

MISSOURI S&T

Pointing Students in the Right Direction: the importance
of new student orientation | NCSSSMST 2010

Founded 1870 | Rolla, Missouri

MISSOURI UNIVERSITY OF SCIENCE AND TECHNOLOGY

Who is Missouri S&T?

1. Top 5 specialized STEM research university.
2. Top 5 public university for highest starting salaries for graduates.
3. Top 5 among national universities for supporting students with high financial need.
4. Top 5 “best values” among national public universities.
5. No. 12 public university as rated by the guidance counselors at America’s top 800 high schools.

TOP
5
things
YOU need
to KNOW

Who is Missouri S&T?

- 7,200 students
- Average student ACT/SAT:
upper 10% in nation
 - Average ACT: 27.7
- +70% of freshmen from
upper 20% of HS class
- 23% out-of-state enrollment
- +90% 5-year average
placement rate at graduation
- 5-year average starting
salary: +\$57,475

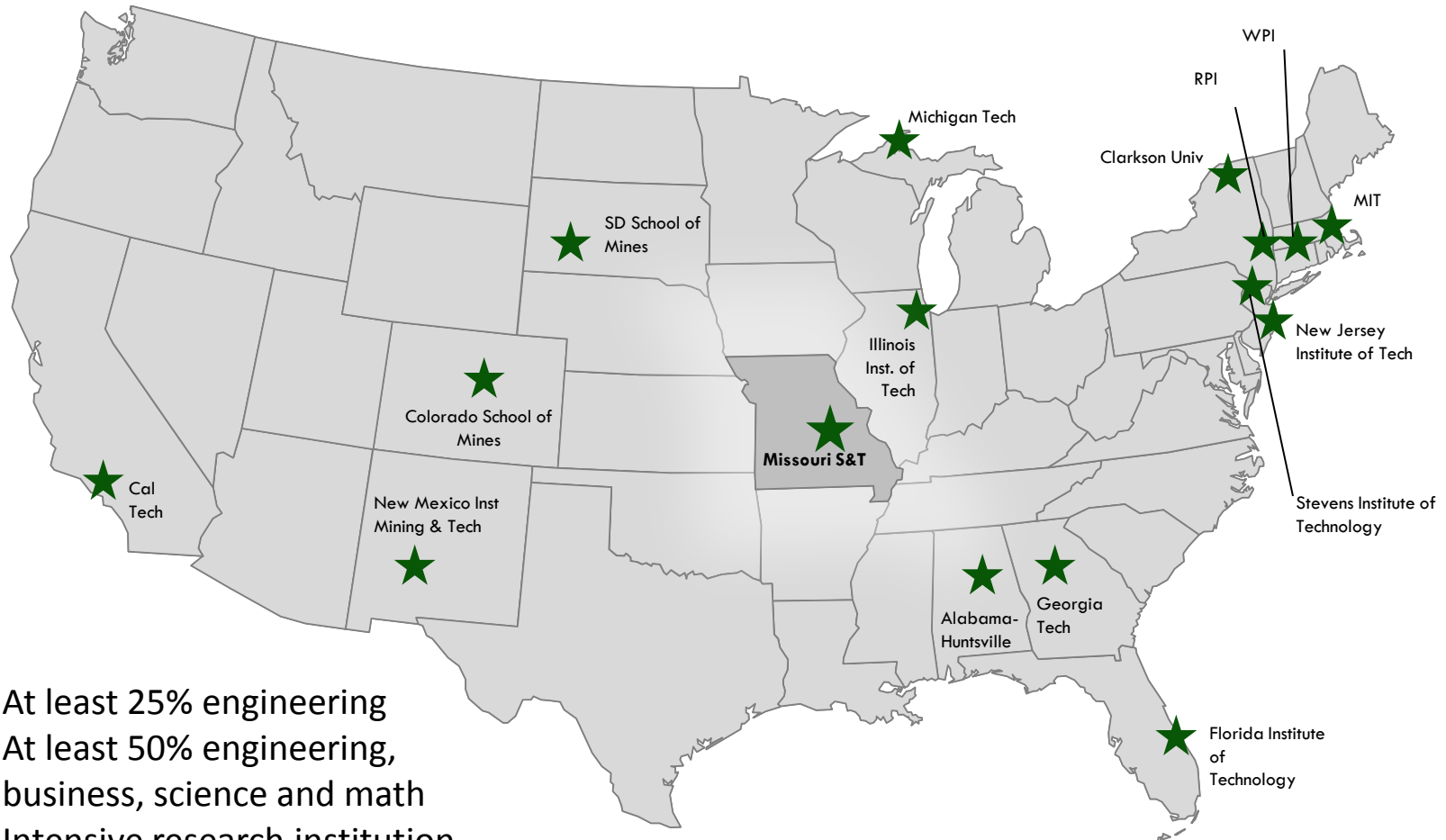
Current Undergraduate Students

- Average parent income:
\$ 78,250
- Family incomes below \$50,000:
+35%
- First generation college
students:
29%
- Pell Grant eligible students:
25%

Graduation Statistics

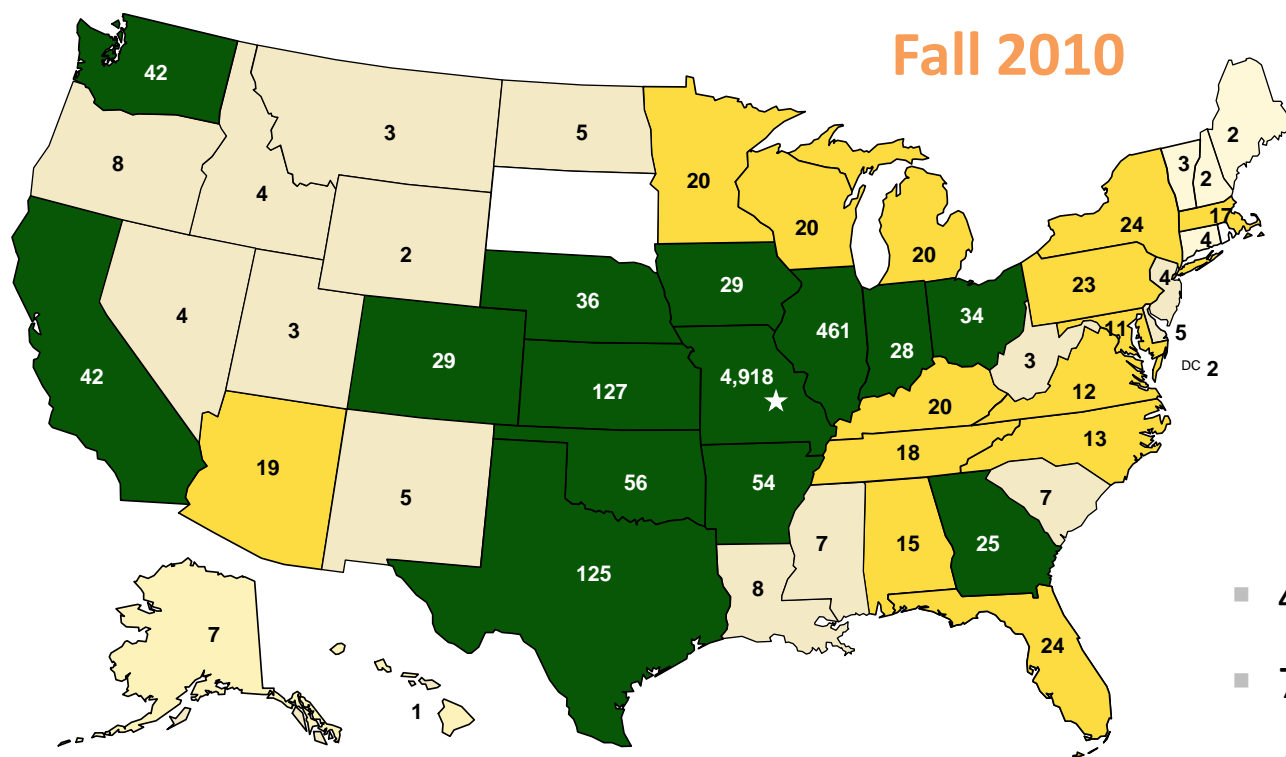
- Approximate indebtedness:
\$ 23,000
- Average starting salary:
\$ 57,475

America's 16 Technological Research Universities



- At least 25% engineering
- At least 50% engineering, business, science and math
- Intensive research institution
- Cutting-edge graduate program

