

program faculty presentation schedule

ENGINEERING EDUCATION PhD

No profession unleashes the spirit of innovation like engineering. The Doctor of Philosophy in Curriculum and Instruction with a concentration in Engineering Education prepares the next generation of thought leaders and experts to devise improved strategies for engineering teaching and learning across the education spectrum. A collaborative of the Mary Lou Fulton Teachers College and the Ira A. Fulton Schools of Engineering, ASU's PhD program in Engineering Education provides students a multidisciplinary academic experience that bridges fundamental research and best practices to improve learning.

Graduates of the program emerge with the knowledge and abilities needed to succeed in the global engineering community of the 21st century as they pursue careers in academia, industry, government and policy, foundations or within P-16+ systems, as engineering faculty members, outreach directors, corporate trainers, or assessment specialists.

ADMISSION & PROGRAM INFORMATION

Admission requirements:

- Minimum grade point average of 3.0 (on a 4.0 scale) is required for graduates of accredited United States institutions
- Current score on the general Graduate Record Examination (GRE)
- Three letters of recommendation
- Statement of academic and career objectives
- Curriculum vita and writing sample

Please review the [Engineering Education Program Guide](#) and visit the [ASU Graduate College website](#) for more detailed information regarding admission requirements and how to apply.

APPLICATION DEADLINE

- Applications are accepted only for Fall admission.
- Admissions for Fall 2010 are now closed. Application deadline for Fall 2011 will be announced soon.

PROGRAM DOCUMENTS

- [Engineering Education Program Guide](#)
- [Curriculum & Instruction PhD Handbook](#)

CONTACT US

Tirupalavanam G. Ganesh, PhD
Program Coordinator & Assistant Professor



Discover **ENGINEERING**; foster engineering habits of mind; **ENHANCE** k-12 STEM education; retain undergraduate engineering students; **ENCOURAGE** mathematical thinking; systems thinking, **CREATIVITY, OPTIMISM, COLLABORATION, COMMUNICATION, ETHICAL** considerations research, innovation; scholarship of teaching and learning engineering; address the **GRAND CHALLENGES** of our time

Arizona State University: Engineering Education Doctoral Program
<http://engineeringed.asu.edu>

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Research
Certificate Program
PhD program
News



Latest News

Department Chair, Engineering and Science Education

The College of Engineering and Science (CoES) at Clemson University invites nominations and applications for the position of Chair ... [\[more...\]](#)

Dr. Lisa Benson is a recipient of the NSF Faculty Early CAREER Development Award for her project

Lisa Benson, Assistant Professor in Engineering and Science Education, is a recipient of the National Science Foundation (NSF) ... [\[more...\]](#)

Dr. Melanie Cooper received the Class of 1939 Award for Excellence

Congratulations to Dr. Melanie Cooper who has received the Class of 1939 Award for Excellence ... [\[more...\]](#)

Science as Art

The most beautiful experience we can have is the mysterious... the fundamental emotion which stands at the cradle of true art ... [\[more...\]](#)

[Other News]



Engineering Education Research at the University of Georgia

Contacts:

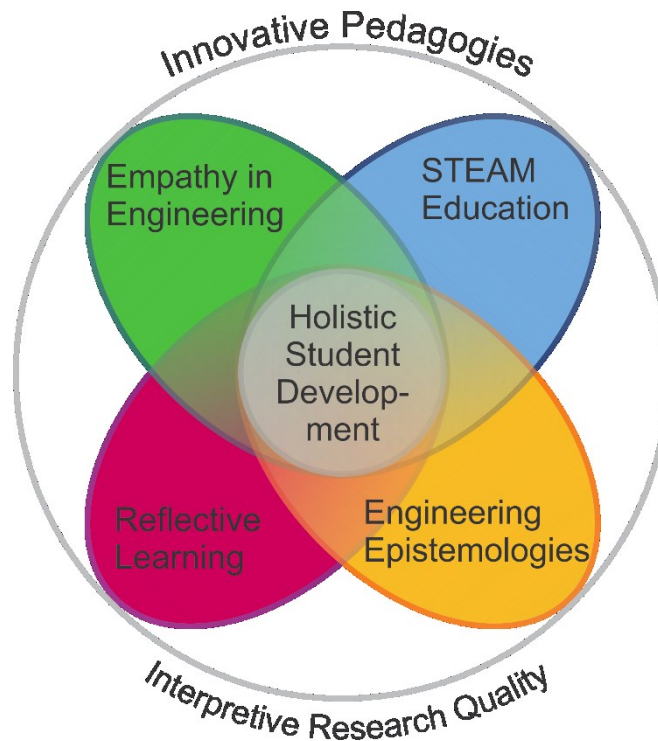


Dr. Jo Walther
jwalther@engr.uga.edu

We are a trans-disciplinary, collaborative group that uses interpretive research methods to investigate diverse aspects of engineering education and build on our research outcomes to push the boundaries and transform engineering curricula and teaching practice.



