



Using NSSE to Understand Students' Experiences in the Agricultural and Related Sciences

Presentation at the Joint Annual Meeting of ADSA and ASAS , July 11, 2006



**National Survey
of Student Engagement**

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Engagement Quiz

- ◆ What percentage of first-year students from agriculture and related sciences frequently (often or very often) worked with classmates outside of class to prepare class assignments?

◆ 21%

◆ 32%

◆ 40%

◆ 54%



NSSE 2005 across all fields: 43%



Engagement Quiz

◆ What percentage of first-year students from agriculture and related sciences at least sometimes worked with faculty on activities on than coursework?

◆ 8%

◆ 27%

◆ 42%

◆ 53%



NSSE 2005 across all fields: 44%



Engagement Quiz

- ◆ What percentage of seniors from agriculture and related sciences spent over 20 hours per week preparing for their classes?

◆ 9%

◆ 13% ←

◆ 24%

◆ 32%

NSSE 2005 across all fields: 21%



Engagement Quiz

◆ What percentage of seniors from agriculture and related sciences worked on a research project with a faculty member during college?

◆ 10%

◆ 13%

◆ 21%

◆ 29%



NSSE 2005 across all fields: 21%

Overview

- ◆ Description of student engagement
- ◆ Description of NSSE
- ◆ Some comparisons by field of study
- ◆ Some ideas and questions



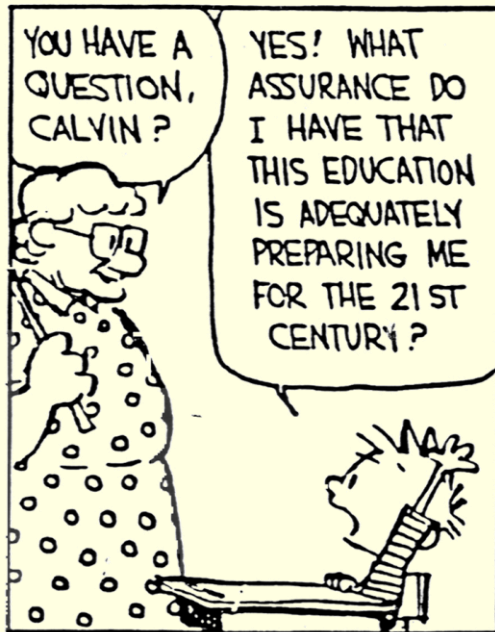


National Survey of Student Engagement

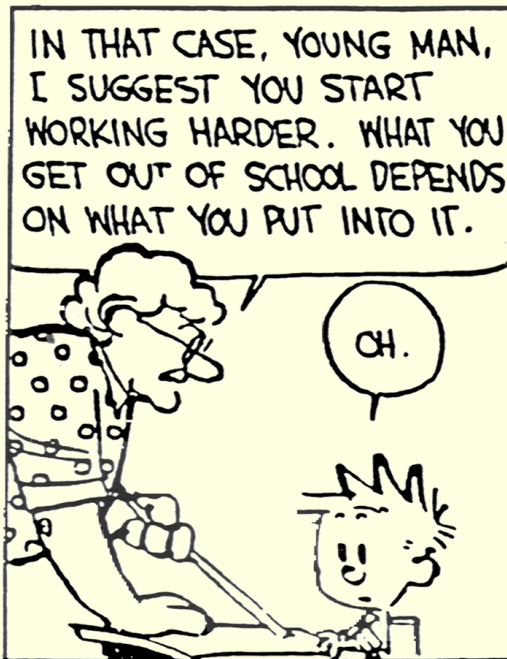
**What is Student
Engagement?**



Calvin & Hobbes



AM I GETTING THE SKILLS I'LL NEED TO EFFECTIVELY COMPETE IN A TOUGH, GLOBAL ECONOMY? I WANT A HIGH-PAYING JOB WHEN I GET OUT OF HERE! I WANT OPPORTUNITY!





Student Engagement is...

... the time and energy students devote to educationally sound activities inside and outside the classroom, and the policies and practices that institutions use to induce students to take part in these activities.

George Kuh, *Change*, March/April 2003



Two Components of Student Engagement

- ◆ What **students** do—time and energy devoted to educationally purposeful activities
- ◆ What **institutions** do—using effective educational practices to induce students to do the right things





Lessons from the Research

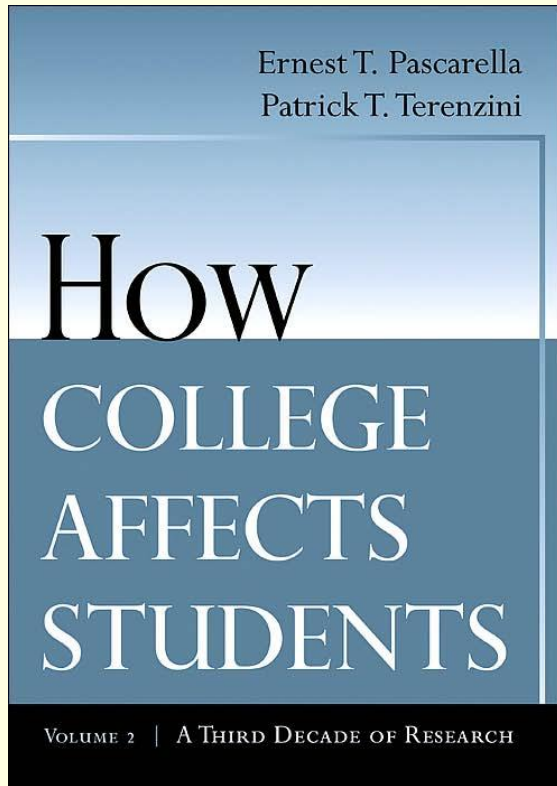
- What matters most to desired outcomes is what students **do**, not who they are
- ◆ A key factor is the **quality of effort** students devote to educationally purposeful activities
- ◆ Educationally effective institutions channel student energy toward the right activities

The research is unequivocal: students who are actively involved in both academic and out-of-class activities gain more from the college experience than those who are not so involved.

**Ernest T. Pascarella & Patrick T. Terenzini,
*How College Affects Students, 1991***



Engagement Really Matters



Because individual effort and involvement are the critical determinants of college impact, institutions should focus on the ways they can shape their academic, interpersonal, and extracurricular offerings to encourage **student engagement**.

Pascarella & Terenzini,
How College Affects Students, 2005, p. 602



Promise of Student Engagement

(I)f faculty and administrators use principles of good practice to arrange the curriculum and other aspects of the college experience, students would... write more papers, read more books, meet with faculty and peers, and use information technology appropriately, all of which would result in greater gains in such areas as critical thinking, problem solving, effective communication, and responsible citizenship.

George D. Kuh et al, *Student Success in College*, 2005



National Survey of Student Engagement

What is NSSE?