Students' Home States



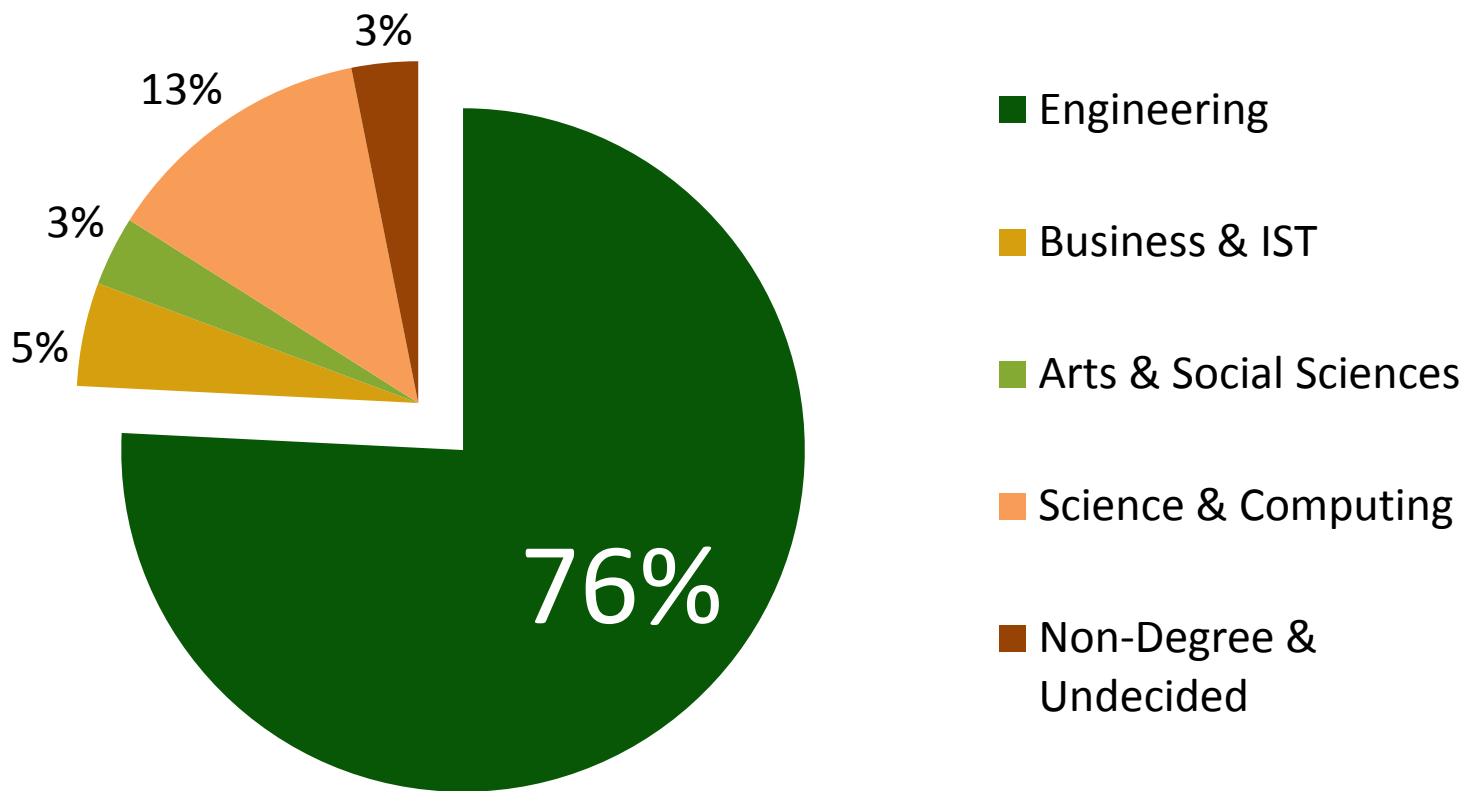
Total Enrollment

- 48 states & 51 nations
- 70% Missouri residents
- 10% minority students
- 9% international students

Missouri S&T: 90% engineering, science and computing majors

19th in nation for largest undergraduate engineering enrollment (ASEE Prism 2010)

19th in nation for number of BS engineering degrees granted (ASEE Prism 2010)



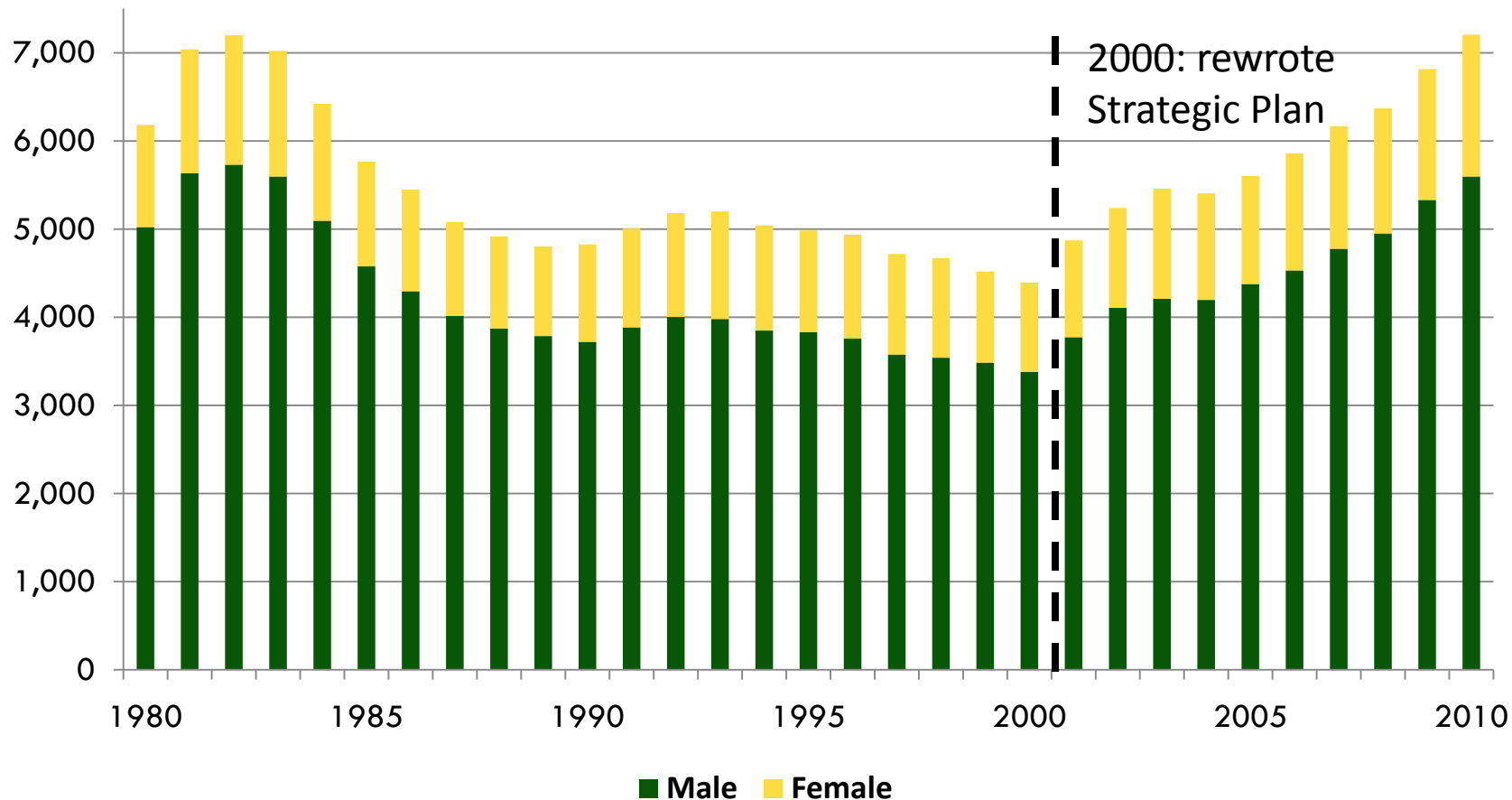
Fun Facts

- 80% of grads “actively involved” in student organizations
 - 1-2 organizations (37%)
 - 2-3 organizations (14%)
 - 3-4 organizations (14%)
 - 5+ organizations (15%)
- 60% held a leadership position
- 30% changed their major at least once
- How likely to attend graduate school?
 - Very good chance (56%)
 - Some chance (23%)
 - Very little chance (12%)
 - No chance (7%)
 - Haven’t considered (1%)
 - *24% went to grad school directly after completing a B.S.*