Research Areas:



Dr. Nicki Sochacka
sochacka@uga.edu

We include students as partners in research projects in a trans-disciplinary, dynamic process of mutual learning and shared discovery.

Ask us about:





Innovations in the GT Learning Environments

From MOOCs to flipped classrooms to problem-solving studios, GT faculty are at the forefront of bringing STEM education research to practice.

A few recent innovations include:

- **Flipping a Fluid Mechanics Course,**
- **Blending Core ECE Courses, and**
- **Creating a Heat Transfer Problem-Solving Studio.**

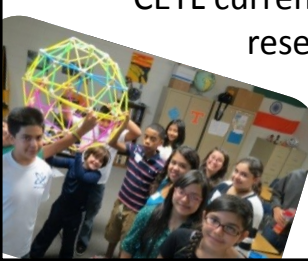
Graduate students also participate in these innovative learning environments as problem-based learning facilitators or through their own teaching experiences in CETL's Tech to Teaching program.

Center for the Enhancement of Teaching and Learning (CETL)

CETL staff members encourage, consult, and partner with faculty who become involved in the research, scholarship and assessment of teaching and learning through individual, program, or grant driven initiatives. **Programs include:**

classroom consultations to seminars, project-based fellows programs, workshops on educational technology, and retreats.

CETL currently supports engineering education research efforts funded by NSF, US Dept of Education, the Goizueta Foundation, and others.



GT-ASEE Student Chapter

Founded in 2011, the GT student chapter of ASEE has created a community among graduate students and post docs with an interest in improving STEM education.

The chapter's multiple events include:

- Two research expositions and a 1 day workshop aimed at **connecting GT's STEM Education Research Community,**
- Two day teaching and learning workshop, INSPIRE², focusing on **interactive teaching pedagogies,** and
- Presentations about **GT's research and innovative classroom changes.**



STEM Education Research

GT faculty, research scientists, and graduate students from across the campus lead and participate in multidisciplinary STEM education research. Topics include:

- K-12 education,
- Engineering design education,
- Diagrammatic reasoning,
- Interdisciplinary thinking,
- Women in engineering,
- Educational technology, and
- Teaching assistant development programs.

Be sure to check out GT STEM Education researchers at the 2014 Annual Conference!





PH.D. ENGINEERING ENGINEERING EDUCATION CONCENTRATION

Fellowships still available for Fall 2014!

<http://coes.latech.edu/iserc>

- 4 years (summers included)
- \$30,000 plus tuition



Jenna
Carpenter



Kelly
Crittenden



Katie
Evans



David
Hall



Marisa
Orr



Heath
Tims

PhD in Engineering Education @

Regional Centre for Engineering Education (RCEE)

Universiti Teknologi Malaysia (UTM)

FACTS ON UTM

- 10 engineering schools
- 2000 tenured academics
- 2,800+ foreign students
- Largest number of engineering alumni in Malaysia
- More than 43% enrollment at graduate levels in engineering and technology in Malaysia

Transforming engineering education through innovative evidence-based practices

- Focus on training and research in Engineering Education
- PhD in Engineering Education program
 - Started in 2008
 - Up till now, 8 students completed PhD
 - Current enrolment: 40 students
- Also: Joint PhD in Engineering Education with Aalborg University, Denmark
- Post-doctoral and faculty position available

Contact:

khairiyah@cheme.utm.my

<http://tree.utm.my>



School of Graduate Studies

www.sps.utm.my



innovative • entrepreneurial • global



**Center for Engineering
Education Research**
• Michigan State University

The CEER research team includes backgrounds in engineering, other STEM areas, and education.

CEER is a DBER center with roles focusing on:

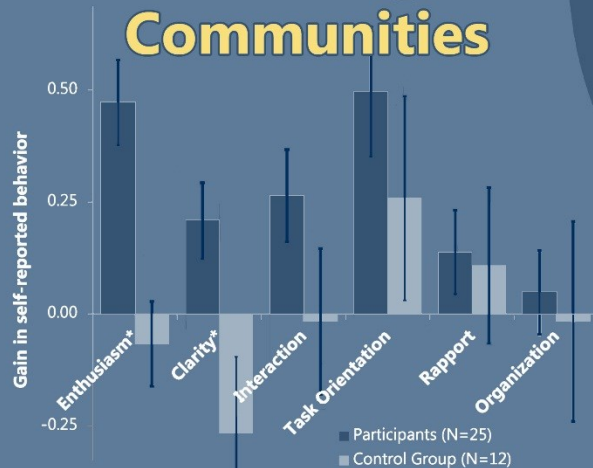
- **Funded engineering education research**
- **Widening the network of MSU EER researchers**
- **Support for outcomes-based education in EGR**
- **Collaboration to enhance MSU STEM research**