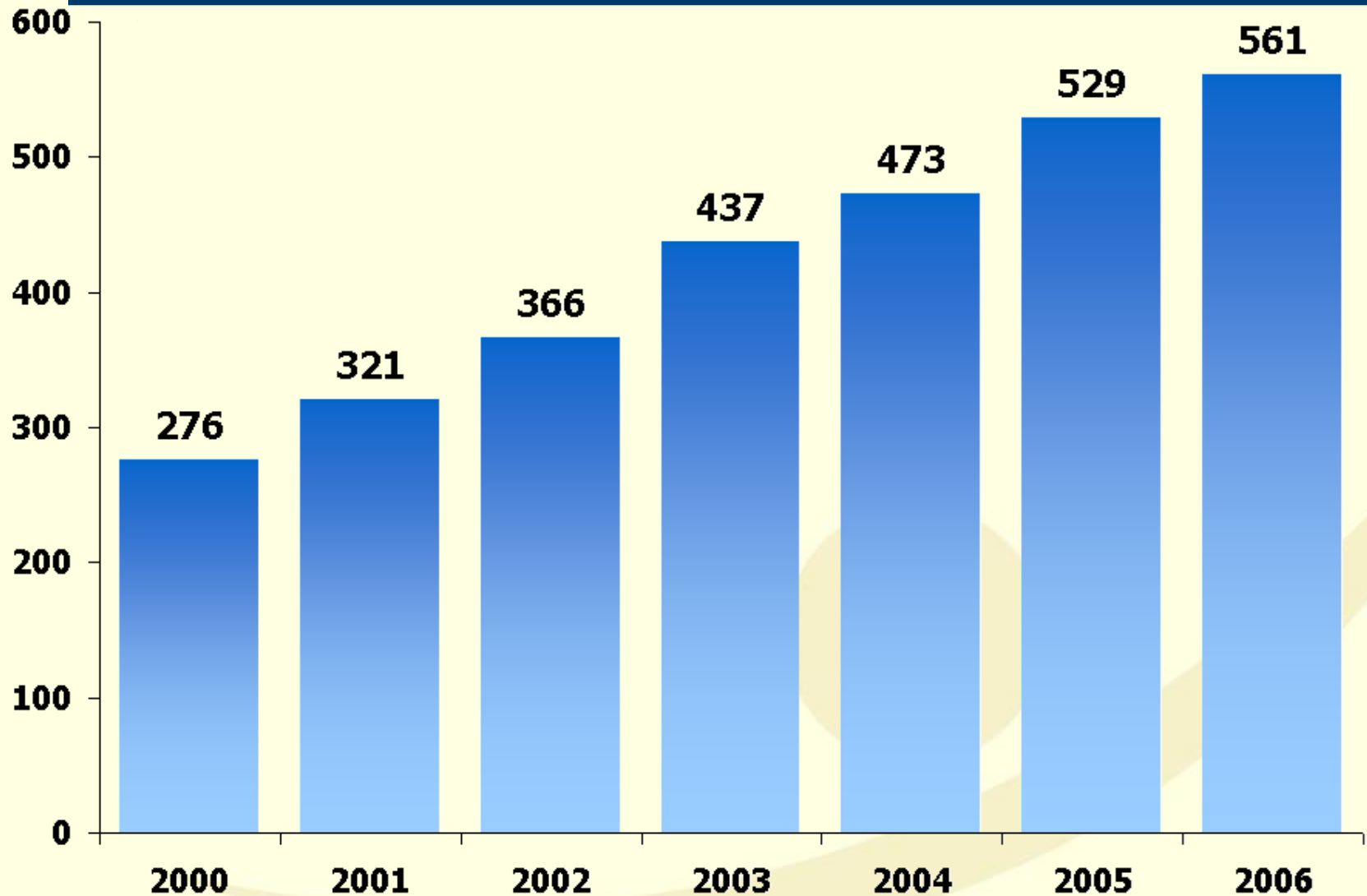


NSSE Summary

- ◆ Core objectives: Institutional improvement, documenting effective educational practices, public advocacy
- ◆ Annual survey of first-year students and seniors at four-year institutions that measures students' participation in educational experiences that prior research has connected to valued outcomes
- ◆ Data collection, institutional reports, annual report
- ◆ National reports co-sponsored by The Carnegie Foundation for the Advancement of Teaching and The Pew Forum on Undergraduate Learning
- ◆ FSSE, BCSSE, LSSSE, CCSSE, HSSSE, ...



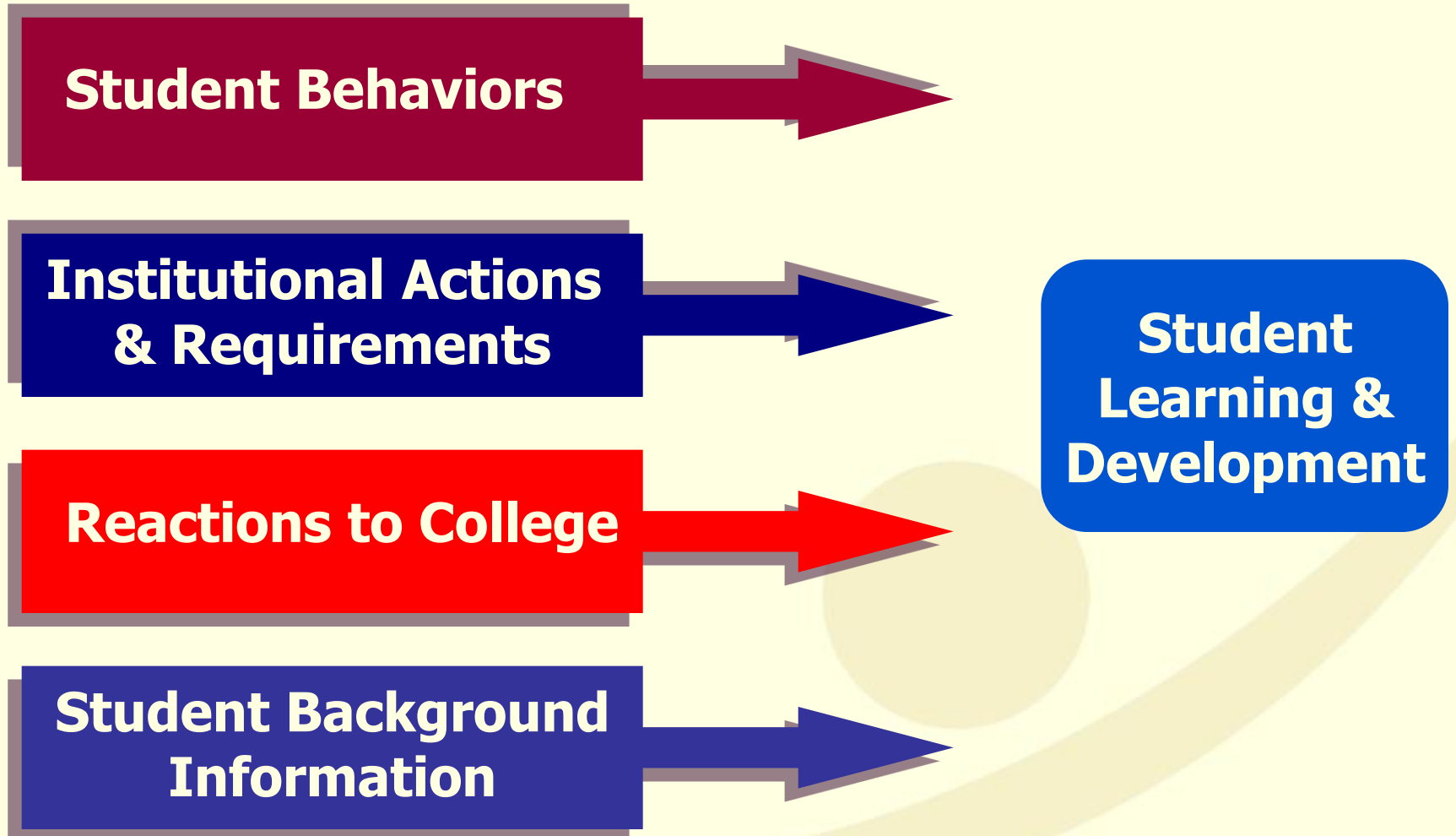
NSSE Institutions by Year





NSSE Survey Instrument

The College Student Report





National Survey of Student Engagement 2005

The College Student Report

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In your experience at your institution during the current school year, about how often have you done each of the following?

	Very often ▼	Often ▼	Some- times ▼	Never ▼
Asked questions in class or contributed to class discussions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Made a class presentation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prepared two or more drafts of a paper or assignment before turning it in	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Worked on a paper or project that required integrating ideas or information from various sources	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Included diverse perspectives (different races, religions, genders, political beliefs, etc.) in class discussions or writing assignments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Come to class without completing readings or assignments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Worked with other students on projects during class	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Worked with classmates outside of class to prepare class assignments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Continue



NSSE Survey Administration

- ◆ Third party administration (IU Center for Survey Research)
- ◆ Students surveyed in the spring
- ◆ Random sample of first-year students and seniors
- ◆ Paper and web version
- ◆ In 2005, over 650,000 students from 529 institutions were invited to participate with an average institutional response rate of 39%

The logo features a stylized blue and orange arc on the left, with three colored dots (blue, yellow, and orange) positioned along the curve. To the right of the arc, the text "NSSE Reporting" is written in a bold, blue, sans-serif font.

