“... 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
How STEM Gateway course redesign projects work:

3 redesign teams begin each year

Each course-redesign team consists of:

- 3-4 UNM faculty who frequently teach the targeted gateway course
- 1 UNM Graduate Assistant from the gateway-course department
- 1-2 CNM faculty who frequently teach the targeted gateway course

**Timeline**

**Proposal**
- April
- STEM Gateway compensation:
  - Faculty
  - Graduate Assistant

**Redesign Work**
- May-August

**Pilot Implementation**
- Fall Semester

**Redesign Revision & Dissemination**
- Spring Semester

**Expanded Implementation Plan**
- May-June
STEM Gateway Course Redesign Advisory Council

Leaders who advise STEM Gateway to establish priorities

Charles Fleddermann, Associate Dean of Engineering
Kate Krause, Dean of University College
Mark Peceny, Dean of Arts & Sciences
Steve Cabaniss, Chair, Chemistry & Chemical Biology
Patricia Henning, Associate Chair, Physics & Astronomy
Terry Loring, Chair, Mathematics & Statistics
2012-2013 Course Reform Projects

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

2013-2014 Course Reform Projects

CHEM 121 – General Chemistry I
BIOL 204L – Plant/Animal Form/Function Lab
PHYC 1xx – Preparation for General Physics

2014-2015 Course Reform Projects

BIOL 202 – Genetics
BIOL 204 – Plant/Animal Form/Function
MATH 123/150 – Trigonometry/Pre-Calculus

Recommended by 2013 symposium participants
Improved success in college algebra (Math 121)
Partly a result of curriculum change (across all sections) and pedagogical change (in some sections) since redesign first implemented in Fall 2012
Evidence of greater conceptual learning in General Chemistry II (Chem 122) following redesign.
Some redesigned courses are using elements of flipped learning

**In Class**

Introduction to content

**Out of Class**

Elaboration and engagement for deep learning
Students are responding positively to the redesign structure (e.g., Chem 122)

Q1: How well do the reading assignments and quizzes prepare you for class? (1-5 where 1 = not at all and 5 = very much)

Q2: How effective are in-class exercises in helping you learn the material? (1-5 where 1 = not at all and 5 = very much)

Q3: Which statement do you agree with most?

- More class time should be spent on lecture with problems worked outside class
- More class time should be spent on in-class exercises and less on lecture
- The balance of lecture and in-class exercises works well for me
- I would prefer the class be taught using only lecture
Course redesign teams are funded for 1 year ...

... but what happens after that year?

Teams must:

1. Expand
2. Sustain
Expanding across section instructors

Sharing curricular and pedagogical knowledge via archived resources on PBWorks/Google Drive

Training material:
Website guide
Video of teachers in action
Sustaining

Teams close the loop with assessment data to sustain successful components

Elements include:
Informal meetings

Learning from one another through peer observations for learning

Standardization

Sharing and managing knowledge
From a Community of Course Redesign Teams to Communities of Practice

To create, expand and exchange knowledge and develop individual capabilities