Networking & Dissemination



Learning Communities



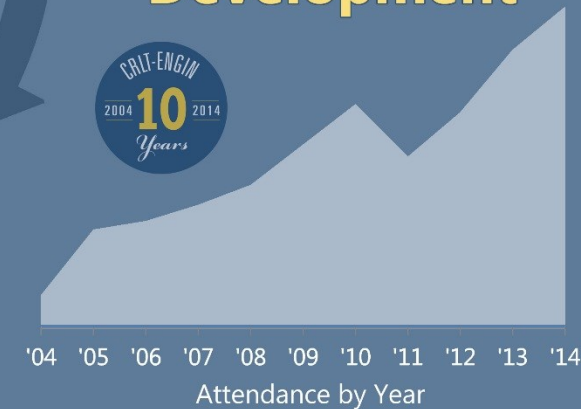
Ph.D Certificate for Engineering Education Research



Original Research



Faculty & TA Development



facebook.com/CRLTEngin

Center for Research on Learning and Teaching in Engineering



STEM Education Center

University of Minnesota

Mission

The STEM Education Center is dedicated to the transformation of science, technology, engineering and mathematics education.

Initiatives

- STEM Integration
- Learning and Cognition
- Research and Instructor Preparation
- Evaluation and Assessment



STEM Education Center

University of Minnesota

Outreach

- Research
- Professional Development
- STEM Colloquium on K-12 Education Research to Practice

Contact Us

www.cehd.umn.edu/stem

stem@umn.edu

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STEM



EDUCATION CENTER

UNIVERSITY OF MINNESOTA

Doctor of Philosophy in STEM Education

The STEM Education track in the Education, Curriculum and Instruction Ph.D. program at the University of Minnesota is an interdisciplinary program focusing on science education, mathematics education, and engineering education. This integrated-style program is one of the first in the nation, and is designed to prepare scholars to conduct thoughtful disciplinary and interdisciplinary research in STEM education in order to assume roles as university faculty members, educational leaders, policy makers, and researchers.

Contact: Terry Wyberg, Gillian Roehrig, Kristina Pearson

The STEM (Science, Technology, Engineering & Mathematics) Education Center is a research center in the College of Education & Human Development (CEHD). The STEM Education Center is an interdisciplinary collaboration with researchers from across the University of Minnesota.

Sponsoring Projects



Innovation Corps for Learning (I-Corps-L)