NSSE Reporting

- ◆ Institutional Reports
 - ◆ Respondent characteristics
 - ◆ Means and frequencies reports with peer group/consortium, Carnegie group, and national comparisons
 - ◆ Benchmark report using the same comparison groups as above for comparisons based on the indicators of effective educational practice
- ◆ Annual Report



Five Indicators of Effective Educational Practice

**Supportive
Campus
Environment**

**Enriching
Educational
Experiences**

**Level of
Academic
Challenge**

**Student
Faculty
Interaction**

**Active &
Collaborative
Learning**



National Survey of Student Engagement

**How Do Agriculture and
Related Sciences
Compare to Other Fields?**



National Survey of Student Engagement

**First-Year Students
and
Seniors**



First-Year and Senior Comparisons

- ◆ Analyses limited to students at the 64 NSSE 2005 institutions that graduated students in agriculture and related sciences in 2005 (according to IPEDS)
- ◆ Average scores on indicators of effective education practice and two outcomes are compared by field of study



Students by Field and Year

	First-Year Students	Seniors
Agricultural & Related Sciences	690	808
Biological Sciences	1,392	1,329
Business	2,549	2,886
Education	1,538	1,808
Engineering	1,649	1,795
Physical Sciences	482	533
Social Sciences	1,787	2,443
Total	10,087	11,602



Academic Challenge

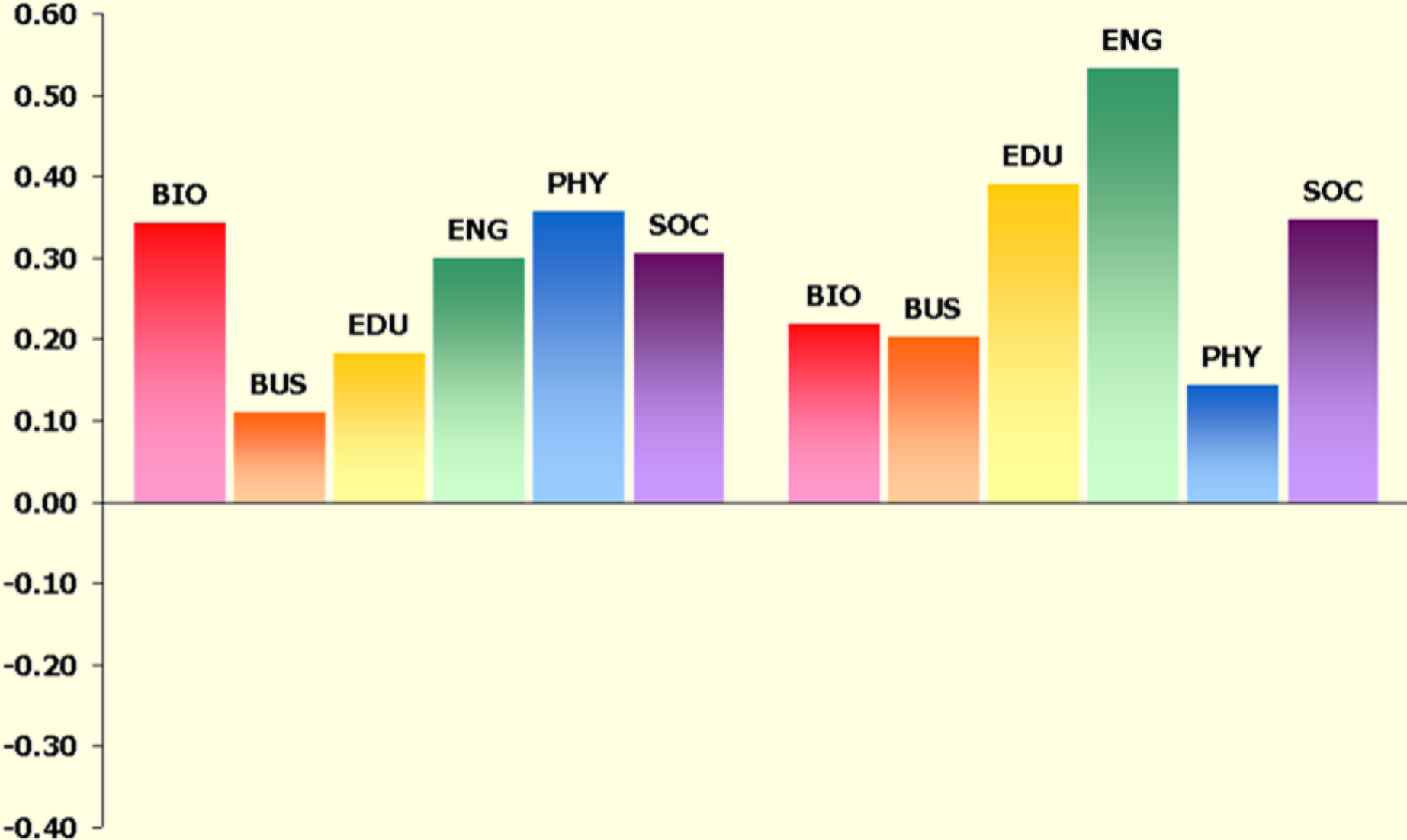
- ◆ Number of assigned readings
- ◆ Number of written papers
- ◆ Analyzing the basic elements of an idea, experience, or theory
- ◆ Synthesizing and organizing ideas, information, or experiences into new, more complex interpretations and relationships
- ◆ Making judgments about the value of information, arguments, or methods
- ◆ Applying theories or concepts to practical problems or in new situations
- ◆ Working harder than you thought you could to meet an instructor's standards or expectations

Academic Challenge

Standardized Mean Differences From Agriculture and Related Sciences

First-Years

Seniors



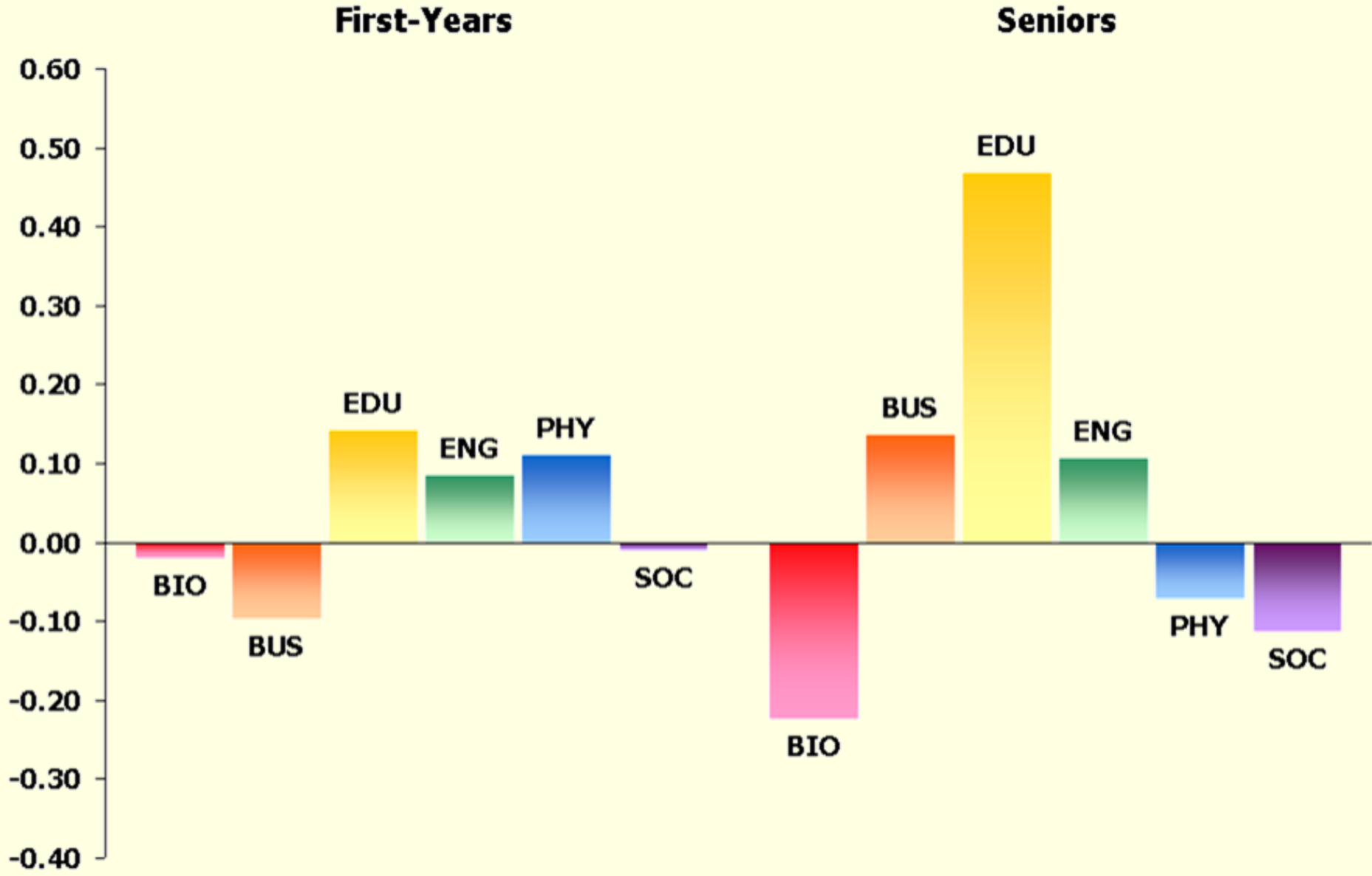


Active & Collaborative Learning

- ◆ Asked questions in class or contributed to class discussions
- ◆ Made a class presentation
- ◆ Worked with other students on projects during class
- ◆ Worked with classmates outside of class to prepare class assignments
- ◆ Tutored or taught other students (paid or voluntary)
- ◆ Participated in a community-based project (e.g., service learning) as part of a regular course
- ◆ Discussed ideas from your readings or classes with others outside of class (students, family members, co-workers, etc.)

