STEM GATEWAY

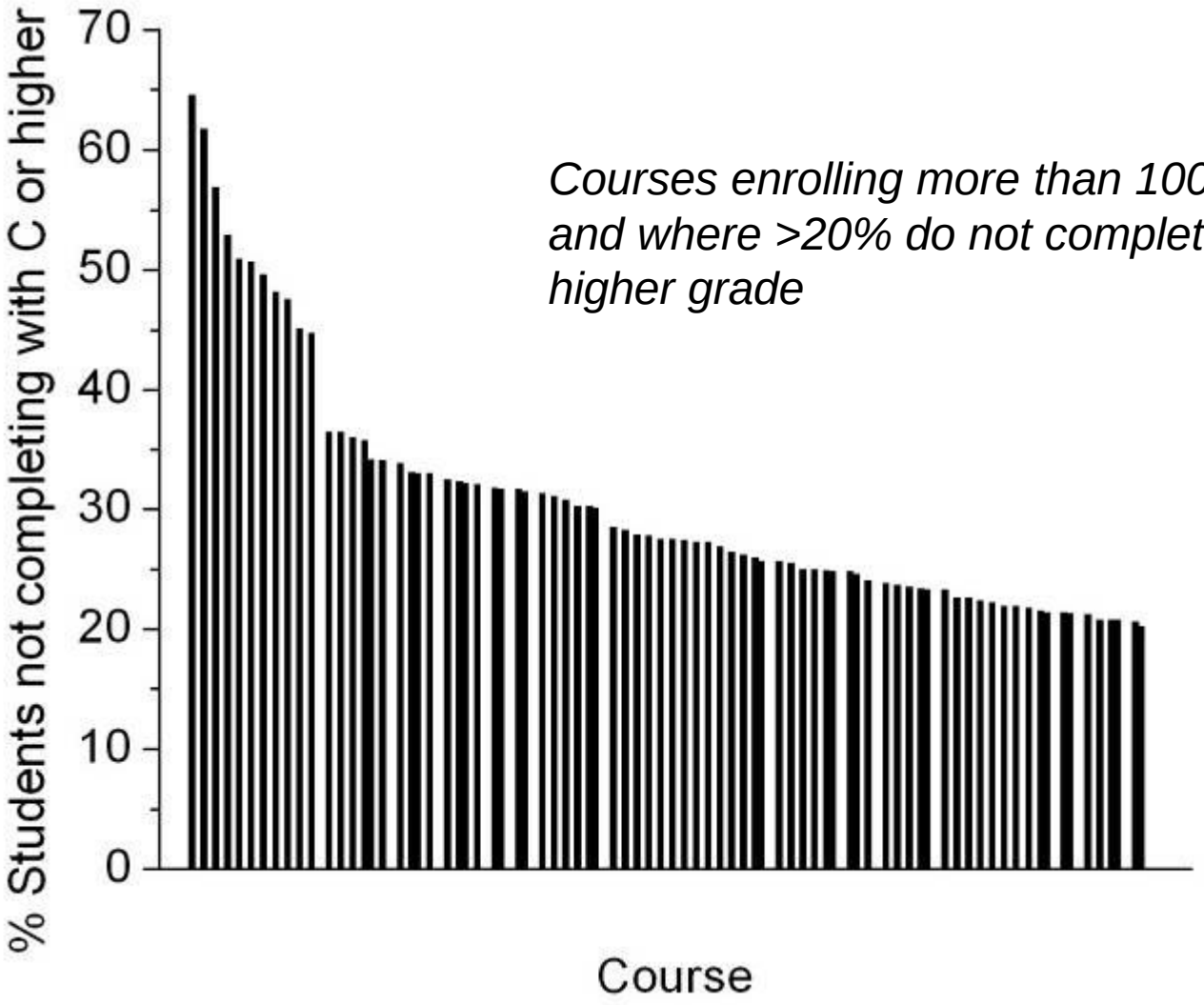
"… student success, however it is defined and measured, must have at its core success in individual classes. Though student success is indeed everyone's business, it is the business of faculty in particular."

