

Strategic Plan – Initiative Work Plan FY2016

Initiative Name Apply the Science of Learning to the Learning of Science **Date** 5/11/2015

Goal # Two **Goal Chair(s)** Nancy Rogers and Heather Miklozek

Initiative # Two **Initiative Chair(s)** Catherine Stemmans Paterson

Thesis Statement Science Education for New Civic Engagements and Responsibilities (SENCER) is a teaching approach whereby course content is taught through a large, unresolved civic issue. Students in SENCER courses participate in community-engaged service and/or research projects as they learn about science, health, communication, arts, technology, and a variety of other subject matters. Engaged learning courses/environments contribute to student retention and success, enhanced faculty performance, and positive publicity for Indiana State University. Facilitating the creation of additional engaged learning courses/opportunities through these courses will, therefore, benefit students, faculty, and the university as a whole.

1. Introduction/Background – What?

SENCER at ISU

Indiana State University has adopted the Science Education for New Civic Engagements and Responsibilities (SENCER) Teaching approach, which fits well with our strengths in experiential learning and community engagement. We are working to promote the SENCER Teaching Model at ISU and requests the following budget to meet the goal of making our classes more engaging and to provide students with a deeper learning experience across all disciplines using this engaged, interdisciplinary approach.

2. Proposal/Purpose/Justification – Why?

The SENCER Teaching Model promotes project-based learning and community engagement to involve students in a meaningful education. The budget that we are requesting will provide funding for: (a) faculty development; (b) class conversion to this interactive and interdisciplinary model that incorporates community engagement; (c) the SENCER Student Leadership Team, who will use the skills learned from their diverse majors to bring SENCER alive at ISU; and (d) conference participation for SENCER participants (students and faculty) in order to present their findings at conferences, and to gain valuable professional experiences from interacting with other SENCER contributors in other educational institutions. 62% of the requested funds will go to course conversion and undergraduate student stipends.

3. Discussion of Past Years Results – Benchmark Successes?

On January 28, 2015, Drs. Tina Kruger Newsham, Catherine Stemmans Paterson and Jim Speer presented Enriching Community Outreach in SENCER Courses. This session was part of a Faculty Development Series promoted by the Center for Community Engagement, The Career Center and the Faculty Center for Teaching Excellence. Several faculty members attended to learn more about the SENCER teaching model and were able to ask questions of involved faculty.

Over the past year (FY2015), course development proposals for the following new SENCER courses have been approved:

1. MATH 102 – Mathematics and Computer Sciences

Mr. Richard Hardin, instructor in the Mathematics and Computer Sciences, and Dr. Catherine Stemmans Paterson attended the SENCER Regional Conference. At that conference, Mr. Hardin was

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able to meet with several faculty members from other universities who had converted introductory Mathematics courses through the SENCER model.

Mr. Hardin, and Drs. Jim Speer and Catherine Stemmans Paterson will soon attend a SENCER Summer Institute to further develop faculty into creating these learning opportunities.

On April 8, 2015 a meeting was held with the deans and department chairs from the College of Technology. During this meeting, the SENCER initiative, strategies for course adoption and faculty incentives were discussed.

Efforts have been initiated to connect the SENCER initiative with ISU's Course Transformation Academy.

SENCER continues to be a part of the Curricular Engagement Inventory so faculty and departments can identify course sections with this Engaged Learning attribute.

4. Work Plan, Next Fiscal Year – Action Steps – Process – How?

1. Increase faculty awareness of the SENCER model and its benefits, and boost faculty participation in SENCER-related projects and activities.
 - a. Send faculty to SENCER conferences (the SENCER Summer Institute, the SENCER D.C Symposium)
 - b. Update and maintain the ISU SENCER webpage, which will include sample SENCER course syllabi and best practices for *SENCERizing* courses
 - c. Revise SENCER brochure and evaluate marketing campaign
2. Increase student involvement in SENCER related projects and activities
 - a. Send students to SENCER conferences (the SENCER Summer Institute, the SENCER D.C Symposium)
 - b. Develop a series of student projects to promote and evaluate SENCER courses and activities
 - c. Implement a social media approach to disseminating information about SENCER to students and faculty
3. Increase the number of SENCER courses offered at Indiana State University
 - a. Offer stipends for conversion of courses to the SENCER model. Priority will be given to courses from Biology, Chemistry and Physical, Earth and Environmental Sciences, Economic, and Mathematics and Computer Science.
4. Pursue external funding/grants from the National Center for Science and Civic Engagement (NCSCE) for SENCER- related projects
5. Develop assessment procedures in evaluating outcomes of SENCER-related activities
 - a. Continue to develop and improve the existing system of review whereby SENCER courses at ISU can be reviewed to evaluate the extent to which they address the SENCER ideals (basic, emerging, transformative).
6. Share our work, best practices and accomplishments with the SENCER community (e.g., SENCER Regional Centers of Innovation) and other stakeholders (local community, civic leaders, ISU alumni, etc.)
7. Pursue research interests and disseminate research outcomes connected to SENCER's goals

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- a. Implement a research agenda around the SENCER Teaching Model and pursue the opportunity for ISU faculty to become visiting scholars with SENCER
- b. Publish the outcomes of our research endeavors to SENCER-related journals, and other discipline-specific research outlets.

8. Maintain a catalog of SENCER courses through the annual Curricular Engagement Inventory.

5. Reporting and Deliverable Schedule – When?

August 2015:

1. Update SENCER brochure
2. Request participation of potential members of the SENCER Leadership team; including faculty, staff, and students.