Active & Collaborative Learning

Standardized Mean Differences From Agriculture and Related Sciences



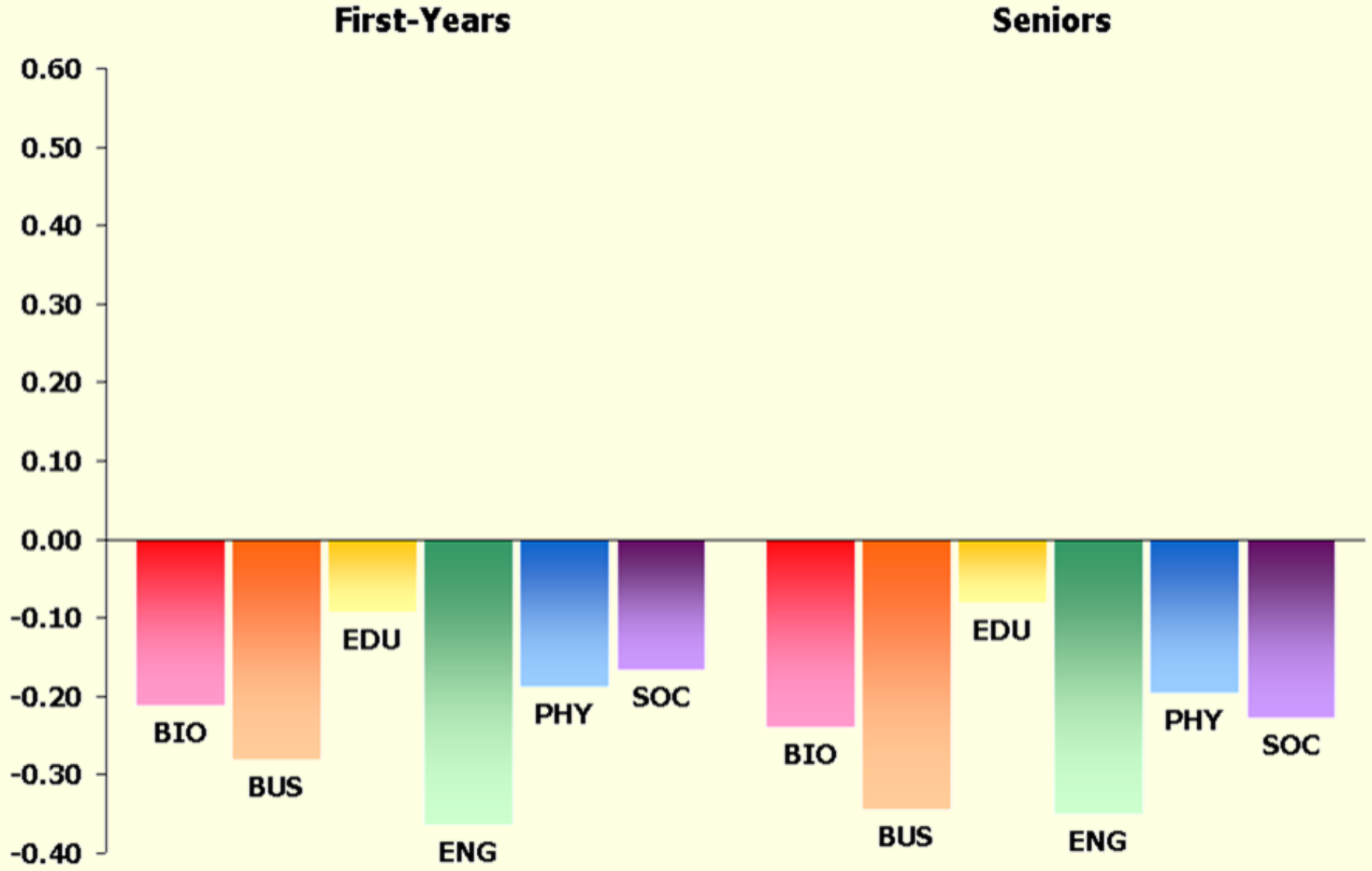


Student-Faculty Interaction

- ◆ Discussed grades or assignments with an instructor
- ◆ Discussed ideas from your readings or classes with faculty members outside of class
- ◆ Talked about career plans with a faculty member or advisor
- ◆ Received prompt feedback from faculty on your academic performance (written or oral)
- ◆ Worked with faculty members on activities other than coursework (committees, orientation, student life activities, etc.)

Student-Faculty Interaction

Standardized Mean Differences From Agriculture and Related Sciences



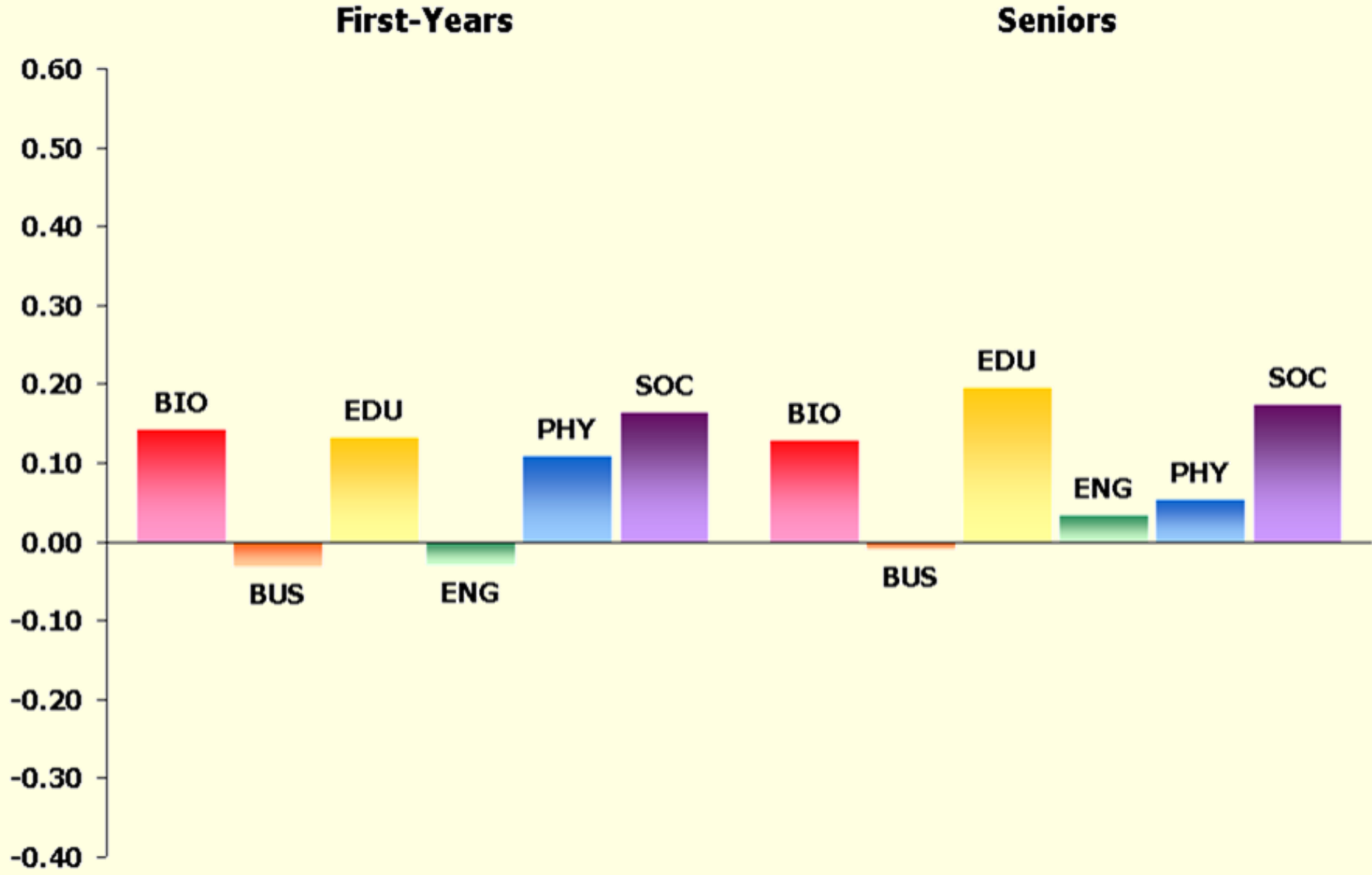


Enriching Educational Experiences

- ◆ Diversity experiences
- ◆ Participating in co-curricular activities
- ◆ Using an electronic medium to discuss or complete an assignment
- ◆ Practicum, internship, field experience, or co-op experience
- ◆ Participation in
 - ◆ Learning community
 - ◆ Community service or volunteer work
 - ◆ Foreign language coursework
 - ◆ Study abroad
 - ◆ Independent study or self-designed major
 - ◆ Culminating senior experience

