

American Society for Engineering Education 2019 Midwest Section Conference *Applied Learning and Industry Partnerships Enhancing Engineering Education*



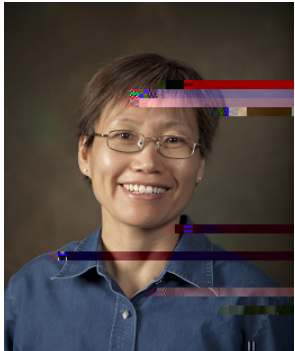
September 15-17, 2019
Wichita State University

WELCOME

A MESSAGE FROM THE WSU DEAN OF THE COLLEGE OF ENGINEERING



CONFERENCE COMMITTEE



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WELCOME

KEYNOTE SPEAKERS



JEFF SMITH

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JOHN O'LEARY

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JOHN TOMBLIN

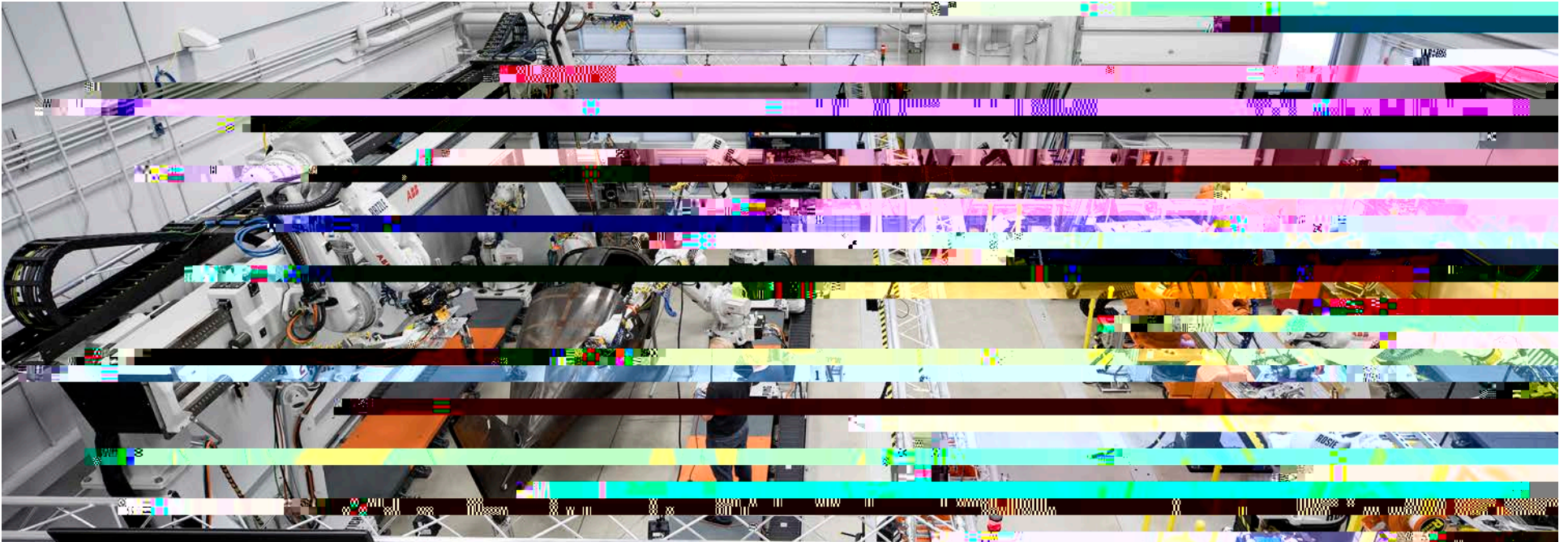
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ERIC HEIN

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A SPECIAL THANK YOU TO OUR
SUNDAY RECEPTION SPONSOR



SUNDAY, SEPTEMBER 15, 2019

4:30 - 7:30	<p style="text-align: center;">Registration, Reception & Networking Experiential Engineering Building (EEB) Lobby</p>
5:30	<p style="text-align: center;">Welcome Address</p>
6:00 , 6:15 & 6:30	<p style="text-align: center;">Experiential Engineering Building Tours</p>