Tinto, V., and Pusser, B., 2006, *Moving from theory to action: Building a model of institutional action for student success*

"The biggest and most long-lasting reforms of undergraduate education will come when individual faculty or small groups of instructors adopt the view of themselves as reformers, within their immediate sphere of influence, the classes they teach every day."

K. Patricia Cross, Professor of Higher Education, University of California, Berkeley; Trustee, Carnegie Foundation for the Advancement of Teaching

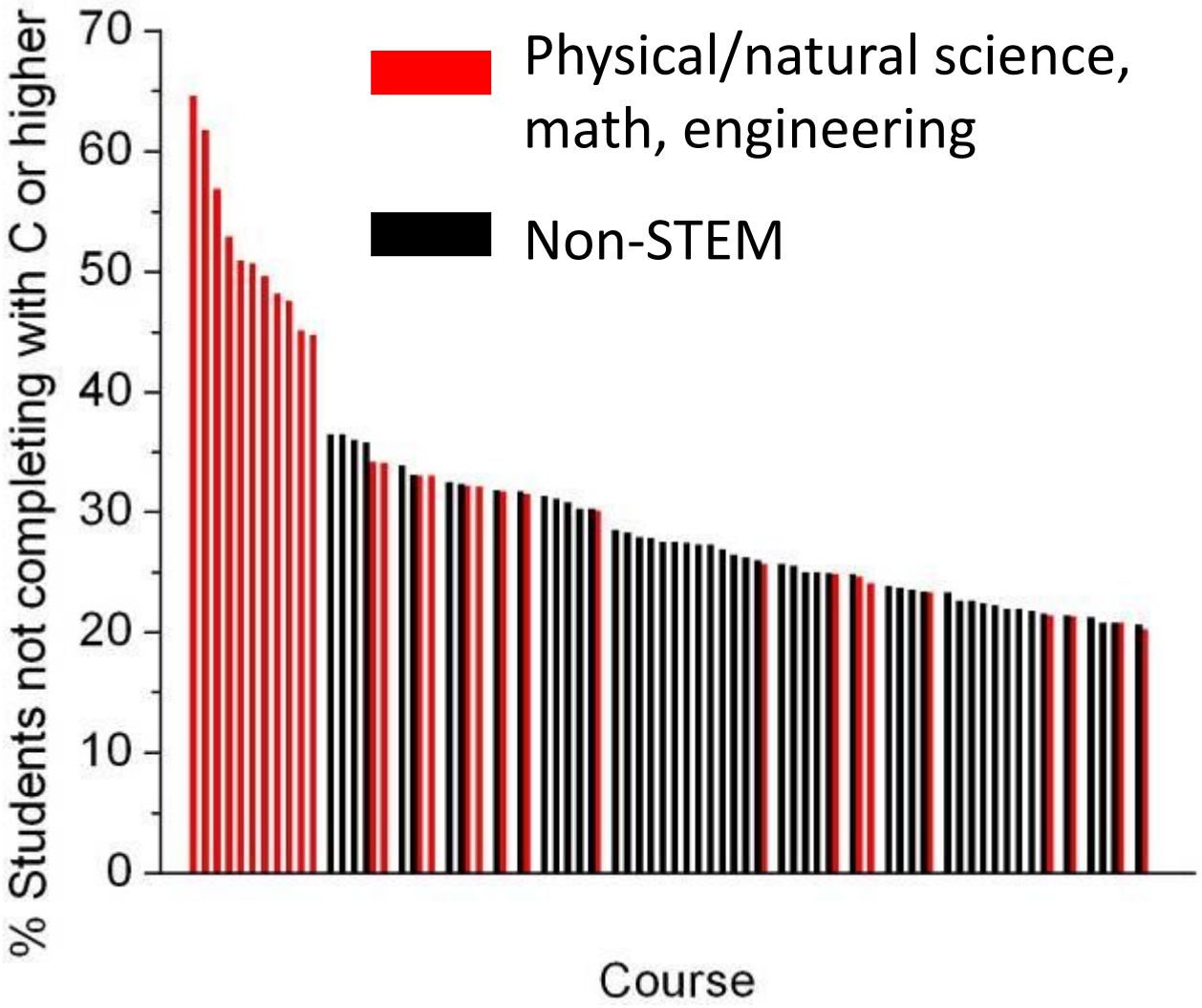
UNM's "Killer courses" are significant challenges to student persistence



