Educational Research Mini-Grants at Missouri S&T

Teaching and Learning Technology Conference
March 15, 2018

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ABOUT

> To research specific pedagogical questions about student learning

> Funded by CAFE

> Eligibility:
  – Full-time tenured and tenure track
  – Full-time non-tenure track faculty
  – Full-time staff with teaching duties
  – Department chairs with teaching duties

> Up to $5,000 for individual grant

> Up to $8,000 for an interdisciplinary team

"The scholarship of teaching and learning...is perhaps best understood as an approach that marries scholarly inquiry to any of the intellectual tasks that comprise the work of teaching..."
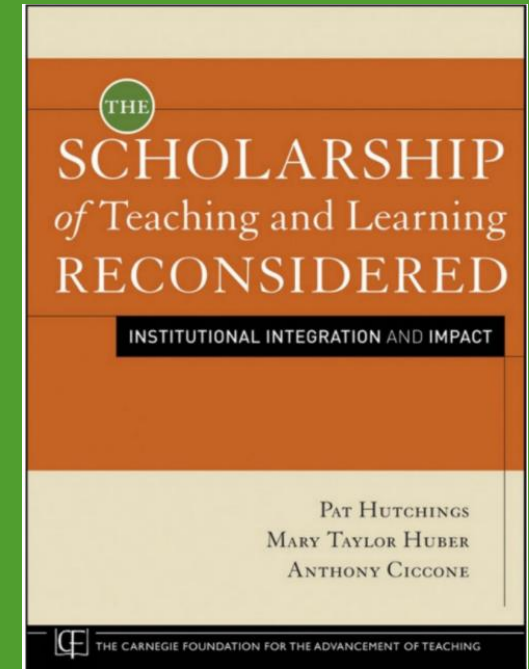
(Hutchings, Huber & Ciccone, 2011)

ADDRESS A QUESTION YOU HAVE ABOUT

> Student learning outcomes

> Achievement among underrepresented students

> A particular pedagogy (ie. design thinking)

> A curricular change

A list of 9 suggested areas of focus in listed in the grant guidelines

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RESULTS OF DOING 5 YEARS of EDUCATIONAL RESEARCH PROJECTS at S&T

> Increased instructor satisfaction in teaching

> New collaborations developed

> Improvement in end-of-course evaluation scores

> New insights about how students learn

> Introduction to a new field of study

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RESULTS OF DOING 5 YEARS of EDUCATIONAL RESEARCH PROJECTS at S&T

> Papers, publications, presentations and grant proposals

> Documented improved student learning

> Increased engagement student-to-student and student-to-instructor

> Unexpected positive outcomes

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TIMELINE

> Letter of Intent due March 1

> Full proposal due May 18

> Awards Announced June 1

> Final report due January 2, 2020

> Funding released in stages

 – 50% available when awards are announced

 – 25% available upon update to committee after fall semester

 – 25% released after final report is submitted

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STEPS

> Develop a *specific* research question

> Review background literature

> Determine assessment methods

> Obtain IRB approval or exemption

> Perform research and collect data

> Analyze data

> Present your findings to colleagues

O'Loughlin, V. D. (2006). A "how to" guide for developing a publishable Scholarship of Teaching project *Adv Physiol Educ*. 30: 83-88.

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ISSUES TO AVOID

> Research question is not clear, specific or measurable

> Scope of project is too broad

> Assessment methods are not described

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EXAMPLE

Vague Research question:

How will a flipped laboratory model impact student learning?

- Ambiguous terms – what type of "impact" should we expect?
- How will it be measured?
- What is the setting?

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RESEARCH QUESTION

Will implementation of a flipped laboratory model of BIOL3000 result in greater student satisfaction and learning, as measured by the Fraser test and course grades, compared to student satisfaction and learning in a traditional laboratory model of BIOL3000?