Enriching Educational Experiences

Standardized Mean Differences From Agriculture and Related Sciences



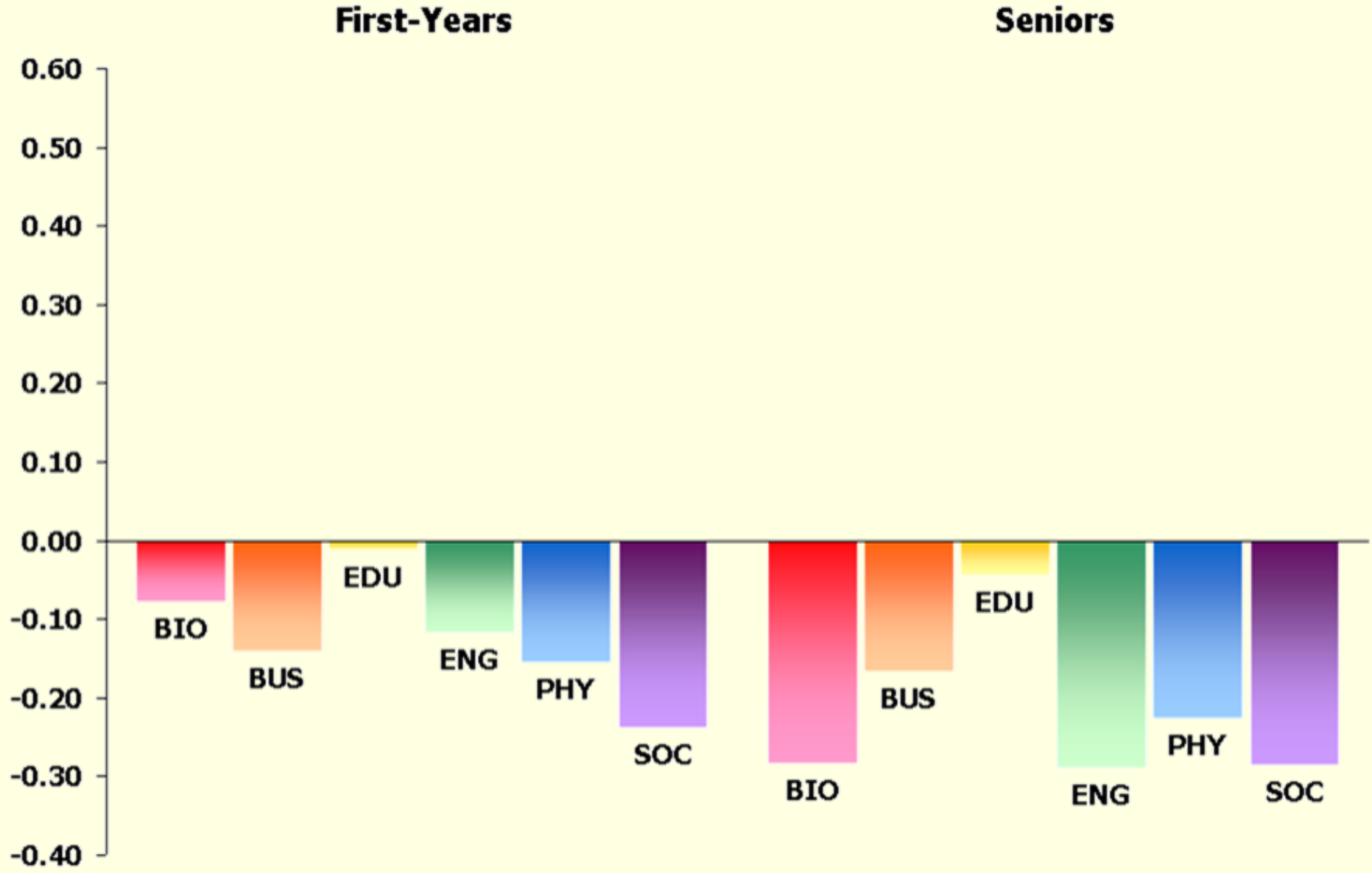


Supportive Campus Environment

- ◆ Providing the support you need to thrive socially
- ◆ Providing the support you need to help you succeed academically
- ◆ Helping you cope with your non-academic responsibilities (work, family, etc.)
- ◆ Relationships with: Other Students
- ◆ Relationships with: Faculty Members
- ◆ Relationships with: Administrative Personnel and Offices

Supportive Campus Environment

Standardized Mean Differences From Agriculture and Related Sciences



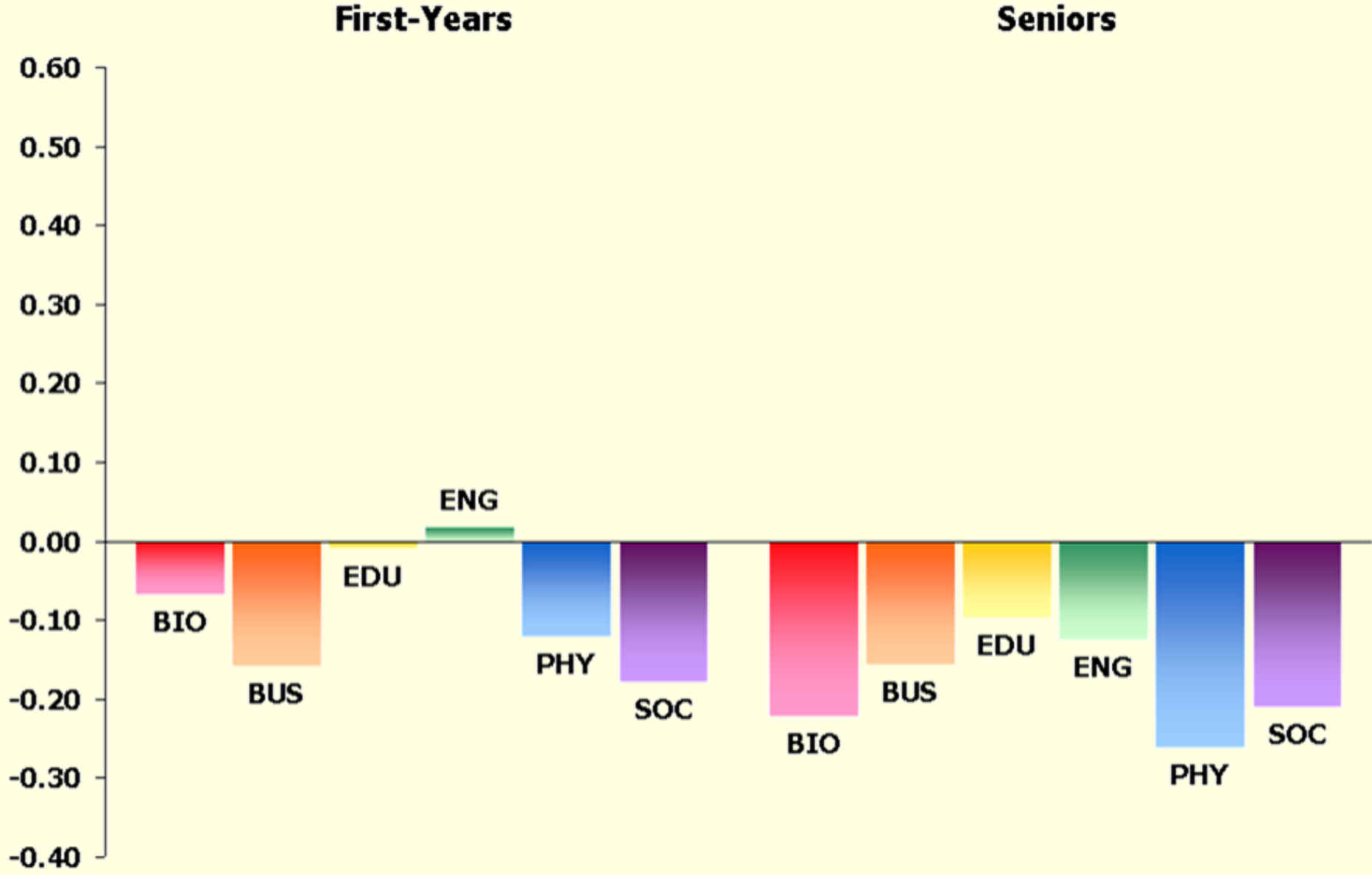


Satisfaction with College

- ◆ How would you evaluate your entire educational experience at this institution?
- ◆ If you could start over again, would you go to the **SAME INSTITUTION** you are now attending?