September 2015:

1. Convene the SENCER Leadership team.
2. Deliver SENCER information presentations to deans, college leadership teams and faculty
3. Meet with faculty delivering SENCER courses
4. Develop a list of all student projects for the academic year 2015-16, as well as the guidelines and deliverables for the projects.
5. Remind faculty that initial SALGs are due

October 2015:

1. Update the SENCER website and increase functionality for its users
2. Increase students awareness of funds for short-term SENCER-related projects and activities
3. Identify interested faculty members and give the first subawards that will assist those faculty to convert existing courses using the SENCER model.

November 2015:

1. Deliver the first round of faculty development workshops
2. Start developing assessment procedures (faculty portfolio sample) in evaluating outcomes of SENCER-related activities
3. Remind faculty of due date for secondary SALGs

December 2015:

1. Review of *Student Assessment of Learning Goals* (SALGs) for all SENCER designated courses in ISU

January 2016:

1. Complete data analysis of student outcomes (SALGs) from Fall 2015 courses
2. Remind faculty of initial SALG for Spring 2016 courses

February & March 2016:

3. Award the rest of the subawards to assist faculty to convert existing courses using the SENCER model.
4. Continue delivering faculty development workshops
5. Start working on research projects related to the SENCER model and its practices

April 2016:

1. Attend the SENCER Symposium in Washington, D.C with students to have them report out on their research in their SENCER classes
2. Remind faculty about due date for secondary SALGs

May 2016:

1. Review and analyze Spring 2016 SALGs

July - August 2016:

1. Work on and deliver multiple presentations at the SENCER Summer Institute (SSI)

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6. Budget – How Much, a General Discussion of Funds Use?

This initiative makes a request for **\$77,360** from the ISU strategic plan for the FY 2016. The majority of the budget (**52%**) is for course conversion (faculty stipends and benefits). Program development and administration expenses (student/faculty training and course assessment are included) account for **14%** of the budget proposal. Student stipends for the SENCER Student Leadership Team account for **16%** of the budget request; those funds provide students with leadership skills, experiential learning within their major, and an opportunity to improve education at their own institution. Travel expenses in FY 2016 account for **14%** of the total budget. Finally, for supplies and other promotional material, the request account for only **4%** of the budget.

7. Stakeholders and Management Plan – Who?

Dr. Catherine Stemmans Paterson is the Chair of Goal 2 Initiative 2. Dr. Speer & Dr. Tina Kruger are past initiative chairs and are part of the SENCER Leadership Team. We will search for six new student members on the Student Leadership Team with skills in public relations, survey development, and assessment. Liz Metzger (Office of Sponsored Programs) and Heather Dalton Miklozek (Center for Community Engagement) remain engaged with the SENCER program and bring their skills and expertise from their offices to advance SENCER at ISU.

8. Outcome Assessment & Future Testing

(How will we know that we were successful?)

We are studying the effect of SENCER classes through an innovative assessment tool called the Student Assessment of Learning Gains (SALG). Each SENCER class completes this extra assessment survey of the students' gains and understanding of larger issues such as critical thinking and importance of civic issues. This work is building to the point where we will better understand how our students learn and what engages them in their education, which will result in student retention and success (see benchmarks under **Goal 1** as well). We also are looking at long-term data from the Student Instruction Report (SIR) scores from the past 10 years to examine classes before and after the SENCER model was implemented at ISU. We will know that we are succeeding if we see an increase in SIR scores in SENCER classes and if we see positive responses regarding critical thinking, knowledge of how science is done, interest in science, and interest in the science of civic issues from the SALG assessment.

Furthermore, we are working to continue developing clear guidelines for the process of SENCERizing courses and for reviewing faculty portfolios for courses with a SENCER designation on a regular basis. The guidelines will serve to streamline the process of converting courses to the SENCER model, thus enabling increasing numbers of faculty to participate in SENCER. The portfolio review tool will include outcomes of syllabus review via Rubric 3.0, comparison of baseline and follow-up SALGs, samples of student work, and interviews with faculty and students engaged in the courses. The portfolio review tool will facilitate the identification of areas for enhancing adoption of SENCER ideals, allow for the continued implementation of the SENCER model in courses once converted, provide for identification of courses that incorporated SENCER ideals to greater and lesser degrees (i.e., basic, emerging, transformative), and facilitate identification and recognition of faculty who are actively and continually engaged in SENCER. Outcomes of the review tool will, ideally, include consistently strong performance among faculty receiving a stipend to convert a course(s) to the SENCER model, increase student and faculty satisfaction and performance, enhance student

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retention, and facilitate community engagement.

9. Line Item Budget Discussion that tracks Budget Templates ...

(These sections also need to be as long as is necessary to articulate each of the budget line items.)

Faculty stipends (course conversion) – 18 @ \$2,000 each	\$36,000
Fringe benefits for stipends – 12% of \$36,000	\$ 4,320
Initiative Chair stipend – 1 @ \$4,500 each	\$ 4,500
Fringe benefits for Chair stipend – 12% of \$4,500	\$ 540
Travel	
SENCER Summer institute 2015 (2 faculty, 2 students)	\$ 5,000
DC Symposium (1 faculty, 2 students)	\$ 4,500
Travel to request for grant money	\$ 1,500
Student projects – 40 @ \$300 each	\$12,000
Faculty buyout (2 semester @ \$3,000 each)	\$ 6,000
Supplies and materials	<u>\$ 3,000</u>
Total	\$77,360

In addition, we would like to request a carry over for funds in FY2015 in order to cover the SENCER Summer Institute 2015 expenses which will occur in June and August of 2015.