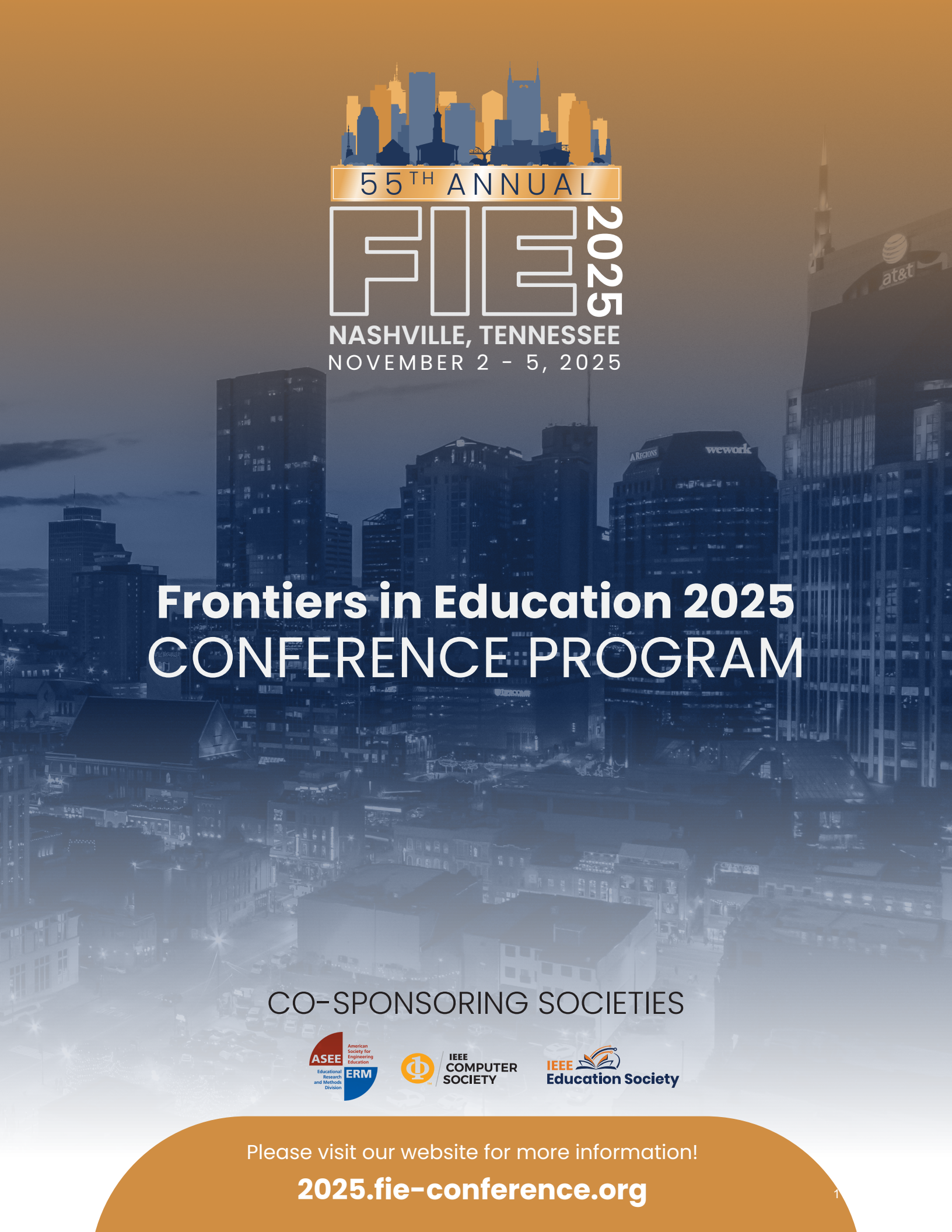

Frontiers in Education 2025
CONFERENCE PROGRAM

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Welcome Message from the General Chair

Dear Esteemed Colleagues and Friends of the FIE Community,

It is with great enthusiasm that I welcome you to the **55th annual Frontiers in Education Conference**, taking place November 2 to 5, 2025, in the vibrant city of **Nashville, Tennessee**. This milestone year celebrates over half a century of advancing engineering and computing education through scholarship, innovation, and community. Fittingly, we gather under the theme "**Digital Riffs: Harmonizing Engineering and Computing Education for the Future**." In a city renowned for its musical heritage, this theme reflects how foundational riffs, in our case key ideas and practices from engineering, engineering technology, computer engineering, and computer science education, can be iterated, harmonized, and played together in new and transformative ways.

Since its founding in 1971, FIE has served as the premier international venue for the exchange of research, the discussion of pedagogy, and the building of community among educators, researchers, and practitioners in engineering and computing education. Supported by our co-sponsoring societies, the **ASEE Educational Research and Methods (ERM) Division**, the **IEEE Computer Society**, and the **IEEE Education Society**, FIE continues to shape the future of how we teach, learn, and create knowledge in technologically rich and globally connected contexts.

This year's theme invites us to think of our work as part of a larger composition. Each discipline contributes its own riff, whether hardware or software, theory or practice, pedagogy or technology. Through collaboration and innovation, we create a performance much greater than the sum of its parts.

We are especially proud to feature two keynote speakers whose work exemplifies this spirit of transformation and harmony:

- On **Monday, November 3**, we welcome **Alex Goryachev**, a globally recognized expert in innovation leadership and author of *Fearless Innovation*. With a track record of transforming organizations and building sustainable cultures of creativity across industries, Alex will challenge us to ask whether we are truly preparing students for a future that does not yet exist, and what it takes to do so in the age of artificial intelligence and exponential change.
- On **Tuesday, November 4**, we are joined by **Dr. Krishna Madhavan**, Principal Product Manager at **Microsoft AI, Bing**, where he leads large-scale innovations in AI and web data platforms. His keynote will offer a compelling look into how advances in crawling, indexing, and content understanding are powering Copilot and modern search for hundreds of millions worldwide. His work reimagines how we discover and engage with information through AI.

Our program this year spans innovative workshops, panels, paper sessions, poster presentations, and special sessions. Each is designed to advance engineering, engineering technology, computer engineering, and computer science education. Whether you are exploring curriculum redesign, educational technologies, artificial intelligence in the classroom, or inclusive and global learning practices, you will find both depth and breadth in the offerings.

Beyond the formal sessions, FIE 2025 provides rich opportunities for connection: networking with peers, forging collaborations, mentoring students, and exchanging ideas in informal settings. We encourage you to engage fully, share generously, and challenge convention in the spirit of inquiry and continuous improvement.

Continued on next page

Welcome Message from the General Chair (cont.)

I would like to extend my heartfelt thanks to the **FIE Steering Committee**, the **Technical Program Committee**, and the many volunteers whose dedication and behind-the-scenes efforts have made this conference possible. We are especially grateful to the **reviewers**, whose thoughtful and rigorous evaluations are vital to maintaining the scholarly excellence of the FIE program.

A sincere thank-you as well to our **university sponsors**:

- the **University of Nebraska–Lincoln College of Engineering**
- the **University of Texas at Dallas Erik Jonsson School of Engineering and Computer Science**
- the **University of Oklahoma Polytechnic Institute**

Their leadership and commitment to engineering and computing education have been instrumental in bringing this conference to life and supporting the broader FIE community.

Welcome to **FIE 2025 in Nashville**. Together, let us riff, harmonize, and innovate as we shape the future of engineering and computing education in a world full of possibility.
Warm regards,

P.K. Imbrie, Ph.D., F.ASEE
General Chair, FIE 2025
Vice Provost for Academic Effectiveness
Professor of Aerospace and Mechanical Engineering
The University of Oklahoma

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Keynote Speakers

Monday, November 3, 2025 | 12:00 - 1:30

Room: Meadow Ballroom

Educating for the Unknown: Are We Preparing Students for a Future That Doesn't Exist Yet?
Alex Goryachev
Wall Street Journal Best-Selling Author, Forbes Contributor

Abstract: Nearly 40% of the global workforce will need to reskill as AI dismantles industries, rewrites job descriptions, and automates what we once considered irreplaceable. So how do we prepare students for a world where today's top skills may be tomorrow's liabilities?

As AI accelerates change at a breakneck pace, educators face an unprecedented challenge: teaching students to succeed in a future we can't predict using tools that didn't exist last year. This talk confronts the uncomfortable truth - our education systems were built for a world that no longer exists.

We'll explore how to blend timeless academic values with disruptive innovation, challenge the boundaries of academic ethics, and answer the tough question: How do we future-proof education when the future keeps rewriting itself?

Biography: Alex Goryachev is a Wall Street Journal bestselling author and the publisher of The Dean of AI, a leading newsletter on the future of education and work. A former Managing Director of Cisco's Global Innovation Centers, he has led AI and innovation strategy for Fortune 500 companies and contributed to global policy as a key member of the ISO Innovation Standards group. Alex has worked with universities across the United States, Canada, the UK, Germany, Australia, France, Italy, Russia, and Singapore to turn emerging technologies into strategic advantage and to innovate education at scale. His initiatives have reached nearly half a million students and educators worldwide. He is also a frequent contributor to Forbes, Fast Company, and Entrepreneur on AI, transformation, and lifelong learning.

Tuesday, November 4, 2025 | 12:00 - 1:30

Room: Meadow Ballroom

Inside the AI Engine: Search, Intelligence, and the Convergence Powering the Future of Knowledge
Krishna Madhavan
Principal Product Manager, Microsoft AI

Abstract: Search powered by AI is becoming the intelligence fabric of the internet at an unprecedented pace - shaping how billions discover, learn, and make decisions. This talk shares an insider's view into building AI and search experiences at global scale. At the heart of this transformation is the convergence of nano, info (planet-scale data systems, AI, and knowledge networks), and cogno (cognitive science, machine intelligence, and human–machine interaction). Together, these forces are accelerating how knowledge is created, linked, and applied - reshaping the very architecture of human understanding.

Biography: Dr. Krishna Madhavan is a Principal Product Manager at Microsoft AI, Bing, shaping the future of the internet through search and AI experiences at global scale. He leads innovations in web data platforms - advancing crawling, indexing, and content understanding to power Copilot and search for hundreds of millions of users worldwide. Dr. Madhavan's expertise and focus is on AI and web data platform engineering that reimagines how people everywhere discover and engage with information.

Panel Sessions

Integrating Technical and Professional Communication into the Engineering Curriculum: International Perspectives from Four Programs

Room: Willow Pond E

Tuesday, November 4 | 8:00 AM – 9:30 AM

Organizers

Alan Chong and Lydia Wilkinson (University of Toronto, Canada); Suzanne Lane (Cornell University, USA); Rosa Margarita Galán Vélez (Instituto Tecnológico Autónomo de México, Mexico); Carl Johan Carlsson and Magnus Gustafsson (Chalmers University of Technology, Sweden)

Description

This panel describes the shape of four international engineering communication programs, spread across North America and Europe.

Each of these programs attempt to break the typical silos that separate communication instruction – writing, presenting, and visual communication – in engineering from disciplinary knowledge and the students' technical curriculum. In describing the history, structure, and curricular practices of each of these programs, we hope to give attendees strategies for building integrated transdisciplinary skill development directly into technical courses, providing undergraduate engineering students with the most relevant instruction possible.

Student Panel Session: Summer Bridge and First-Year Engineering Experience

Room: Willow Pond E

Tuesday, November 4 | 10:30 AM – 9:30 AM

Organizers

Lorena Benavides-Riano and Mahnas Jean Mohammadi-Aragh (Mississippi State University, USA)

Description

This panel features engineering students sharing diverse experiences with and without participation in first-year programs such as Summer Bridge.

The panel session will explore how structured interventions influence their success in the first year, while others navigated the transition independently. The panel will explore how these experiences influenced academic readiness, belonging, and persistence in engineering through their perspectives and guided discussion. Attendees will gain insights into the successful elements and limitations of these programs, as well as practical suggestions for improving first-year programs and fostering welcoming learning environments across engineering education.

Panel Sessions (cont.)

Engineering is Humanitarian - Creating the Best Engineers for the Most Impact

Room: Riverbed B

Wednesday, November 5 | 3:30 PM – 5:00 PM

Organizers

Kirsten Heikkinen Dodson (Lipscomb University, USA)

Description

This panel session will bring together educators and practitioners to engage in critical reflection and discussion around the future of engineering.

The facilitator proposes the idea that engineering focused on creating positive impact produces the best engineers. Specifically, this session will present humanitarian projects as an avenue to create engineers that exemplify qualities like care and compassion. Humanitarian projects are unique because they provide an opportunity to engage in purposeful and impactful work that is not always apparent in traditional engineering projects. Additionally, the purpose and impact of humanitarian projects encourages stronger commitment and dedication from engineers, potentially resulting in better satisfaction and joy in their career. Representatives with varying levels of experience with humanitarian engineering projects will be invited to share their thoughts and the audience will be encouraged to participate in the discussion as well.

Pre-Conference Workshops: Sunday, November 2

Unfolding the Layers of the Engineer of 2050 through Faculty Development and Change

Room: Riverbed A

9:00 AM – 12:00 PM

Organizers

Michelle K Marincel Payne and Ben Jelen (Rose-Hulman Institute of Technology, USA); Reva Johnson (Valparaiso University, USA); Joseph LeDoux (Emory University, USA); Rachael Pitts Hall (Georgia Institute of Technology, USA); Lucas Power (Rose-Hulman Institute of Technology, USA); Janece Shaffer (StoryReady, USA); Ariana Turner (Georgia Institute of Technology, USA); Julia Williams (Rose-Hulman Institute of Technology, USA)

Description

In this workshop, participants will experience and practice SDL and see examples of how SDL is used in STEM classrooms and across the campus communities of three universities. SDL—the use of personal story in the classroom—can uniquely increase students' self-awareness, sense of satisfaction, and learning. STEM disciplines can particularly benefit from the reflection, connection-making, and empathy-building of SDL. As both participants and architects of SDL, participants can leverage the examples and resources provided to explore ways they can integrate SDL to transform their students' learning in their own STEM education endeavors.

Artificial General Intelligence Integration into Engineering Education, a Framework That Balances Technology with Human-Centered Skill Development

Room: Riverbed B

9:00 AM – 12:00 PM

Organizers

Trini S Balart and Kristi J. Shryock (Texas A&M University, USA)

Description

As engineering education advances in alignment with Industry 5.0, institutions face increasing pressure to adapt their curricula to emerging technologies without compromising foundational competencies such as creativity, ethical reasoning, and adaptability.

This workshop introduces the Artificial General Intelligence Integration into Engineering Education (AGIIEE) Framework, a structured approach to support educators in effectively incorporating AI-driven tools while preserving and enhancing human-centered skills. The workshop equips participants with actionable strategies, ethical frameworks, and practical tools for leveraging AI to personalize learning, support interdisciplinary collaboration, and maintain inclusive, human-centric pedagogies. Through interactive activities, case-based discussions, and structured feedback sessions, attendees will co-develop innovative approaches to AI integration.

Write and Evaluate like a Pro for FIE: Excelling as an Author and Reviewer in Engineering Education Research

Room: Riverbed C

9:00 AM – 12:00 PM

Organizers

Noemi Mendoza (Texas A&M, USA); So Yoon Yoon (University of Cincinnati, USA); Deborah Trytten (University of Oklahoma, USA); Rachel L. Kajfez (The Ohio State University, USA); Saira Anwar (Texas A&M University, USA)

Description

The field of engineering education has evolved into a recognized discipline, yet many engineering faculty and graduate students lack formal training in educational research methodologies.

This gap contributes to variability in the quality of research presented at major conferences, including Frontiers in Education (FIE). To address this, past FIE conference chairs and leaders in the field have designed a recurring 180-minute workshop focused on improving the quality of paper submissions and peer reviews. The workshop introduces participants to a structured framework for research design methods, spanning qualitative, quantitative, and mixed methods. Through active learning, hands-on analysis of past conference papers, and small-group methodological exploration, attendees will develop plans for conducting and evaluating high-quality research. Emphasis is placed on research rigor, trustworthiness, and alignment with top-tier journals such as the Journal of Engineering Education and IEEE Transactions on Education. Open to all FIE participants, this workshop provides essential tools for building methodological competence, fostering inclusivity, and preparing the current and next generation of engineering education scholars.

