UNDERGRADUATES

- Initial interest in STEM among freshmen (3rd week census data)
- Data from each freshmen cohort as to retention at OU in a STEM major and Retention at OU
- OU’s six year grad rate data compared to other highly selective institutions (CSRDE data)

Definition of STEM will be a narrowly define definition based on CIP codes used at the federal level. At OU the STEM definitions thus defined include:
  - Engineering – all undergraduate majors
  - Earth & Energy – all undergraduate majors
  - Atmospheric & Geographic Sciences – all undergraduate majors
  - Continuing Education – Aviation
  - Arts & Sciences – physics/astronomy, chemistry/biochemistry, microbiology, plant biology, biology, mathematics, information studies

For more information regarding the CIP coding system:

http://nces.ed.gov/ipeds/cipcode
Classification of Instructional Programs (CIP) provides a taxonomic scheme that supports the accurate tracking and reporting of fields of study and program completions activity. CIP was originally developed by the U.S. Department of Education’s National Center for Education Statistics (NCES) in 1980, with major revisions occurring in 1985, 1990, and 2000 and annual revisions in subsequent years.

The Integrated Postsecondary Education Data System (IPEDS) uses the CIP coding scheme extensively.
The percentage of freshmen initially interested in STEM majors is growing
2001 23.2%  2006 24.5%  2011 30.0%

Men outnumber women interested in STEM at the point of entry into OU by 2:1
2001 65.1%  2006 64.8%  2011 64.9%

STEM freshmen enter with a higher ACT average than OU freshmen, this is true for both men and women
2001 1.7 ACT pts.  2006 1.1 ACT pts.  2011 1.5 ACT pts.

STEM women enter with a slightly lower ACT average than STEM men
2001 0.6 ACT pts.  2006 0.7 ACT pts.  2011 0.8 ACT pts.
While STEM freshmen come into OU better prepared academically, they are now retained at only a slightly higher rate than all OU freshmen into year two at OU.

But are they still in STEM majors?
<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2006</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STEM Freshmen</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Still at OU</td>
<td>84.1%</td>
<td>85.6%</td>
<td>84.4%</td>
</tr>
<tr>
<td></td>
<td>21.9%</td>
<td>21.5%</td>
<td>16.4%</td>
</tr>
<tr>
<td>Still in STEM at OU</td>
<td>62.9%</td>
<td>64.1%</td>
<td>68.0%</td>
</tr>
<tr>
<td><strong>STEM Women</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Still at OU</td>
<td>86.7%</td>
<td>86.2%</td>
<td>83.9%</td>
</tr>
<tr>
<td></td>
<td>23.8%</td>
<td>27.9%</td>
<td>22.3%</td>
</tr>
<tr>
<td>Still in STEM at OU</td>
<td>62.9%</td>
<td>58.3%</td>
<td>61.6%</td>
</tr>
<tr>
<td><strong>STEM Men</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Still at OU</td>
<td>82.7%</td>
<td>85.2%</td>
<td>84.7%</td>
</tr>
<tr>
<td></td>
<td>19.7%</td>
<td>18.0%</td>
<td>13.3%</td>
</tr>
<tr>
<td>Still in STEM at OU</td>
<td>63.0%</td>
<td>67.2%</td>
<td>71.4%</td>
</tr>
</tbody>
</table>

While we are retaining STEM freshmen at OU into year two, we are not retaining them well in STEM majors. This seems most pronounced for STEM women.
## SIX YEAR GRADUATION RATE

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stem Freshmen</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduated from OU</td>
<td>62.8%</td>
<td>68.8%</td>
</tr>
<tr>
<td></td>
<td>25.7%</td>
<td>28.2%</td>
</tr>
<tr>
<td>Graduated in STEM major</td>
<td>37.1%</td>
<td>40.6%</td>
</tr>
<tr>
<td><strong>STEM Women</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduated from OU</td>
<td>67.4%</td>
<td>71.4%</td>
</tr>
<tr>
<td></td>
<td>34.1%</td>
<td>36.4%</td>
</tr>
<tr>
<td>Graduated in STEM major</td>
<td>33.3%</td>
<td>35.0%</td>
</tr>
<tr>
<td><strong>STEM Men</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Still at OU</td>
<td>60.4%</td>
<td>67.4%</td>
</tr>
<tr>
<td></td>
<td>21.3%</td>
<td>23.7%</td>
</tr>
<tr>
<td>Still in STEM at OU</td>
<td>39.1%</td>
<td>43.7%</td>
</tr>
</tbody>
</table>

From the recent 6 year graduation data (Cohort 2006), we appear to graduating more STEM freshmen at OU than was true for the 2001 cohort **BUT** we continue to have over 1/3 of the women and over 1/5 of the men shift into non STEM majors by the time they graduate

How does OU compare to other similar institutions?
The Consortium for Student Retention data Exchange is located within the Center for Institutional data Exchange and Analysis here at OU. The CSRDE compiles data from 173 institutions, 44 of whom were categorized as highly selective in their most recent annual report.

**RESEARCH EXTENSIVE**
- Colorado State
- Florida State
- Georgia State
- Kansas State
- Louisiana State
- North Carolina State
- Ohio State
- Oklahoma State
- SUNY – Stony Brook
- Texas A&M
- U Alabama
- U Alabama – Birmingham
- U Arkansas
- UC – Davis
- UC – Irvine
- U Colorado
- U Connecticut
- U Delaware
- U Georgia
- U Illinois
- U Massachusetts
- U Minnesota
- U Missouri
- U South Carolina
- U Tennessee
- U Texas
- U Utah
- Virginia Polytechnic

**RESEARCH INTENSIVE**
- George Mason
- Miami U – Ohio
- Michigan Tech U
- Montana State
- Baylor U
- DePaul U – Illinois
- U St. Thomas – Minnesota

**MASTERS**
- Ca Polytechnic State U
- College of Charleston
- St. John Fisher College – NY

**OTHER**
- Colorado School of Mines

Note: Highly Selective institutions as reported to the Consortium for Student Retention Data Exchange
University of Oklahoma
6-Year Graduation Rates of STEM Freshmen
As Compared to Highly Selective Institutions in CSRDE
Cohorts 2001 – 2006
Why are we not doing as well as our peers?

- Is the curriculum for the lower division science and mathematics courses sufficiently engaging for today’s undergraduates?

- In our concern with getting students graduated from OU, have we been too quick to counsel STEM students having trouble in their science, math or engineering courses into other majors?

- Do we create an appropriate and welcoming environment in our lectures, teaching labs, and tutoring sessions for all STEM students? Do we remind instructional faculty and graduate teaching assistants to be welcoming and encouraging to all students?

- Other hypotheses?