Our Challenge

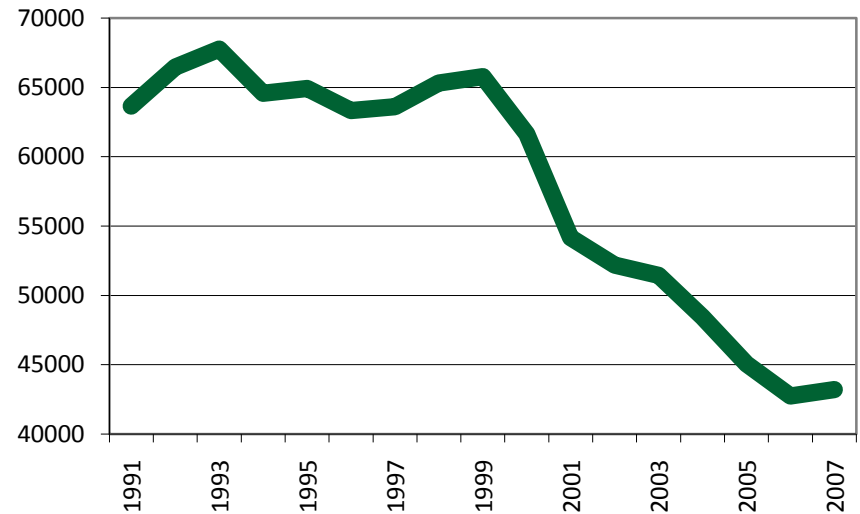
Enrollment Growth



38% Total Enrollment Growth: 2000: 4,626 2010: 7,206

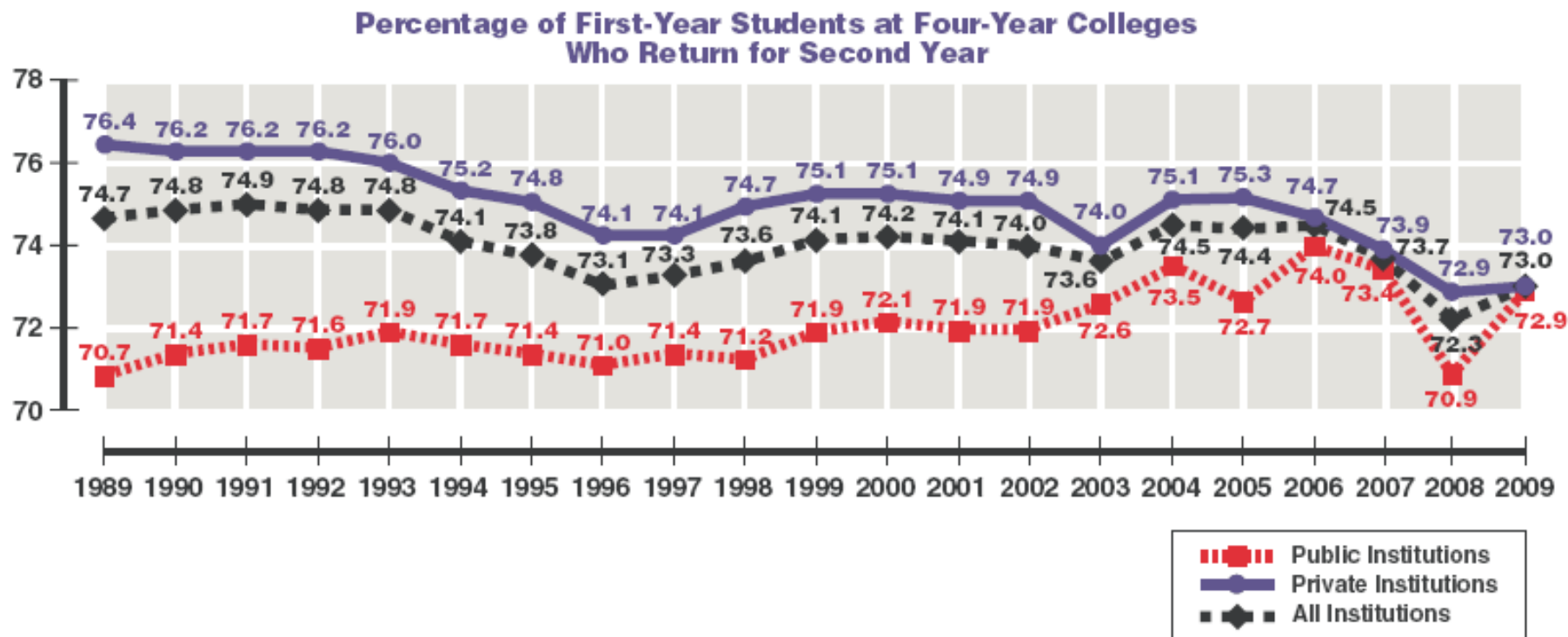
Since 2004: 60% of growth due to increased retention

Record Growth vs. Declining Interest

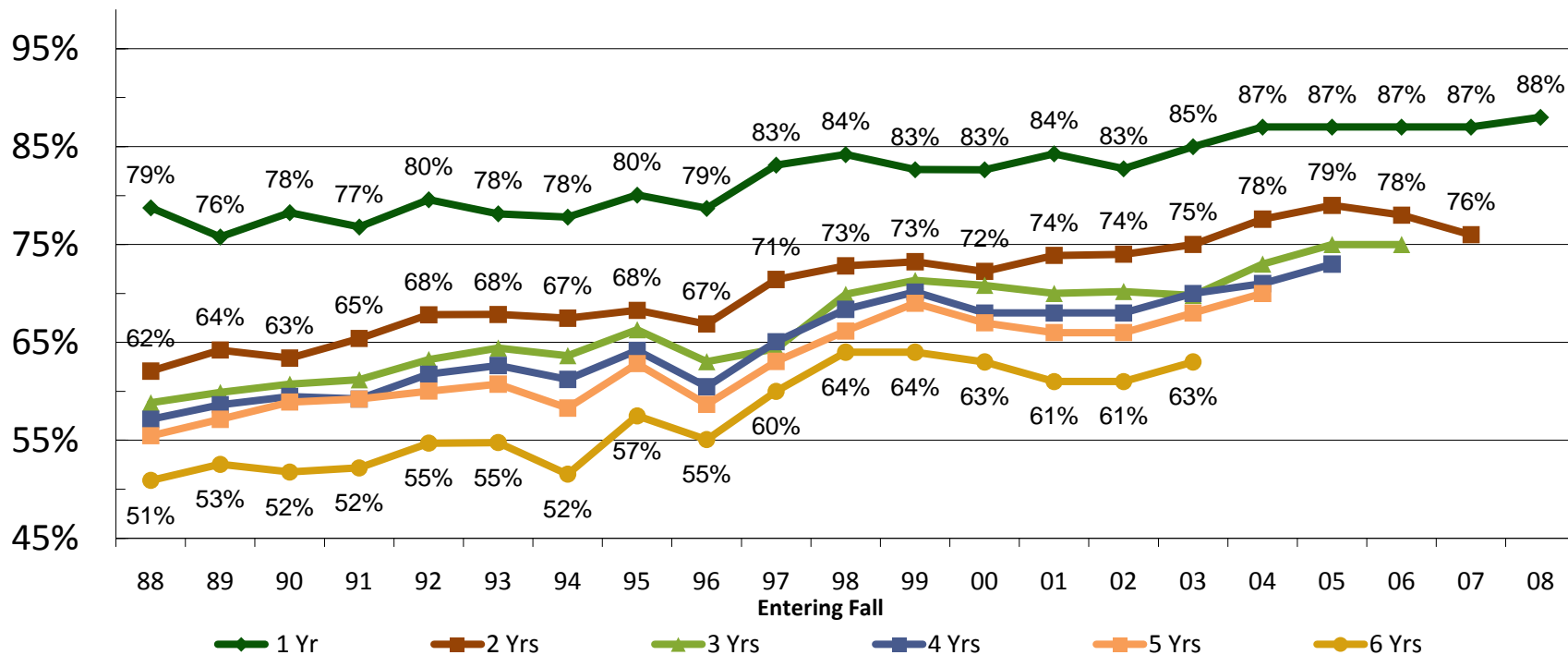


“Succeeding while Swimming Against the Tide”