RESEARCH QUESTION

> Includes

  – location where research will take place
    – States the specific change you are looking for
    – How to measure it

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RESEARCH QUESTION

> Includes
  – location where research will take place (Course#)
  – **States the specific change you are looking for**
  – are How to measure it

Will implementation of flipped laboratory model of BIOL3000 result in **greater student satisfaction and learning**, as measured by the Fraser test and course grades, compared to student satisfaction and learning in a traditional laboratory model of BIOL3000?

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- location where research will take place (Course#)
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RESEARCH QUESTION

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  – location where research will take place (Course#)
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Will implementation of flipped laboratory model of BIOL3000 result in greater student satisfaction and learning, as measured by the Fraser test and course grades, compared to student satisfaction and learning in a traditional laboratory model of BIOL3000?

ASSESSMENT METHODS

> Consider using:
  – Data from assessment tools you already use
  – Previously developed measures/methods (literature search)
  – Multiple assessment methods, ie:
    > Student survey, and
    > Classroom observations, and
    > Course grades comparing pre and post intervention, and
    > Canvas analytics

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RUBRIC

Available on the CERTI website:

certi.mst.edu/educationalresearch

Evaluation Rubric for Educational Research Mini-Grants

	5-4 Outstanding	4-3 Acceptable	2-0 Unsatisfactory
Project Purpose	The project purpose is clearly defined and aligns with one or more suggested focus areas. Proposal describes potential impact on teaching and student learning and has the potential to be transformative in nature. Relevant theory and/or thorough review of the literature has been conducted.	The project purpose is clearly defined and mostly aligns with suggested focus area(s). Proposal describes the potential impact on teaching and student learning and has the potential to be transformative in nature . Some review of the literature has been conducted.	Proposal does not describe the potential impact on teaching and learning and/or does not have the potential to be transformative in nature. Project purpose is unclear. No review of the literature has been conducted.
Research Question	Research question addresses an S&T teaching and learning issue, is clearly stated, specific and measurable. The question describes the setting for the classroom research.	Research question addresses an S&T teaching and learning issue, is clearly stated, and is mostly measurable. The question describes the setting for the classroom research.	Proposal does not include a research question. Or, the research question does not address an S&T teaching and learning issue. And/or the question is not clear, specific or measurable. The setting for classroom research is not described.
Outcomes/ Objectives	Project outcome(s) are clearly stated, realistic and achievable using appropriate assessment methods. All outcomes align with the research question.	Most project outcome(s) are clearly stated, realistic and achievable using appropriate assessment methods. Most outcomes align with the research question.	Project outcomes are not stated, unclear, unrealistic, or not achievable using the outlined assessment methods. Outcomes do not align with the research question being addressed.
Methodology & Evaluation Plan	Methodology aligns with evaluation plan. Data collected from methodolgy and evaluation plan addresses the stated objectives. Appropriate assessment methods to determine outcomes/ objectives are described. Data produced will support or refute the research question. Timeline is provided and fits within the award cycle.	Methodology mostly aligns with evaluation plan. Data collected from methodology and evaluation plan addresses most of the stated objectives. Most assessment methods are appropriate to determine the objectives. Data produced will support or refute the research question. Timeline is provided and fits within the award cycle.	Methodology does not align with the evaluation plan. Data collected does not address the outcomes/ objectives, and/or will not support or refute the research question. Assessment methods are not described, or inappropriate assessment methods are used. Timeline does not fit within the award cycle.
Budget	Each budget item is clearly linked to a specific project activity. Each budget item directly correlates to the successful completion of the project. The amounts are clearly explained and based on expected costs.	Each budget item is linked to a specific activity. Each budget item correlates to the successful completion of the project.	Budget is partially or not itemized. Budget items do not correlate to the successful completion of the project.
Communication /Dissemination	Proposal describes how the results will be applied in the classroom *and* beyond the grant cycle. Other S&T faculty are likely to access and use the results. A plan is developed to publicize and disclose research results on campus and at venues beyond campus.	Proposal describes how the results will be applied in the classroom *and* beyond the grant cycle. A plan is developed to publicize and disclose research results at the TLT Conference or other local venues, and may include venues beyond campus.	Proposal does not describe how the results will be applied in the classroom and/or beyond the grant cycle. No plan is described to publicize and disclose research results.
IRB Approval	IRB approval has been obtained or exemption has been received through the Missouri S&T IRB office.	IRB approval is in process/pending. (Note: IRB approval must be obtained, or exemption granted, before funding will be released)	IRB approval has not been obtained or pursued.