Intentional Integration of Reflection in Engineering and Computer Science Courses

Room: Riverbed D

9:00 AM – 12:00 PM

Organizers

Heidi A. Diefes-Dux and Logan A. Perry (University of Nebraska-Lincoln, USA)

Description

Engineering students, through their degree programs, are expected to become self-directed learners. However, students do not develop robust metacognitive regulation strategies without intentional practice and feedback. This workshop is designed to advance participants' appreciation for and ability to support students' development of metacognitive regulation strategies through the integration of reflection in engineering courses.

Create Engaging and Accessible Materials with PreTeXt

Room: Willow Pond E

9:00 AM – 12:00 PM

Organizers

Chrissy Safranski (Franciscan University of Steubenville, USA); Oscar Levin (University of Northern Colorado, USA)

Description

PreTeXt is an open-source authoring language that has been used primarily to create open, accessible, and interactive mathematics textbooks. It has also been used to create smaller documents such as course notes, syllabi, and handouts for in-class activities or for exams. PreTeXt enables you to convert the source of your document into a variety of output formats, including fully accessible web pages, PDF, Epub, Jupyter Notebooks, and Braille.

PreTeXt source documents are plain text files, which means that creators of PreTeXt materials are not locked into a particular platform and can easily share their materials and adopt those of others. While originally developed by and for mathematicians looking to improve upon LATEX, PreTeXt has expanded into other disciplines including computer science, engineering, writing, and music theory. Recent state and federal guidance of accessibility compliance means that all course materials posted on a Learning Management System must meet accessibility requirements, and PreTeXt is well-equipped to help professors and institutions comply with these. This pre-conference workshop will introduce the capabilities and features of PreTeXt to a non-mathematician audience while also providing hands-on instruction for using PreTeXt in an active-learning workshop. Recent updates make getting started with PreTeXt much easier than in the past; there has never been a better time to learn and use PreTeXt. Participants will leave the workshop having created something of their own in PreTeXt and knowing how to continue using PreTeXt on their own.

Pre-Conference Workshops continued on next page

Podcast-Based Learning for Engineering and Computer Science Educators

Room: Riverbed A

1:00 PM – 4:00 PM

Organizers

Kurt Paterson (Arizona State University, USA); Justin Henriques (Boston College, USA); Michelle Edith Jarvie-Eggart and Mary Raber (Michigan Technological University, USA); Reva Johnson (Valparaiso University, USA); Winifred Opoku (The Ohio State University, USA)

Description

This interactive pre-conference workshop introduces engineering and computer science educators to podcast-based learning and teaching (PodBLT) as a dynamic, multimodal approach to enhance student engagement, comprehension, and creativity. Participants will gain hands-on experience in planning, recording, and editing educational podcasts, and explore the use of AI-driven tools to transform academic content into accessible audio formats.

The workshop also covers strategies for integrating podcast segments into classroom discussions and guiding students in producing their own podcasts, thereby fostering deeper engagement with course material and developing communication skills. Aligning with the 2025 conference theme, "Digital Riffs: Harmonizing Engineering and Computing Education for the Future," this session emphasizes digital storytelling and innovative teaching methods to diversify instructional strategies and support diverse learning styles. Attendees will leave with practical skills and a personalized plan for incorporating podcasting into their curricula, enhancing active learning and student participation.

Artificial Intelligence for Document Information Extraction and Synthesis: Advancing Research, Teaching, and Learning with LLMs and the TAIWO Framework

Room: Riverbed B

1:00 PM – 4:00 PM

Organizers

Taiwo R Feyijimi (University of Georgia, USA); Ibukun S Osunbunmi (Penn State University, USA)**Description**

This pre-conference workshop focuses on leveraging Large Language Models (LLMs) and prompt engineering for document information extraction, synthesis, and creative content generation. Prompt engineering, the structured design of input queries, is highlighted as a critical technique for optimizing AI capabilities.

The session covers three core applications: document information extraction & synthesis, AIassisted creative content generation, and particularly, qualitative analysis using the novel TAIWO Framework. The TAIWO Framework enhances methods like thematic analysis for efficiency, reliability, and transparency in AI-assisted qualitative research, incorporating components like TAP, PETs, and TARM. Designed for STEM researchers, educators, and industry professionals, the workshop provides hands-on experience in deploying LLMs, addressing AI bias, and balancing computational efficiency with human oversight for ethical results. Attendees will master prompt engineering techniques, implement TAIWO, and develop strategies for human-AI collaboration while addressing ethical challenges.

Innovative K-12 Educator Sessions: Partnerships Between TryEngineering & Universities

Room: Riverbed D

1:00 PM – 4:00 PM

Organizers

Stamatis Dragoumanos (Computer Technology Institute and Press Diophantus, Greece); Debra Gulick and Dawna Schultz (IEEE, USA)

Description

IEEE TryEngineering is a program within IEEE Educational Activities that coordinates resources and programs for adults who work with school-aged children.

The mission of IEEE TryEngineering is to ensure that all school-aged children see themselves as changemakers who can improve the world through engineering and technology. In 2024 and 2025, TryEngineering provided professional development activities in partnership with U.S. universities through the TryEngineering Educator Sessions which included hands-on activities, videos, tours and expert speakers who worked with educators of K-12 students (children ages 8-17). The workshop will include a discussion of the TryEngineering Educator Sessions held in 2024 and in 2025, and engage the participants in the Making of a Microchip lesson. Participants will learn about the Engineering Design Process and other TryEngineering resources that can be used in the classroom.

Special Sessions: Monday, November 3

Cultivating Adaptable Engineers Through Interdisciplinary and Contextual Learning Strategies

8:00 AM – 9:30 AM | Riverbed B

Organizers

Kassiopeia Smith (Adams State University, USA)

Description

Engineering programs at small, teaching-focused institutions often face constraints in resources, faculty, and infrastructure but serve a critical role in educating future engineers, particularly those from underrepresented or first generation backgrounds.

This special session explores how such institutions can leverage interdisciplinary and contextual learning strategies to cultivate adaptable, engaged, and socially responsible engineers. By integrating STEM and non-STEM disciplines, fostering faculty collaboration, and connecting students to realworld, community-based problems, these approaches help students develop critical thinking, creativity, and engineering identity. The session will also examine the use of computational tools as scaffolding for interdisciplinary problem-solving, supporting conceptual understanding and cross-disciplinary exploration. Drawing from current literature and practical case studies, the session offers novel insights into how small programs can design scalable, high-impact learning experiences without requiring large-scale labs or extensive research infrastructure. Participants will engage in structured discussion, collaborative planning, and guided reflection to identify strategies they can implement in their own programs. The session centers perspectives often overlooked in engineering education reform and offers practical models for innovation within resource-limited contexts.

Fostering Psychological Safety in Doctoral Advising Relationships

10:30 AM – 12:00 PM | Riverbed B

Organizers

Mark Huerta and Larkin Martini (Virginia Tech, USA)

Description

Psychological safety is a relatively understudied concept in graduate education, especially in engineering. Despite this, psychological safety may provide a lens through which to better support graduate students' success by fostering creativity, innovation, self-advocacy, and supporting mental health.

Advisors play a crucial role in the development of psychological safety for engineering doctoral students, as research shows that leaders can play a mediating role in building psychologically safe environments. This special session draws from a narrative analysis to illustrate to participants how psychological safety evolves in engineering advising relationships and encourages participants to reflect on steps they can take to foster psychologically safe environments in their own advising relationships.

Use of Generative AI for Designing and Evaluating Course Learning Objectives and Aligned Assessments

1:30 PM – 3:00 PM | Riverbed B

Organizers

Saira Anwar (Texas A&M University, USA); Ahmed Ashraf Butt (The University of Oklahoma, USA); Syeda Fizza Ali (Texas A&M University, USA)

Description

The increasing integration of Generative Artificial Intelligence (GenAI) tools in education presents new opportunities for enhancing curriculum design and evaluation. This Special Session explores the application of GenAI, specifically tools like ChatGPT, for designing and assessing course learning objectives (LOs) and ensuring their alignment with instructional content and assessments.

The Session aims to equip participants with practical skills to utilize GenAI to develop SMART (Specific, Measurable, Attainable, Relevant, Timebound) LOs and map them to Bloom's Taxonomy for cognitive complexity. Through structured, hands-on activities, attendees will use GenAI to create and evaluate formative and summative assessments that align with course objectives. Targeted at early career educators, course designers, and education technology practitioners, the Session provides actionable opportunities, skills, and strategies for using GenAI to reduce cognitive load and foster outcome-based education. The anticipated outcomes include an improved understanding of curriculum alignment and the effective use of GenAI for educational design and assessment.

Artificial Intelligence for Research and Teaching: Adopting Emerging Technologies in Engineering Education

3:30 PM – 5:00 PM | Riverbed B

Organizers

Ibukun S Osunbunmi and Stephanie L Cutler (Penn State University, USA); Taiwo R Feyijimi (University of Georgia, USA)

Description

Emerging technologies such as artificial intelligence (AI), digital twins, internet of things (IoT), extended reality (XR), and Robotics have the potential to enhance engineering education. The rapid integration of generative artificial intelligence into the workplace and daily life calls for engineering educators to leverage these tools in research and teaching.

During this interactive workshop, we will introduce some AI tools for educational purposes that can enhance research and teaching in the engineering discipline. Additionally, participants will have the opportunity to gain hands-on experience using AI to assist with literature review and their research work. They will also learn to leverage generative AI as an assistive technological tool in instructional design and to achieve higher-order levels of Bloom's Taxonomy. We propose that when engineering educators who facilitate learning are equipped with the requisite skill set for using generative AI for teaching and research, the engineering students they teach and mentor will be better positioned to develop AI literacy and leverage these AI tools. AI literacy is an essential workforce readiness skill set to develop in the artificial intelligence age, as industries increasingly integrate AI into their processes.

Space Teams Academy- Transforming STEM Education Through Virtual Space Exploration

5:00 PM – 6:30 PM | Riverbed B

Organizers

Jasleen Kaur (Texas A&M University, USA); Fernando S Arias (Texas A&M University); Elise A Koock (Texas A&M University, USA); Gregory E Chamitoff (Texas A&M University & SimDynamX LLC, USA)

Description

Space Teams Academy (STA) aims to provide an immersive, hands-on STEM education experience that fosters creativity, teamwork, critical thinking, and problem-solving skills, while also expanding access to higher education materials.

Aligned with its mission to inspire and activate the next generation of leaders in space and STEM, STA creates a dynamic platform and ecosystem that empowers students to engage with real-world engineering challenges. Space Teams Academy is an ESSA Level 4 certified program, that's used like flight simulation software made for students to learn various space science topics and the importance of engineering and iterative design. By designing spacecraft, planning interplanetary trajectories, and solving real-world challenges like planetary exploration, remote sensing, and resource utilization, students learn to iterate on designs and think like engineers.

Special Sessions: Tuesday, November 4

Integrating Learning Sciences into Engineering and Computing Education Research: a Practical Framework

8:00 AM – 9:30 AM | Riverbed B

Organizers

HyeonJin Yoon and Guy Trainin (University of Nebraska-Lincoln, USA)

Description

This special session addresses a gap in integrating learning sciences and research design into engineering research by introducing key theories and demonstrating how they can be practically integrated into research design, curriculum development, and teaching practice.

As engineering and computing education evolve to meet the demands of an increasingly complex, diverse, and interdisciplinary world, there is a growing need for research and instructional practices that are not only innovative but also grounded in robust theoretical foundations. The learning sciences, drawing from cognitive science, educational psychology, and empirical experimentation, offer powerful frameworks for understanding how students learn, what motivates them, and how instruction can be designed to foster deeper engagement and long-term success. While engineering education traditionally emphasizes technical content and problem-solving, effective learning also depends on student engagement, persistence, and real-world application. Learning sciences provide evidence-based frameworks to enhance instruction, curriculum, and assessments, aligning them with how students learn.

Practice-Based Research for Engineering Educators: Reflective Practices in Curriculum Design

10:30 AM – 12:00 PM | Riverbed B

Organizers

Cristian Vargas-Ordonez (South Dakota School of Mines and Technology, USA)

Description

This special session introduces engineering educators to practice-based research (PBR) as a methodological framework for investigating and improving curriculum design through reflective teaching practices.

Drawing on approaches such as autoethnography, action research, and sistematización de experiencias, the session positions educators as active researchers of their own pedagogical contexts. Grounded in Schön's concept of the reflective practitioner, PBR offers a flexible and rigorous alternative to traditional empirical research, emphasizing context-driven inquiry and reflexivity in engineering education. Participants engage in hands-on activities, peer discussion, and collaborative planning to develop their own PBR projects. By the end of the session, attendees have crafted preliminary research questions, mapped relevant knowledge, and identified methodological strategies tailored to their teaching environments. This session aims to build capacity among engineering educators to document and analyze their practices as a means of advancing inclusive, responsive, and transformative curriculum design.

Design Your Ideal Work Group: Intentionally Structuring Research and Teaching Group Culture to Better Navigate Differences in Thinking

1:30 PM – 3:00 PM | Riverbed B

Organizers

Courtney J Faber, Danielle Lewis and Lorna Treffert (University at Buffalo, USA)

Description

Engineering and computer science education (EngCSEd) research and teaching groups aim to revolutionize engineering departments through the implementation of existing research, use of organizational and cultural change theories, and production of new knowledge.

These efforts often involve interdisciplinary groups, comprised of individuals holding varying institutional positions, academic levels, and personal identities, with team members bringing their own approaches to the generation, expression, and application of knowledge. These differences in thinking are key to the success of EngCSEd projects; however, they can also create tensions that prevent teams from achieving their core goals. The purpose of this special session is to engage EngCSEd scholars in intentional reflection about their research and/or teaching group's culture around making decisions and support them to develop "rules of engagement" for their group to encourage negotiation of differences in thinking.

A Hands-on Exploration of the Engineering Education Community in Our Ever-Changing World

3:30 PM – 5:00 PM | Riverbed B

Organizers

Krista M Kecskemety, Rachel L. Kajfez and Tyler Stump (The Ohio State University, USA)

Description

This special session will explore how each of us fits into the engineering education community and how we envision the engineering education community of the future. By using the LEGO® Serious Play® facilitation model, attendees will be able to share their ideas and curiosities about the engineering education community. The goal is to identify some ways engineering education might look like in the future, potential collaborations, and shared visions.

Students' Experiences and Sense of Academic and Social Belonging Within the 'Globalized' Engineering Graduate Education: Translating Research into Practice

5:00 PM – 6:30 PM | Riverbed B

Organizers

Eunsil Lee (University at Buffalo, USA); Susan Sajadi (Virginia Tech, USA)

Description

This special session will guide participants - engineering educators involved in graduate education - to reflect on their current strategies and considerations in research and practice related to supporting engineering graduate students.

Through reflective and interactive discussions, participants will have the opportunity to question or evaluate whether they have adequately considered the globalized characteristics of the engineering education learning environment when studying or supporting the experiences and sense of belonging of both domestic and international students. Structured small- and large- group activities are designed to help participants explore the interplay of globalized dynamics in students' experiences, navigate similarities and differences between domestic and international students, and identify potential gaps between student perceptions of supports and barriers and those held by participants; who design support strategies and structures. By the conclusion of the session, we hope participants will gain actionable insights to enhance their research and practice by collaboratively brainstorming improvements based on evidence-informed discussions and activities.

Special Sessions: Wednesday, November 5

Scalable K-8 Math Support for Equitable Engineering Success

8:00 AM – 9:30 AM | Riverbed B

Organizers

Mohamed Y. Selim (Iowa State University, USA); Renee Gibert (Purdue University, USA); Namrata Vaswani (Iowa State University, USA)

Description

Early mathematics proficiency is a pivotal determinant of long-term success in engineering and computing disciplines, yet disparities in math education persist, particularly for underrepresented populations.

This special session addresses the urgent need to close these achievement gaps by implementing structured K-8 math intervention programs that are grounded in evidence-based strategies.This session explores how adaptive technologies, structured tutoring, and community partnerships can collectively close math achievement gaps and foster equity in STEM. The session draws on successful initiatives such as the CyMathprogram at Iowa State University and the Algebra by 7th Grade program at Purdue University, showcasing scalable models that leverage university-led mentoring programs to provide consistent academic support. Attendees will engage with strategies for implementing sustainable interventions, fostering inclusive learning environments, and utilizing data-driven approaches to monitor progress and outcomes. By cultivating a network of educators, researchers, and practitioners, the session seeks to extend the impact of K-8 math interventions as a critical pathway to STEM success and broadened participation in engineering disciplines.