% of 1st Year Students at 4-Year College Who Return for 2nd Year



Freshman Retention and Graduation Rates

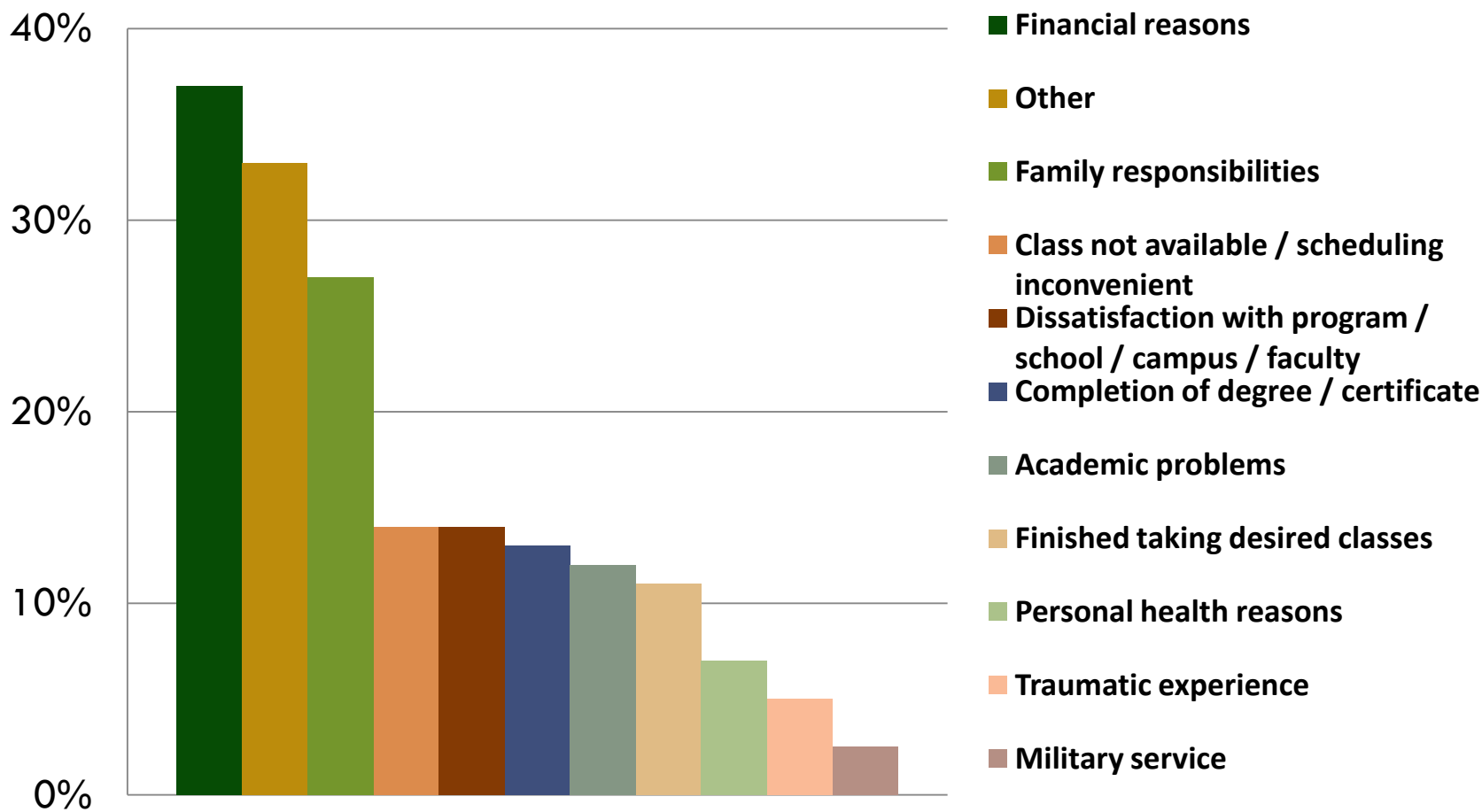


- Average 1st to 2nd year retention for NCSSSMST students is identical to all-campus average
- 4-year graduation rate for NCSSSMST students is +30% higher than all-campus average

S&T: 12% “drop out” rate after the first year

- **23.8% “drop out” rate for public Ph.D. granting institutions**
(July 2001 ACT National Collegiate Dropout and Graduation Rates report)
- **18.6% “drop out” rate for “selective” institutions (average ACT 22-27)** *(July 2001 ACT National Collegiate Dropout and Graduation Rates report)*
- **31% of all students enrolled in science, mathematics, engineering and technology either transferred to a non-STEM degree or dropped out of school completely.**
(September 2001 Center for Institutional Data Exchange and Analysis)
- **13.4% of students at the participating institutions ranked as highly selective (ACT>24) dropped out.** *(September 2001 Center for Institutional Data Exchange and Analysis)*
- **15% “drop out” rate for technological research universities.**
(2008 from Education Trust’s collegeresults.org)

Financial considerations the most common reason for leaving college



Enrolled vs. Not-Enrolled

First-time freshmen class (full-time, degree-seeking)

	FS97		FS99		FS01		FS02		FS03		FS04		FS05		FS06	
	STAYED	LEFT	STAYED	LEFT	STAYED	LEFT	STAYED	LEFT	STAYED	LEFT	STAYED	LEFT	STAYED	LEFT	STAYED	LEFT
Count	576	117	562	118	584	109	652	136	737	134	733	106	767	112	810	125
%	83.1	16.9	82.6	17.4	84.3	15.7	82.7	17.3	84.6	15.4	87.4	12.6	87.3	12.7	86.6	13.4
HS GPA	Not Tracked		3.56	3.32	3.5	3.25	3.52	3.27	3.59	3.35	3.62	3.41	3.60	3.38	3.60	3.48
HS % Rank	85.9	78.2	85.1	76.5	82.1	71.6	81.5	74.0	82.4	71.9	82.0	73.7	81.6	71.6	81.3	69.3
ACT	28.4	27.1	28.0	26.2	27.1	25.3	27.5	26.5	27.4	26.3	27.2	26.2	27.3	25.7	27.2	26.3
S&T GPA	3.01	2.22	3.02	2.21	3.04	2.18	3.16	2.41	3.21	2.35	3.26	2.62	3.22	2.55	3.30	2.59

Challenges of “Academy” Students

Missouri S&T has Opening Week for freshmen, and a separate experience for transfer students

- “Academy” students are neither, or both. They are hybrids (50-60 credit hours).
- Freshmen orientation has an emphasis on team building.
- Transfer scheduling is intended for a more mature student.

Challenges for “Academy” Students

- Orientation activities introduce them to other freshmen, but not to the students who will be in their junior level classes
- Study groups in their junior level classes have already formed study groups and routines
- Instructors and advisors of “juniors” typically expect that the student “knows the ropes”
- Academy students may not find same level of assistance, support or encouragement that they are accustomed to



Identifying Solutions

- “Academic Alerts”
- LASSI
- HPI

Core Retention Assessments

Why did students who chose S&T stay or leave? Be proactive and intrusive.

- **New Student Survey** (prior to start of classes)
- **Withdrawal Survey** (prior to cancelling classes)
- **Phone/Email Survey of Non-Returning Students**
(2-4 weeks prior to start of semester and after census date to catch stop-outs)
- **Student Satisfaction Survey** (all returning students)
- **Graduating Student Survey** (prior to commencement or within the first six months after graduating)
- **LASSI Inventory** (required to close an Academic Alert)

Summary of LASSI Results

While S&T's freshman class would rank in the top 10% of all U.S. universities, new students...

- are bright but have never been challenged at the level they're about to experience
- are great "memorizers" but not great "analyzers"
- aren't used to taking their textbooks home
- aren't used to reading
- aren't great at picking out main ideas
- are easily distracted and don't manage their time well
- aren't good at dealing with anything but success

The university...

