

**Project Name:** Expansion of Services in the Chemistry Learning Center (CLC) and Physics Learning Center (PLC)

**MIU Round:** Round 1

**Sponsor(s):** College of Letters and Science

**Coordinator(s):** Tony Jacob (Chemistry) and Susan Nossal (Physics)

**Partner(s):** Department of Chemistry, Department of Physics

**Report Date:** Year 1, August 2010; Year 2, July 2011; Year 3, July 2012; Year 4, July 2013

### Project Specific Goal and Measures

- Project Impact Measure(s)**
- Chemistry: Increase CLC staff support to cover all sections of Chemistry 103, 104 and 108. This will result in an increase in the number of students served.
  - Physics: Increase PLC staff support to Physics 103-104 and continue providing support to students in Physics 207-208. Support to students in 207 and 208 would have been cut without MIU funding. In addition to serving an increased number of students in these courses, Physics intends to use MIU funding to provide more comprehensive support.

- Project Impact Data Source(s)**
- Number of covered sections in Chemistry will be provided by Tony Jacob.
  - Number of students and courses served in AY 2009-10 and beyond will be provided by Susan Nossal.
  - Note: The operational definition of a "covered section" is that a staff member attends the course lecture, provides learning center support services to students identified as needing them (approx. 10% of students in course), and coordinates with the course instructor regarding course materials.

- Baseline Measure(s)**
- CLC: Number of covered sections in AY 2008-09 (9 of 15 sections, 252 students).
  - PLC: Number of students served in AY 2008-09 (4 courses, 268 students) and comprehensiveness of student services provided.

### General MIU Goals and Measures (applicable to project)

- F Decreased achievement gaps
- One goal of this project is to reduce the gap in the rates of adverse outcomes (D, F, or drop) for underrepresented students including targeted minorities, returning adult students, students with disabilities, and transfer students.
  - Continue identifying peer tutors from diverse backgrounds.

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| G | Attention to diversity in new hires | <ul style="list-style-type: none"><li>• Physics: The hiring of a new teaching assistant in Physics was partially made on the basis of the staff member's experience working with diverse students in the PEOPLE program and on her coursework in multicultural education.</li><li>• Chemistry: The Department states on all PVLs that staff are expected to participate in continued professional development and increase their competency in teaching diverse groups of students.</li></ul> |
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| I | Unintended Benefits | Physics: Increased staffing allowed the PLC to enhance the training of undergraduate students pursuing Physics Education (Secondary Education Certification). The School of Education students who were PLC peer mentor tutors gained valuable teaching experience and resources they could use in their own classrooms. These students also assisted in teaching the pre-college Physics courses for summer PEOPLE students. Expanding supplemental support for the calculus-based physics courses identifies a pool of potential peer mentors. |
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### Progress Reports

Year 1, 2009-10

- Physics: Increase staff member's appointment from 50% to 100%. Hired a 33% teaching assistant. With increased staffing the PLC was able to provide support for Physics 207 and 208 while maintaining support for Physics 103 and 104. Increased staffing allowed PLC staff to proactively reach out to students experiencing difficulties in supported courses.
- Chemistry: The focus in Spring 2010 was on recruiting, hiring, and training new staff members. At the end of the spring semester, CLC staff increased by .8 FTE (approximately 40% of the approved total increase).

Year 2, 2010-11

- Physics: Increased staffing in the PLC (TA position increased from 33% to 50% in the second year; an additional 100% FTE staff member was hired starting in Spring 2011; Susan Nossal increased her PLC appointment by 20% with MIU funds to a total of 70% FTE). Increased the number of students served in Physics 207, 208, 103, and 104 (from 251 in 2009-10 to 335 in 2010-11). Increased the number of Peer Mentor Tutors to 19 (and the number from targeted minority groups). Provided increased follow-up to students who were not attending class and pilot tested new interventions (for example, hired a graduate students to run additional sessions for the highest need students in Physics 208). Worked with the First Wave Program to increase the success of students taking Physics 109 (Physics and the Arts) by providing a stipend to a graduate student who met once per week with FW students for reinforcement of key concepts and for practice with problem-solving.

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Year 2, continued

- Chemistry: In 2010-11, staff in the CLC increased by 3.75 over the 2009 base. Increased the percentage of Chemistry 103, 104, and 108 lectures covered/supported to 100%. Expanded capacity (as measured by students enrolled in CLC services) by almost 100% (251 in base year to 479 in 2010-11). Maintained strongly positive students evaluations of the overall CLC services, self-assessment of increased knowledge of Chemistry, confidence that the CLC services would lead to a higher course grades than without the CLC services, and increased enjoyment of their Chemistry courses.
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Year 3, 2011-12

- Physics: Continued academic support activities described in Year 2 update. Served 338 students served in Physics 207, 208, 103, and 104 (up from 251 in 2009-10 ). Increased the number of small group supplemental sections to 30 per semester in 2011-12 (capped at 8 students per group). Expanded outreach to the First Wave program through Physics 109 (Physics and the Arts), a course that is part of a first-year interest group (FIG). Increased the number of peer mentors to 22.
  - Chemistry: Provided academic support to 7 of 8 sections of Chemistry 103 (202 students), all 7 sections of Chemistry 104 (207 students), and both sections of Chemistry 108 (28 students). This was accomplished despite the loss of .5 FTE and an increase in the number of Chemistry 104 sections. Compared to the pre-MIU baseline, there has been an 86% increase in the number of students served. Surveyed students about their experience with the CLC including the helpfulness of staff, learning gains, confidence in chemistry, and enjoyment of chemistry. The survey had a high response rate and ratings on these measures are consistently above 4.0 on a 5.0 scale.
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Year 4, 2012-13

- Physics: Continued academic support activities described in updates from Years 2 and 3. Served 349 students in Physics 207, 208, 103, and 104 (up from 285 in baseline year) and an additional 260 students who only accessed supplemental course and review materials. Used additional staffing to increase follow-up to students, make referrals to other campus resources, and develop additional pilot interventions such practice test sessions. Increased coordination with University Health Services and the McBurney Disability Resource Center to better support students with disabilities. Selected and trained 22 peer mentor tutors. PLC staff participated in the Delta Program's Closing the Achievement Gap course during spring 2013.
  - Chemistry: Provided academic support to all 17 lectures of Chemistry 103, 104, and 108 (418 students). One measure of effectiveness used by the CLC is the percentage of targeted minority students in the lecture compared to the percentage who use the CLC. This percentage has been steady compared to the baseline, despite the increased number of students and lectures served. The CLC continues to receive high ratings from students using the services and notes that student evaluations have remained high even as the program has grown.
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