Evidence-based
Entrepreneurship to Improve
(STEM) Education

STEM Initiatives

STEM Integration



Evaluation and Assessment



P-12 Instructor & Curriculum Development



Learning and Cognition



Learn More at www.cehd.umn.edu/stem





THE OHIO STATE UNIVERSITY

College of Engineering
Engineering Education Innovation Center

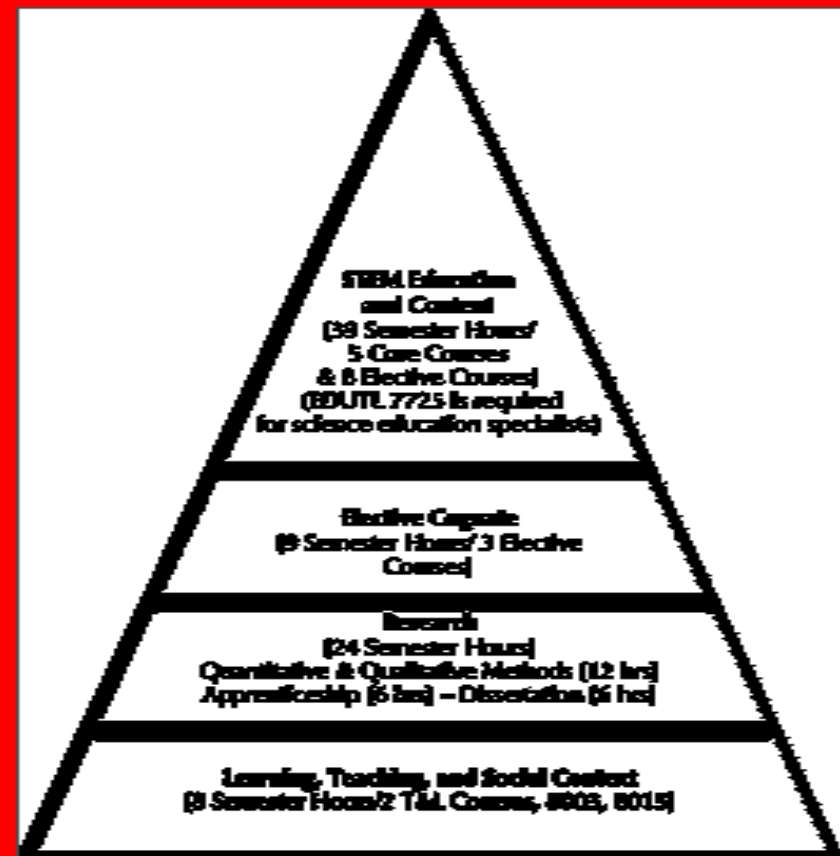


PhD Option in Engineering Education

Contacts:

Robert J. Gustafson, College of
Engineering gustafson.4@osu.edu

Paul Post, College of Education and
Human Ecology post.1@osu.edu



The Leonhard Center for the Enhancement of Engineering Education

Founded in 1990 with a gift from William E. Leonhard



Mission includes:

- Leading and supporting enhancements in undergraduate engineering courses and programs
- Supporting assessment, including ABET
- Leading improvements in communication courses for engineering students
- Preparing graduate and undergraduate teaching assistants
- Conducting externally funded research

Current strategic focus areas:

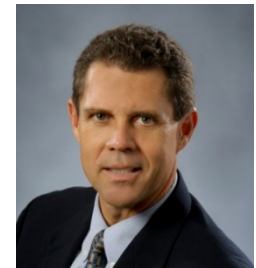
- Cross-national teams in capstone courses
- Integration of creative process into engineering courses
- Ethics education for first year students
- Technology-enhanced learning



Tom Litzinger, Center Director



Sarah Zappe, Director
Assessment & Instructional Support



Michael Alley
Engineering Communications

*For more information, contact Tom Litzinger at TAL2@PSU.EDU
or visit www.engr.psu.edu/leonhardcenter/*





my.pitt

Swanson School of Engineering

Contact Us

ENGINEERING EDUCATION RESEARCH CENTER

A Center of the Swanson School of Engineering

FACULTY

GRAD STUDENTS / POST DOCS

ENGINEERING ED COMMUNITY

WHO WE ARE

SERVICES

EFFECTIVE TEACHING

RESEARCH

CONNECTIONS

EVENTS/NEWS



Upcoming Events

[+ REGISTER](#)

Using Model Eliciting Activities (MEAs) in the Engineering Classrooms

07-19-12 | 08:30 am | 102 Benedum Hall, University of Pittsburgh

This workshop will provide engineering faculty with the ability to adapt or develop, implement, and assess Model Eliciting Activities (MEAs) in the upper division engineer classrooms. Participants will learn the theoretical basis for the MEAs, how to best implement MEAs within a course, as well as assessing the effectiveness of the MEAs.

... [Learn more](#)

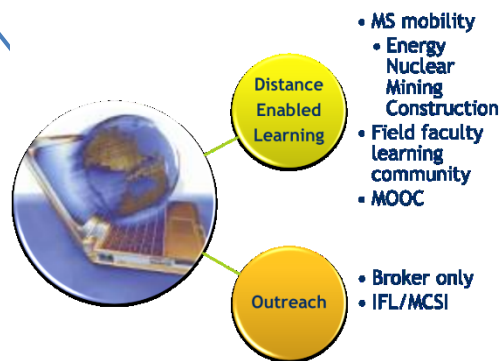
[+ REGISTER](#)

Teaching Workshop

08-21-12 | 08:30 am |

University of Pittsburgh
<http://www.engineering.pitt.edu/eerc/>

A Swanson School of Engineering Center
Mary Besterfield-Sacre, Director



Staff

Jan Littrell, Dir for DL & Assist Dir EERC
Renee Clark, Dir of Assessment

Faculty

Natasa Vidic – IE
Cheryl Bodnar – ChE

Other

Sam Spiegel – LRDC
Joel Brady – CIDDE
Kim Leasure – MCSI
Nathan Pearce – Technology Liaison

<http://www.engineering.pitt.edu/eerc>

23 Faculty
(>50% female)

20 A/P Staff
2 Admin Assist
4 Secretary

4 Post-Docs

~2400 FYE students

~ 70 Multidisciplinary
Engineering Students

80 PhD students (Fall 2014)
35 graduates

BS in Multidisciplinary
Engineering

Ideas to
Innovation
Learning
Labs

First-Year
Engineering
Program

Student
Advising

Graduate
Program
MS & PhD

Integrated
Research
Labs

INSPIRE
Pre-College
Engineering
Research





Center for the Practice and Scholarship of Education

Improving engineering education by:

- ✓ supporting faculty working to improve student learning and enhance instructional effectiveness
- ✓ assisting faculty engaged in educational scholarship and assessment
- ✓ facilitating the sharing of ideas and practices within the Institute and the larger educational community,
- ✓ promoting faculty development nationwide through the Making Academic Change Happen workshop (MACH)





University of St. Thomas
Center for Engineering Education
<http://www.StThomas.edu/CEE>

**Credit bearing graduate and undergraduate programs in PK-12
Engineering Education**
**Community based partnerships for broadening participation in
STEM at all levels**
**Strong partnership between the Schools of Education and
Engineering**



STEM Education

Master's & PhD Programs (97 students total)

Past and Current Research

UTeach Engineering (NSF-MSP)
Beyond Blackboards (NSF-ITEST)
VaNTH (NSF-ERC)
Teacher Training for Engineering
IPRO - Programming Standing Up
Adaptive Expertise in Engineering
K-12 LEGO Robotics
Discourse in K-12 engineering teams
National HS Curriculum Project

Faculty

David Allen (Chem Eng)
Leema Berland (STEM-Ed)
Richard Crawford (Mech Eng)
Ken Diller (BioEng)
Jill Marshall (STEM-Ed)
Anthony Petrosino (STEM-Ed)
Catherine Riegler-Crumb (STEM-Ed)



UNIVERSITY OF TORONTO
FACULTY OF APPLIED SCIENCE & ENGINEERING

NEW!

COLLABORATIVE PROGRAM IN ENGINEERING EDUCATION

Students pursue **traditional graduate degrees** in **engineering** or **education**.

Studies are **enriched** through thesis research and courses in **engineering education**.



Now
accepting
applications

Launching this September:

Offered at the **Master's and Ph.D. levels** through the
Faculty of Applied Science & Engineering and the
Ontario Institute for Studies in Education.

Contact:

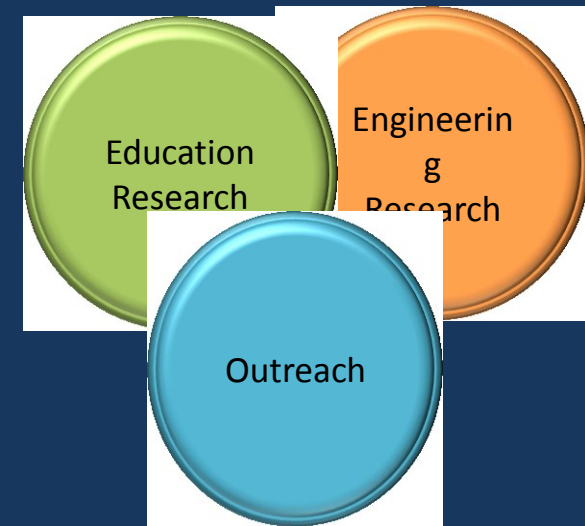
PROFESSOR GREG EVANS, greg.evans@utoronto.ca | www.gradstudies.engineering.utoronto.ca





Mission: Improving Education through Engineering

- An interdisciplinary center that includes faculty in engineering, education, child development and computer science.
- Ongoing research in engineering teaching and learning, outreach, and educational technology development.
- Highlighted projects:
 - Novel Engineering: Integrating Engineering and Literacy*
 - Interactive Learning and Collaboration Environment (InterLACE)*
 - STOMP: Student Teacher Outreach Mentorship Program*
- *PhD and M.S. in Engineering Education (in cooperation with Tufts Department of Education)*



COLLEGE OF ENGINEERING

home > students & visitors > ph.d. engineering education

Welcome

Students & Visitors

- + Clubs & Organizations
- + Prospective Students
- + Academic Programs
- + Advising Office
- + Engineering Scholarships
- + Ph.D. Engineering Education
- + Undergraduate Research
- + Freshman
- + Engineering Week

Research

College News & Events

Calendar

Facilities & Resources

Advising Office

Development

Contact Us

Map & Driving Directions

Information for College Faculty and Staff

Doctorate of Philosophy in Engineering Education

The **Doctorate of Philosophy in Engineering Education** is offered through the Engineering and Technology Education Department. Emphasis is on the learning and teaching of engineering design. Engineering Design is a decision making process, which utilizes results from basic sciences, mathematics, and the engineering sciences. This program produces doctoral students with proficiency in developing engineering design skills in others, and expertise in research into how those skills are best learned and taught.



Program graduates are expected to:

Be familiar with the theory and practice of engineering education and are adept at these aspects within their specific area of engineering specialization.