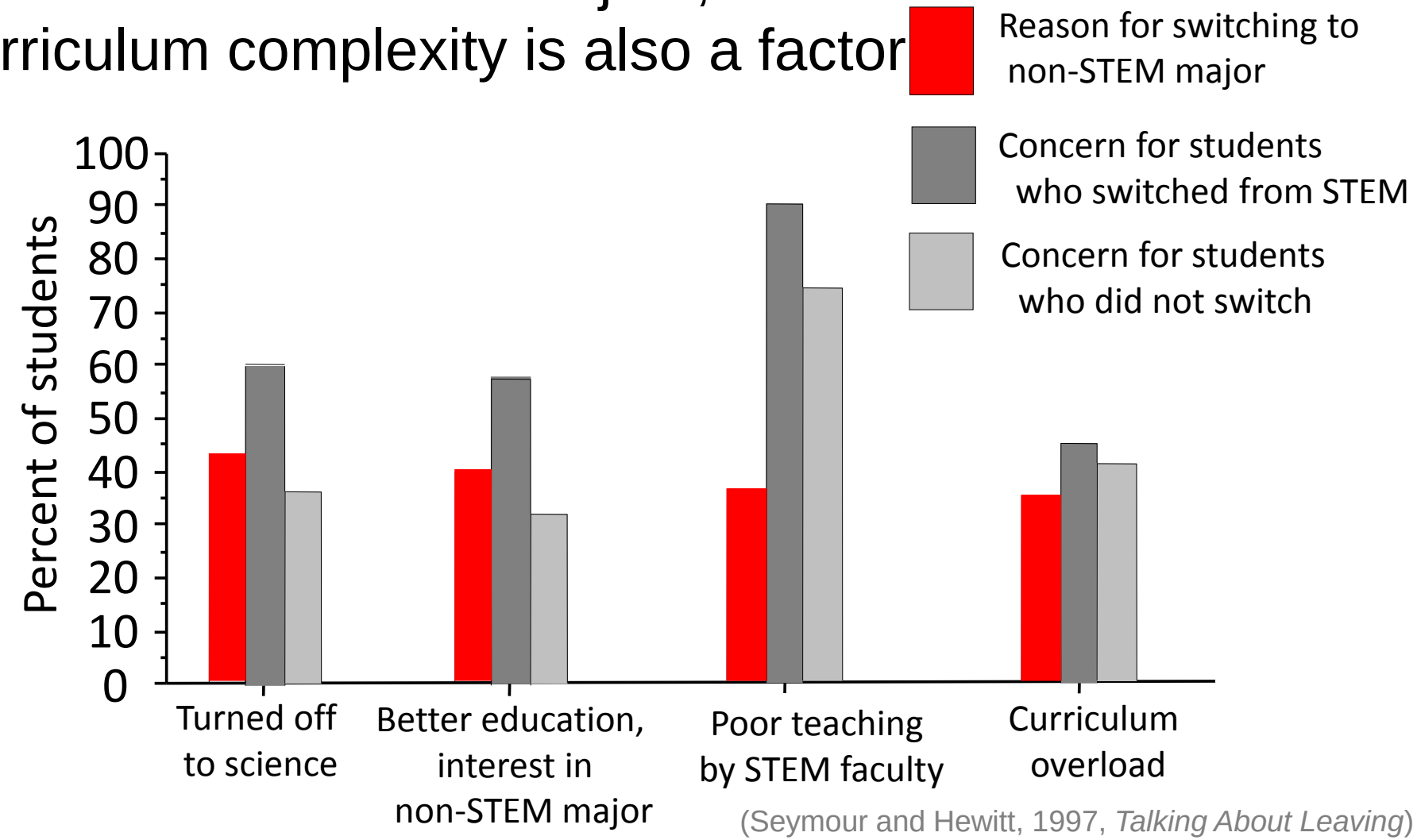
Courses enrolling more than 100 students and where >20% do not complete with a C or higher grade