A Chicana Feminist Approach to Supporting Latina Students in Engineering and Computing

10:30 AM – 12:00 PM | Riverbed B

Organizers

Sarah L Rodriguez (Virginia Tech, USA)

Description

This 80-minute special session introduces the FIE community to a new book by author Dr. Sarah L. Rodriguez entitled, Supporting Latina Students in Engineering and Computing: A Chicana Feminist Approach (Harvard Education Press, 2025).

Together, the author and audience members work towards understanding more about the experiences of Latina students in engineering and computing then evaluating and creating plans for concrete actions that can be taken to address the needs of these students. Overall, this session also aims to build community and capacity among scholars, practitioners, and other educational stakeholders who would like to support Latina engineering and computing students.

Teaching the AI Curriculum in K-12: Technological and Engineering Education Imperatives for the 21st Century

1:30 PM – 3:00 PM | Riverbed B

Organizers

Arnold N Pears (KTH Royal Institute of Technology, Sweden & Uppsala University, Sweden); Matti Tedre and Henriikka Vartiainen (University of Eastern Finland, Finland); Rajendra Raj (Rochester Institute of Technology, USA)

Description

This Special Session explores the challenges facing learners for the Engineering Profession in a future where Artificial Intelligence Tools are likely to be crucial to career success. We explore professional and academic expectations of the impact that AI will have on the major branches of engineering during the next decade, leveraging the expertise of the professions attending this special session.

Technical Program: Sunday, November 2

8:00 – 16:00
Registration
Room: 3rd Floor, Across from East Lounge

9:00 - 12:00
S1-RBA: Using Story-Driven Learning to Support Students as STEM Professionals
Room: Riverbed A
Organizers: Michelle K Marincel Payne and Ben Jelen (Rose-Hulman Institute of Technology, USA); Reva Johnson (Valparaiso University, USA); Joseph LeDoux (Emory University, USA); Rachael Pitts Hall (Georgia Institute of Technology, USA); Lucas Power (Rose-Hulman Institute of Technology, USA); Janece Shaffer (StoryReady, USA); Ariana Turner (Georgia Institute of Technology, USA); Julia Williams (Rose-Hulman Institute of Technology, USA)

9:00 - 12:00
S1-RBB: Artificial General Intelligence Integration into Engineering Education, a Framework That Balances Technology with Human-Centered Skill Development
Room: Riverbed B
Organizers: Trini S Balart and Kristi J. Shryock (Texas A&M University, USA)

9:00 - 12:00
S1-RBC: Write and Evaluate like a Pro for FIE: Excelling as an Author and Reviewer in Engineering Education Research
Room: Riverbed C
Organizers: Noemi Mendoza (Texas A&M, USA); So Yoon Yoon (University of Cincinnati, USA); Deborah Trytten (University of Oklahoma, USA); Rachel L. Kajfez (The Ohio State University, USA); Saira Anwar (Texas A&M University, USA)

9:00 - 12:00
S1-RBD: Intentional Integration of Reflection in Engineering and Computer Science Courses
Room: Riverbed D
Organizers: Heidi A. Diefes-Dux and Logan A. Perry (University of Nebraska-Lincoln, USA)

9:00 - 12:00
S1-WPE: Create Engaging and Accessible Materials with PreTeXt
Room: Willow Pond E
Chrissy Safranski (Franciscan University of Steubenville, USA); Oscar Levin (University of Northern Colorado, USA)

12:00 – 13:00
Break

Technical Program: Sunday, November 2 (cont.)

13:00 - 16:00
S2-RBA: Podcast-Based Learning for Engineering and Computer Science Educators
Room: Riverbed A
Organizers: Kurt Paterson (Arizona State University, USA); Justin Henriques (Boston College, USA); Michelle Edith Jarvie-Eggart and Mary Raber (Michigan Technological University, USA); Reva Johnson (Valparaiso University, USA); Winifred Opoku (The Ohio State University, USA)

13:00 - 16:00
S2-RBB: Artificial Intelligence for Document Information Extraction and Synthesis: Advancing Research, Teaching, and Learning with LLMs and the TAIWO Framework
Room: Riverbed B
Organizers: Taiwo R Feyijimi (University of Georgia, USA); Ibukun S Osunbunmi (Penn State University, USA)

13:00 - 16:00
S2-RBD: Innovative K-12 Educator Sessions: Partnerships Between TryEngineering & Universities
Room: Riverbed D
Organizers: Stamatis Dragoumanos (Computer Technology Institute and Press Diophantus, Greece); Debra Gulick and Dawna Schultz (IEEE, USA)

Technical Program: Monday, November 3

6:30 – 18:00
Registration
Room: 3rd Floor, Across from East Lounge

6:30 - 9:30
Breakfast
Room: Harmony Restaurant
For any attendees staying off site: Please check in with the registration desk before proceeding to Harmony Restaurant for your breakfast voucher. Attendees staying at the Embassy Suites do not need breakfast vouchers.

8:00 - 9:30
M1-RBA: Computing Undergraduate 1: Introductory Levels
Session Chair: Yanjun Yan (Western Carolina University, USA)
Room: Riverbed A

8:00
Scaffolding the Problem-Solving Process for Introductory Computing Students
Ashish Deepak Dandekar (National University of Singapore, Singapore); Nitya Lakshmanan (NUS, Singapore); Daren Ler, Adi Yoga Sidi Prabawa and Sanka Rasnayaka (National University of Singapore, Singapore)

8:15
WIP: Exploratory Analysis of Code Quality Issues in CS1
Isabela Vieira Rodrigues and Igor dos Santos Montagner (Insper, Brazil)

8:30
ILDBug: a New Approach to Teaching Debugging
Liia Butler and Charlotte Kiesel (University of Illinois Urbana-Champaign, USA); Dipayan Mukherjee (University of Illinois, Urbana-Champaign, USA); Mohammed Hassan and Mattox Beckman (University of Illinois Urbana-Champaign, USA); Geoffrey L Herman (University of Illinois at Urbana-Champaign, USA)

8:45
Microcontroller Hands-on Lesson Plan and Analysis for Logic Gates in Computer Science 1
Brandon Outterson (Katy ISD, USA); Sheng-Jen Hsieh (Texas A&M University, USA)

9:00
Exploring Traces from Algorithm Simulation: Students' Conceptions of Dijkstra's Algorithm
Artturi Tilanterä (Aalto University, Finland); Ari Korhonen (Aalto University School of Science, Finland); Otto Seppälä, Teemu Taivainen and Inka L. K. Croell (Aalto University, Finland)

9:15
Tracing Code Quality Evolution: Insights from a Data Structures and Algorithms Course
Devanshi Prajapati and Ruben Acuña (Arizona State University, USA)

8:00 - 9:30
M1-RBB: ***Special Session: Cultivating Adaptable Engineers Through Interdisciplinary and Contextual Learning Strategies***
Organizers: Kassiopeia Smith (Adams State University, USA)
Room: Riverbed B

Technical Program: Monday, November 3 (cont.)

8:00 - 9:30
M1-RBC: Gen AI 1: Assessment Design in Undergraduate Courses
Session Chair: Sadan Kulturel-Konak (Pennsylvania State University, Berks, USA)
Room: Riverbed C

8:00
STEM Faculty Perspectives: Assessment Design in the Era of Generative AI
Ahmed Ashraf Butt (The University of Oklahoma, USA); Syed Ali Kamal (University at Buffalo, USA); Rabia Ashraf (Forman Christian College, Pakistan)

8:15
Designing CS Assignments to Foster Cogitation in the AI Era
Jaya Veera Surendra Gupta Kurivella, Rajeshwari Deoraj and Marcia Moraes (Colorado State University, USA)

8:30
WIP - Developing a Rubric for GenAI Information Literacy in Programming
Makenzie Yates, Kristina Bloch, Angela Thompson, Elisabeth L Thomas, Gabriel Gatsos and Udit Kumar Das (University of Louisville, USA); Campbell R. Bego (University of Louisville & J. B. Speed School of Engineering, USA)

8:45
Can LLMs Be Fair Graders? Only If You Bribe Them with the Right Rubric
Samuel B Mazzone, Jack R Forden and Dennis Brylow (Marquette University, USA)

9:00
Optimizing Diary Studies Learning Outcomes With Fine-Tuned Large Language Models on the DiaryQuest Platform
Sunggyeol Oh, Jiacheng Zhao, Carson Russo, Michael Bolmer Jr and Jihoo Jeong (Virginia Tech, USA); Jixiang Fan, Yusheng Cao and Wei Lu Wang (Virginia Polytechnic Institute and State University, USA); Natalie Andrus and Scott McCrickard (Virginia Tech, USA)

9:15
Classification of Kinematics Problems Using Artificial Intelligence for Design Tests in Physics Education in Engineering
José Alfonso Catana Castellanos (Instituto Politécnico Nacional); Erika Cervantes Juárez, Daniel Sánchez Guzmán, Sr and Graciela Martínez Gallegos (Instituto Politécnico Nacional, Mexico)

8:00 - 9:30
M1-RBD: Informal Learning Environments 1: Supporting Student Engagement, Motivation, and Research
Session Chair: Christiana Garcia (Virginia Tech, USA)
Room: Riverbed D

8:00
An AI-Enhanced Systematic Review of Barriers to Student Engagement in Innovation Ecosystems
Sadan Kulturel-Konak, Abdullah Konak and Ada Leung (Penn State Berks, USA)

8:15
WIP: Understanding Student Motivations in Innovation Ecosystems
Abdullah Konak and Sadan Kulturel-Konak (Penn State Berks, USA)

8:30
Conversations over Clicks: Impact of Chatbots on Information Search in Interdisciplinary Learning
Hannah Kim, Sergei L. Kosakovsky Pond and Stephen MacNeil (Temple University, USA)

8:00 - 9:30
M1-RBD: Informal Learning Environments 1: Supporting Student Engagement, Motivation, and Research (cont.)

8:45
Navigating Multi-Semester Service-Learning in Software Engineering: Strategies for Success
Chad A Williams and Stan Kurkovsky (Central Connecticut State University, USA); Mikey Goldweber (Denison University, USA); Nathan Sommer (Xavier Univerity, USA)

9:00
Empowering Undergraduate Research Through an Entrepreneurial Mindset Framework
Maysam Nezafati (Georgia Institute of Technology, USA); Irene Reizman (Rose Hulman Institute of Technology, USA); Mary Lauren Benton (Baylor University, USA); Michelle K Marincel Payne (Rose-Hulman Institute of Technology, USA); Jonathan Rylander (Baylor University, USA); Liping Liu (Lawrence Technological University, USA)

9:15
WIP: Integrating Sustainability in Engineering Through Undergraduate Research and Hands-on Laboratory Projects
Carlos J Landaverde-Alvarado, Amanda Nguyen, Emily Mellen and Finnegan McGoldrick (The University of Texas at Austin, USA)

8:00 - 9:30
M1-WPA: Pedagogical & Instructional Approaches 1: Enhancing Learning, Critical Thinking, and Student Success
Session Chair: Domenico Santaniello (Università degli Studi di Salerno, Italy)
Room: Willow Pond A

8:00
A Scoping Review on AI Integration in Engineering Education and Its Impact on Students' Critical Thinking
Fatemeh Mirzahosseini Zarandi and Madeline Martin (University of Cincinnati, USA); Siqing Wei (Youngstown State University, USA); David Reeping (University of Cincinnati, USA)

8:15
Effects of an Instructor-Provided Study Plan on Students' Exam Preparation: Results from a Pilot Study
Divya Bhargava (Texas A&M University, USA)

8:30
Students' Critical Thinking: Impact of FossilSketch, an Active Learning Educational Application
Daniel S Bahng, Anna Stepanova, Syeda Fizza Ali, Utsav Dabhi, Satya Bhavsar and Divij Bajaj (Texas A&M University, USA); Christina Belanger and Tracy Hammond (Texas A and M University, USA); Saira Anwar (Texas A&M University, USA)

8:45
WIP: Adapting Pink Time to Support Self-Regulated Learning in a Variety of Engineering Classroom Contexts
Erin Henslee and Michael Gross (Wake Forest University, USA); Andrea Ragonese (Pennsylvania State University, USA); Kelly Ottman (Milwaukee School of Engineering, USA); Craig Downing (Rose-Hulman Institute of Technology, USA)

9:00
Exam Grades Largely Unaffected by Practice Exams in a Signals and Systems Course
Mary Lanzerotti, Scott Dunning and R. Michael Buehrer (Virginia Tech, USA); Ahmad Safaai-Jazi (Virginia Tech, Saudi Arabia); Nektaria Tryfona and Luke Lester (Virginia Tech, USA); Creed Farris Jones (Virginia Tech, USA & Globe Biomedical, USA); Kenneth Reid (University of Indianapolis, USA); Muhammad Dawood (New Mexico State University, USA)

8:00 - 9:30
M1-WPA: Pedagogical & Instructional Approaches 1: Enhancing Learning, Critical Thinking, and Student Success (cont.)

9:15
WIP: Learning Skill Intervention in a Large-Enrollment Classroom
Curt Schurgers (University of California San Diego, USA); Saharnaz Baghdadchi (UC San Diego, USA); Minju Kim (Chapman University, USA); Marko V. Lubarda (University of California San Diego, USA); Huihui Qi (UC San Diego, USA)

8:00 - 9:30
M1-WPB: Broadening Participation 1: Advancing Theory in Computing and Engineering Education
Session Chair: Helen K Joy (CHRIST University, India)
Room: Willow Pond B

8:00
WIP: Bringing Classical and Quantum Machine Learning in Biomedical and Environmental Applications to the Community College Setting
Jean S Larson (Arizona State University, USA); Anna Haywood (Maricopa Community Colleges, USA); Frank Marfai (Phoenix College, USA); Milton Johnson (Maricopa Community Colleges, USA); Niraj Babar (ASU, USA); Glen Uehara (Arizona State University & SenSIP Center, USA); Judith Klein-Seetharaman, Daniel Gulick and Jennifer M Blain Christen (Arizona State University, USA); Andreas Spanias (ASU / SenSIP Center / School of ECEE, USA)

8:15
WIP: What Does Mutuality Look like? Comparing How MSIs and Non-MSIs Engage in s-STEM Partnerships to Serve Low-Income Engineering and Computing College Students
Sarah L Rodriguez and Amy Richardson (Virginia Tech, USA); Benjamin E Chaback (Virginia Polytechnic Institute and State University, USA); David Reeping (University of Cincinnati, USA); David Knight and Anya Work (Virginia Tech, USA)

8:30
WIP: Servingness and Graduate Engineering Education in Hispanic Serving Institutions
Mayra S. Artiles (The Ohio State University, USA)

8:45
Educational Data Privacy: a Differential Privacy Algorithm
Rafael Zamboni (Universidade Federal do ABC, Brazil); Itana Stiubiener (Universidade Federal do ABC UFABC, Brazil)

9:00
Conceptual Analysis and Conceptual Engineering: Methodological Issues in the Philosophy of Computing Education
Roger McDermott (United Kingdom (Great Britain)); Mats Daniels (Uppsala University, Sweden); John N A Brown (Robert Gordon University, United Kingdom (Great Britain)); Åsa Cajander (Uppsala University, Sweden); Arnold N Pears (KTH Royal Institute of Technology, Sweden & Uppsala University, Sweden)

9:15
An Ontology for Theoretical Interpretation of Persistence in Computing Education
Ashlyn Campbell, Anu G Bourgeois and Mario M Kubek (Georgia State University, USA)

8:00 - 9:30
M1-WPC: Faculty Development & Perspectives 1: Becoming and Being a Faculty Member
Session Chair: John Mitchell (UCL, UK)
Room: Willow Pond C

8:00
Faculty Preparation Strategies: Empowering Computing Students to Achieve Technical Interview Success
Stephanie J. Lunn (Florida International University, USA); Edward C. Dillon, Jr (University of Maryland Baltimore County, USA); Krystal L Williams (University of Wisconsin, Madison, USA); Kevin Lemus (University of Maryland, Baltimore County, USA); Christian Ruiz (Florida International University, USA)

8:15
Preparation Practices: Faculty Perspectives on Technical Interviews at Hispanic Serving Institutions in the Southeastern Region of the United States
Ashmita Thapaliya and Stephanie J. Lunn (Florida International University, USA); Edward C. Dillon, Jr (University of Maryland Baltimore County, USA); Krystal L Williams (University of Wisconsin, Madison, USA)

8:30
Exploring Early-Career Engineering Faculty Experiences Teaching Using Social Cognitive Theory
Marcus Vinicius Melo de Lyra, Jialing Wu and Adam R Carberry (The Ohio State University, USA)

8:45
Reflecting on What It Means to Be a Faculty Member Using the NPIB Model: A Guide for Self-Reflection
Stephanie L Cutler (Penn State University, USA); Cassandra McCall (Utah State University, USA); Yu Xia (Emporia State University, USA)

9:00
A Systematized Literature Review of "Work-Life Balance and "Women in Engineering
Laura M Cruz Castro and Sarah Jayasekaran (University of Florida, USA)

8:00 - 9:30
M1-WPE: Design Education 1: Advancing Systems Thinking, Industry Collaboration, and Innovative Practices
Session Chair: John Greiner (Rice University, USA)
Room: Willow Pond E

8:00
A Checklist-Based Intervention for Improved Comprehension of Design Concepts in CS Education
Rupinder Kaur (North Dakota State University, USA); Malik Muhammad (NDSU, USA); Maninder Singh (St. Cloud State University, USA)

8:15
Incorporating Interactive Design Reviews and Industry Experts in Capstone Projects
Jim Beachnau (Stryker Corporation, USA); Jeffrey D Will and Georges El-Howayek (Valparaiso University, USA)

8:30
WIP: Applying an Engineering Judgment Framework in Electrical and Computer Engineering Design Education
Samuel J Dickerson and Renee Clark (University of Pittsburgh, USA)

8:45
WIP: System Concept Compilation: a Generative AI Approach to Systems Modeling and Simulation
Jon Wade and Richard Gessner (University of California, San Diego, USA)

Technical Program: Monday, November 3 (cont.)