Have the ability to conduct research in engineering education in areas such as engineering epistemologies, engineering learning mechanisms, engineering learning systems, engineering diversity and inclusiveness, technology-enhanced learning, distance delivery, and engineering assessment.

Have the ability to develop, implement, and assess engineering curricula at high school and university levels.

Curriculum Requirements meet program expectations, students will complete a minimum of sixty credit hours, combining course work and research. The curriculum is divided into three components:

Engineering Education Core

This curricular component recognizes that engineering education is an emerging discipline. As such, students must have an accredited degree in an engineering discipline.

Area of Specialization

This component allows students to develop an in-depth knowledge in one area of engineering education. Students will identify a research area approved through the department and take courses within that area. The research area and courses will be identified and chosen with the advice and approval of the student's doctoral advisory committee. Three credits of these courses must be taken outside the ETE Department.

Research Component

This component ensures that program graduates have the skills



Utah State University

<http://www.engineering.usu.edu/htm/information/phd-engineering-education>

Vision.

We aspire to prepare students to be exceptional engineers and educators while serving as an international beacon for engineering education and research.

Quick Facts.

- PhD. began in 2008
- 21 Faculty (15.5 FTE)
- 32 Graduate Students
- 16 PhD Graduates
- 6 NSF Career Awardees
- 1 PECASE Award
- 2 NSF GRFP Awardees
- ~2300 First Year Students

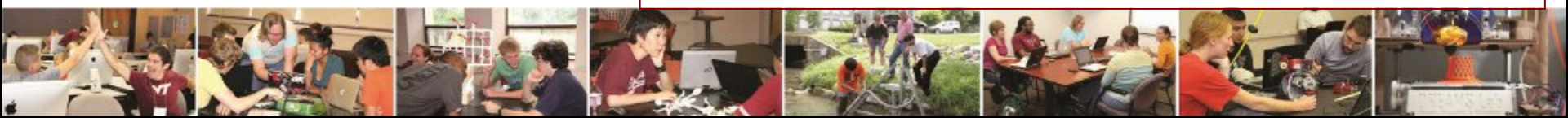
Faculty Research Themes.

Design Education and Pedagogy; Interdisciplinary; Reflective Practice; International Collaboration and Education; Broadening Participation; Systems View of Higher Education; Student Development; Role of Motivation in Learning; Computer Supported Learning Systems; Faculty Development; Communication and Teamwork in Engineering; Gender, Race, Class and Engineering Identities; Digital Portfolios

Testimonial.

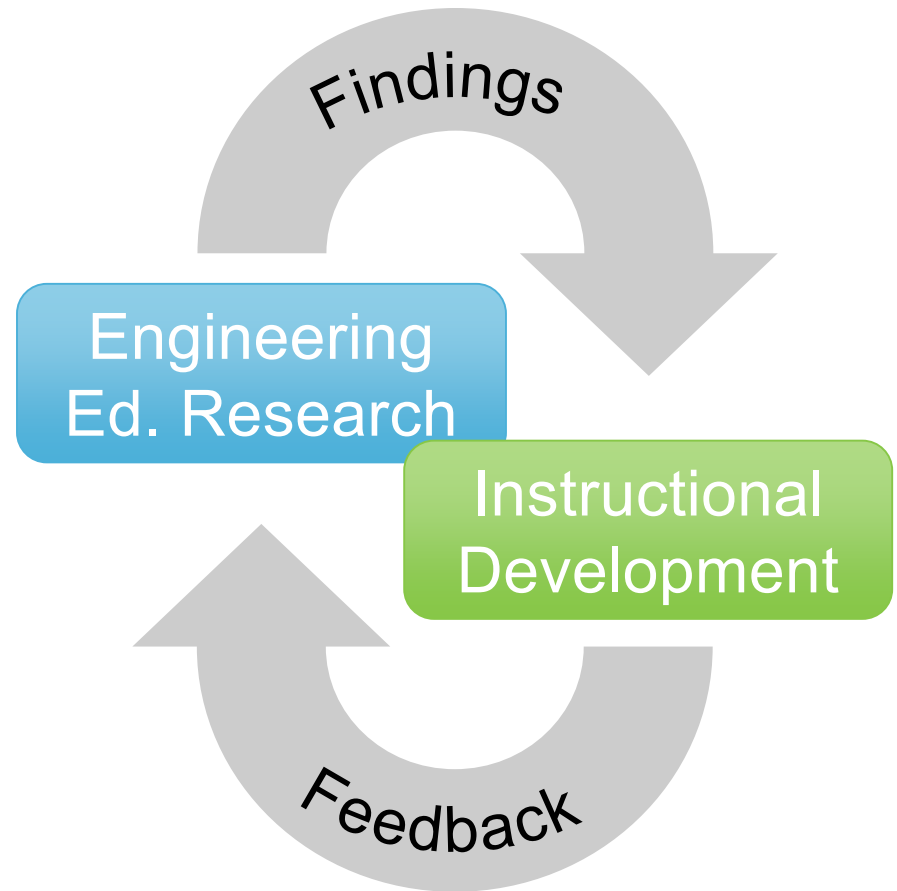
"A graduate degree in engineering education means that I have the knowledge and skills to help my students learn engineering content both through my use of evidence-based pedagogical practices and my research that provides additional knowledge of my students, the context, and the how best to implement pedagogical practices."