O'Loughlin, V. D. (2006). A how to guide for developing a publishable Scholarship of Teaching project. Adv Physiol Educ, 30:83-88. Retrieved from https://www.academia.edu/20790279/A_how_to_guide_for_developing_a_publishable_Scholarship_of_Teaching_project

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RESOURCES

> Help is available through the CERTI office
  – certi@mst.edu
  – x7648

> CERTI website
  – Video tutorials
  – Articles
  – List of past mini-grant recipients
  – Journals by discipline that publish SoTL articles
  – Conferences to present SoTL projects

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Comparison of S&T Grants
administered through CERTI, CAFE, & Ed Tech

GRANT PROGRAM	Curriculum Development Faculty Grants	Educational Research Mini-Grants	Provost's eFellows Grants	Professional Development Travel Grants	Publishing Results from Mini-Grants
ADMINISTERED BY	CERTI (certi.mst.edu)	CAFE & CERTI (certi@mst.edu)	Educational Technology (phelpsja@mst.edu)	CAFE (cafe@mst.edu)	CAFE & CERTI (certi.mst.edu)
FUNDED BY	Innovation Fund – Pathways to Innovation Team (chair: Dr. Bonnie Bachman)	Center for Advancing Faculty Excellence (CAFE)	Center for Advancing Faculty Excellence (CAFE)	Center for Advancing Faculty Excellence (CAFE)	Center for Advancing Faculty Excellence (CAFE)
FOCUS OF PROGRAM	To incorporate strategies that promote student entrepreneurial-minded learning in undergraduate classrooms	To promote the scholarship of teaching and learning; to support projects that research pedagogy within a particular discipline	To redesign courses for blended or online courses using best pedagogical practices	To travel to conferences or workshops for professional development or to meet with fund managers	To offset the cost of dissemination of results from past educational research mini-grant projects

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GRANT PROGRAM	Curriculum Development Faculty Grants	Educational Research Mini-Grants	Provost's eFellows Grants	Professional Development Travel Grants	Publishing Results from Mini-Grants
ELIGIBILITY	All full-time tenured, tenure-track and non-tenure track faculty with appointments in the CEC or CASB	All full-time faculty, full-time staff, and department chairs with teaching duties	All faculty and staff with teaching duties from any S&T department	Tenure-track and Non-tenure track early career faculty	All individuals and teams who successfully completed an educational research mini-grant project
AMOUNT OF FUNDING	Up to $3,000 per individual	Up to $5000 for individual project and up to $8,000 for interdisciplinary team project	Up to $5,000 for 'whole course' redesign. Up to $7,000 for a lecture and lab full redesign	Up to $1,000 per individual per year	Up to $1,000 per individual
TIMELINE	Letter of intent: March 30, 2018. Proposal due May 18, 2018.	Letter of intent: March 1, 2018. Proposal due May 18, 2018. Awards announced June 1, 2018	Letter of intent: April 20, 2018. Proposals due June 1, 2018.	Two cycles per year. Proposal due December 1 and March 1	Proposal due May 18, 2018. Awards announced June 1, 2018
AWARD CYCLE LENGTH	Four semesters; June 2018 – May 2020	Three semesters; June 2018 – Dec 2019	12 – 18 months – through Fall 2019 or Spring 2020	One-year	One-year (flexible)

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Thank you!