



Academic Department Student Success Plan Annual Update: 2016-2019¹



Department: Mathematics and Computer Science

Department Chair: Liz Brown

Department Mission: The mission of the Department of Mathematics and Computer Science is to provide quality education in mathematics, computer science, mathematics education, information technology, and related fields and to expand knowledge in these fields. The Department strives to develop the thinking skills of students and to provide students with the foundational knowledge, skills, and relevant experiences to succeed in their chosen professions. This effort is sustained and informed by the faculty's pursuit of original research and scholarly activities. The faculty also has the mission of preparing quality teachers for the schools.

Department Freshmen (1st year) Retention Goal(s):

(A) Improve success rates in freshman classes for majors so that students remain at ISU, even if they change programs. (action steps are 1 and 2 below)

(B) Help freshmen make connections to faculty and other students in the department. (action steps 1 and 3 below)

Action Steps² (with dates & person(s) responsible):

(1) Have a "peer assistant" embedded in each of our freshman classes for majors. This includes CS 151, CS 201, CS 202, MATH 122, MATH 131, and MATH 132. The purpose of this initiative is to help our majors navigate their first year of college while learning the foundational concepts found in computer science, mathematics, and mathematics education. Hence, the peer assistant will help freshmen with both the content of the courses as well as how to be successful in the major and in college in general. We would like funding for this. We had this in Spring 2015, and were not given funds. Once we have that, instructors of the sections of these courses will identify a successful undergraduate student who will attend the section and hold "office hours" outside of class to meet with freshmen. Spring 2017 and Fall 2017 and ongoing.

(2) In addition, we are implementing plans to examine the courses in our freshman curriculum to address consistency across sections and alignment with our upper level courses. We are engaged in a course transformation for CS 151 to improve our DFW rates and to ensure that students are leaving those courses with the knowledge and skills to be successful in their next coursework. Steve Baker is leading the course transformation of CS 151 in Fall 2016. We have also repurposed CS 101 for students not doing well in CS 151. At the 5-week mark, students were identified and transferred into CS 101. In Spring 2016, we created a new course, MATH 116 Pre-calculus, for students who have tested into MATH 131, yet it is clear to their instructor that they have gaps in their background. MATH 116 started at the 5-week mark in the fall semester and is only open to students in MATH 131 who are identified by their instructor as needing the background for calculus. Fall 2016 is the first semester for this initiative.

¹ Plan updates are due to your Dean by Nov. 4 as informed by your 2015-16 End-of-Year Report that is due to your Dean by Oct. 3.

² **Action Steps Defined:** The specific activities/actions taken to realize progress toward the goal. Such action steps should include not only student support type activities/actions but also student learning enhancement focused activities/actions.

(3) Revive the math honor society Pi Mu Epsilon and/or revive the Indiana State Sycamore Council of Teachers of Mathematics to ensure that we have department clubs/organizations for students in each of our majors. Jeff Kinne is the faculty advisor for the CS student club and we would like to see a similar organization for our other majors. Spring 2017 and ongoing, Jodi Frost, Derrick Bowman, Patti Dreher

<i>Retention Benchmarks</i> (by latest department)	Fall 2013 Cohort: 66.7%	Fall 2014 Cohort: 60.6%	Fall 2015 target & actual: 65%, 74.3%
	Fall 2016 target: 67%	Fall 2017 target: 69%	Fall 2018 target: 71%

Other Freshmen Retention related benchmarks of focal interest to department

Goal: As a department, we are also very interested in the success of students who are not in our programs, but who are taking courses as part of their programs.

Action Step: Continue monitoring the implementation of the Course Transformation of MATH 102 and MATH 115 (Richard Harden, Derrick Bowman). Continue meeting with departments whose students take our courses as part of their majors (Liz Brown). Also, we have added a required “SI”-type session as part of MATH 115 to be implemented in Spring 2017 (Liz Brown, Derrick Bowman).

Department Persistence to Completion Goal(s):

(1) Require juniors and seniors to meet with their academic advisor to do a degree audit to ensure that they are on track for graduation.

Continuing: Ramachandra Abhyankar, Robert Sternfeld, Henjin Chi, Robert Johnson, Jodi Frost, Winnie Ko (undergraduate advisors in the CS, math, and math ed programs).

(2) Keep upper classmen involved in the department outside of their classes.

See action steps 1 and 3 for freshmen—these will also help our upperclassmen as well as the tutoring center goal below

(3) Ensure that the “right” faculty are teaching critical courses in the majors, ensure alignment between prerequisite and subsequent courses, closely review curriculum and program assessment data to determine necessary program modifications.

Starting Fall 2015 and ongoing: Liz Brown, Henjin Chi, Jeff Kinne, Winnie Ko.

Action Steps (with dates & person(s) responsible):

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<i>Completion Benchmarks</i> (by latest department)	Fall 2010 Cohort: 25.6%	Fall 2011 Cohort: 21.4%	Fall 2012 target & actual: 23%, 20.6%
	Fall 2013 target: 22.5%	Fall 2014 target: 24.5%	Fall 2015 target: 26.5%

Other Persistence to Completion related benchmarks of focal interest to department

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Other Goal(s), Action Steps, and Benchmarks of focal interest to department:

Bring the Math Tutoring Center to the basement of Root Hall, under the control of the Department.

Why:

- (1) Closer connections between faculty and tutors
- (2) Sending consistent messages to students in our courses
- (3) Proximity to the place where the majority of the department courses are taught
- (4) We will provide leadership and professional development to the tutors
- (5) Consistency among tutoring in remedial math and college-level math courses
- (6) Presence of embedded tutors in lower level courses

This could be accomplished in a revenue-neutral way if the current resources in the MWC devoted to mathematics were shifted to the Department. We could have this fully functioning by the Fall of 2017. Liz Brown, Christine Taylor