- expected students to change without helping them
- was losing great, high-qualified students that nearly any other university would love to have
- struggled with motivating students to succeed in foundational courses
- struggled with getting new students to make friends
- struggled with getting students to work together in teams
- struggled to help students set realistic career goals

Academic Alert System

Catch students BEFORE they sink (and develop future interventions)

5th Week “Academic Alerts” Issued to General Chemistry Students

- To close their “Academic Alert” students were asked to take the LASSI (Learning and Study Skills Inventory)
- Course Enrollment: 771
- Alerts Issued: 325 (42%)
- Took the LASSI: 267 (82%)

LASSI Results from General Chemistry

- Self test reviewing and preparing for class (SFT) 65.54%
- Attitude and interest/study aids (ATT/STA) 60.67%
- Testing strategies and preparing for tests (TST) 49.81%
- Time management for academic tasks (TMT) 49.44%
- Anxiety and worry about school performance (ANX) 47.57%
- Concentration/motivation (CON/MOT) 36.70%
- Selecting main ideas (SMI) 30.34%
- Information processing (INP) 27.34%

Hogan Personality Index

Measure of personality used to predict job performance

The screenshot shows the Hogan Personality Inventory (HPI) website. The browser window title is "Hogan Personality Inventory | Hogan Assessments - Windows Internet Explorer". The address bar shows "http://www.hoganassessments.com/hogan-personality-inventory". The website features a navigation menu with links: PRODUCTS, SERVICES, ASSESSMENTS, WORLDWIDE, TRAINING, RESOURCES, ABOUT, and CONTACT. The main content area is titled "HPI" and includes a list of products: HPI, HDS, MVP, and HBRI. A detailed description of the HPI is provided, stating it is a measure of normal personality used to predict job performance. A list of features and benefits is also shown, including reports, scales, and a download brochure. On the right side, there are "QUICK LINKS" to a newsletter, bookstore, news, events, 12 questions, blog, distributors, and contact. Below these are social media icons and a "CONTACT US" form with fields for Name, Company, Email, and Phone.

Hogan Assessments

PRODUCTS SERVICES ASSESSMENTS WORLDWIDE TRAINING RESOURCES ABOUT CONTACT

HOME :: ASSESSMENTS :: HPI

HPI

- HPI
- HDS
- MVP
- HBRI

The Hogan Personality Inventory (HPI) is a measure of normal personality and is used to predict job performance. The HPI is an ideal tool to help you strengthen your employee selection, leadership development, succession planning, and talent management processes.

The HPI was the first inventory of normal personality based on the Five-Factor Model and developed specifically for the business community. The HPI is a high-quality psychometric evaluation of the personality characteristics necessary for success in careers, relationships, education, and life.

- FEATURES & BENEFITS
- REPORTS & APPLICATIONS
- PRIMARY SCALES
- OCCUPATIONAL SCALES
- DOWNLOAD BROCHURE

Whether you are implementing an organizational assessment process...

QUICK LINKS

- Newsletter
- Bookstore
- News
- Events
- 12 Questions
- Blog
- Distributors
- Contact

CONNECT

CONTACT US

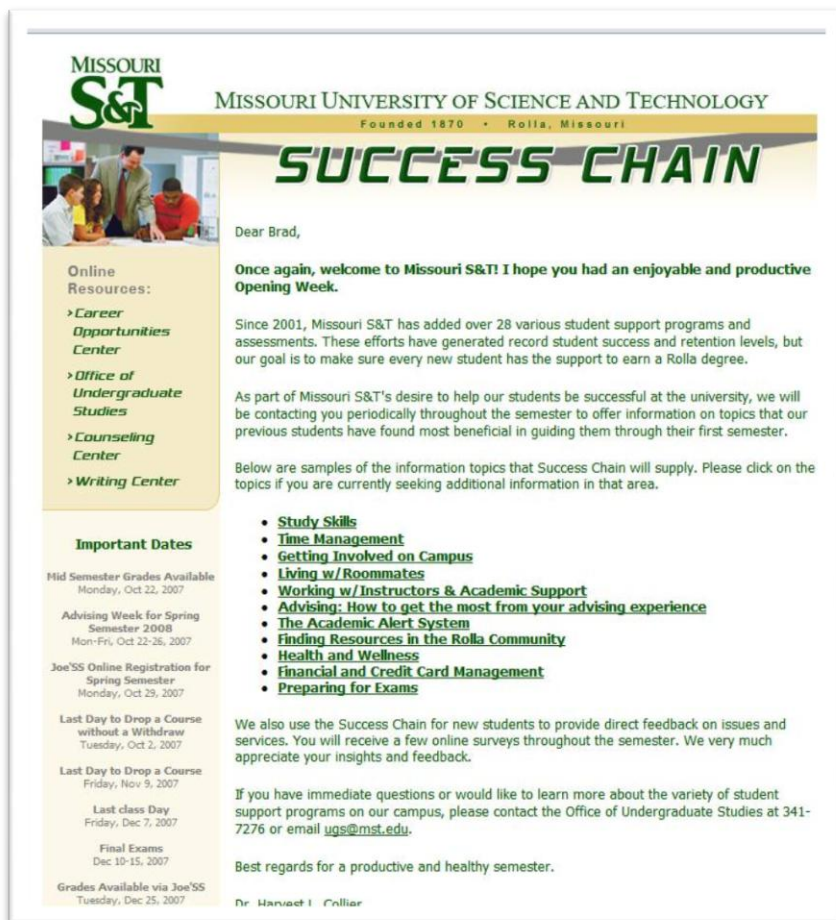
Name: *

Company: *

Email: *

Phone: *

Putting Data Into Action



MISSOURI S&T
MISSOURI UNIVERSITY OF SCIENCE AND TECHNOLOGY
Founded 1870 • Rolla, Missouri

SUCCESS CHAIN

Dear Brad,

Once again, welcome to Missouri S&T! I hope you had an enjoyable and productive Opening Week.

Since 2001, Missouri S&T has added over 28 various student support programs and assessments. These efforts have generated record student success and retention levels, but our goal is to make sure every new student has the support to earn a Rolla degree.

As part of Missouri S&T's desire to help our students be successful at the university, we will be contacting you periodically throughout the semester to offer information on topics that our previous students have found most beneficial in guiding them through their first semester.

Below are samples of the information topics that Success Chain will supply. Please click on the topics if you are currently seeking additional information in that area.

- [Study Skills](#)
- [Time Management](#)
- [Getting Involved on Campus](#)
- [Living w/Roommates](#)
- [Working w/Instructors & Academic Support](#)
- [Advising: How to get the most from your advising experience](#)
- [The Academic Alert System](#)
- [Finding Resources in the Rolla Community](#)
- [Health and Wellness](#)
- [Financial and Credit Card Management](#)
- [Preparing for Exams](#)

We also use the Success Chain for new students to provide direct feedback on issues and services. You will receive a few online surveys throughout the semester. We very much appreciate your insights and feedback.

If you have immediate questions or would like to learn more about the variety of student support programs on our campus, please contact the Office of Undergraduate Studies at 341-7276 or email ugs@mst.edu.

Best regards for a productive and healthy semester.

Dr. Harriet L. Collier

Online Resources:

- > [Career Opportunities Center](#)
- > [Office of Undergraduate Studies](#)
- > [Counseling Center](#)
- > [Writing Center](#)

Important Dates

Mid Semester Grades Available
Monday, Oct 22, 2007

Advising Week for Spring Semester 2008
Mon-Fri, Oct 22-25, 2007

Joe'SS Online Registration for Spring Semester
Monday, Oct 29, 2007

Last Day to Drop a Course without a Withdraw
Tuesday, Oct 2, 2007

Last Day to Drop a Course
Friday, Nov 9, 2007

Last class Day
Friday, Dec 7, 2007

Final Exams
Dec 10-15, 2007

Grades Available via Joe'SS
Tuesday, Dec 25, 2007

- Based on HPI data
- Email communications based on
 - Prudence
 - Adjustment
 - Sociability



Implementing Change

Keeping Students Engaged

CORE ENROLLMENT PRINCIPLE: The most successful retention programs clearly address students' needs and regularly **ENGAGE** students in academic and non-academic programs

- ACT Policy Report: *The Role of Academic and Non-Academic Factors in Improving College Retention*, indicates that many colleges' retention efforts are too narrowly focused.
- **Academic help alone is not enough to keep many students in school.** These students also need individual support to feel connected to the campus community. Colleges, however, may focus on only academic or non-academic support, rather than both.

Between 2000 and 2009, S&T made 35 major policy, programming and assessment changes to enhance student engagement and retention.

Key Retention Understandings

- There is **no Magic Bullet** – Retention programs must be designed to meet student needs and have an academic success focus
- Retention programs must be multi-faceted
- Don't ignore socio-economic factors
- Quick improvements can be made by examining processes and points of student interaction

Exit and Phone Survey Results

Why students leave

Personal Reasons:

- Family issues – needed at home
- Girlfriend/boyfriend issues
- Bad & overpriced dorm & food
- Too small of a town/nothing to do
- Just not the right fit
- Wanted to get away from home
- Wanted to move closer to home

Academic Issues:

- Too hard/grades lower than expected
- Changed major/preferred major at another institution
- Felt university was too focused on engineering/not enough different liberal arts programs/classes
- Advisor/Instructor not helpful enough

Financial Issues:

- Cost/Financial
- Cannot borrow enough
- Parents will not pay

Note: Some students reported multiple reasons.