STEM GATEWAY

STEM courses are prominent entries on the UNM "Killer course" list

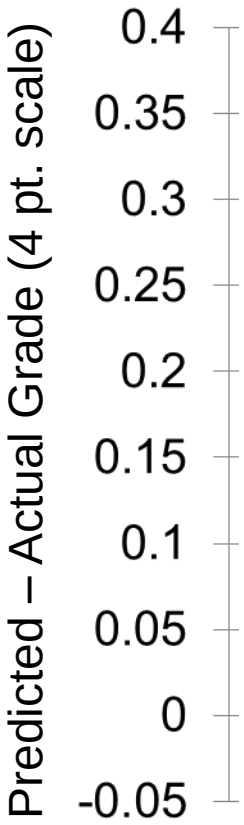


Faculty instructional and curricular choices are the top reasons that students leave STEM majors; curriculum complexity is also a factor



(Seymour and Hewitt, 1997, *Talking About Leaving*)

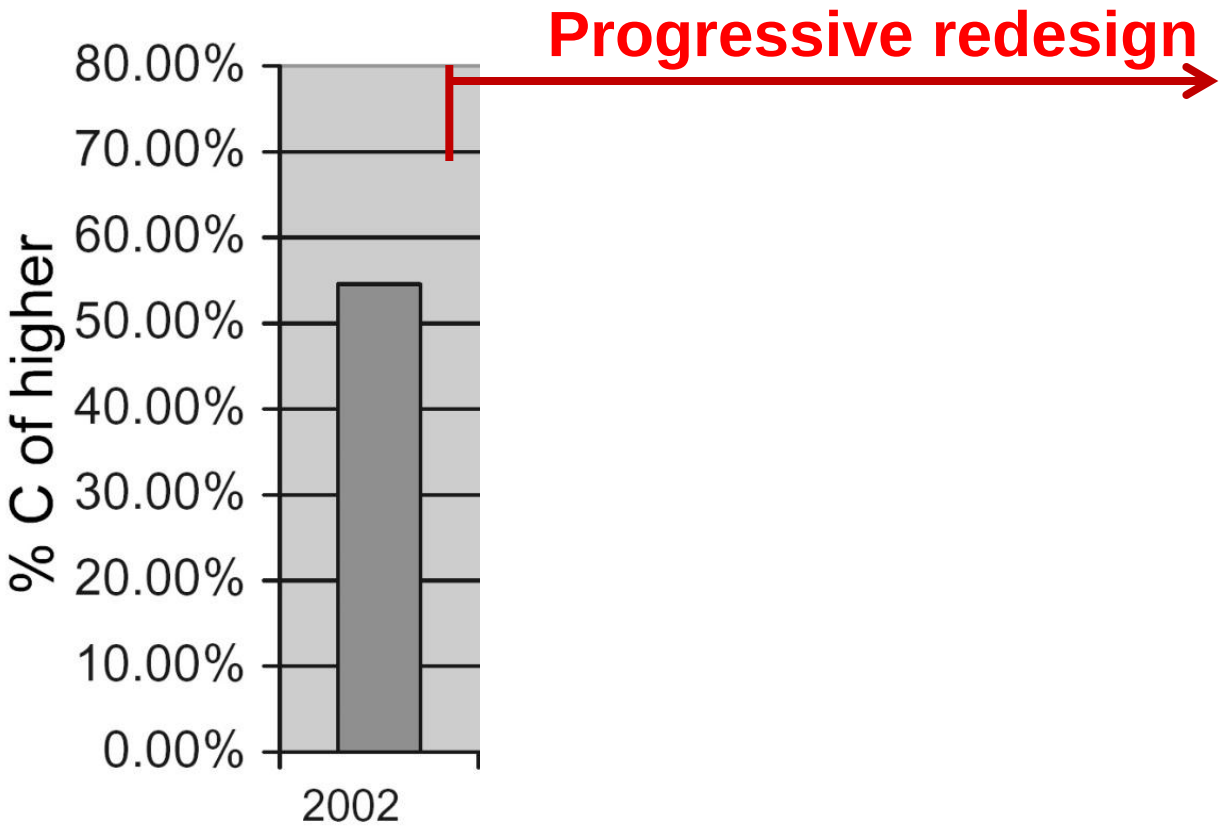
STEM course redesign works: Biology at the Univ. of Washington



