

## **Abstract**

Mentoring has been primarily used as a developmental tool to support learning and personal growth and has been shown to advance and perpetuate the growth of many professions. A mentoring program was developed to aid in the retention and career development of female students majoring in STEM disciplines within the College of Technology at Indiana State University. Twenty-five female students were invited to participate in the pilot mentoring program; eleven students accepted the invitation. Students had opportunities to work with a mentor regarding academic and post-graduation success; interact with peers in their major and college; and learn and develop skills to aid in career and professional development.

## **Background**

Mentoring has been primarily used as a developmental tool to support learning and personal growth and has been shown to advance and perpetuate the growth of many professions (Crisp & Cruz, 2009; Kram, 1983). Mentoring is also widely used in U.S. institutions of higher education to support students' academic success (Cohen, 1995; Wyre, 2016). However, a gap has been identified in supporting the link between mentoring and students' success (Jacobi, 1991). This program will help generate awareness and insight in the higher education community regarding ways to assess the impact of mentoring programs; fill a gap in the literature regarding the usage of mentoring to aid students in STEM (particularly females); and help enhance and provide additional data to support the usage of mentoring in higher education.

Like many public institutions, state allocations in Indiana have declined over the last 5 years (Indiana State Budget Agency). Indiana utilizes six performance metrics in a funding formula to

determine allocation amounts. These metrics are listed in Table 1 along with their associated weights (Indiana Commission for Higher Education). This funding formula places emphasis on 4-year graduation rate (30% weight) in addition to the number of students obtaining degrees (40% weight). As state legislators continue to increase demands for evidence-based student success and achievement, and simultaneously decrease funding for public colleges and universities, it is even more important to implement effective programs and services for students.

*Table 1: Indiana State Higher Education Funding Formula*

<b>Metric</b>	<b>Weight</b>
Overall completion	40%
On-time completion	30%
At-risk completion	20%
High-impact completion	8%
Student persistence	1%
Remediation success	1%

In addition to student success having a heavy emphasis in the state funding formula, it is also Goal #1 of the current ISU strategic plan (ISU Institutional Research). Both Goal #1 and Goal #2 of the strategic plan, *Increase Enrollment and Student Success* and *Advance Experiential Learning*, are addressed through the Destination Success program.

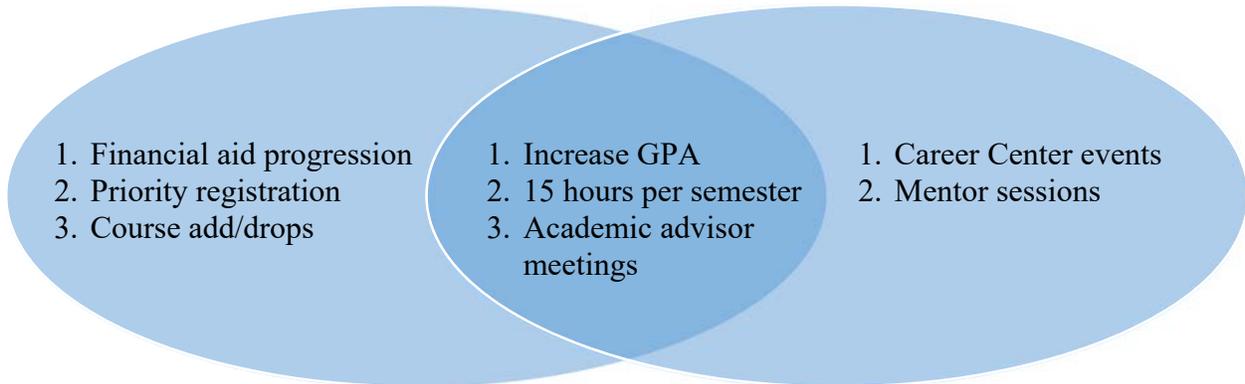
### **Program Development**

The Destination Success (DS) program in the College of Technology (COT) at Indiana State University (ISU) began in October 2015 under the direction of professional women from both academia and industry. DS aimed to support undergraduate female students studying STEM disciplines in two areas: A) degree progression, and B) professional development/career readiness.

## Destination Success: Student Success in Female STEM Students

As mentioned before, many universities in the US have experienced a loss in general budget in recent years. DS recognizes this loss in resources and is designed around existing campus and college resources that can be utilized and framed for the success of female STEM students. The program utilizes pre-existing student success and career ready resources on campus thru the college and university's career center. The DS program is voluntary. Students nor mentors who participate in the mentoring program are compensated. The program is coordinated by the college in conjunction with campus partners. DS ran as a pilot program during the 2015-2016 and 2016-2017 academic years. Ten students participated in the first year, and 16 participated in the second. After the pilot launch, all female STEM students in the COT (83 women) were invited to participate in the full-scale program during the 2017-2018 academic year.

Measurable outcomes for DS were developed to quantify success of participants. For the purposes of this program, "student success" is based upon academic and post-graduation success. Academic success is based upon positive degree progression, on-time course registration, good academic standing (2.0 GPA or higher), and completing required courses. Measurable goals/outcomes are summarized in Figure 1. Outcomes that relate to the first objective of DS, to encourage degree progression, are in the left portion of the diagram. These include maintaining satisfactory financial aid progression (meeting *Satisfactory Academic Progress*), qualifying for priority registration, and adding/dropping courses after the start of a semester. Outcomes that relate to the second objective of DS, to support professional development and career readiness, are in the right portion of the diagram. These include attending career readiness workshops, and participating in mentoring sessions (Wyre & Harris).



*Figure 1: Measurable Outcomes of the DS Program*

Measurable academic outcomes are listed in the center of the diagram. They are increasing grade point average (GPA), completing at least 15 hours per semester (which aids in four-year graduation), and regularly attending academic advising sessions. In addition to the measurable outcomes listed in the figure, participant and sponsor perceptions of the program are measured. All measurable outcomes of DS not only align with typical mentee benefits, but also with the university's initiatives and ISU's strategic goals. These outcomes are also linked to the Indiana state funding model, so positive outcomes not only benefit the student, but the university's bottom line as well.

The structure of DS consists of programmed meetings and individual mentor/mentee meetings. The programmed meetings educate students on specific issues related to degree progression and/or professional development, such as resume development, interviewing skills, financial literacy, networking, utilization of LinkedIn, and cultivation of leadership skills. Mentor/mentee meetings were held to discuss academic and career goals, academic struggles and success, integration into campus, and more.

### **Program Continuation**

Mentoring has a long history in both academia and industry as a valuable tool for growth and development. The Destination Success (DS) program in the College of Technology (COT) at Indiana State University builds upon this history with the intent of improving both degree progression and professional development of female participants, in a way that will also assist with the state funding model.

Both programmed meetings and mentor/mentee meetings will continue throughout the 2018-2019 academic year. All female STEM students will be invited to participate in the program, and it is anticipated that 10 additional mentors will be added. Data for each of the DS measurable outcomes, listed in Figure 1, will be collected during the spring 2019 semester. This data will allow a detailed assessment of the impact of the DS program on its participants.

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