Students' Plans

Do you plan to return to S&T?

- 68% students do not plan to return to S&T
- 25% plan to return
"Stop-outs" includes students leaving for military service
- 7% were not certain of their plans

What would have kept you at S&T?

- Nothing would have kept me at S&T
- More money or financial aid
- More majors or non-engineering degrees
- Higher or better grades

Would you recommend S&T to another student?

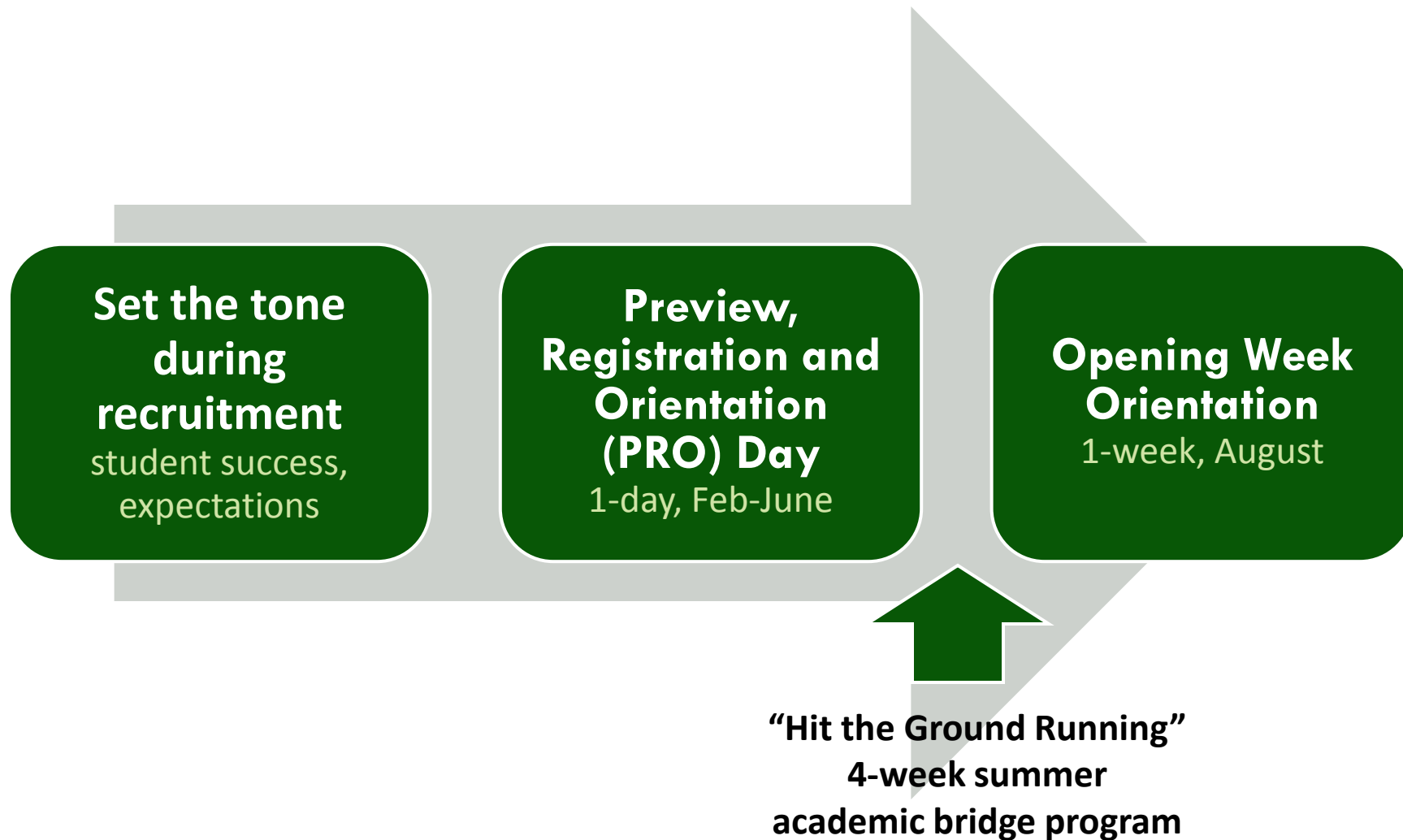
- 38% would recommend to another student unconditionally
- 39% would recommend for engineering/science/math only
- 4% would recommend with a caveat (it's not for everyone, if they wanted to go away)
- 5% said no



Orientation Is Key



3-Step Orientation



Why Change Orientation?

Problem: Majority of students were not attending

- Limited use of campus resources
- Limited campus and community involvement
- No incentive or commitment to participate
- Students changing/no tools to evaluate change
- Important topics not addressed
- Lecture style presentations
- Weak social interaction
- Lacked expectations and outcomes
- Lacked challenging & interesting activities
- No common learning experience
- Not Fun

**Solution: Give students what they want
but also what they need!**

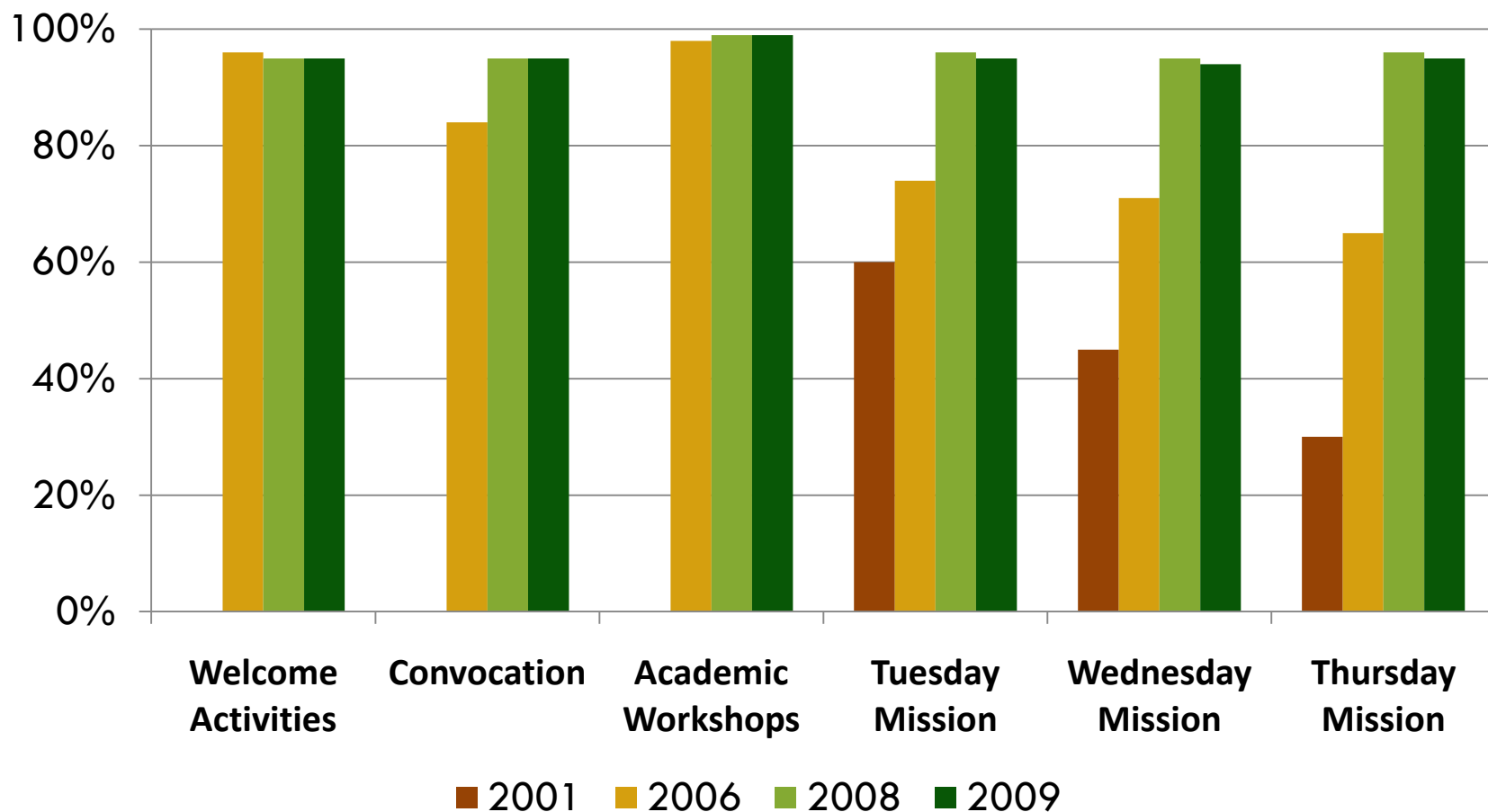
Opening Week Learning Objectives

- Begin the learning process
- Involve collaborative learning
- Common experience
- Higher retention
- Interact and bond with students, faculty and staff
- Empower students to develop character
- Introduce campus resources
- Understand expectations
- Foundation for future success
- Promote teamwork
- Respect cultural backgrounds and differences
- Understand importance of communication skills
- Other skills developed:
 - Critical Thinking,
 - Problem Solving,
 - Brainstorming, and
 - Conflict Resolution.
- FUN!