8:00 - 9:30
M1-WPE: Design Education 1: Advancing Systems Thinking, Industry Collaboration, and Innovative Practices (cont.)

9:00
WIP: Supporting Student Learning About Embedded Systems Through Hardware-Software Antipatterns
Diane T. Rover, Fana Teffera, James O. Joseph and Jesse Gillingham (Iowa State University, USA)

9:15
Adapting Globally Distributed Scrum Team Strategies for University Classrooms
Caleb Ramos and Sarah A Reynolds (Embry-Riddle Aeronautical University, USA); Lynn Vonderhaar (Embry-Riddle Aeronautical Unviersity, USA); Alexandra Davidoff, Omar Ochoa, Massood Towhidnejad and James Pembridge (Embry-Riddle Aeronautical University, USA)

9:30 - 10:30
M-CB1: Focus on Exhibitors, Coffee Break, Open Poster Session 1
Room: Meadow Prefunction Area

10:30 - 12:00
M2-RBA: Computing Undergraduate 2: Hardware
Session Chair: Renee Clark (University of Pittsburgh, USA)
Room: Riverbed A

10:30
Enhancing Computer Programming Courses with Hardware and Simulation Projects
Asad Azemi (University of Maryland Eastern Shore, USA)

10:45
Enhancing Operating Systems Courses Through Automated Assessment
Mitchell L Buckner, Devanshi Prajapati and Ruben Acuña (Arizona State University, USA)

11:00
Concept of a Digital Battery Laboratory for Academic Training of Future Battery Experts
Heiko Fechtner, Alexander Popp, Utz Spaeth and Benedikt Schmuelling (University of Wuppertal, Germany)

11:15
A New Course on Wireless Networks and Protocols for IoT in Cyber Engineering
Yong-Kyu Jung (Gannon University, USA & Ada, USA); Lokesh Venkata Sai Santhosh Vidadala (Research Assistant, USA)

11:30
ToP-CK: Technological Pedagogical Content Knowledge and Adaptive Feedback Integrated Robot Path Planning
Tingjun Lei (University of North Dakota, USA); Timothy Sellers and Chaomin Luo (Mississippi State University, USA); Lin Gong (Prairie View A&M University, USA); Zhuming Bi (Purdue University Fort Wayne, USA); Jiawen Wang (Eastern Washington University, USA)

11:45
Advancing Robot Local Navigation Through Vector Field Histograms Using a Hybrid Learning Approach
Timothy Sellers (Mississippi State University, USA); Tingjun Lei (University of North Dakota, USA); Jiawen Wang (Eastern Washington University, USA); Umar Iqbal (Illinois State University, USA); Lantao Liu (Indiana University-Bloomington, USA); Chaomin Luo (Mississippi State University, USA)

10:30 - 12:00
M2-RBB: ***Special Session: Fostering Psychological Safety in Doctoral Advising Relationships***
Organizers: Mark Huerta and Larkin Martini (Virginia Tech, USA)
Room: Riverbed B

10:30 - 12:00
M2-RBC: Gen AI 2: Autograding and Feedback in Undergraduate Courses
Session Chair: Syed Hassan Tanvir (University of Florida, USA)
Room: Riverbed C

10:30
Enhancing Large Language Models for Automated Homework Assessment in Undergraduate Circuit Analysis
Liangliang Chen, Huiru Xie, Zhihao Qin, Yiming Guo, Jacqueline Rohde and Ying Zhang (Georgia Institute of Technology, USA)

10:45
Evaluating the Efficacy of Using LLMs in Assessing Software Quality Assurance Projects
Timothy R Elvira, Omar Ochoa and Juan Ortiz Couder (Embry-Riddle Aeronautical University, USA)

11:00
Lightweight LLM for Accurate & Accessible Automated Course Support in Student Forums
Jason L Weber, Ulises Maldonado and Alessio Diaz Cama (University of California, Irvine, USA); Justin Tian Jin Chen (University of California Irvine, USA); Agustín Herlindo Angulo and Barbara Martinez Neda (University of California, Irvine, USA); Jennifer Wong-Ma and Sergio Gago-Masague (University of California Irvine, USA)

11:15
AI-Generated Essay Identification: a Machine Learning Approach and Fairness Analysis
Lingrui Sun, Yisheng Yang and Yang Song (University of North Carolina Wilmington, USA)

11:30
Enhancing Inquiry-Based Learning in Failure Analysis Through AI: A Case Study on Formative Assessment with OpenAI's GPT
Amir Saeidi (University of California, Davis, USA)

11:45
WIP: a Pedagogical Prompt Engineering Framework for LLM-Based Feedback in Higher Education (PPE-LLM)
Eyman Abdulrahman Alyahyan (The University of Glasgow, United Kingdom (Great Britain) & Imam Abdulrahman Bin Faisal University, Saudi Arabia); Mireilla Bikanga Ada and Jake Lever (University of Glasgow, United Kingdom (Great Britain))

10:30 - 12:00
M2-RBD: Informal Learning Environments 2: Fostering K-12 Student Learning
Session Chair: Debarati Basu (Embry-Riddle Aeronautical University, USA)
Room: Riverbed D

10:30
WIP Laboratorio Impacto: Fostering Culturally Relevant STEM Informal Learning
Awilda Rodriguez Carrion, Aikaterini Kyprioti and Deborah Trytten (University of Oklahoma, USA)

10:45
Development, Usability, and Effectiveness of the FossilSketch Application in Outreach Experiences
Utsav Dabhi and Divij Bajaj (Texas A&M University, USA); Heba Ibrahim Aly (University of Houston, USA); Anna Stepanova (Texas A&M University, USA); Christina Belanger and Tracy Hammond (Texas A and M University, USA); Saira Anwar (Texas A&M University, USA)

10:30 - 12:00
M2-RBD: Informal Learning Environments 2: Fostering K-12 Student Learning (cont.)

11:00
Toward Accessible Human-Data Interaction: Designing Auditory Displays for Informal Learning Environments
Huaigu Li (Georgia Institute of Technology, USA); Jon Bellona (University of Oregon, USA); Leslie Smith (Your Ocean Consulting LLC, USA); Amy Bower (Woods Hole Oceanographic Institution, USA); Jessica Roberts (Georgia Institute of Technology, USA)

11:15
Empowering the Next Generation: Teaching Web Vulnerabilities and Network Intrusion Detection with Machine Learning to Middle and High School Students
Zhenhua He (Texas A&M University, USA); Sandra B Nite (Texas a and M University, USA); Joshua Winchell (Texas AM University, USA); Wesley Brashear (Texas A&M University, USA); Dhruva Chakravorty, Lisa Perez and Honggao Liu (Texas A and M University, USA)

11:30
WIP: PicPrompt - a Novel Social Prompt Engineering Game Based Tool for Informal Learning in K-12
Priyanka Kumar (The University of Texas Permian Basin, USA); Saniya Vahedian Movahed (University of Texas at San Antonio, USA); Griffin J Kopp (University of Texas Permian Basin, USA); Johnny T Ngo, Panhapiseth Lim and Omar A Beg (The University of Texas Permian Basin, USA)

11:45
WIP: EvolveMoralMaze: Introducing Middle School Students to AI Ethics
Priyanka Kumar (The University of Texas Permian Basin, USA); Anupama Kumari (VIT Bhopal University, India); Saniya Vahedian Movahed (University of Texas at San Antonio, USA); Mohsen Dorodchi (University of North Carolina at Charlotte, USA); Panhapiseth Lim and Alejandro Sotelo (The University of Texas Permian Basin, USA)

10:30 - 12:00
M2-WPA: Pedagogical & Instructional Approaches 2: Enhancing Engagement and Learning through Active, Hybrid, and Immersive Methods
Session Chair: Ying Zhang (Georgia Institute of Technology, USA)
Room: Willow Pond A

10:30
WIP: Evaluating the Effects of Active-Learning Implementation in a Foundational Engineering Course
Catherine Ishikawa, Praveen Meduri, Sergio Aguilar-Rudametkin and Mohammed E. Eltayeb (California State University, Sacramento, USA); Milica Markovic (California State University Sacramento, USA)

10:45
Integrating Virtual Labs in Senior Engineering Education: Student Experiences and Learning Outcomes
Kimberly Cook-Chennault (Rutgers, the State University of New Jersey, USA)

11:00
WIP: Immersive Case Studies to Improve Process Safety Judgments in Chemical Engineering
Margaret Bowman, Brittany Butler-Morton, Erick Ayala-Ortiz and Aadan Plank (Rowan University, USA); Cheryl A. Bodnar (The Ohio State University, USA)

11:15
Exploring Students Free Body Diagrams on Truss Structures Using Different Modalities on a Visuo-Haptic Simulation
Hector Emilio Will (University of Evansville, USA); Alejandra J. Magana and Lynn A. Bryan (Purdue University, USA)

11:30
Learning Mathematical Vectors' Properties and Operations Using the LSEESC Methodology in Engineering and Science Students
Daniel Sánchez Guzmán, Sr and Erika Cervantes Juárez (Instituto Politécnico Nacional, Mexico)

10:30 - 12:00
M2-WPA: Pedagogical & Instructional Approaches 2: Enhancing Engagement and Learning through Active, Hybrid, and Immersive Methods (cont.)

11:45
WIP: Enhancing Design Patterns Learning Through Gamification
Luiz Carlos Begosso (Fundacao Educacional Do Municipio de Assis & FATEC Assis, Brazil); Luiz Ricardo Begosso (Fundacao Educacional Do Municipio de Assis, Brazil); Regina Barwaldt (Federal University of Rio Grande (FURG), Brazil & Center of Computational Sciences (C3), Brazil); Vitor Hugo Camoleze Delantonia and Uryel Jó de Lucca Araujo de Oliveira (Fundação Educacional do Municipio de Assis, Brazil); Ailime F. Rodrigues (Federal University of Rio Grande, Brazil)

10:30 - 12:00
M2-WPB: Broadening Participation 2: Deep Dive into Research Methods and Frameworks
Session Chair: Daniel Joseph Ringis (The University of the West Indies, St Augustine, Trinidad and Tobago)
Room: Willow Pond B

10:30
WIP: Parents Study: a Different Approach to Racial Equity in STEM
E Shirl Donaldson, Jennifer Lacosse and Thiago Ferreira (University of Michigan Flint, USA)

10:45
Interruption as a Framework for Unpacking the Experiences of Undergraduate Black Women in STEM: A Critical Case Study
Tamara Pearson and Justina Jackson (Georgia Institute of Technology, USA); Kathaleena E Monds (Albany State University, USA); Pamela Leggett-Robinson (PLR Consulting, Inc., USA); Monica Stephens (Spelman College, USA)

11:00
The Researcher's Lens: How Engaging in Photovoice Prepares Us to Study Lower-SES, First-Generation Engineering Students
Elizabeth Strehl (University of Michigan, USA); Sarah Jane Bork (University of Georgia, USA); Aaron Johnson (University of Michigan, USA)

11:15
Combatting Quantitative Erasure of LGBTQIA+ Students Through an Investigation of Their Engineering Identity and Sense of Belonging
Ash Quadd and Justin C Major (Rowan University, USA); Allison Godwin (Cornell University, USA)

10:30 - 12:00
M2-WPC: Faculty Development & Perspectives 2: Enhancing Teaching Practices and Inclusive Pedagogies
Session Chair: Heather Beem (Ashesi University, Ghana)
Room: Willow Pond C

10:30
Creating SMART Learning Objectives - Relationship Between Application Engagement and Performance
Chris Minje Bahng, Anurag Srivastava and Daniel S Bahng (Texas A&M University, USA); Ahmed Ashraf Butt (The University of Oklahoma, USA); Asefeh Kardgar (Texas A&M University, USA); Swetha Nittala (Stanford University, USA); Saira Anwar (Texas A&M University, USA)

10:45
WIP: Invisible, Yet DependABLE: Examining the Socialization Experiences of Engineering Professors of Practice Who Teach Online at a Public Research University
Kourtney Rogers Gruner (Texas A&M University, USA)

10:30 - 12:00
M2-WPC: Faculty Development & Perspectives 2: Enhancing Teaching Practices and Inclusive Pedagogies (cont.)

11:00
WIP: Do Metadiscursive Riffs Harmonize Lecture Delivery?
Chang Kyoung Choi, Aneet Dharmavaram Narendranath and Radheshyam Tewari (Michigan Technological University, USA)

11:15
A DevOps Workflow for Courses
Joel Coffman (United States Air Force Academy, USA & Johns Hopkins University, USA)

11:30
Factors Impacting Faculty Adoption of Project-Based Learning in Computing Education: a Survey
Ahmad D Suleiman, Yiming Tang and Daqing HOU (Rochester Institute of Technology, USA)

11:45
WIP: Design and Introduction of a Culturally Relevant and Responsive Instruction Workshop to STEM Higher Education Instructors
So Yoon Yoon and Lei Wang (University of Cincinnati, USA); Kate Klein, Jiajun Xu, Ronnie Brown and Feiyang Bai (University of the District of Columbia, USA)

10:30 - 12:00
M2-WPD: Continuing Education: Fostering Student Learning through Online Platforms and Targeted Training
Session Chair: Heather Beem (Ashesi University, Ghana)
Room: Willow Pond D

10:30
WIP: Lifelong Learning in Electric Engineering Education Using a Stakeholder Approach for Electrified Aviation
Olof Lindahl and Jennifer Leijon (Uppsala University, Sweden)

10:45
Decoding AI Impact: Longitudinal Analysis of Code Submissions in Programming MOOCs
Leo Leppänen (University of Helsinki, Finland); Juho Leinonen and Arto Hellas (Aalto University, Finland); Erkki Kaila and Linda Mannila (University of Helsinki, Finland)

11:00
WIP: Case Study: Veterans SkillBridge Program for Hardware Security Workforce Development
Hyunju Oh (University of Florida, USA); Hyojung Kim (Indiana University, USA); Wanli Xing and Sandip Ray (University of Florida, USA)

11:15
Work-in-Progress: College-Industry Partnership for Professional Development Through Online Education: Two Case Studies
Yuetong Lin (Embry-Riddle Aeronautical University Worldwide, USA); Reza Rahdar (Embry-Riddle Aeronautical University, Worldwide, USA); Jorge Ortega Moody (Embry-Riddle Aeronautical University Worldwide, USA); William Muldoon (Embry-Riddle Aeronautical University, USA)

11:30
A Systematic Review of Video-Based Computing and Programming Education: Do Online Videos Really Teach Programming?
Otavio Santos (Universidade Federal do Espírito Santo & Faculdades Integradas Espírito-Santenses, Brazil); Davidson Cury (UFES-Universidade Federal do Espirito Santo, Brazil); Pedro David Netto Silveira (UFES & IFES, Brazil); Wagner de Andrade Perin (Universidade Federal do Espírito Santo, Brazil); Jadson do Prado Rafalski (Instituto Federal do Espírito Santo - Brazil, Brazil & IFES, Brazil)

10:30 - 12:00
M2-WPD: Continuing Education: Fostering Student Learning through Online Platforms and Targeted Training (cont.)