Satisfaction with College

Standardized Mean Differences From Agriculture and Related Sciences





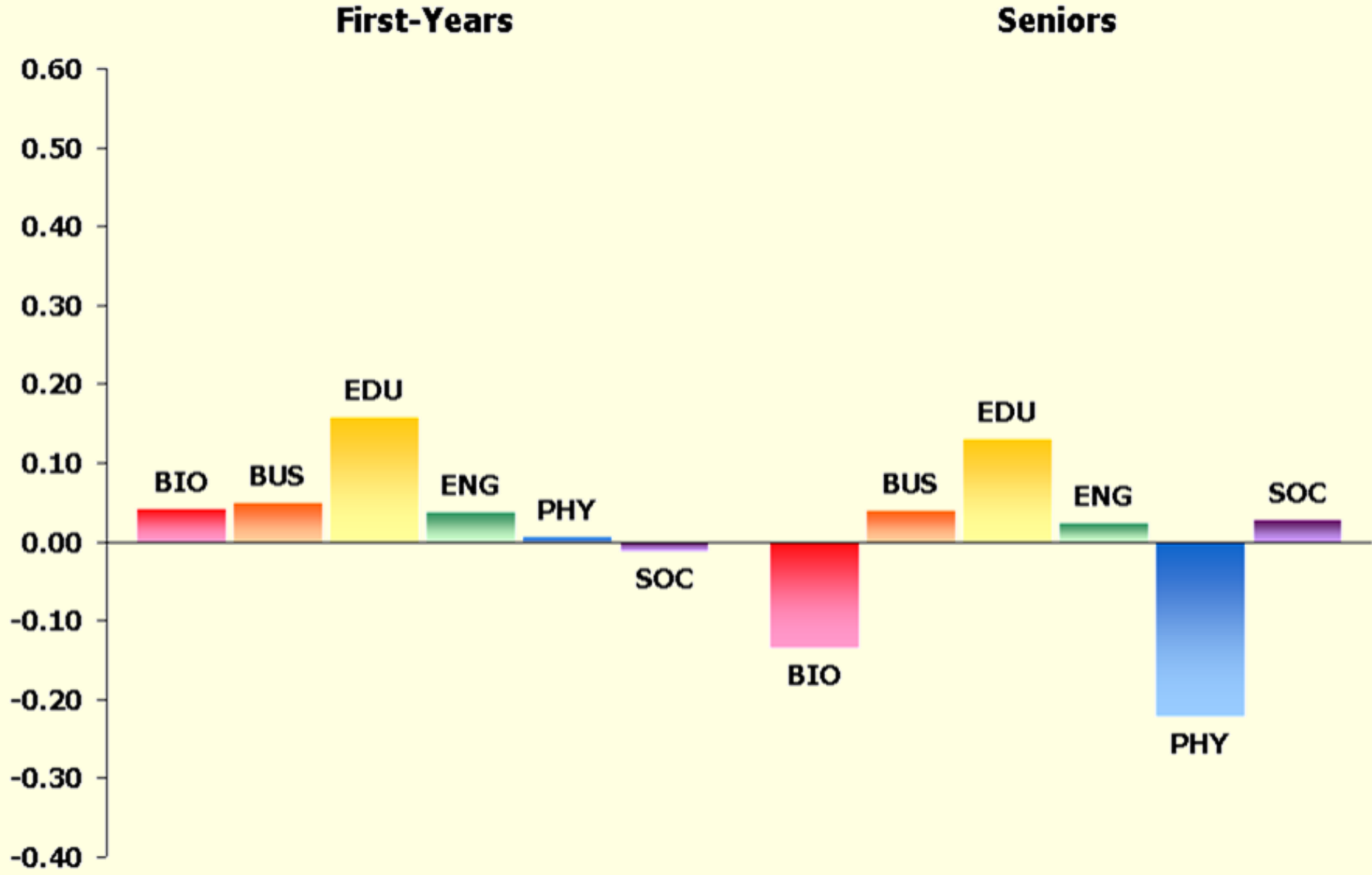
Gains in Learning & Development

Extent to which your experience has contributed to your learning and development in the following areas:

- ◆ Acquiring a broad general education
- ◆ Acquiring job or work-related knowledge and skills
- ◆ Writing clearly and effectively
- ◆ Speaking clearly and effectively
- ◆ Thinking critically and analytically
- ◆ Analyzing quantitative problems
- ◆ Using computing and information technology
- ◆ Working effectively with others
- ◆ Voting in local, state (provincial), or national (federal) elections
- ◆ Learning effectively on your own
- ◆ Understanding yourself
- ◆ Understanding people of other racial and ethnic backgrounds
- ◆ Solving complex real-world problems
- ◆ Developing a personal code of values and ethics
- ◆ Contributing to the welfare of your community
- ◆ Developing a deepened sense of spirituality

Gains in Learning & Development


Standardized Mean Differences From Agriculture and Related Sciences





Summary of NSSE Findings

- ◆ Relative to their peers from other fields of study, students in agriculture and related sciences tend to experience:
 - ◆ Less academic challenge
 - ◆ Slightly fewer enriching educational experiences
 - ◆ About average levels of active and collaborative learning
 - ◆ More interaction with faculty
 - ◆ Their environment as more supportive
- ◆ Based on their experiences, students in agriculture and related sciences report greater satisfaction and average learning and developmental gains



Some Questions

- ◆ Is there a need and commitment for changing students' experiences?
 - ◆ In what areas (e.g., academic challenge)?
 - ◆ Is the change needed in my field of study and/or on my campus?
 - ◆ What evidence do we have?
- ◆ A change in practice or culture?
 - ◆ Will this hurt?
 - ◆ Who needs to be involved (e.g., faculty, student affairs staff, academic administrators)?



Faculty Do Matter!

- ◆ In general, on campuses where faculty place greater emphasis on or require more use of effective educational practices, students do more
- ◆ Faculty emphasis on one area of effective educational practice (e.g., academic challenge or active & collaborative learning) is connected to student use of effective educational practices in other areas as well as improved student outcomes



Faculty Survey of Student Engagement

Faculty Comparisons



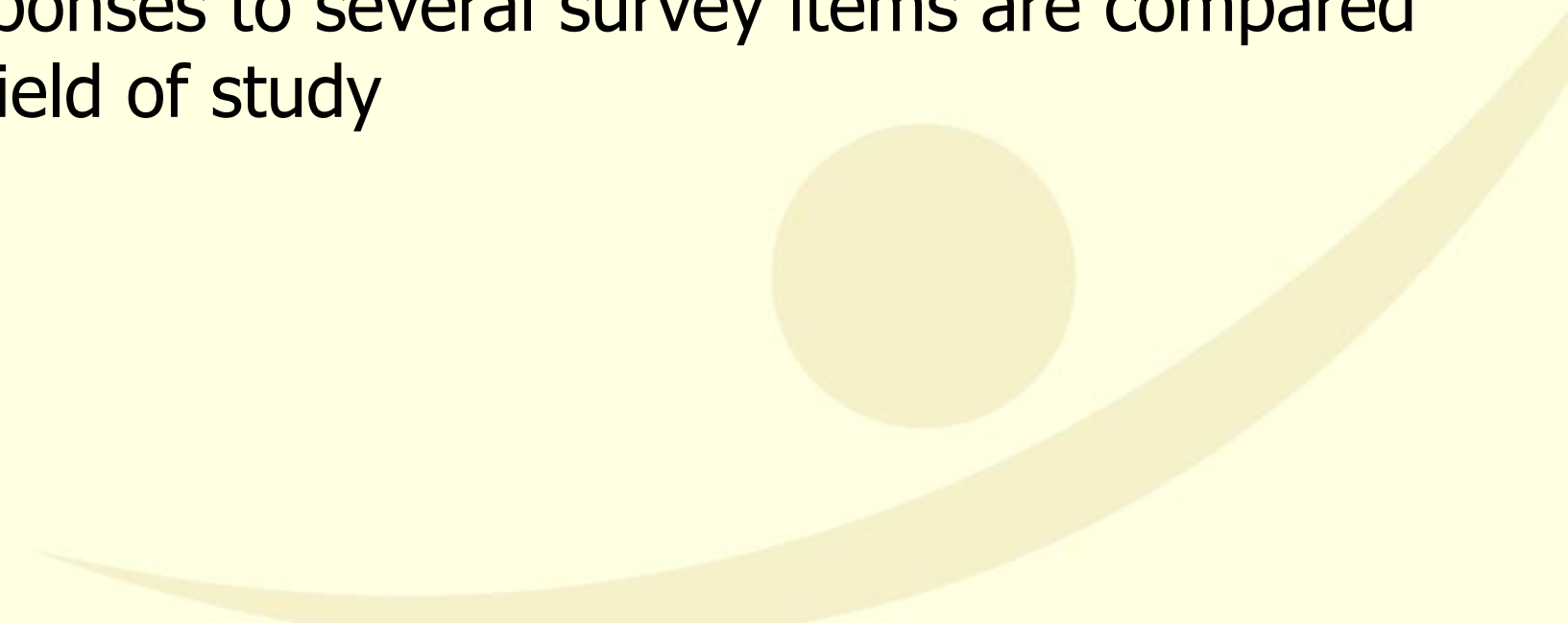


Faculty Survey of Student Engagement

- ◆ Survey designed as a companion to NSSE
 - ◆ Faculty perceptions of how often their students engage in different activities
 - ◆ The importance faculty place on various areas of learning and development
 - ◆ The nature and frequency of interactions faculty have with students
 - ◆ How faculty members organize class time
- ◆ Web version only
- ◆ In 2005, over 19,000 faculty from 109 institutions responded to the survey; average institutional participation rate of 54%



