Building a Classroom Community in the STEM Fields with Peer Learning Facilitators

Mary Cianflone, Program Specialist
mcian@unm.edu

The University of New Mexico STEM Gateway program seeks to increase the number of Hispanic and other low-income students attaining STEM degrees.

STEM Gateway initiatives focus resources on undergraduate science and math courses that serve as gateways to STEM degrees, and that traditionally have had low success rates.

The Peer Learning Facilitator Program is one of four initiatives under the STEM Gateway grant.

It consists of peer-assisted collaborative learning activities in large gateway sections. The assistance of facilitators allows instructors to incorporate a wider variety of effective instructional strategies.

**Who are the PLFs?**

- Undergraduate students (Graduate students also welcome)
- Academically qualified in the course (Received A or B grade or have tested out)
- Young women and men who understand firsthand the challenges that come in gateway STEM classes
- Eager to help their peers succeed academically through collaboration and mentorship

PLFs collaborate on a team-building science project as part of their professional training.

Spring 2012

Spring 2013 marks the beginning of Year Two for the five-year STEM Gateway grant. Stay tuned for more data, but here is what we’ve learned so far:

- 47% of enrolled students were Hispanic, compared to the UNM average of 37%.
- Sixty percent of Hispanic and low-income students with increased course completion.
- “I am very happy with the program and my PLFs. They really make the class much better.” - STEM Faculty, Fall 2012

What are “Gateway” Classes?

**For purposes of STEM Gateway, they are defined as those which meet at least one of the following criteria:**

- Core Requirement, Entry Level Program Requirement, and/or Survey courses within Dept. of Education-approved STEM disciplines that can be applied towards degrees in these disciplines
- Companion courses (lab, problem-solving courses, etc.) that are connected to Core Requirement or Program Requirement courses
- Pre-requisite courses that are required by students to take Core Requirement or Program Requirement courses

**Who Benefits from the PLF Program?**

- STEM Students
  - Building a foundation of support among peers
  - Better absorption of concepts and theories
  - Increased course completion
  - Greater retention in the STEM field majors
- STEM Faculty
  - Connect with more students personally
  - Collaborative work more manageable in large classrooms
  - Strengthened community of upper-level STEM students
  - Higher pass rates

For more information on PLFs and the STEM Gateway grant:

stemgateway.unm.edu

The STEM Gateway program is funded through a U.S. Department of Education Title V grant, 2011-2016. 100% grant-funded (total anticipated funding $3.82 million).

Does having a classroom community even matter?

Undergraduate students process material in a variety of ways. For students who crave hands-on learning, even the most vibrant lecture can leave them disconnected from course content.

Does working with other students in class help you learn more than you would otherwise?

Allowing collaborative group work in the classroom provides opportunities for students of different academic backgrounds, learning styles, and personalities to join together and use their strengths to grasp complex concepts.

I want to see more data!

Spring 2013 marks the beginning of Year Two for the five-year STEM Gateway grant. Stay tuned for more data, but here is what we’ve learned so far:

- 61% of Hispanic and low-income students with increased course completion.
- “I really can’t express how helpful it is to work with another, more-experienced PLF. His insight in [my] situation was really helpful.” - PLF, Spring 2012

What classes have PLFs served in the past?

- Chemistry 121, 122
- Earth & Planetary Science 101, 201
- Math 121, 150, 180
- Physics 167

For further information on the STEM Gateway program:

stemgateway.unm.edu

The program continues to grow

Spring 2011: 26 PLFs serving 14 classes
Fall 2012: 42 PLFs serving 24 classes
Spring 2013: 45 PLFs serving 20 classes

During the first semester of implementation, student successful completion rates increased from 67% prior to STEM Gateway PLF implementation to 76% after implementation (Spring 2013, PLF-supported sections only).

For Hispanic and low-income students, success rates increased from 53.71% to 58.4%.

Within the Spring 2012 PLF-supported sections, 47% of enrolled students were Hispanic, compared to the UNM average of 37%.