11:45
Enhancing Awareness and Attitudes Towards Software Quality Assurance in a Startup Ecosystem Through Targeted Training
Hilma Aludhilu (University of Eastern Finland, Finland); Erkki Sutinen (University of Turku, Finland); Ilkka Jormanainen (University of Eastern Finland, Finland)

10:30 - 12:00
M2-WPE: Design Education 2: Integrating Sociotechnical Considerations
Session Chair: Balvin Thorpe (University of Technology, Jamaica)
Room: Willow Pond E

10:30
WIP: Fostering Effective Teamwork in Undergraduate Research Based Course
Priyanka Kumar, Panhapiseth Lim and Omar A Beg (The University of Texas Permian Basin, USA); Saniya Vahedian Movahed (University of Texas at San Antonio, USA)

10:45
WIP: Teaching Engineers to Draw People: Enhancing User-Centered Thinking and Self Efficacy
Shiho Nakamura, Mohen Li, Sarai Colorado-Landero, Denis Dorozhkin and Julie Linsey (Georgia Institute of Technology, USA)

11:00
Understanding Students' Perceptions of Human Dispositions in Computing Education
Teresa Pereira (University of Minho, Portugal); John Impagliazzo (Hofstra University, USA)

11:15
WIP: a Critical Self-Reflection Case Study on Teaching Sociotechnical Content in an Engineering Course
Chelsea J Andrews (Tufts University, USA); Morgan Hynes (Purdue University, USA); Ethan E Danahy (Tufts University & Center for Engineering Education and Outreach (CEEO), USA); Trevion S Henderson, Jennifer L Cross, Brian P Timko, David Zabner and Emily Carlson (Tufts University, USA)

11:30
WIP: Piloting Three New Sociotechnical Modules for an "Introduction to Circuits" Course
Karen E Nortz and Cynthia J Finelli (University of Michigan, USA); Susan M Lord (University of San Diego, USA)

11:45
WIP: Student Feedback on Two Sociotechnical Modules in an Introductory Circuits Course
Musabbiha Zaheer and Cynthia J Finelli (University of Michigan, USA); Susan M Lord (University of San Diego, USA); Lea Marlor (University of Michigan, USA)

12:00 - 13:30
M-LK: Lunch & Keynote
Educating for the Unknown: Are We Preparing Students for a Future That Doesn't Exist Yet?
Speaker: Alex Goryachev
Room: Meadow Ballroom

Enjoy a buffet meal and engaging talk—please arrive promptly to be seated before the talk begins.

13:30 - 15:00
M3-RBA: Computing Undergraduate 3: Pedagogical Approaches
Session Chair: Mary Lanzerotti (Virginia Tech, USA)
Room: Riverbed A

13:30
WIP: Exploring Students' Self-Reflection Patterns in a Physics Course Using LIWC Analysis
Jiwon Lai Kim, Alfa Satya Putra and Muhsin Menekse (Purdue University, USA)

13:45
WIP: Enhancing Grading Efficiency in Engineering Education Through Automation on a Flipped Classroom
Edwin Marte Zorrilla, Kimberly Stubbs and John Mendoza Garcia (University of Florida, USA); Reymi Then (UTESA, USA)

14:00
Development of an Optimization-Based Ranking Framework for Concurrent Estimation of Student and Course Skills
Anthony Dixon and Adan E Vela (University of Central Florida, USA)

14:15
WIP: Establishing a Coding Framework for Research on Moral Narratives of Engineering Practitioners
Bailey K McOwen, Marie Paretti and Dayoung Kim (Virginia Tech, USA)

14:30
WIP: a Reference Implementation for Course Catalogues in the Erasmus Higher Education Context
Manuel Caeiro-Rodríguez (AtlanTTic - University of Vigo, Spain); Fernando Mikic-Fonte (Universidad de Vigo, Spain); Martín Llamas-Nistal (Atlanttic - University of Vigo, Spain); Martín Liz-Domínguez (University of Santiago de Compostela, Spain); Adrián Lugilde-López (University of Vigo, Spain)

14:45
A Hybrid Learning Approach to Multi-Target Navigation in Robotics Education
Tingjun Lei (University of North Dakota, USA); Timothy Sellers (Mississippi State University, USA); Umar Iqbal (Illinois State University, USA); Jiawen Wang (Eastern Washington University, USA); Chaomin Luo (Mississippi State University, USA)

13:30 - 15:00
M3-RBB: ***Special Session: Use of Generative AI for Designing and Evaluating Course Learning Objectives and Aligned Assessments***
Organizers: Saira Anwar (Texas A&M University, USA); Ahmed Ashraf Butt (The University of Oklahoma, USA); Syeda Fizza Ali (Texas A&M University, USA)
Room: Riverbed B

13:30 - 15:00
M3-RBC: Gen AI 3: Chatbots and Tutors (1)
Session Chair: Mohammed Seyam (Virginia Tech, USA)
Room: Riverbed C

13:30
LLM Chatbot-Creation Approaches
Hemil Mehta, Tanvi Raut, Kohav Yadav and Edward F. Gehringer (North Carolina State University, USA)

13:45
AI Chatbots vs. Traditional Search: a Comparative Study on Student Information Retrieval
Leonardo Pasquarelli, Charles Koutcheme and Arto Hellas (Aalto University, Finland)

13:30 - 15:00
M3-RBC: Gen AI 3: Chatbots and Tutors (1) (cont.)

14:00
Research on Personalized Cognitive Graph Based on Large Language Models (LLM) for Education
Ying Li, Yiming Gai, Leilei Sun, Xingyu Wang and Chaoxu Wang (Beihang University, China); Xuefei Huang (Hangzhou International Innovation Institute, Beihang University, China)

14:15
Xiaohang: Research on the Construction and Application of Educational Intelligent Agents Based on Large Language Models
Ying Li, Xiaozhou Zhang, Tongyu Zhu, Haifeng Gao and Guoliang Zhang (Beihang University, China); Guopeng Wang (Zhejiang Ocean University, China)

14:30
WIP: Empowering Students with AI-Driven Tutors: Unlocking New Frontiers in Computer Operating Systems Education
John W Hassell (University of Oklahoma, USA); Ahmed Ashraf Butt (The University of Oklahoma, USA)

14:45
Learning from Chatbots: Main Themes in Recent Research
Mahathi Kolishetty, Rushabh N. Shah and Edward F. Gehringer (North Carolina State University, USA)

13:30 - 15:00
M3-RBD: Informal Learning Environments 3: Engaging Students in Undergraduate Research
Session Chair: Mohamed Bayoumy (University of Pittsburgh, USA)
Room: Riverbed D

13:30
Research Experience for Undergraduates for Inclusion of African American and Hispanic Students in Computer Science Majors: A Literature Mapping
Maristela Holanda (University of Brasilia, Brazil); Suxia Cui (Prairie View A&M University, USA); Dilma Da Silva (TAMU, USA)

13:45
Broadening Participation in CS Research with Scalable Undergraduate Research Mini-Projects
Bridget Agyare, Manooshree Patel, Alicia Matsumoto and Gireeja Ranade (University of California, Berkeley, USA)

14:00
Using Participatory Narrative Portraiture to Understand Power Within Undergraduate Research Experiences
Lorna Treffert, Courtney J Faber and Danielle Lewis (University at Buffalo, USA)

14:15
Recruiting and Developing Faculty Mentors to Improve STEM Retention and Success
Dave Joiner and Patricia Morreale (Kean University, USA); Sarah Hug (Colorado Evaluation and Research Consulting, USA); Derrick Swinton, Feng Qi, Kim Spaccarotella, Dina Rosen and Nancy Amador (Kean University, USA)

14:30
Exploring the Role of Graduate Student Mentors in Apprenticeship-Style Undergraduate Student Research Experiences in Engineering
Nosakhare Idiaghe (University of Nebraska-Lincoln, USA); Jessica R Deters (University of Nebraska - Lincoln, USA)

14:45
WIP: the Graduate Student Role in Undergraduate Research Mentoring: Perspectives from Participants
Christina A. Pantoja and Anastasia Rynearson (Campbell University, USA)

Technical Program: Monday, November 3 (cont.)

13:30 - 15:00

M3-WPA: Pedagogical & Instructional Approaches 3: Enhancing Student Engagement and Motivation through Analytics, Gamification, and Innovative Teaching Strategies

Session Chair: Mohamed Bayoumy (University of Pittsburgh, USA)
Room: Willow Pond A

13:30
Do LMS Analytics Predict Student Success? a Quantitative Study of Engagement and Course Performance
Kimberly Cook-Chennault and Ahmad Farooq (Rutgers, the State University of New Jersey, USA)

13:45
WIP: Novel Pre-Lecture Technique for Accelerated Student Engagement in Circuit Analysis Courses
Renny E. Badra (University of Georgia, USA)

14:00
WIP: Enhancing Computational Thinking and Engagement of Undergraduate Students Through Collaborative Game Development in the Interdisciplinary Course
Jinsook Park and Andrew Jung (University of Hartford, USA)

14:15
Boosting Engagement and Motivation in Latin American Engineering Students Through Gamified Calculus Competitions
Roberto Portillo and Alberth Alvarado (Universidad Galileo, Guatemala)

14:30
Integrating Self-Regulated Learning into Engineering Courses: A Study of Student Perceptions and Participation
Huihui Qi (UC San Diego, USA); Changkai Chen (University of California San Diego, USA); Alejandro De Leon and Richard E Vallejo, Jr (UC San Diego, USA); Curt Schurgers (University of California San Diego, USA); Andy Rabanal, Yu Ming M Li and Celeste Pilegard (UC San Diego, USA)

14:45
WIP: an RC Circuit Model for Student Attendance: a System for Encouraging Continuous Engagement
Anson Trapani and Victoria Chin (Virginia Tech, USA); Manav Bhavesh Shah (VJTI, Mumbai, India); Christiana Chamon and Leyla Nazhandali (Virginia Tech, USA)

13:30 - 15:00

M3-WPB: Broadening Participation 3: Exploring Gender Based Disparities in STEM Education

Session Chair: Amir Saeidi (UC Davis, USA)
Room: Willow Pond B

13:30
Exploring the Impact of Classroom Composition on Women's Experiential Identity, Interest, and Self-Efficacy in Microelectronics
Laura M Cruz Castro, Maryam K Multani, Andrea Ramirez-Salgado, Andrea Goncher, Isabella Victoria and Gabriella Taboada (University of Florida, USA)

13:45
WIP: Investigating the Effect of Gendered Seating Proximity on Classroom Success for Female Engineering Students
Cassandra Mariel Savukinas, Kayla D. Taylor and Ashley Lear (Embry-Riddle Aeronautical University, USA)

13:30 - 15:00
M3-WPB: Broadening Participation 3: Exploring Gender Based Disparities in STEM Education (cont.)

14:00
Integrating User-Centered Design (UCD) into Computer Science Curricula to Support Gender Diversity
Summer L Abramson, Neha Srinivasa and Pedro Guillermo Feijóo-García (Georgia Institute of Technology, USA)

14:15
Temporal Correlation Between Women Studying Computing & Human Development Index (30 Years of Data)
Louise M Carlsen (IT University of Copenahgen, Denmark); Maria Stisen Flyger, Josefine Marie Andersen, Nanna Inie and Claus Brabrand (IT University of Copenhagen, Denmark)

14:30
WIP: Bias Beneath the Surface: AI-Driven Gender Representation Analysis in Academic Communications
Kumara Srivatsa Kondapalli (California State University Long Beach, USA); Benny Nottonson (California State University, Long Beach, USA); Devery Rodgers and Hossein Sayadi (California State University Long Beach, USA)

14:45
Unpacking Intersectional Race-Gender Gaps in Computing Courses Through Institutional Data
Jennifer Alexandra Thompson and Sara Hooshangi (Virginia Tech, USA)

13:30 - 15:00
M3-WPC: Faculty Development & Perspectives 3: Fostering Support and Resilience of Faculty
Session Chair: Renee Clark (University of Pittsburgh, USA)
Room: Willow Pond C

13:30
Building Psychological Safety and Conflict Resolution Capacity in Faculty Teams
Eva Andrijcic, Michelle K Marincel Payne, Sriram Mohan and Julia Williams (Rose-Hulman Institute of Technology, USA)

13:45
Increasing Care, Community and Productivity Through a Faculty Support Program
Jude Fogarty and Kristen R. Moore (University at Buffalo, USA)

14:00
WIP: Designing Faculty Mentorship at Scale: Lessons from the Mentorship 360 Faculty Mentoring Program at Arizona State University
Jennifer Bekki and Samantha Brunhaver (Arizona State University, USA); Ann McKenna (University of Iowa, USA)

14:15
Emotional Patterns of Engineering University Instructors Through Cluster Analysis
Irene Magara and Grace Panther (University of Nebraska-Lincoln, USA)

14:30
Engineering the Unexpected: Faculty Strategies for Navigating Disruptions
Gibin Raju, Trini S Balart, George Todd Ligler, Kristi J. Shryock and Kelly Brumbelow (Texas A&M University, USA)

13:30 - 15:00
M3-WPD: Bridging Academia and Industry: Enhancing Workforce Readiness through Collaboration and Innovation
Session Chair: Thitima Srivatanakul (York College of CUNY, USA)
Room: Willow Pond D

13:30
WIP: Understanding and Addressing Barriers to Industry Engagement in Undergraduate Engineering Programs
Brahim Medjahed (University of Michigan, Dearborn, USA); John Cristiano (University of Michigan-Dearborn, USA); Sebastian Dziallas (University of the Pacific, USA); Jean Huang (Olin College, USA); Michelle Edith Jarvie-Eggart (Michigan Technological University, USA); Stephanos Matsumoto (Olin College of Engineering, USA); Chris Sharp (George Fox University, USA); Rabih Younes (Duke University, USA)

13:45
WIP: Enhancing Employability Through Industry Engagement: A Work in Progress Report on the EPS Advisory Council
Margarita Moltó-Aribau, Ferran Badia, Alvaro De Gracia, Francesc Gine and Josep Ll. Lérida (University of Lleida, Spain); Magda Valls (Universitat de Lleida, Spain)

14:00
WIP: Leveraging Collaborative Online International Learning (COIL) Projects for Industry-Driven Software Development in Undergraduate Education
Ross McLean, Jamie Sundance McDonald and John N A Brown (Robert Gordon University, United Kingdom (Great Britain))

14:15
Exoskeleton Adoption in Construction: How Do Industry Experts Say We Can Prepare the Future Workforce to Advance Exoskeleton Solutions in the Industry?
Joshua Nsiah Addo Ofori, Mariam A Tomori I and Omobolanle Ogunseiju (Georgia Institute of Technology, USA)

14:30
Identifying the Potential Gap Between Graduates' Preparation and the Professional Civil Engineering Consultant's Needs
Michael Venuto (Rowan University, USA); Juan M Cruz (Rowan University, USA & Unive, Colombia)

14:45
WIP: Progressing from Micro-Credentialing to Micro-Recruiting: Connecting Employers with Ideally-Badged Learners via Last-Stage Invocation of GenAI
Paul Amoruso, Laurie O Campbell and Ronald F DeMara (University of Central Florida, USA)

13:30 - 15:00
M3-WPE: Design Education 3: Fostering Collaboration, Creativity, and Problem-Solving in Early Engineering Courses
Session Chair: Sreekanth Gopi (Kennesaw State University, USA)
Room: Willow Pond E

13:30
Using an Early-Term Design Challenge to Jump-Start Peer Interactions in First-Year Engineering Courses
Abhimanyu Ghosh, Kevin Dietsche, Brenda Puck and Jocelyn Hamann (University of Wisconsin-Stout, USA)

13:45
An Exploratory Study of Relational Agency in First-Year Open Ended Engineering Design
Trevor G. Bennett (University at Buffalo, USA); Corey Schimpf (University at Buffalo, USA & Finger Lakes Trail Conference, USA); Jutshi Agarwal (University at Buffalo, SUNY, USA)

13:30 - 15:00
M3-WPE: Design Education 3: Fostering Collaboration, Creativity, and Problem-Solving in Early Engineering Courses (cont.)