MONDAY, SEPTEMBER 16, 2019

7:30			

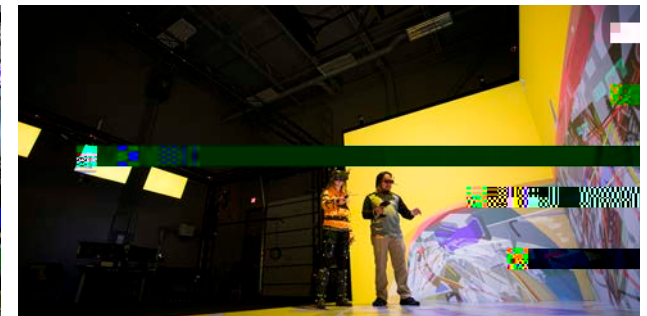
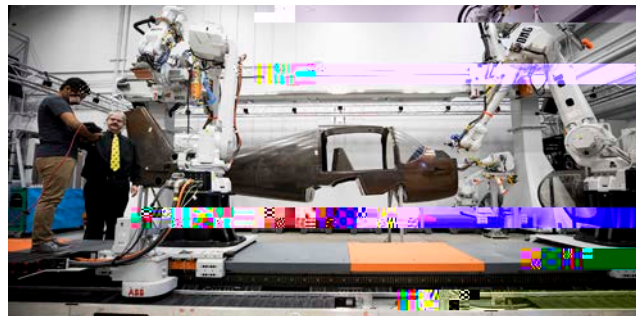
AGENDA

MONDAY, SEPTEMBER 16, 2019 CONT.

3:30 - 5:00	Lucas Room (RSC 265)	Beggs Ballroom West
6:00 - 8:00	Banquet, Keynote Address & Section Awards Beggs Ballroom East	
8:00 - 9:00	Midwest Section Executive Meeting Pike Room (RSC 266)	

TUESDAY, SEPTEMBER 17, 2019

7:30	Registration & Breakfast Aster Lounge & Beggs Ballroom East	
8:30 - 9:00	Closing Keynote Address Beggs Ballroom East	
9:15 - 10:35	Lucas Room (RSC 265)	Pike Room (RSC 266)
10:45 - 11:45	Lucas Room (RSC 265)	Herrman Room (RSC 262)
12:00 - 1:00	Lunch & Conference Awards Beggs Ballroom East	







SESSION ABSTRACTS

CONCURRENT SESSION I

PROBLEM-BASED LEARNING

Tank Depressurization Experiments for the Classroom or Laboratory

INDUSTRY & ENTREPRENEURSHIP



SESSION ABSTRACTS

CONCURRENT SESSION II

STATICS & DYNAMICS EDUCATION

Prerequisite Testing as a Tool to Gauge Incoming Student Capability and Knowledge in an Engineering Statics Course

Abstract: This abstract discusses the implementation of prerequisite testing in an engineering statics course. The study involved a cohort of 100 students, with 300+ data points collected. The results show that prerequisite testing effectively gauges incoming student capability and knowledge, leading to improved course outcomes.

Restructuring a Modeling Dynamics Course with Absorb-Do-Connect Learning Units

Abstract: This abstract describes the restructuring of a modeling dynamics course using Absorb-Do-Connect Learning Units. The course was redesigned to focus on learning units that allow students to absorb information, do it, and then connect it to their existing knowledge. This approach resulted in improved student performance and engagement.

Student Performance Characteristics in a Hybrid Engineering Statics Course

Abstract: This abstract examines student performance characteristics in a hybrid engineering statics course. The study compares student performance in a hybrid course versus a traditional lecture-based course. Results indicate that students in the hybrid course demonstrated higher performance levels and better understanding of the material.

POSTERS

Effect of an Engineering Camp on Elementary Students Understanding of Engineering and Attitudes toward Engineering

Abstract: This abstract reports on the effect of an engineering camp on elementary students' understanding of engineering and their attitudes toward engineering. The study found that participation in the camp significantly improved students' understanding and positive attitudes toward engineering.