Jay Pembridge, Ph.D.
Embry-Riddle Aeronautical University



CELT

CENTER FOR
ENGINEERING
LEARNING &
TEACHING



First campus-based center in U.S. to combine research and instructional development missions

http://bit.ly/uw_celt

Consortium to Promote Reflection in Engineering Education

Identify and map practices that support reflective thinking

Practices, rationale for use, how students respond, keys to effectiveness, faculty-peer reactions

Produce field guides to support awareness and understanding of reflective practices

Campus-specific and national field guides with a wide variety of practices and how they fit into local institutional contexts

Promote local use, development, and sharing of reflective practices

Activities to develop, refine, and evaluate reflective practices at different scales

Mapping practices

Producing field guides: campus-specific & national

Promoting use & development of practices

**Start-up
(2014)**

Initializing

Building the consortium of 12 campuses

**Academic Year 1
(2014-2015)**

On each campus

Mapping reflective activities
Creating local field guides
Planning Year 2 reflection activities
Planning evaluation activities

Across the CPREE Partners of the Consortium

Conducting the CPREE events
Consortium-wide online meetings (2 per month)

Consortium-wide meeting in Seattle (annual)

Evaluation activities

Reports to funding agency

Dissemination including national field guide of reflective activities

**Academic Year 2
(2015-2016)**

On each campus

Conducting & evaluating reflection activities
Staging local CPREE events

**Wrap-up
(2016-17)**

Conclusion

Evaluation

Reporting

On-going

Dissemination

Reflection

Reflection can support student excellence and retention by helping students...

- Gain new perspectives on their knowledge and skills, and how to expand them
- Prepare for, seek out, and engage in new learning experiences
- Make informed commitments to studying and practicing engineering

Impact

18,000 student experiences across 12 campuses (1 student experience is an individual student engaging in a reflective activity)

240 educator experiences across 12 campuses (1 educator experience is an individual educator supporting a reflective activity)

Guiding principles

- Promote educator-driven change
- Identify practices that meet local needs and contexts
- Enhance the value and multiply the impact of existing and new educational practices
- Promote the idea of students making informed choices about majors, courses, and careers in engineering



[About Us](#)[Prospective Students](#)[Current Students](#)[Course Information](#)[Jobs and Internships](#)[Research and Labs](#)[News, Events, & Information](#)[People](#)[PhD Recruitment »](#)[Research: Technology with a Human Touch »](#)[HCDE Has the Moves! Do you? »](#)

Why Human Centered Design & Engineering »

Study Human Computer Interaction (HCI), Socio-Technical Systems, User Experience (UX) Research & Design, and Engineering Education in the internationally recognized department of Human Centered Design & Engineering.

Work with award-winning faculty, participate in interdisciplinary research, and gain cutting-edge, real world experience at international companies. [MORE »](#)

HCDE is Hiring »

The Department of Human Centered Design & Engineering (HCDE) is hiring a postdoctoral researcher, and a full-time [Senior Lecturer and Director](#) of the new [Master of Human-Computer Interaction + Design](#) (MHCI+D) program.

Give to HCDE »

Make an impact in the everyday lives of HCDE students. Give a gift today and help an HCDE student attend a conference, bring in guest speakers, or contribute to a scholarship fund.

[Make A Gift](#)

HCDE Human
Centered
Design &
Engineering

News »

>> Praveen Shekhar Selected as Hero Student Scholarship Winner. Recent HCDE graduate, Praveen Shekhar, has been selected as a Hero Student Scholarship Winner to attend the 2013 UXPA Conference in Washington, DC.

>> WebLabUX Research Group Wins IPCC Poster Competition. Students in HCDE Professor and Chair Jan Spyridakis' WebLabUX research group recently won the 2013 IPCC student poster competition.