14:00
WIP: Lessons Learned Using Genuine Projects to Motivate Students
Michael P McGarry (University of Texas at El Paso, USA); Patrick Seeling (Central Michigan University, USA)

14:15
WIP: ERTE Protocol: Promoting Creative Problem-Solving Skills in Undergraduate Engineering Students
Andrew Jung, Jinsook Park and Kiwon Sohn (University of Hartford, USA)

14:30
Comparing the Usability of Rating and Ranking Scale Types in Perceptions of Sketched Engineering Products
Shiho Nakamura, Mohen Li and Julie Linsey (Georgia Institute of Technology, USA)

14:45
WIP: Building a Bridge to the Future: Connecting Engineering Students with Alumni, Industry, and the Community Through an Innovative Outreach Program
Mário Minami (Federal University of ABC & Information Engineering, Brazil); Celso Setsuo Kurashima (Federal University of ABC (UFABC), Brazil); Mario Gazziro (Federal University of ABC, Brazil); Wallace G. Ferreira and Camila C. Arantes (Federal University of ABC); Claudia E. E. de Paiva (Federal University of ABC, Brazil); Sonia Maria Malmonge (UFABC, Brazil); Claudia Celeste Celestino and VItor Bittencourt (Federal University of ABC, Brazil)

15:00 – 15:30
M-CB2: Focus on Exhibitors & Coffee Break
Room: Meadow Prefunction Area

15:30 - 17:00
M4-RBA: Computing Undergraduate 4: Cybersecurity
Session Chair: Arko Barman (Rice University, USA)
Room: Riverbed A

15:30
Integrating Generative AI into Cybersecurity Education: a Study of OCR and Multimodal LLM-Assisted Instruction
Karan Patel and Yu-Zheng Lin (University of Arizona, USA); Gaurangi Raul (The University of Arizona, USA); Bono Po-Jen Shih (The Pennsylvania State University, USA); Matthew W Redondo (University of Arizona, USA); Banafsheh Saber Latibari (The University of Arizona, USA); Jesus Pacheco (Universidad de Sonora, Mexico); Soheil Salehi and Pratik Satam (University of Arizona, USA)

15:45
RAG-PRISM: A Personalized, Rapid, and Immersive Skill Mastery Framework with Adaptive Retrieval-Augmented Tutoring
Gaurangi Raul (The University of Arizona, USA); Yu-Zheng Lin and Karan Patel (University of Arizona, USA); Bono Po-Jen Shih (The Pennsylvania State University, USA); Matthew W Redondo (University of Arizona, USA); Banafsheh Saber Latibari (The University of Arizona, USA); Jesus Pacheco (Universidad de Sonora, Mexico); Soheil Salehi and Pratik Satam (University of Arizona, USA)

16:00
Do LLMs Make Cybersecurity Mistakes? an Evaluation of LLMs Performance on Cybersecurity Concept Inventories
Shan Huang (University of Illinois Urbana-Champaign, USA); Geoffrey L Herman (University of Illinois at Urbana-Champaign, USA); Alan T Sherman (University of Maryland, Baltimore County (UMBC), USA)

15:30 - 17:00
M4-RBA: Computing Undergraduate 4: Cybersecurity (cont.)

16:15
Pedalogical: Feedback Tool to Reduce Software Vulnerabilities in Non-Security Computer Science Courses
Andrew L Sanders and Gursimran Singh Walia (Augusta University, USA); Lucas Cordova and Teo Mendoza (Willamette University, USA)

16:30
WIP: Leveraging Blockchain for Secure and Verifiable Micro-Credentialing in Engineering Education
Christiana Chamon, Leyla Nazhandali, Vinod Lohani and Dayoung Kim (Virginia Tech, USA)

16:45
WIP: Image Scaling Attack Simulation: A Measure of Stealth and Detectability
Devon A Kelly (Virginia Tech, USA); Sarah A Flanery (Texas A&M University, USA); Christiana Chamon (Virginia Tech, USA)

15:30 - 17:00
M4-RBB*: Special Session: Artificial Intelligence for Research and Teaching: Adopting Emerging Technologies in Engineering Education*
Organizers: Ibukun S Osunbunmi and Stephanie L Cutler (Penn State University, USA); Taiwo R Feyijimi (University of Georgia, USA)
Room: Riverbed B

15:30 - 17:00
M4-RBC: Gen AI 4: Chatbots and Tutors (2)
Session Chair: Radheshyam Tewari (Michigan Technological University, USA)
Room: Riverbed C

15:30
Evaluating LLM Engines for TA Chatbots
Shyamal Gandhi, Sai Santhosh Garlapati, Vinay Vobbilichetty and Edward F. Gehringer (North Carolina State University, USA)

15:45
WIP: Developing AI-Powered Chatbots as Learning Assistants: A Work-in-Progress Study on Enhancing Undergraduate Computer Science Education
Tajay Jackson, Nickmoon Mware and Hong Jiang (Benedict College, USA)

16:00
Cultivating Character and Ethics via a Custom-Built AI-Chatbot in an Electric Circuits Activity
Hussein Abdeltawab and Kyle Luthy (Wake Forest University, USA)

16:15
ChatGPT as a Teaching Assistant in a CS1 Course: An Experience Report
Luiza A. N. Gomes and Camila Frealdo Fraga (Universidade de Brasilia, Brazil); Maristela Holanda (University of Brasilia, Brazil); Dilma Da Silva (TAMU, USA)

16:30
WIP: Large Language Model-Enhanced Smart Tutor for Undergraduate Circuit Analysis
Liangliang Chen, Huiru Xie, Jacqueline Rohde and Ying Zhang (Georgia Institute of Technology, USA)

15:30 - 17:00
M4-RBC: Gen AI 4: Chatbots and Tutors (2) (cont.)

16:45
WIP: Structured AI Tutoring in Engineering Education
Alberto Cruz (California State University Bakersfield, USA); Anjana Yatawara, Maruti V Mishra and Jianjun Wang (California State University, Bakersfield, USA)

15:30 - 17:00
M4-RBD: Competencies Development 1: Professional Skills and Global Experiences
Session Chair: Andrew Jung (University of Hartford, USA)
Room: Riverbed D

15:30
WIP: Assessing 21st Century Skills of High School Students in a Machine Learning Workshop with TinyML
Algeir P Sampaio (Federal University of Bahia, Brazil); Paulo Farias (UFBA, Brazil); Roberto A Bittencourt (University of Victoria, Canada)

15:45
WIP: What Employers Want: a Data-Driven Analysis of Soft Skill Trends in Computer Science Job Postings (2012-2024)
Negin Yazdani Motlagh (University of Massachusetts Lowell, USA); Kritee Neupane and Lewis Tseng (UMass Lowell, USA); Hsien-Yuan Hsu (University of Massachusetts Lowell, USA)

16:00
WIP: the Impact of Activeness on the Student Competencies and Curriculum Design of CS
Ninghan Zheng, Yingqi Zhang, ShanShan Li, Yuchao Gao, Xiaojun Wu and Weidong Liu (Tsinghua University, China)

16:15
Assessing the Impact of Undergraduate Global Experiences on Engineers' Career Outcomes: a Case Study of One University
Lexy C Arinze, Joe Tort and Kirsten A Davis (Purdue University, USA)

16:30
WIP: Enhancing Internationalization of Engineering Students: Factors and Consequences
Ferran Badia, Alvaro De Gracia, Francesc Gine, Josep Ll. Lérida and Margarita Moltó-Aribau (University of Lleida, Spain); Magda Valls (Universitat de Lleida, Spain)

16:45
Identification of Digital Competencies to Strengthen the Graduation Profile of Students Close to Graduation from a Polytechnic University in Central Mexico
Martha Patricia Robles Gutiérrez, Dra (Universidad Politécnica de Pachuca, Mexico); Noemi Mendoza (Texas A&M, USA); Lourdes E Del Razo Robles (UnadMexico, Mexico); Omar-Arturo Dominguez-Ramirez (Autonomous University of the State of Hidalgo, Mexico); Luis Arturo Guerrero Azpeitia (Universidad Politécnica Metropolitana de Hidalgo, Mexico)

Technical Program: Monday, November 3 (cont.)

15:30 - 17:00
M4-WPA: Pedagogical & Instructional Approaches 4: Promoting Problem-Solving and Experiential Learning in Programming and Electrification
Session Chair: Yousuf Amanuel (Leibniz University Hannover, Germany)
Room: Willow Pond A

15:30
Fostering Problem-Solving in Introductory Programming Through Software Testing: A Systematic Review
André Almeida (Federal University of Campina Grande, Brazil & State University of Paraíba, Brazil); Wilkerson L. Andrade (Federal University of Campina Grande, Brazil); Dalton Guerrero (Universidade Federal de Campina Grande, Brazil)

15:45
Engaged Student Learning Through Hands-on IoT: a Special Topics Course on IoT - Devices and Communication
Mehrube Mehrubeoglu (Texas A&M University-Corpus Christi, USA); Lifford McLauchlan and David L. Hicks (Texas A&M University-Kingsville, USA)

16:00
A Pedagogically-Focused Translation Pipeline for Designing Loops in Programming
Larry J Crotts, Chung-chieh Shan and Sam Tobin-Hochstadt (Indiana University Bloomington, USA)

16:15
WIP: Using Cases and a Change Management Framework to Teach About Implementing New Ways of Working in the Electrification of Transportation
Olof Lindahl and Jennifer Leijon (Uppsala University, Sweden)

16:30
WIP: Using Comparative Industry Cases to Teach About Challenges in the Electrification of Transportation
Jennifer Leijon and Olof Lindahl (Uppsala University, Sweden)

16:45
WIP: Experiment Exploration in Computer Organization - Design a Computer for Running Software
ShanShan Li, Ninghan Zheng, Yuchao Gao, Xiaojun Wu and Weidong Liu (Tsinghua University, China)

15:30 - 17:00
M4-WPB: Broadening Participation 4: Support Systems and Student Perceptions
Session Chair: Glenn Strong (Trinity College Dublin, Ireland)
Room: Willow Pond B

15:30
Exploring the Impact of Pre-College Resources and Support on Spatial Skills Development in Undergraduate Engineering Students
Narjes Khorsandi Koujel, Justin C Major and Stephanie Farrell (Rowan University, USA)

15:45
LSAMP Serves as Medium for Developing Support Networks for STEM Undergraduate Retention
Jordan Peyton (Ohio State University, USA); Olivia Callahan (University of Michigan, USA); Minso Choi (The Ohio State University, USA); Angela Ebreo (University of Michigan, USA)

16:00
WIP: Non-Legacy or FirstGen Latinx Engineering Entrepreneurship
Noemi Mendoza (Texas A&M, USA); Alma Susana Galvez Herrera (Sintesys, USA)

15:30 - 17:00
M4-WPB: Broadening Participation 4: Support Systems and Student Perceptions (cont.)

16:15
Perception of Artificial Intelligence in Education by High School Students in a Rural Region in the US in Comparison with US in General and Europe
Yanjun Yan (Western Carolina University, USA); Vladislav Deyanov Slavov (Technical University of Sofia, Bulgaria)

16:30
WIP: Revealing the Hidden Curriculum: a Multi-Institutional Perspective
Suzanne Rivoire (Sonoma State University, USA); Alexandra K Schofield (Harvey Mudd College, USA)

15:30 - 17:00
M4-WPC: Faculty Development & Perspectives 4: Advancing Mentorship, Innovation, and Reflective Practices
Session Chair: Renee Clark (University of Pittsburgh, USA)
Room: Willow Pond C

15:30
How Mentors Benefit from a STEM-Based Ementoring Program
Cameron Denson, Niloufar Bayati and Jameelah Hayes (North Carolina State University, USA)

15:45
WIP: Faculty Mentoring Experiences in an Evolving NSF s-STEM Project
Debarati Basu, Sydney A. Cash and Omar Ochoa (Embry-Riddle Aeronautical University, USA)

16:00
WIP Bridging the Gap: Faculty Perspectives on Microlearning Implementation in Engineering and Computing Education
Farhan Sadique (Kansas State University, USA); Suman Saha and Mahfuza Farooque (Pennsylvania State University, USA); Susan Yelich Biniecki (Kansas State University, USA)

16:15
Empowering Disruptive Professor for a Disruptive University
Claudio R Brito (Science and Education Research Organization, Portugal); Melany M Ciampi (World Organization on System Engineering and Information Technology (WCSEIT) & President, Portugal)

16:30
WIP: Engineering Doctoral Students' Perceptions of Transformative Experiences in Developing Non-Technical Competencies for Faculty Careers
Ibukunoluwa E Salami (University of Nebraska at Lincoln, USA); Logan A. Perry (University of Nebraska-Lincoln, USA)

16:45
WIP: Fostering Meaningful Reflective Practice Through Concept Mapping in Graduate Engineering Education
Shih Hui Lee (Purdue University, USA & Universiti Teknologi Malaysia, Malaysia); Khairiyah Mohd-Yusof (Purdue University, USA)

15:30 - 17:00
M4-WPE: Design Education 4: Supporting Learner Success and Incorporating Innovative Practices
Session Chair: Chillara Venkata Varun (California State University - Sacramento, USA)
Room: Willow Pond E

15:30
A Flexible and Innovative Method to Teach a Design Technology Course to Empower and Inspire Students' Learning and Prepare Them for Future Employment
Kenny M Fotouhi (University of Maryland Eastern Shore, USA); Mehdi Fotouhi (University of Maryland, USA); Joel Tomlinson (University of Maryland Eastern Shore, USA)

15:45
WIP: Design Activity Engagement of Women Engineering Students
Amelia Slater (Harding University, USA); James Huff (University of Georgia, USA)

16:00
Examining the Prevalence of Design Philosophies in Engineering Education
Nathan M Hicks, Corbin Edmonds and Emma Laymon (University of Tennessee, Knoxville, USA)

16:15
Implementing Scrum Methodology in Engineering Capstone Design Courses
Haifeng Wang (Slippery Rock University, USA)

16:30
Design Fixation in Cross-Cultural Design Education: Challenges in Overcoming Fixed Thinking in a Global Design Thinking Program
Andrea Goncher and Gloria J Kim (University of Florida, USA); Audrey M DeHoog (Unviersity of Florida, USA)

16:45
WIP: Supporting Industrial Engineering Students' Learning in Capstone Engineering Design Course
Syed Ahmad Helmi Syed Hassan, Craig Allen Zehrung, Aaron Ramsey, Prathyush Dinesh Kothari, Maxell P Lumbera and Khairiyah Mohd-Yusof (Purdue University, USA)

17:00 - 18:30
M5-RBA: Undergraduate Education Applications
Session Chair: Joni Lakin (University of Alabama, USA)
Room: Riverbed A

17:00
WIP: Evaluating the Capabilities of GPT Applications in Solving Introductory-Level Algorithm Problems
Xiaojun Wu, ShanShan Li, Ninghan Zheng and Yuchao Gao (Tsinghua University, China)

17:15
WIP: Guiding, Not Giving: Analyzing the Effectiveness of Guided Problem-Solving in CS1
Rajeshwari Deoraj, Jaya Veera Surendra Gupta Kurivella and Marcia Moraes (Colorado State University, USA)

17:30
WIP: Context-Aware AI in Learning Management Systems for Computer Science Courses
Archer Simmons (Texas A&M University, USA); Maristela Holanda (University of Brasilia, Brazil); Dilma Da Silva (TAMU, USA)

17:00 - 18:30
M5-RBA: Undergraduate Education Applications (cont.)