Work in Progress: Evaluating the Impact of an Expanded Sophomore Design Curriculum for Aerospace Engineering Students

Abstract: This abstract presents work in progress on evaluating the impact of an expanded sophomore design curriculum for aerospace engineering students. The study is currently ongoing, and preliminary results suggest that the expanded curriculum has a positive impact on student learning and design skills.

Student-Built Electric Motor Project as a Culminating Project in Introductory Physics

Abstract: This abstract describes a student-built electric motor project as a culminating project in an introductory physics course. The project involves students designing and building their own electric motors, applying concepts learned in the course. The project was highly successful, with students demonstrating a deep understanding of physics principles and engineering design.

SESSION ABSTRACTS

CONCURRENT SESSION II

POSTERS

Master Control Unit for a Large Electric Lunar/Mars Rover

Abstract (Author: [Name])
This paper presents the design and implementation of a Master Control Unit (MCU) for a large electric Lunar/Mars Rover. The MCU is responsible for coordinating the movement and operation of the rover's various subsystems, including the drive system, suspension, and payload. The design is based on a modular architecture that allows for easy integration of new components and features. The MCU is implemented using a combination of hardware and software, and is designed to be highly reliable and fault-tolerant. The paper discusses the challenges of designing a MCU for a rover operating in a harsh, unstructured environment, and presents the solutions that were developed. The MCU has been successfully tested in a simulated environment, and is expected to be used in the next generation of Lunar/Mars rovers.

Let's Go Full STEAM Ahead: Addressing Gender Parity

Abstract (Author: [Name])
This poster discusses the importance of addressing gender parity in the field of STEAM (Science, Technology, Engineering, Art, and Mathematics). It highlights the current state of gender parity in these fields and the challenges that remain. The poster also presents strategies for promoting gender parity, such as increasing the visibility of women in STEAM, providing mentorship and support for women, and creating a more inclusive and equitable environment. The poster concludes by emphasizing the need for continued effort and collaboration to achieve gender parity in STEAM.

IGNITE PRESENTATIONS

Doing the Things That Scare You Just a Little Bit

Abstract (Author: [Name])
This presentation explores the benefits of stepping out of your comfort zone and taking on challenges that scare you just a little bit. It discusses how these experiences can lead to personal growth, increased resilience, and a greater sense of accomplishment. The presentation also provides practical tips for overcoming fear and embracing new opportunities. The speaker shares their own experiences and offers encouragement to the audience to pursue their dreams and take risks.

Strong-Seal Strength Research

Abstract (Author: [Name])
This research paper focuses on the development of a strong-seal strength research program. The program aims to improve the performance and reliability of seals used in various industrial applications. The research involves a combination of material science, mechanical engineering, and testing. The paper discusses the challenges of developing a strong-seal strength research program and the solutions that were developed. The research has led to the development of a new seal design that is stronger, more durable, and more reliable than existing designs. The paper concludes by emphasizing the importance of continued research and development in the field of seal technology.

SESSION ABSTRACTS

CONCURRENT SESSION III

DESIGN

Integrating 4D Printing Processes into STEM Education

Abstract: This paper discusses the integration of 4D printing processes into STEM education. The authors explore the challenges and opportunities of using 4D printing in the classroom and provide examples of how it can be used to create interactive learning experiences. The paper also discusses the importance of interdisciplinary collaboration and the role of educators in fostering a culture of innovation and learning.

Big Data Analytics for Big Outcomes in Healthcare

Abstract: This paper discusses the use of big data analytics in healthcare to improve patient outcomes and reduce costs. The authors explore the challenges of working with large volumes of data and the importance of developing robust analytical models. The paper also discusses the role of healthcare providers in implementing big data analytics and the potential for personalized medicine. The authors conclude that big data analytics has the potential to revolutionize healthcare and improve the lives of millions of people.

CONCURRENT SESSION IV

LAB & CLASSROOM MANAGEMENT

SESSION ABSTRACTS

CONCURRENT SESSION V

OUTREACH & DIVERSITY

University-Led Engineering Outreach to Adults: Public Engagement and Senior Adult Initiatives

Abstract text describing the outreach initiative, including details about the program and its goals.

RESEARCH EXPERIENCES

