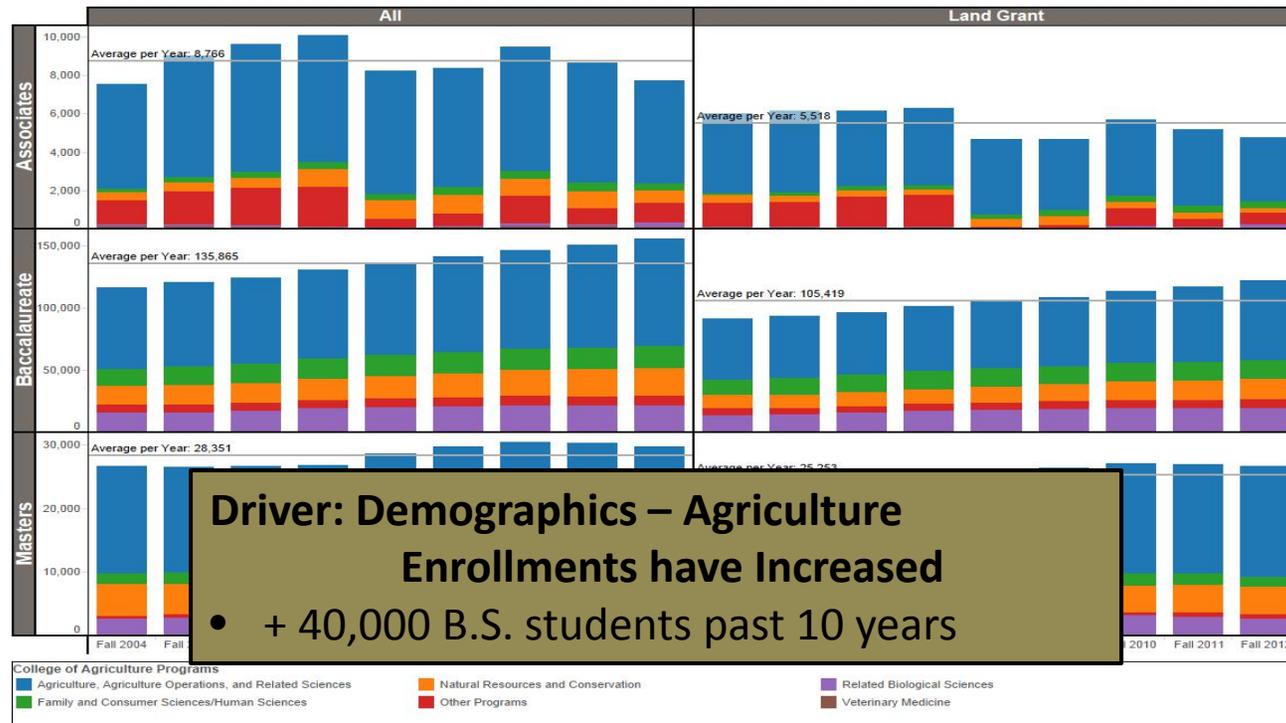
Total Number of Agricultural Managers in 2008: 1,234,000

Projected Change in Number of Jobs 2008-2018: -64,600

Percent Change: -5

AGRICULTURE

NATIONAL ENROLLMENT IN COLLEGES OF AGRICULTURE BY PROGRAM TYPE



Data provided by FAEIS

Purdue College of Agriculture

QUICK FACTS

- 11 academic departments
- 2671 undergraduates
- 675 graduate students
- 300 faculty
- 92 County Extension Offices