17:45
Scribble and Learn-a Leaner Centric Approach
Helen K Joy (CHRIST University, India); Manjunath R Kounte (Department of Electronics and Communication Engineering, HKBK College of Engineering, Bengaluru, India - 560045); Sridevi R (CHRIST University, India)

18:00
Data-Driven Adaptive Curriculum: Personalizing Academic Pathways for Enhanced Student Success
Priyanka Kumar, David Mike-Ewewie, Panhapiseth Lim and Alejandro Sotelo (The University of Texas Permian Basin, USA)

18:15
Reflective Homework as a Learning Tool: Evidence from Comparing 13 Years of Dual vs. Single Submission
Madhur Dixit, Kavya Lalbahadur Joshi, Kaveri Bhalchandra Konde and Edward F. Gehringer (North Carolina State University, USA)

17:00 - 18:30
M5-RBB*: Special Session: Space Teams Academy- Transforming STEM Education Through Virtual Space Exploration*
Organizers: Jasleen Kaur (Texas A&M University, USA); Fernando S Arias (Texas A&M University); Elise A Koock (Texas A&M University, USA); Gregory E Chamitoff (Texas A&M University & SimDynamX LLC, USA)
Room: Riverbed B

17:00 - 18:30
M5-RBC: Gen AI 5: Chatbots and Tutors (3)
Session Chair: Amir Saeidi (UC Davis, USA)
Room: Riverbed C

17:00
WIP: an AI-Based Virtual Assistant for Supporting a Large Engineering Course
Deepanshu Gupta, Jorge D. Camba and Travis Fuerst (Purdue University, USA); Jiwei Zhou (Heliponix, LLC, USA)

17:15
Integrating a Customized AI Chatbot in Database Design and Programming Course
Shamima Mithun (Purdue University, USA); Rajagopal Sankaranarayanan (The University of Texas at Austin, USA)

17:30
AI Tutor for Assessing and Training Engineering Students in Reading Comprehension
Shreya Khanna, Niksh Hiremath, Armaan Raisinghani, Shreyas Ramachandran, Siddharth Siddharth and Brainerd Prince (Plaksha University, India)

17:45
AI-Powered Personalized Hindi Pronunciation Tutor for Enabling Engineering Students to Effectively Communicate Technical Concepts
Satvik Bajpai, Nimrat Kaur, Arnav Rustagi, Brainerd Prince and Siddharth Siddharth (Plaksha University, India)

18:00
Enhancing Algorithmic Thinking and Emotional Resilience in Programming Education Through AI-Powered Virtual Tutoring
Ana Luna (Universidad del Pacifico, Peru & UP, Peru); Julio Ricardo Martínez (Unicomfacauca, Colombia); Mario Chong (Universidad del Pacifico, Peru & UP, Peru); Susana Maya and María Alejandra Caicedo (Unicomfacauca, Colombia)

17:00 - 18:30
M5-RBC: Gen AI 5: Chatbots and Tutors (3) (cont.)

18:15
WIP: Cognition-Aware RAG for Video-Based Learning Support
Xiaonan Wang, Hidenari Kiyomitsu and Asako Ohno (Kobe University, Japan)

17:00 - 18:30
M5-RBD: Competencies Development 2: Integrating Digital Skills and Innovative Technologies
Session Chair: Afonso Sales (PUCRS, Brazil)
Room: Riverbed D

17:00
WIP: Aligning Undergraduate Electrical and Computer Engineering Curricula with Industry Needs: A Q Method Study of Perspectives and Competency Expectations of Key Stakeholders
Taiwo R Feyijimi and Sarah Jane Bork (University of Georgia, USA)

17:15
WIP: the Competency Tilt - Towards Competency Self-Evaluations for Differentiated Learning Experiences
Patrick Seeling (Central Michigan University, USA); Michael P McGarry (University of Texas at El Paso, USA)

17:30
Bridging the Gap Between Theoretical and Practical Reinforcement Learning in Undergraduate Education
Muhammad Ahmed Atif and Mohammad Shahid Shaikh (Habib University, Pakistan)

17:45
Global South, Global Scale: Rethinking EdTech from the Holistic Approach
Hyojung Kim (Indiana University, USA); Sunny Shuoyang Zhang (University of St.Thomas, USA)

18:00
Navigating Digital Frontiers: a Comprehensive Analysis of Mobile Device Integration in Engineering Instruction in Bangladesh Using Mobile Learning Readiness Survey
Ninsiima Hafusa (Islamic University of Technology (IUT), Bangladesh); Md Shahadat Hossain Khan and Mahbub Hasan (Islamic University of Technology, Bangladesh)

17:00 - 18:30
M5-WPB: Broadening Participation 5: Addressing Accessibility, Accommodations, and Barriers
Session Chair: Ahmad Suleiman (Rochester Institute of Technology, USA)
Room: Willow Pond B

17:00
Gender Diversity in Computer Science Through a Global Lens
Nawar T Wali and Sara Hooshangi (Virginia Tech, USA)

17:15
Accessibility and Accommodations for Students with Disabilities in STEM Higher Education: Synthesis of Research on Computing, Physics, and Engineering
Morgan McKie and Stephanie J. Lunn (Florida International University, USA)

17:00 - 18:30
M5-WPB: Broadening Participation 5: Addressing Accessibility, Accommodations, and Barriers (cont.)

17:30
Mitigating Exam Barriers for Neurodivergent Students: a Study on Sensory Adaptations in Computing Assessments
Aidan McGowan, Neil Anderson and Christopher Smith (Queen's University Belfast, United Kingdom (Great Britain))

17:45
WIP: "I May Feel like I'm Falling Apart but Other People Can't See It": Exploring Access Fatigue Among Disabled Women and Nonbinary Students in Engineering Degree Programs
Rachel Figard (University of Georgia, USA)

18:00
WIP: Identifying Barriers for Students with Disabilities in STEM Undergraduate Laboratory and Design Courses
Rebecca M Reck and Katie Ansell (University of Illinois Urbana-Champaign, USA); Christopher Schmitz (University of Illinois at Urbana-Champaign, USA); Chandrasekhar Radhakrishnan (University of Illinois Urbana-Champaign, USA); David Mussulman (University of Illinois at Urbana-Champaign, USA); Natalie M Taylor and Jessica TerBush (University of Illinois Urbana-Champaign, USA)

18:15
WIP: Integrating Accessible Learning Labs: An Exploration of Faculty Experiences
Kayla D. Taylor and Joshua L. Radjavitch (Embry-Riddle Aeronautical University, USA); Laxima Niure Kandel (Embry Riddle Aeronautical University, USA)

17:00 - 18:30
M5-WPC: Attitudes & Perceptions 1: Undergraduate Student Motivation and Identity
Session Chair: Asad Azemi (University of Maryland Eastern Shore, USA)
Room: Willow Pond C

17:00
Exploring the Impact of the Need for Cognitive Closure on Undergraduate Engineering Students Cognitive Engagement During Problem Solving
Zain Ul Abideen and Sehrish Jabeen (Utah State University, USA); Oenardi Lawanto (Utah State University & College of Engineering, USA); Angela Minichiello (Utah State University, USA); Assad Iqbal (Ohio State University, USA)

17:15
Examining the Gender Difference on the Five Facets of Need for Cognitive Closure Among Engineering Students
Zain Ul Abideen and Sehrish Jabeen (Utah State University, USA); Oenardi Lawanto (Utah State University & College of Engineering, USA); Angela Minichiello (Utah State University, USA); Assad Iqbal (Purdue University, USA)

17:30
WIP: an Exploratory Sequential Mixed Methods Study on the Influence of Data Proficiency on Engineering Identity
Tanveer Syed (Florida Institute of Technology, USA); Godwyll Aikins (Florida Institute of Technology Melbourne, USA); Catherine Berdanier (Pennsylvania State University, USA); Kim-Doang Nguyen (Florida Institute of Technology, USA)

17:45
WIP: Exploring Programmer Identity in the Figured World of an Undergraduate Creative Computing Classroom
David Mawer (Buffalo State University, USA)

18:00
Register as an Emerging Emblem of Disciplinary Identity, Agency and Context
Rick Evans (Cornell University & College of Engineering, USA); Jean Hunter and Stephanie Fuchs (Cornell University, USA)

17:00 - 18:30
M5-WPD: Curriculum & Course Design 1: Programming, Systems, and Circuits
Session Chair: Deborah Trytten (University of Oklahoma, USA)
Room: Willow Pond D

17:00
WIP: Study of the Impact of Pre-Requisite Courses on Student Learning in Linear Systems
Eesha Atif and Laura J. Bottomley (North Carolina State University, USA)

17:15
Impact of Prior Programming Experience on First-Year Engineering MATLAB Programming Skills
Sydney Cooper and Krista M Kecskemety (The Ohio State University, USA)

17:30
WIP: Montessori Inspired Learning in Undergraduate Computer Science Education
Raul Alejandro Vargas-Acosta and Omar Ochoa (Embry-Riddle Aeronautical University, USA)

17:45
WIP: Mapping Misconceptions Across Key Electric Circuit Concepts
Vincent Fakiyesi (University of Georgia, USA); Olanrewaju Paul Olaogun (Merrimack College, USA); Isaac D Dunmoye and Nathaniel Hunsu (University of Georgia, USA)

18:00
WIP: Analyzing Students' Reasoning Patterns in Electric Circuit Misconceptions: a Thematic Approach
Vincent Fakiyesi, Deborah Moyaki, Taiwo R Feyijimi and Nathaniel Hunsu (University of Georgia, USA)

18:15
Team- Based Learning in a Large Introductory Circuits Course for Engineering Students
Lizandra Godwin and Lutfullahil Majid (University of New Mexico, USA)

17:00 - 18:30
M5-WPE: Design Education 5: Collaborative and Community-Centered Projects
Session Chair: Md Shahadat Hossain Khan (Islamic University of Technology, Bangladesh)
Room: Willow Pond E

17:00
Integrating Community Knowledge and Resources into Community-Based, Project-Based Learning: The Case of an Engineering Design Abroad Program
Collette Higgins, Trevion S Henderson and David Zabner (Tufts University, USA)

17:15
WIP: Examining a Different Approach to Create Successful Opportunities for Collaboration Between University and Community Partners in International Service Learning
Kadri Parris (The Ohio State University, USA)

17:30
WIP: A Computational Approach to Streamlining Information Management for Farmers Developed Through a Community-Engaged Learning Experience
Eddy W Pan, Arianne M Fong and Alessandra Ferzoco (Olin College of Engineering, USA)

17:00 - 18:30
M5-WPE: Design Education 5: Collaborative and Community-Centered Projects (cont.)

17:45
How to Transform Humanitarian Engineering Student Competitions for the Well-Being of Communities? the Case of IEEE Tech4Good Colombia
Juan Lucena (Colorado School of Mines & Humanitarian Engineering, USA); Diana Duarte (DIVERSA, Colombia)

18:00
WIP: Designing Differently: An Exploration of How Community Cultural Wealth Shapes Student Design Experiences
Jennifer S. Brown and Julie P. Martin (University of Georgia, USA); Dina Verdin (Arizona State University, USA)

18:15
Transforming Risk Management in a Multidisciplinary Design Course: Considering Risk as a Language of Connection to Stakeholders
Tyler J Stump (The Ohio State University & USA, USA); Bob Rhoads (The Ohio State University, USA); Lynn Hall (Ohio State University, USA)

18:30 - 20:00
MS-1: Welcome Reception
Room: Harmony Restaurant

Kick off the conference with a warm welcome in the Harmony Restaurant! Enjoy light refreshments, reconnect with colleagues, and make new friends.

Technical Program: Tuesday, November 4

6:30 – 18:00
Registration
Room: 3rd Floor, Across from East Lounge

6:30 - 9:30
Breakfast
Room: Harmony Restaurant
For any attendees staying off site: Please check in with the registration desk before proceeding to Harmony Restaurant for your breakfast voucher. Attendees staying at the Embassy Suites do not need breakfast vouchers.

8:00 - 9:30
T1-RBA: K-12 Education & Outreach 1: Innovative Technologies and Game-Based Approaches
Session Chair: Khalid Al-Olimat (Ohio Northern University, USA)
Room: Riverbed A

8:00
A Two-Quarter Initiative in Co-Designed Programming Courses for High School Students
Tianyi Li and Victoria Lowell (Purdue University, USA)

8:15
WIP: the Potential of Mobile Technology in Expanding Artifacts for Problem Identification, Problem-Scoping, and Ideation of Middle and High School Students
Tamecia R. Jones (North Carolina State University, USA); Selcen Guzey, Chrystal Johnson, Jennifer Sdunzik and Wilella D Burgess (Purdue University, USA)

8:30
WIP: Teaching Quantum Communication in High School: Pilot Implementation and Evaluation of a 90-Minute Module
Jessica S. Gollmann (Technische Universität Dresden, Germany); Vivian S. Hoffmann (Dresden University of Technology, Germany); Simone Glevitzky and Lisa M Küssel (Technische Universität Dresden, Germany); Patrick Seeling (Central Michigan University, USA); Riccardo Bassoli (Technische Universität Dresden, Germany); Holger Boche (Technical University Munich, Germany); Frank H.P. Fitzek (Technische Universität Dresden & ComNets - Communication Networks Group, Germany)

8:45
WIP: Strategic Gamification: Enhancing STEM Curriculum Through Game-Based Learning
Mehdi Roopaei (University of Wisconsin - Platteville, USA); Caitlin Johnson (Bold-Bird Consulting, Inc., USA)

9:00
An Assessment Framework for Serious Games Focused on Cybersecurity
Ilenia Fronza (Free University of Bolzano, Italy); Antonio Curci (University of Bari, Italy); Claudia Lorusso and Veronica Rossano (Università degli Studi di Bari Aldo Moro, Italy); Shiva Saket Parida (Free University of Bolzano, Italy); Gennaro Iaccarino (Direzione Istruzione e Formazione Italiana, Italy)

9:15
Friendelligent: a Collaborative Synchronized Game-Based Platform for AI Education and Autonomous Navigation Curriculum
Raul Alcantara Castillo, Tasneem Burghleh, Deem Alfozan and Randi Williams (MIT, USA); Sharifa Alghowinem (MIT Media Lab, USA & MIT, USA); Cynthia Breazeal (MIT Media Lab, USA)

8:00 - 9:30
T1-RBB: ***Special Session: Integrating Learning Sciences into Engineering and Computing Education Research: a Practical Framework***
Organizers: HyeonJin Yoon and Guy Trainin (University of Nebraska-Lincoln, USA)
Room: Riverbed B

8:00 - 9:30
T1-RBC: Gen AI 6: Impact on Programming Experiences
Session Chair: Christiana Garcia (Virginia Tech, USA)
Room: Riverbed C

8:00
The Impact of AI Tools on the Student Programming Experience: Interactions, Attitudes, & Perceptions
Sri Yash Tadimalla, Mary Lou Maher and Nadia Najjar (University of North Carolina at Charlotte, USA); Coy Simon (UNC Charlotte, USA)

8:15
The Impact of a GenAI Integration on First-Year Engineering Students' Programming Outcomes
Udit Kumar Das, Makenzie Yates, Kristina Bloch, Lilly Hagan, Elisabeth L Thomas, Gabriel Gatsos, Alwin K Rajkumar, Benarji Valavala, Seth Franco, Sudheer Kumar Divvela and Angela Thompson (University of Louisville, USA); Campbell R. Bego (University of Louisville & J. B. Speed School of Engineering, USA)

8:30
WIP: Assessing the Use of GenAI to Foster Algorithmic Thinking in an Introductory Engineering Course
Juan D Ortega-Alvarez (Virginia Tech, USA & Universidad EAFIT, Colombia); Campbell R. Bego (University of Louisville & J. B. Speed School of Engineering, USA); Andres Nieto-Leal (Virginia Polytechnic Institute and State University, USA)

8:45
Exploring the Impact of ChatGPT on Early Information Systems Majors: Opportunities and Challenges in Learning to Program
Edward C. Dillon, Jr, Patricia Ordóñez, Uzma Hasan, Omobolanle Niyi Owoeye and Srushti Rajesh Dharmale (University of Maryland Baltimore County, USA)

9:00
"ChatGPT Should Be Used as a Tool, but Not Mistaken for a Crutch": Engineering Students' Ethical Perspectives After Using GenAI in an Introductory Course
Campbell R. Bego (University of Louisville & J. B. Speed School of Engineering, USA); Deborah Trytten (University of Oklahoma, USA); Joshua Nwokeji (Gannon University, USA)

9:15
LLM Contribution Summarization in Software Projects
Rafael Corsi Ferrao, Fabio R de Miranda and Diego Pavan Soler (Insper, Brazil); Marcelo Augosto Vieira Graglia (PUC SP, Portugal)

Technical Program: Tuesday, November 4 (cont.)