Faculty Comparisons

- ◆ Analyses limited to faculty at the 14 institutions that graduated students in agriculture and related sciences in 2005 and participated in NSSE and FSSE in 2005
 - ◆ Responses to several survey items are compared by field of study
- 



Faculty by Field & Course Level

	Lower Division	Upper Division
Agricultural & Related Sciences	32	103
Biological Sciences	80	175
Business	38	195
Education	42	162
Engineering	53	177
Physical Sciences	246	155
Social Sciences	141	257
Total	632	1,224

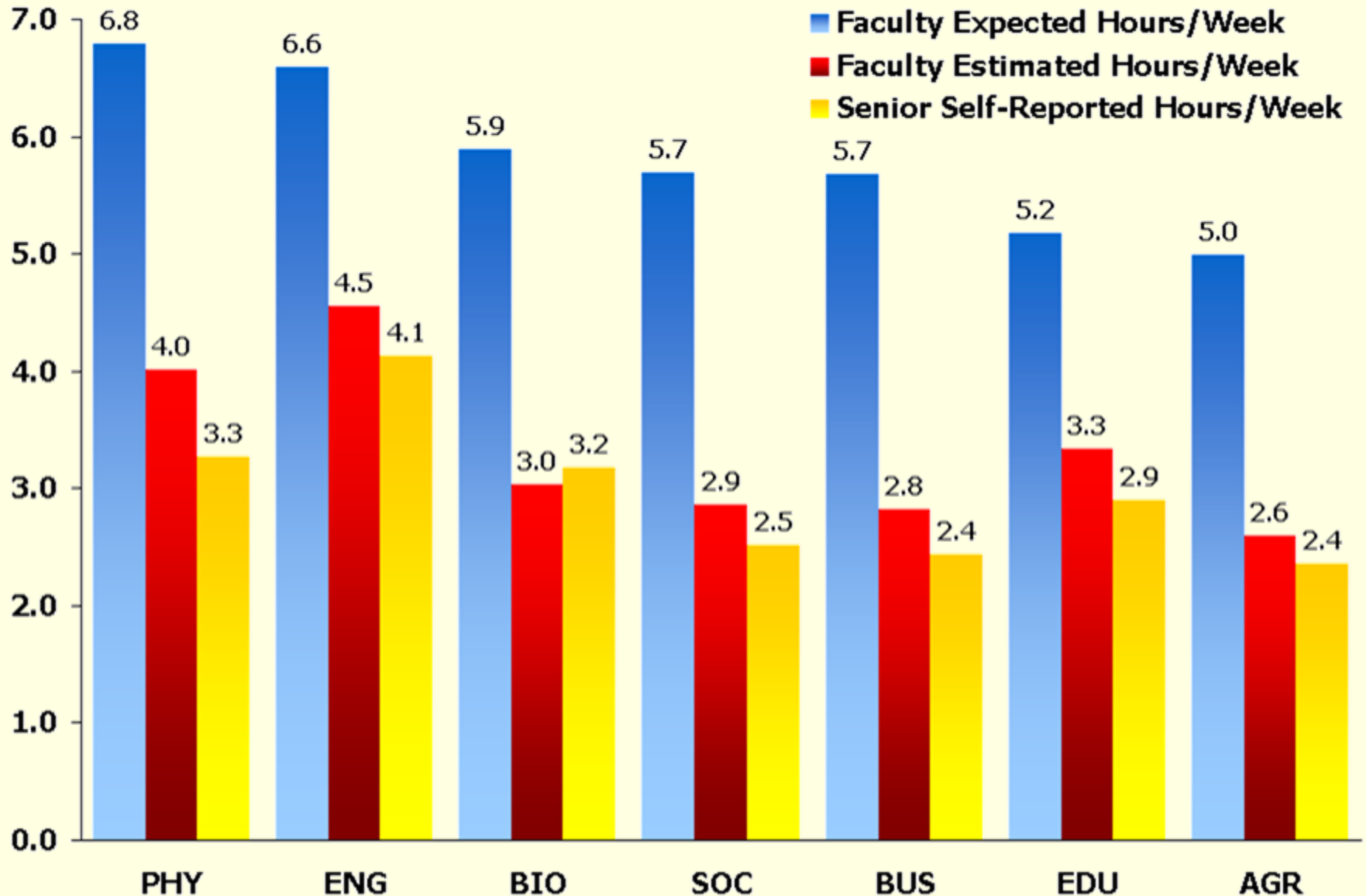


Hours per Week Preparing for Class

- ◆ With regards to a particular undergraduate course taught, faculty were asked:
 - ◆ About how many hours do you **expect** your students to spend preparing for your class in a typical 7-day week, and
 - ◆ About how many hours do you think your students **actually** spend preparing for your class in a typical 7-day week
- ◆ On NSSE, students were asked how much time they spend in a typical 7-day week preparing for class (divide this by 4 for comparison purposes)

Hours Per Week Preparing for Class

Upper Division Faculty Expectations and Estimates, and Senior Self-Reports



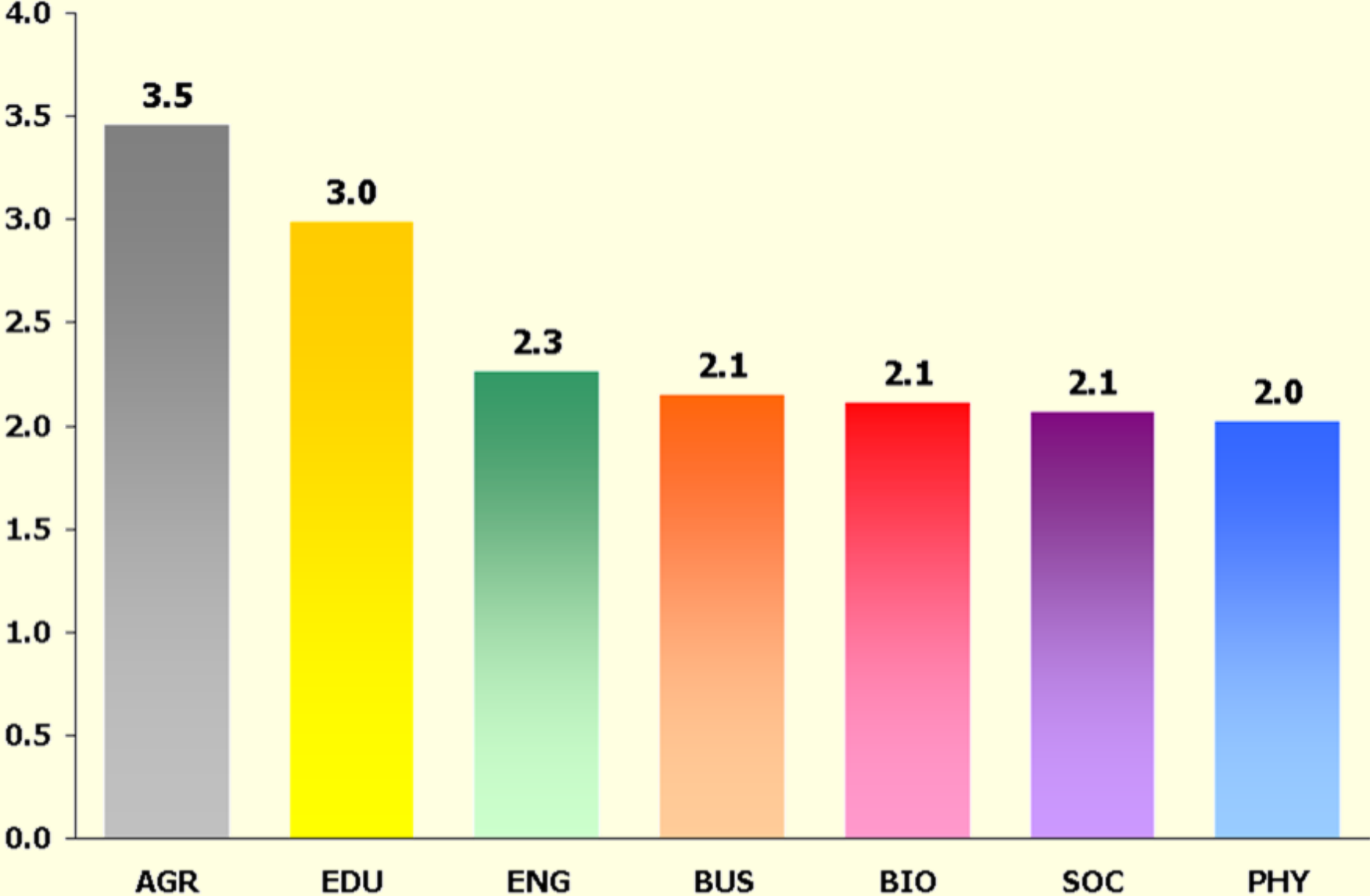


Time Faculty Spend with Students Outside of Class

- ◆ Faculty were asked how many hours they spend in a typical 7-day week working with students on activities other than coursework (committees, orientation, student life activities, etc.)