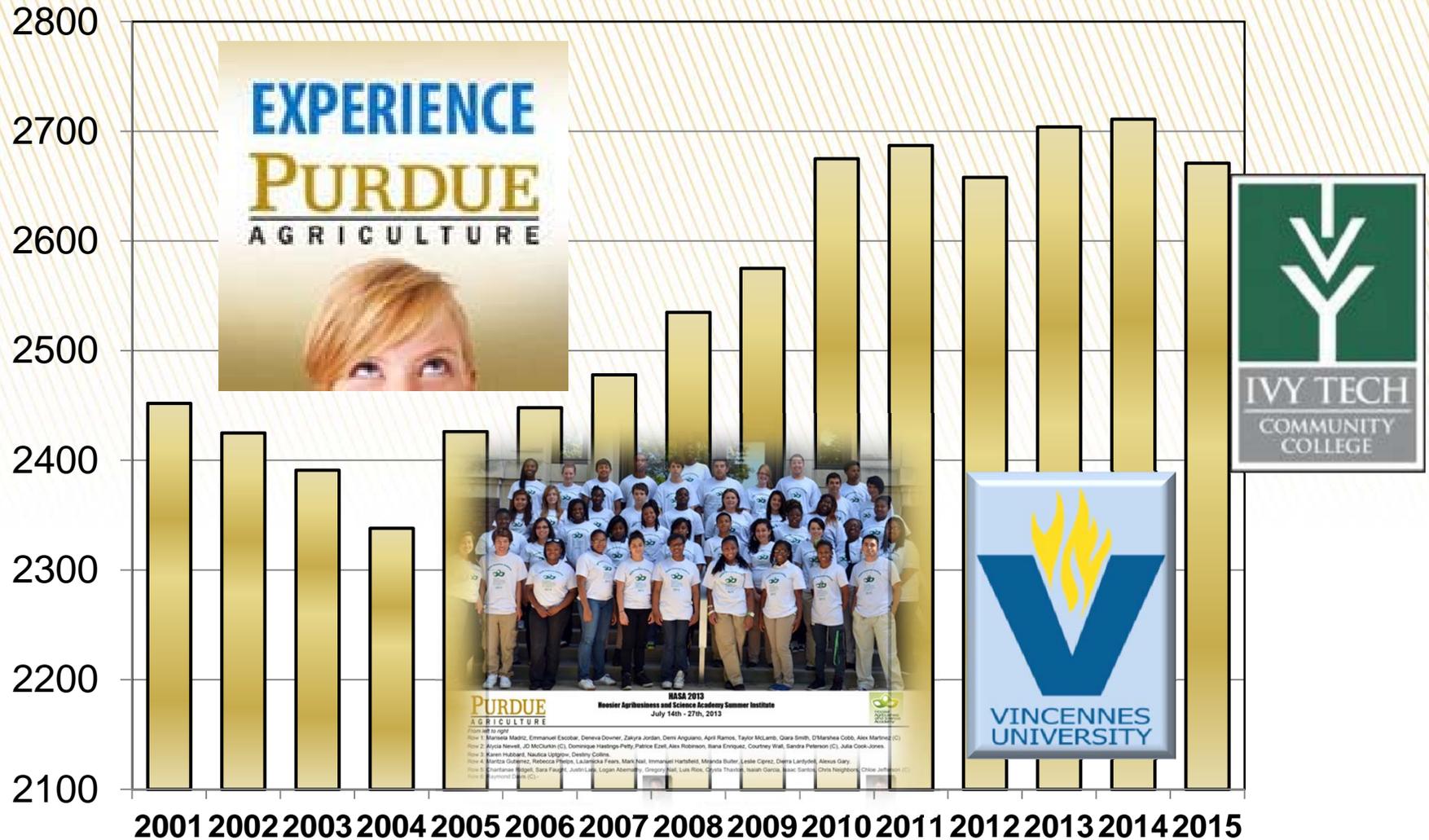


- Ranked #5 in the world in 2015
- #1 Ag and Biological Engineering Graduate and Undergraduate

Phil Nelson, Gebisa Ejeta –
Purdue is the only University to have 2
World Food Prize Laureates on faculty



Undergraduate Student Enrollment: 2001-15



Purdue University is an equal access/equal opportunity institution.



AFA Future Leader Preparedness Survey

Attributes Important to Career Success (2009)

http://www.agfuture.org/s/1342/images/editor_documents/about_us_documents/millennium_research_study.pdf

AFA Future Leader Preparedness Survey

Attributes Important to Career Success (2009)

Students and Industry Aligned

- Work ethic
- Communicate accurately and pleasantly
- Excellent time management
- Think through problems
- Innovative solutions
- Presenting well in groups
- Resolve conflicts
- Knowing/applying business principles
- Excellent business writing

http://www.agfuture.org/s/1342/images/editor_documents/about_us_documents/millennium_research_study.pdf

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Industry More Important

- Sense of urgency
- Quick study
- Results oriented
- Excellent computer skills
- Intelligence

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Students More Important

- Hands on ag experience
- Global market culture knowledge
- Networking
- Graduated from a well respected university
- Excellent project management
- Competence in accounting
- Valuing diversity
- High GPA

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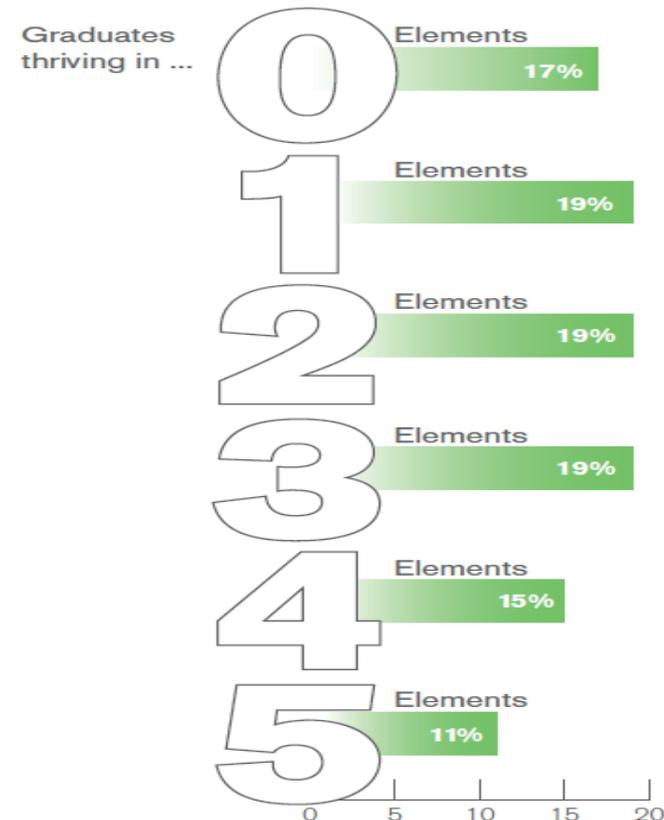
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PURDUE-GALLUP POLL

WELL-BEING

- 1) **Purpose Well-Being:** Liking what you do each day and being motivated to achieve your goals
- 2) **Social Well-Being:** Having strong and supportive relationships and love in your life
- 3) **Financial Well-Being:** Effectively managing your economic life to reduce stress and increase security
- 4) **Community Well-Being:** The sense of engagement you have with the areas where you live, liking where you live, and feeling safe and having pride in your community
- 5) **Physical Well-Being:** Having good health and enough energy to get things done on a daily basis

ON AVERAGE, COLLEGE GRADUATES THRIVING IN TWO ELEMENTS OF WELL-BEING



PURDUE-GALLUP POLL

ALUMNI ATTACHMENT