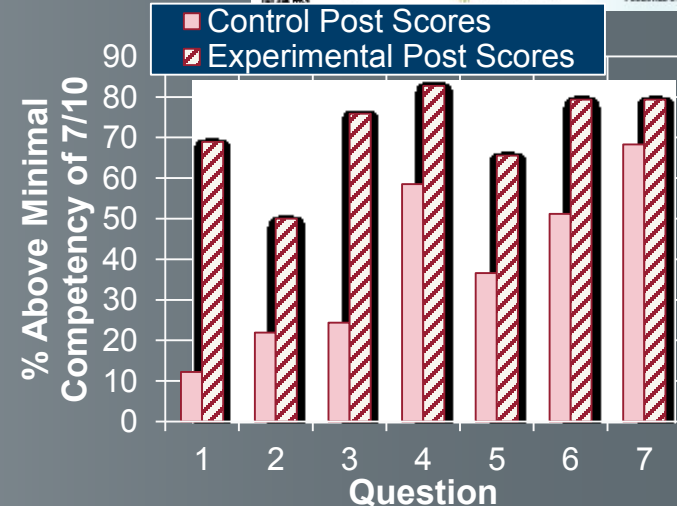
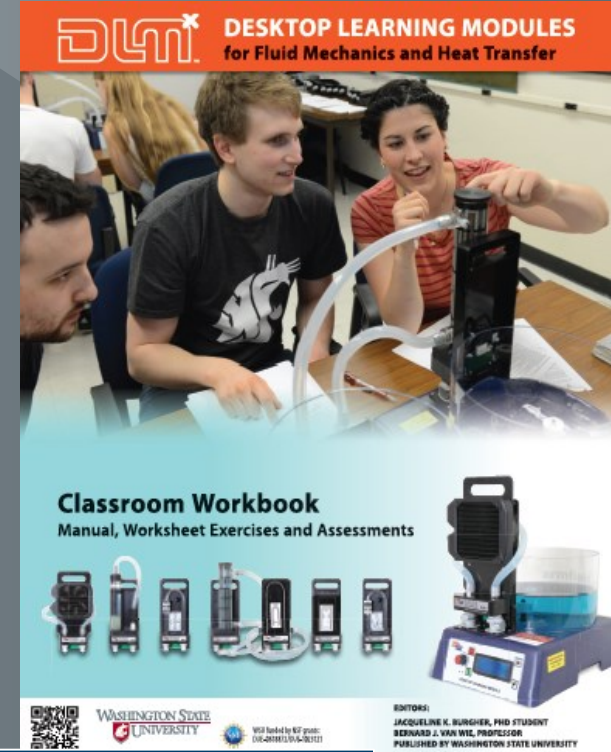
>> The Class of 2013. HCDE held its Commencement Ceremony on Friday, June 14. Congratulations to the Class of 2013!

>> Robin Mays Attends ISCRAM 2013. HCDE PhD student Robin Mays joined up with Professor Mark



Engineering Education Research at Washington State University

- Hands-On Active Learning with Desktop Learning Modules (bvanwie@wsu.edu)
 - B. Van Wie, R. Richards, P. Dutta, D. Thiessen, O. Adesope
- Cataloging and Characterizing Engineering Education Assessments (denny.davis@wsu.edu)
 - D. Davis, H. Davis, M. Trevisan, B. French, J. LeBeau
<http://assess.tidee.org>
- Human-centered Environments for Learning and Programming (hundhaus@wsu.edu)
 - C. Hundhausen, R. Zollars
<http://helplab.org/>
- Exploring Social Programming Environments in Early Computing Courses (hundhaus@wsu.edu)
 - C. Hundhausen, O. Adesope





VIEW

EDIT

Engineering Education Community Resource

last edited by  K. Yasuhara 6 hours, 15 minutes ago

[Page history](#)

This engineering education wiki is a resource created by the [American Society for Engineering Education's Student Division \(ASEE StuD\)](#), in collaboration with the [Center For Engineering Learning & Teaching \(CELT\)](#). The resource offers lists of programs, centers, researchers, societies, publication venues, etc., intended to help in the exploration of the engineering education field. We hope that ultimately this wiki will encourage community members to expand this resource as a place to inform students and other interested individuals new to engineering education about the research happening in this field at institutions and centers all over the world.

Note about user registration: All site content is public. You do *not* need to request access or create a user to view the site. If you are interested in helping maintain the site, we welcome you to request access or contact the co-maintainers listed below.

The resource currently consists of lists in the following categories:

- Engineering Education Departments and Programs
 - [Graduate level](#)
 - [Undergraduate level](#)

bit.ly/
engredu

PBworks
product y
"engineer
amazing

Navigator

- * [Engine](#)
- * [Engine](#)
- * [Engine](#)
- * [Engine](#)
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Pages