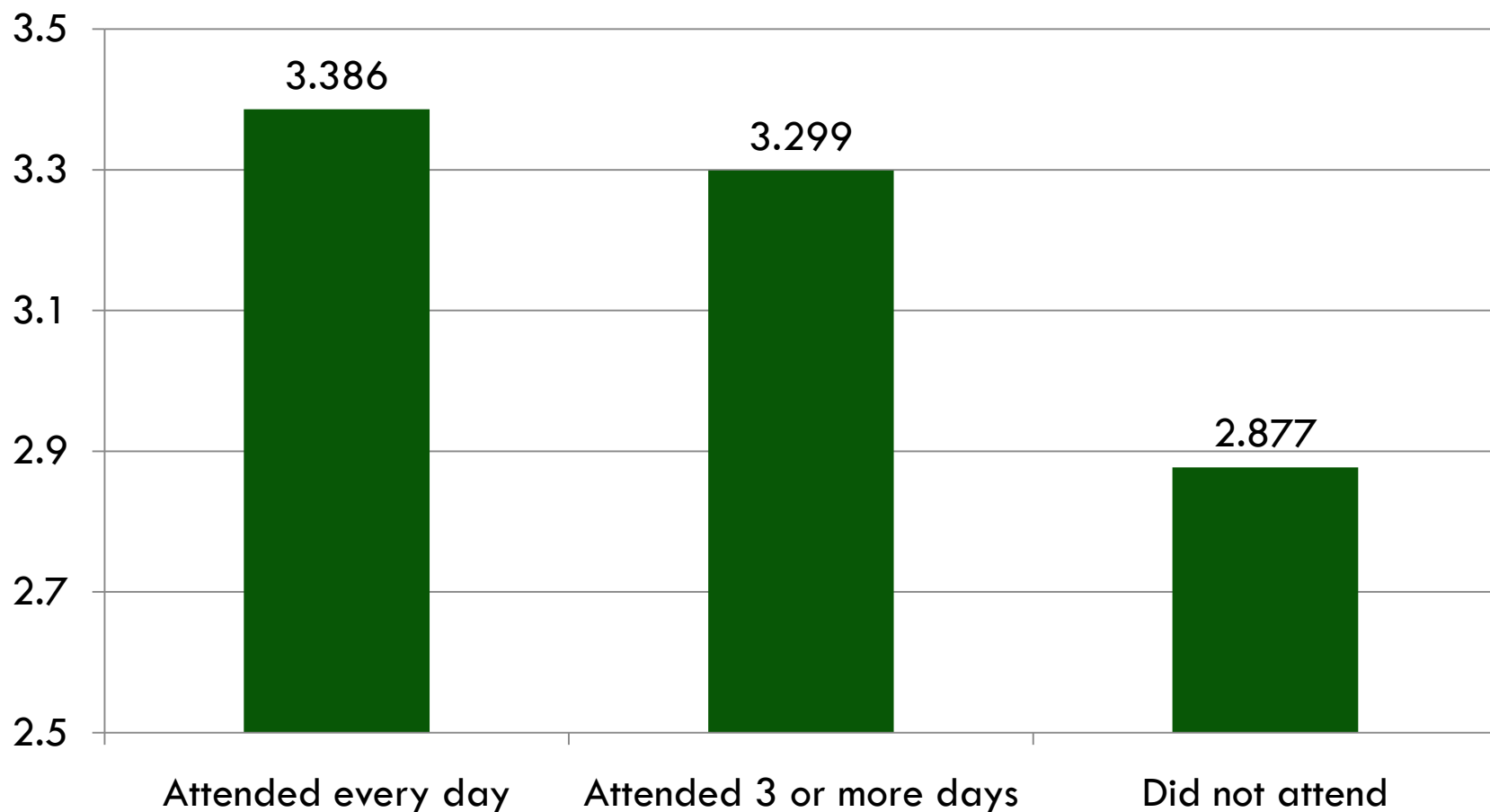
Build a Program Around Your “Purple Cow”



Attendance at Opening Week



Correlation Between Opening Week Participation and 1st Semester GPA





MISSOURI UNIVERSITY OF SCIENCE AND TECHNOLOGY

Mix of fun and formal:

- Welcome picnic
- Convocation
- Academic Workshops
- ProjectX
- Missions
- Network with faculty
- Night activities
- Mini career fair with key employers



Academic Workshops



**Help new students
understand the realities
of academic life at
Missouri S&T**

- Review
- Problem Solving Workshop
- Intro to Chem Safety Lab
- Power of Communication
- Leadership the Miner Way
- CPS (College Program for Success)



Faculty Interaction

- Civility in the classroom and on-campus
- Expectations
- Diversity and Inclusion
- Values
- Casual interaction



Project X

- 70 teams receive radio-controlled chassis and manual
- Teams race against time to compete in the “**Missions**” to seize “**Miner Bucks**” for gadgets at “**The Shop**” to complete **ProjectX**
- Teams build vehicle focused on objectives (bridge, etc.)
- Focus on judging formula:
 - Deliverables/journals
 - Aesthetic
 - Obstacle course
 - Presentations
- Limited materials and time
- No limitations on design, creativity and presenting projects
- Inclusive (all majors)



Missions

Professional Development

- COC Information
- Mini career fair
- Campus Professional Information
- Corporations

Social Commotion

- Social (alcohol, sex, etc)
- Health
- Diversity
- Values

Amazing Miner Race campus resources

- Police Department
- Academic assistance
- Student Affairs
- Student Life
- IT
- Diversity and inclusion
- Student Union Board
- Alumni
- Study abroad
- Community involvement

Opening Week Outcomes

- Students had a great time and made friends
- Interaction with faculty, staff and upperclassmen
- More students were informed about expectations, campus resources and programs than ever before for their success
- Campus involvement
- Introduced S&T traditions
- Upperclassmen leadership experience
- Built a strong foundation to be successful
 - Third week/first semester retention rate increased.
 - First semester freshmen GPA increased.

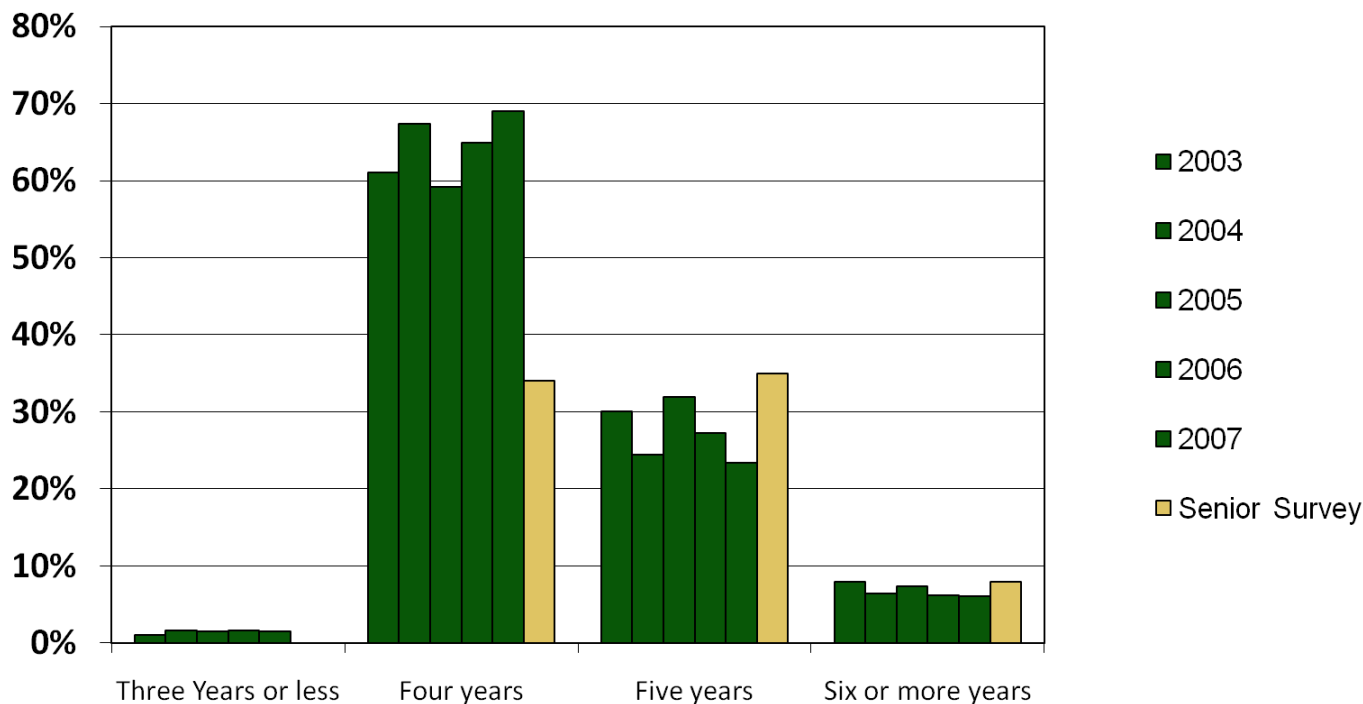
Issues Addressed:

What does it take to be successful at a premier university?

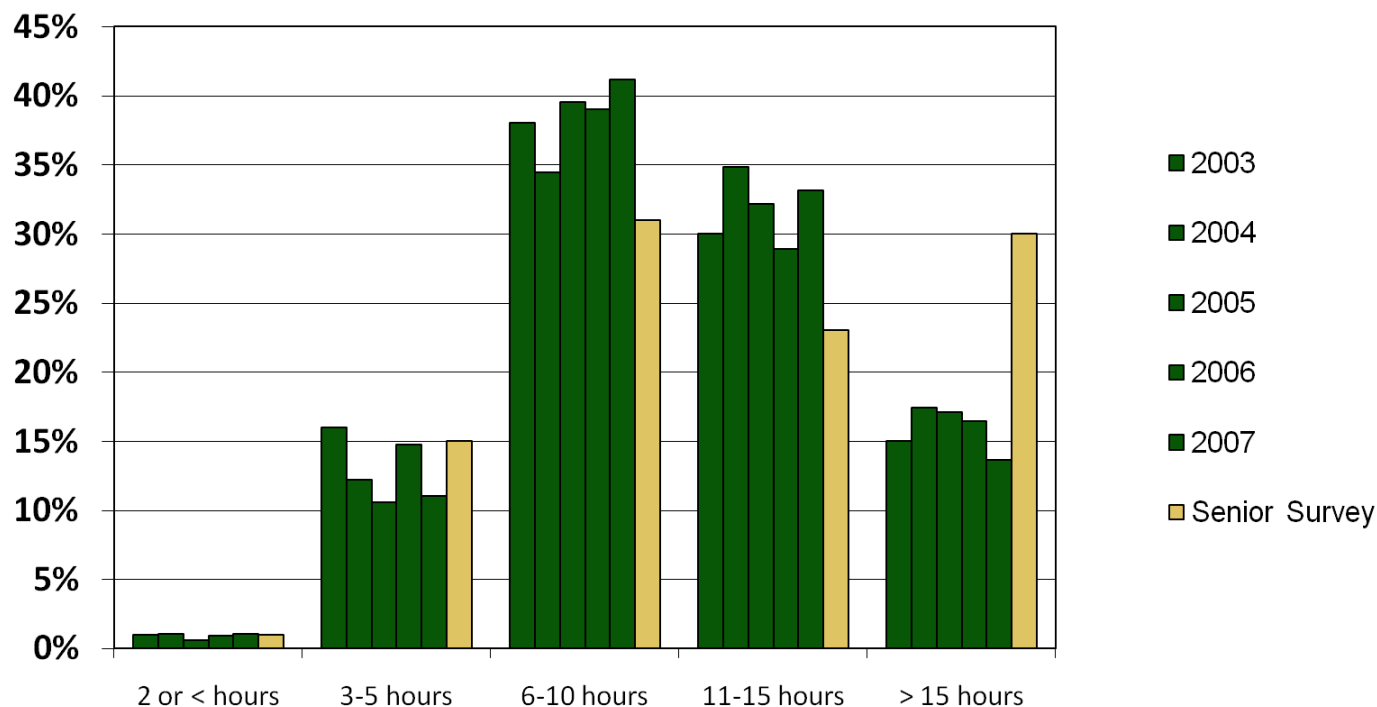
- Teamwork
- Communication
- Life-long learning
- Creativity
- Ability to use math and computers and tackle tough challenges



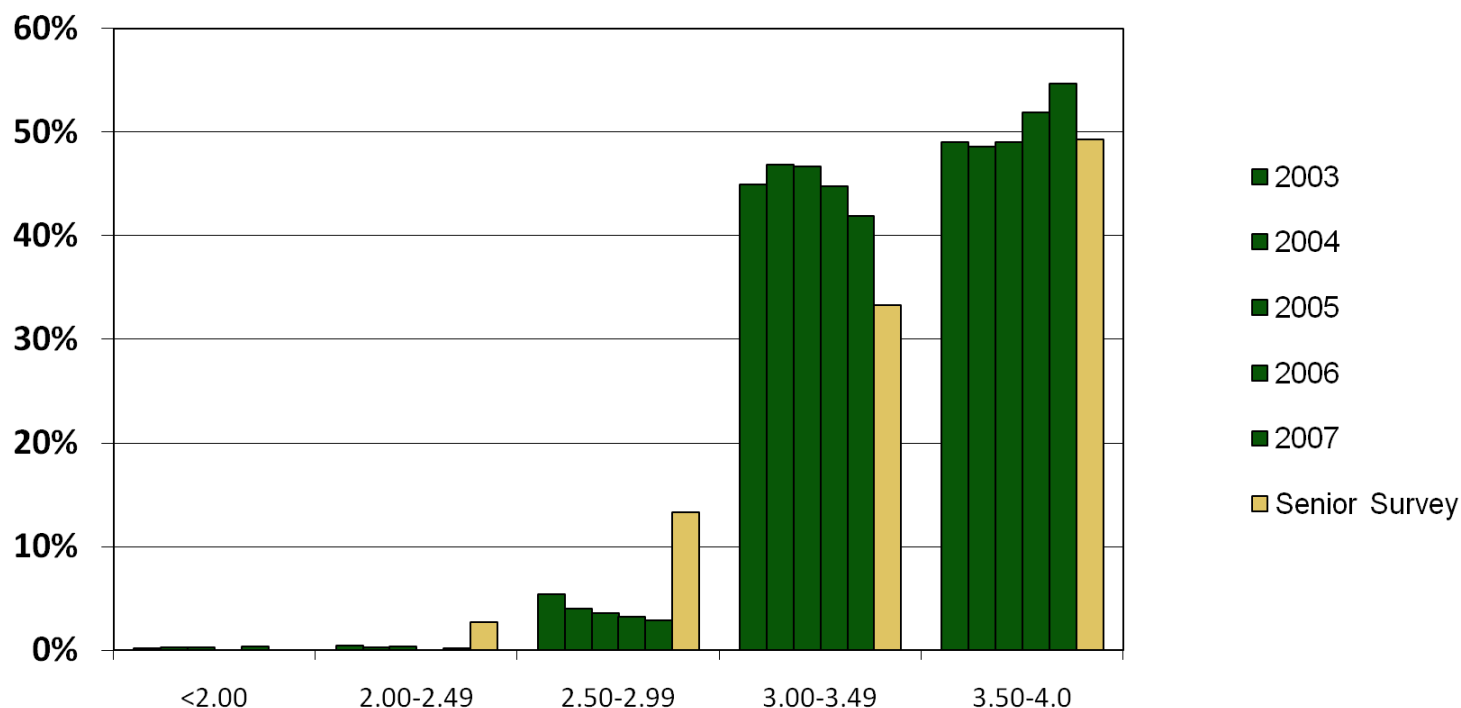
“I expect to complete my degree at Missouri S&T in...”



“I expect to study ____ hours
per week at S&T.”



“By the end of your first year at S&T, I expect my GPA to be...”





Discussion