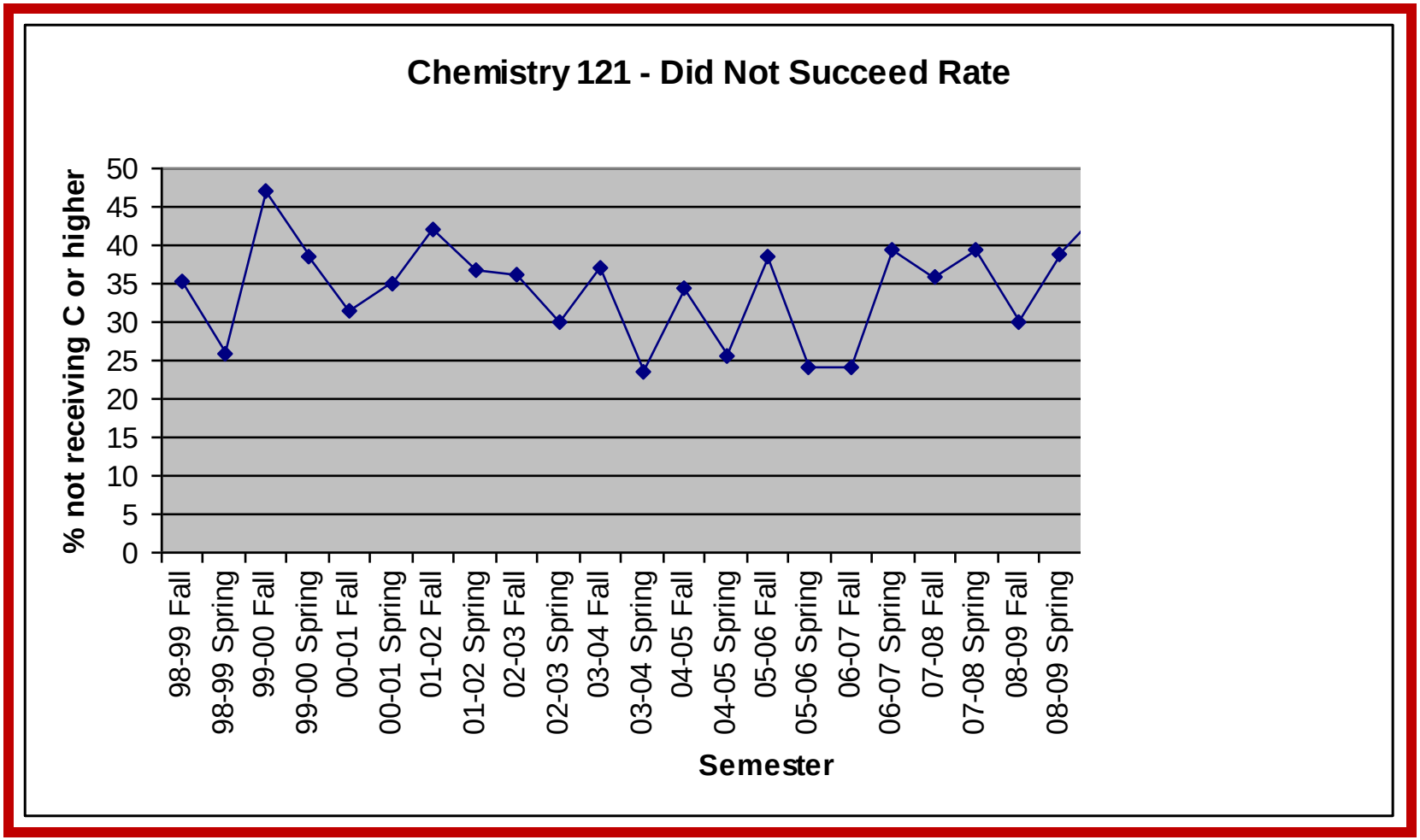
Predicted grade based on long-term regression of Biology grade with SAT verbal score and incomingGPA