Time Outside of Class With Students

Average Hours per Week on Activities Other Than Coursework





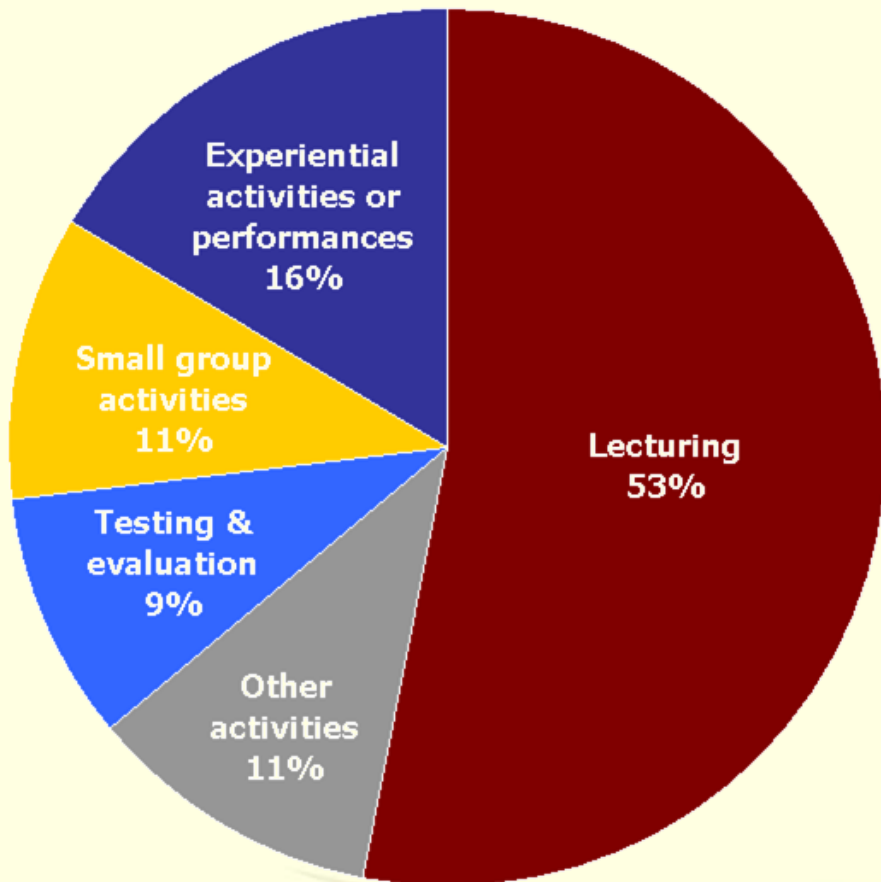
Class Time

- ◆ Faculty were asked, on average, what percent of class time they spend on the following:
 - ◆ Lecture
 - ◆ Small group activities
 - ◆ Experiential activities (labs, field work, art exhibits, etc.)
 - ◆ Performances in applied and fine arts (e.g., dance, drama, music)
 - ◆ Testing and evaluation
 - ◆ Other activities (e.g., teacher-led discussion, in-class writing)

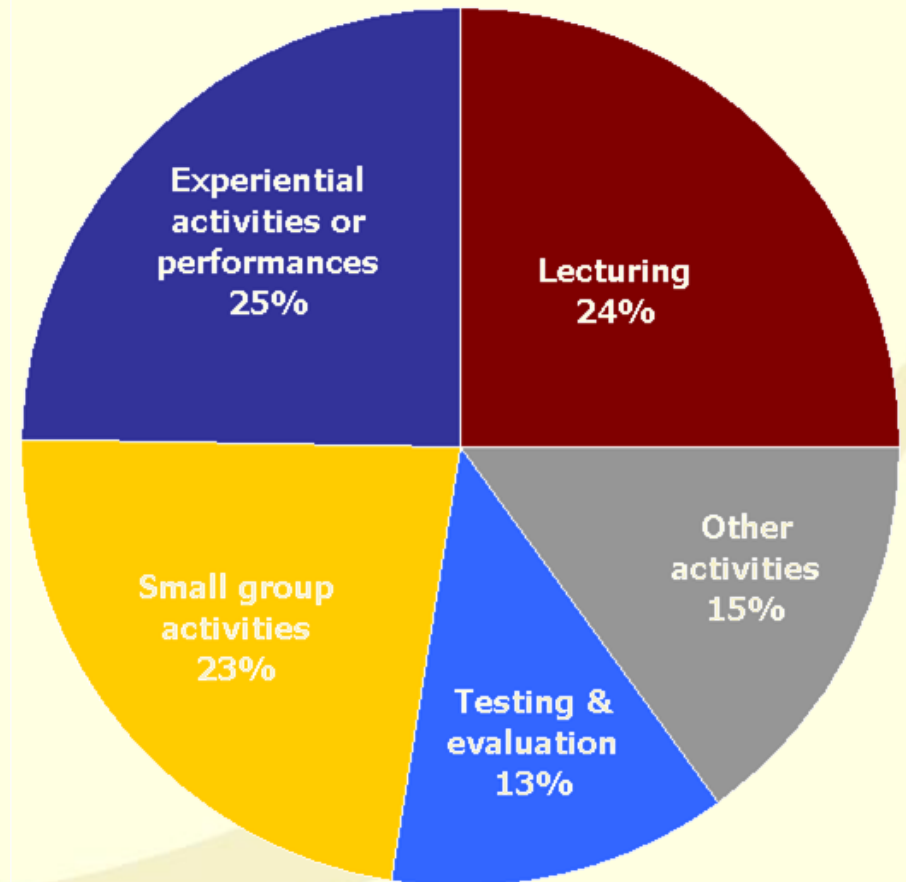


How Faculty Spend Class Time

Agriculture & Related Sciences



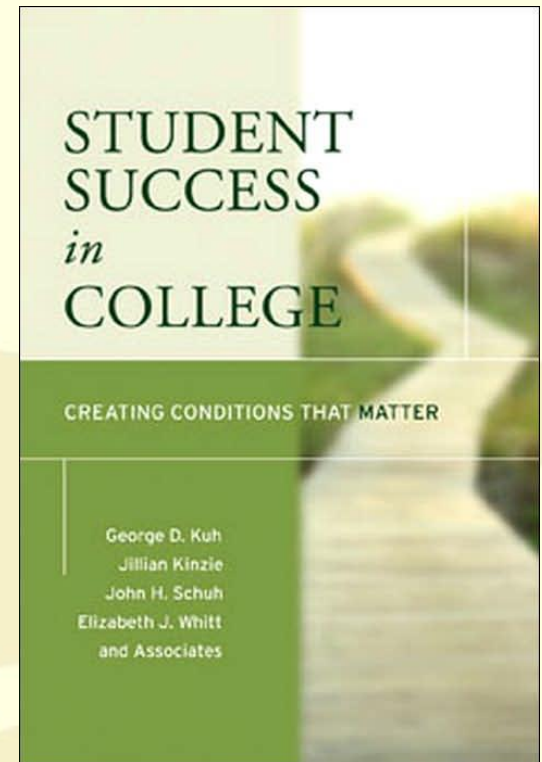
Education





Promoting Student Success

- ◆ “Living” mission and “lived” educational philosophy
- ◆ Unshakeable focus on student learning
- ◆ Environments adapted for educational enrichment
- ◆ Clear pathways to student success
- ◆ Improvement oriented ethos
- ◆ Shared responsibility for educational quality and student success





For More Information

- ◆ Email: nsse@indiana.edu
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- ◆ NSSE website: www.nsse.iub.edu



National Survey
of Student Engagement

Copies of papers and presentations as well as annual reports and other information are available through the website