Haak et al., Increased structure and active learning reduce the achievement gap in introductory biology, *Science*, June 3, 2011

STEM course redesign works: College Algebra at Black Hills State University



STEM course redesign works: General Chemistry I at UNM



How STEM Gateway course reform projects work:

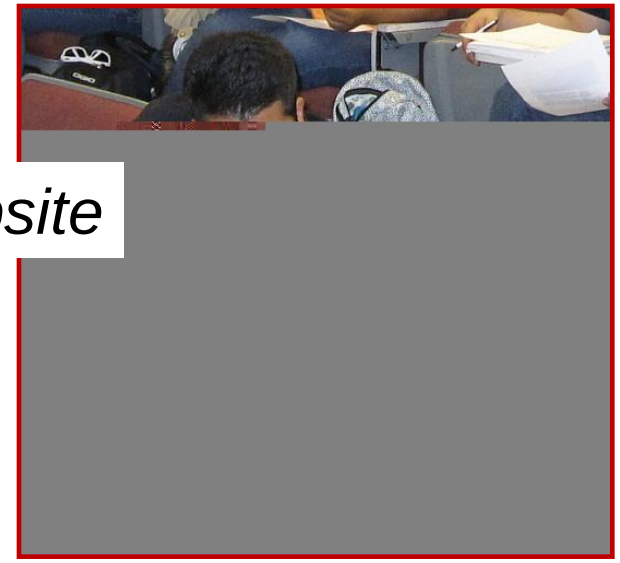
1. 3 to 4 *teams* of faculty propose redesign of UNM gateway courses (March)

2. Teams, including a CNM colleague and a GA, begin their work at OSET course-design institute (May)
3. Teams design new curriculum and pedagogical elements (May-August)

4. Redesign piloted in Fall Semester (August-December)
5. Redesign expanded to more sections (beginning Spring semester)
6. Assessment and revision (May-August)

2012-2013 Course Reform Projects

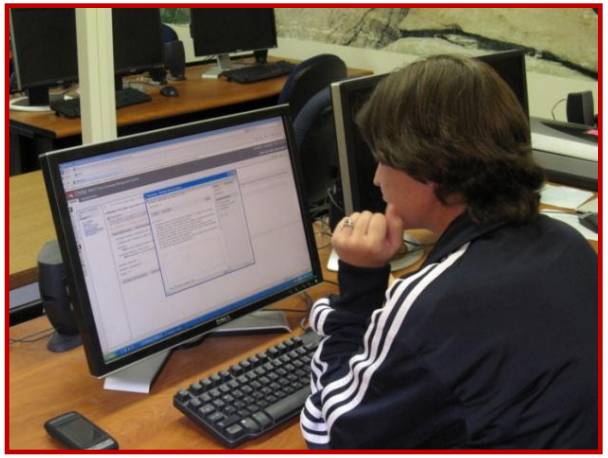
CHEM 122 – General Chemistry II
MATH 121 – College Algebra
PHYC 161/167- University Physics



Read their proposals - STEM Gateway website

Fall 2012: 692 students were enrolled in the pilot sections of the redesigned courses

Fall 2012: 82% of students enrolled in these courses were Hispanic, low-income, or both



Preliminary student-achievement and engagement results are promising,

2012-2013 Course Reform Projects

Current focus:

- Assessing initial results
- Developing plans for *effective* expansion across all (or most) course sections beginning in 2013-2014

2013-2014 Course Reform Projects

Proposals are arriving *this* week

Late proposals *can be accommodated* for review but proposers should contact Gary Smith as soon as possible.