8:00 - 9:30
T1-RBD: Traditional AI Applications
Session Chair: Yanjun Yan (Western Carolina University, USA)
Room: Riverbed D

8:00
Machine Learning Algorithms for Student Performance Prediction: a Literature Review
Prajith Pitchapati and Marcia Moraes (Colorado State University, USA)

8:15
Leveraging Learning Management Systems for Academic Risk Prediction Using Machine Learning: a Computer Science and Engineering Perspective
Daniel R Getty, Mason Turner and Matthew Nickols (University of Michigan - Flint, USA); Halil Bisgin (The University of Michigan - Flint, USA & University of Michigan-Flint, USA)

8:30
Predictive Analysis of Student Dropout in the Computer Science Program at the University of Brasilia
Giovana Pinho Garcia (Universidade de Brasilia, Brazil); Maristela Holanda (University of Brasilia, Brazil); Jonathan Rosa Moreira (Universidade de Brasilia, Brazil & Institute of Engineering, Brazil); Marcelo Grandi Mandelli (Universidade de Brasilia, Brazil); Dilma Da Silva (TAMU, USA)

8:45
Analysis of Students' Patterns and Prediction Using edX Data and Learning Analytics
Pedro Manuel Moreno-Marcos, María Sanz-Gómez, Pedro J. Muñoz -Merino, Carlos Alario-Hoyos, Iria Estevez-Ayres and Carlos Delgado Kloos (Universidad Carlos III de Madrid, Spain)

9:00
Automated Student Engagement Detection Using Hybrid Deep Learning and Machine Learning Techniques
Sherif Abdelhamid (Virginia Military Institute, USA); Mona Aly (Independent Researcher, USA)

9:15
WIP: Quality-Control Metrics for Crowdsourced Labeling: Promoting Dataset Reliability for Machine-Learning Applications
Aditya Iyer, Tanmaiyee Battula, Manoj Katravath and Edward F. Gehringer (North Carolina State University, USA)

8:00 - 9:30
T1-WPA: Pedagogical & Instructional Approaches 6: Innovative Approaches to Software, VR, and Robotics Education
Session Chair: Benjamin Chaback (Virginia Tech, USA)
Room: Willow Pond A

8:00
Exploring Students' Insights on Creating Videos to Learn Software Design and Engineering
Pedro Guillermo Feijóo-García, John D Centner and Lucas G. Zangari (Georgia Institute of Technology, USA); Chase G Wrenn and Neha Rani (University of Florida, USA); Juan Sebastián Sánchez-Gómez (Universidad de los Andes, Colombia); Olufisayo Omojokun (Georgia Institute of Technology, USA)

8:15
Teaching VR Development for Undergraduate Computer Science Students with No Graphics Background
Lori Rebenitsch (The Study, LLC, USA); Lisa R Rebenitsch (South Dakota School of Mines, USA)

8:00 - 9:30
T1-WPA: Pedagogical & Instructional Approaches 6: Innovative Approaches to Software, VR, and Robotics Education (cont.)

8:30
Identification of the Critical Knowledge Areas for Advancing Human-Wearable Robots Interactions: a Delphi Study
Joshua Nsiah Addo Ofori, Mariam A Tomori I and Omobolanle Ogunseiju (Georgia Institute of Technology, USA); Chuma Nnaji (Texas A & M University, USA)

8:45
Agile Mobile Application Development: a Multidisciplinary Approach With CBL, Scrum and Lean Startup
Afonso Sales (PUCRS - University, Brazil); Nicolas Pereira do Nascimento (Pontifical Catholic University of Rio Grande do Sul, Brazil); Rafael Chanin (PUCRS, Brazil); Aline De Campos (Pontifical Catholic University of Rio Grande Do Sul (PUCRS), Brazil)

9:00
Simulation and Hardware in Project-Based Learning for Mobile Robotics and Computer Vision
Victor Hayashi, Murilo Zanini Carvalho, Guilherme Cestari, Lisane Valdo, Rodrigo Nicola, Michele Bazana Souza and Henrique Mohallem Paiva (Inteli, Brazil)

9:15
Evolving Software Engineering Education Through Undergraduate Peer-Mentorship
Azim Abdool (The University of the West Indies, Trinidad and Tobago); Daniel Joseph Ringis (The University of the West Indies, St Augustine, Trinidad and Tobago); Akash Pooransingh (The University of the West Indies, Trinidad and Tobago); Aniel Maharajh (The University of The West Indies, Trinidad and Tobago)

8:00 - 9:30
T1-WPB: Broadening Participation 6: Exploring Identity, Mental Health, and Support in Graduate Education
Session Chair: Runu Proma Das (University of Georgia, USA)
Room: Willow Pond B

8:00
WIP: Visualizing Transitions: Exploring Queer Engineering Students' Pathways to Graduate School Through Collaging
Animesh Paul (University of Georgia, USA); Kevin J Kaufman-Ortiz (Purdue University, USA & Cornell University, USA); Crystal Alicia Nattoo (Stanford University, USA); Yash Tadimalla (University of North Carolina at Charlotte, USA)

8:15
Ageism in the Computer Science University Classroom: A Service Learning Case Study
Natalie Andrus, Alexa Smith and Hamid Tarashiyoun (Virginia Tech, USA); Wei Lu Wang (Virginia Polytechnic Institute and State University, USA); Ihudiya Williams and Scott McCrickard (Virginia Tech, USA)

8:30
WIP: a Scoping Literature Review on Survey Instruments Used to Examine STEM Graduate Students' Mental Health Experiences
Jake Czworka, Harish Vijayakumar, Similoluwa T Ige, Taiwo R Feyijimi and Sarah Jane Bork (University of Georgia, USA)

8:45 ***Mental Health Needs of International Students: Insights for Digital Solutions***
Alex Gurung (University of Michigan - Flint, USA); Chandra Kala Rai and HousamEldin Adel-Ragab Mohamed (University of Michigan-Flint, USA); Charlotte Tang (University of Michigan - Flint, USA)

9:00
WIP: Advising in the Digital Age - Enhancing International Doctoral Student Experiences with Technology and Research
Himani Sharma (Arizona State University, USA); Ann McKenna (University of Iowa, USA)

8:00 - 9:30
T1-WPB: Broadening Participation 6: Exploring Identity, Mental Health, and Support in Graduate Education (cont.)

9:15
Work in Progress: Developing Agency Through a Rising Doctoral Institute
Jordan Peyton (Ohio State University, USA); Mayra S. Artiles (The Ohio State University, USA); Holly Matusovich (Virginia Tech, USA); Juan M Cruz (Rowan University, USA & Unive, Colombia); Stephanie Adams (University of Texas Dallas, USA)

8:00 - 9:30
T1-WPC: Attitudes & Perceptions 2: Cultivating Empathy and Professional Virtue
Session Chair: Divya Nalla (Nalla Malla Reddy Engineering College, India)
Room: Willow Pond C

8:00
Empathy, Humility and the Computer Engineer - in an Australian Context
Jacob M Elmasry (The University of Sydney, Australia); Johannes Strobel (Missouri State University, USA); Tom Goldfinch, Benjy Marks and Ali Hadigheh (The University of Sydney, Australia)

8:15
Creating Inclusive Engineers Through Humanitarian Engineering Projects: Thematic Analysis of 23 Semi-Structured Interviews
Kirsten Heikkinen Dodson, Rene Marius and Ruth Fessehaye (Lipscomb University, USA)

8:30
Longitudinal Study of Professional Virtue Development in Engineering & Computing
Stephen T Frezza and Marita O'Brien (Franciscan University of Steubenville, USA)

8:45
Enhancing Social Engineering Education Through Roleplaying
Devang Atul Patel, Madiha Fathima, Tatiana Ringenberg and Paul J Thomas (Purdue University, USA)

9:00
WIP: Aligning Computing Students' Expectations, Training, and Industry Needs
David Lopez (Universitat Politècnica de Catalunya - BarcelonaTech, Spain); Josep Fernandez Ruzafa (Universitat Politècnica de Catalunya - Barcelona Tech, Spain); Hugo Aranda Sánchez (Universitat Politècnica de Catalñunya - BarcelonaTech, Spain)

9:15
Bridging Theory and Practice: Transforming STEM Keynote Presentations Through Experiential and Musical Engagement
Hortense Gerardo (University of California, San Diego, USA); Victor Hugo Minces (UCSD, USA)

8:00 - 9:30
T1-WPD: Curriculum & Course Design 2: Innovations in AI, Programming, and Ethical Competency Development
Session Chair: John Mitchell (UCL, UK)
Room: Willow Pond D

8:00
WIP: tinyML Systems 101 New Course Curriculum in Tiny Machine Learning
Sercan Aygun (University of Louisiana at Lafayette, USA & Istanbul Technical University, Turkey)

8:15
WIP: Developing Instructional Resources to Cultivate Students' Practical AI Ethics Competencies Through Collaborative Learning
Kylee N Shiekh and Qin Zhu (Virginia Tech, USA); Katherine L Chiou (University of Alabama, USA); Sandy Woodson (Colorado School of Mines, USA)

8:30
Teaching Programming in the Age of AI: Transforming Pedagogy Amidst Code-Generating Technologies
Asad Azemi (University of Maryland Eastern Shore, USA)

8:45
WIP: Scaling Principles of Programming
Ryan J Meuth, Medha Dalal and Peter Van Leusen (Arizona State University, USA)

9:00
Applying Software Engineering Principles to Interdisciplinary AI Curriculum Development
George Frazier, Nan Sun and Joseph Kendall-Morwick (Washburn University, USA)

9:15
Assessing the Efficacy of Teaching Computational Thinking Through the Instructional Method of Academic Research
Deepan Raj Prabakar Muthirayan, Raghav Awasty, Shikhraj Singh, Anvita Ghosh, Divyannsh Pincha and Brainerd Prince (Plaksha University, India)

8:00 - 9:30
T1-WPE: *Panel Session: Integrating Technical and Professional Communication into the Engineering Curriculum: International Perspectives from Four Programs*
Organizers: Alan Chong and Lydia Wilkinson (University of Toronto, Canada); Suzanne Lane (Cornell University, USA); Rosa Margarita Galán Vélez (Instituto Tecnológico Autónomo de México, Mexico); Carl Johan Carlsson and Magnus Gustafsson (Chalmers University of Technology, Sweden)
Room: Willow Pond E

9:30 - 10:30
T-CB1: Focus on Exhibitors, Coffee Break, Open Poster Session 2
Room: Meadow Prefunction Area

10:30 - 12:00
T2-RBA: K-12 Education & Outreach 2: Supporting Engagement and Career Connections
Session Chair: Ibrahim Magboul (AUW, Sudan)
Room: Riverbed A

10:30
WIP: Examining the Interactions of Undergraduate Service Learners Engaged in K-12 Engineering and Computer Science Outreach
Azizi H Penn (Purdue University, USA & Sacramento Sate University, USA); Tamara J. Moore and Kerrie A. Douglas (Purdue University, USA)

10:45
WIP: Undergraduate Research Platforms for Promoting ECE Career-Connected Learning to High School Juniors and Seniors
Wookwon Lee (Gannon University, USA)

11:00
WIP: Elementary Pre-Service Teachers' Perceptions of Engineering Within Integrated STEM
Ursula Nguyen, Deepika Menon, Guy Trainin, Azadeh Hassani and Fatemeh Ashrafabadi (University of Nebraska-Lincoln, USA)

11:15
Sustainability Education for Young Children; Introductory Life Cycle Assessment
Bethany L Willis, Annie Padwick, Antonio Portas, Joe Shimwell, Melanie Horan, Carol Davenport and Neil S. Beattie (Northumbria University, United Kingdom (Great Britain))

11:30
WIP: Supporting Engaging K12 Outreach Through Engineer-Educator Collaborations
Joni M Lakin (University of Alabama, USA); Hope Whiteside (The University of Alabama, USA); Virginia A Davis (Auburn University, USA); Komanci Love (University of Alabama, USA); Cheryl Seals and Edward Davis (Auburn University, USA)

11:45
WIP: Integrating Industry and Research in STEM Transportation Festivals for Middle and High School Audiences
Hope Whiteside (The University of Alabama, USA); Joni M Lakin (University of Alabama, USA); Bernadette Forrest (The University of Alabama, USA); Komanci Love (University of Alabama, USA)

10:30 - 12:00
T2-RBB: *Special Session: Practice-Based Research for Engineering Educators: Reflective Practices in Curriculum Design*
Organizers: Cristian Vargas-Ordonez (South Dakota School of Mines and Technology, USA)
Room: Riverbed B

10:30 - 12:00
T2-RBC: Gen AI 7: Software Engineering in Undergraduate Courses
Session Chair: Sandra Nite (Texas A&M University, USA)
Room: Riverbed C

10:30
Using Prompt Engineering to Enhance a Project-Based Learning Course on Project Management
Paula Quadros De Mendonça, Jose Reginaldo Hughes Carvalho and Ana Carolina Oran (Federal University of Amazonas, Brazil)

Technical Program: Tuesday, November 4 (cont.)

10:30 - 12:00
T2-RBC: Gen AI 7: Software Engineering in Undergraduate Courses (cont.)

10:45
WIP: Generative Artificial Intelligence in Undergraduate Software Engineering Education
Jeffrey M Hemmes (United States Air Force Academy, USA); Richard Blumenthal (Regis University, USA)

11:00
Comparative Evaluation of Large Language Models for Test-Skeleton Generation
Subhang Boorlagadda and Nitya Naga Sai Atluri (North Carolina State University, USA); Muhammet Mustafa Olmez (Turkey); Edward F. Gehringer (North Carolina State University, USA)

11:15
WIP: Augmenting User Stories Writing with GenAI in Students' Software Engineering Projects
Mervat Abu-Elkheir (The German University in Cairo & Media Engineering and Technology, Egypt); Mohammed Seyam (Virginia Tech, USA); Nada Ibrahim and Nabila Attaby (The German University in Cairo, Egypt)

11:30
A Simulation-Based Approach to Enhance Conflict Resolution Through Non-Violent Communication and Large Language Models in Teamwork
Miguel A Feijoo-Garcia, Cristancho A Jorge, James Dworkin and Alejandra J. Magana (Purdue University, USA)

11:45
Enhancing Public Speaking Skills in Engineering Students Through AI
Amol Harsh, Brainerd Prince, Siddharth Siddharth, Deepan Raj Prabakar Muthirayan, Kabir S Bhalla, Esraaj Sarkar Gupta and Siddharth Sahu (Plaksha University, India)

10:30 - 12:00
T2-RBD: Emerging Trends and Insights from Literature Reviews
Session Chair: Stephanie Lunn (Florida International University, USA)
Room: Riverbed D

10:30
Leveraging LLMs for Streamlining and Demystifying the Systematic Literature Review Process
Bo Pei and Xiaojiao Sun (University of South Florida, USA)

10:45
Student Interest and Choice of STEM Majors: a Systematic Review of Contributing Factors
Syeda Fizza Ali and Saira Anwar (Texas A&M University, USA)

11:00
Scaling Success: a Systematic Review of Peer Grading Strategies for Accuracy, Efficiency, and Learning in Contemporary Education
Uchswas Paul, Ananya Mantravadi, Jash Shah, Shail Shah and Sri Vaishnavi Mylavarapu (North Carolina State University, USA); Parvez Rashid (College of Charleston, USA); Edward F. Gehringer (North Carolina State University, USA)

11:15
An Updated View of Conversational Agents in Engineering Education: a Scoping Review
Manjesh Mishra, Luciana Debs and Kim Talley (Texas State University, USA)

10:30 - 12:00
T2-RBD: Emerging Trends and Insights from Literature Reviews (cont.)

11:30
Improving Computing Education with 360-Degree Videos: a Tertiary Study
Aziya Mehboob and Ilenia Fronza (Free University of Bolzano, Italy)

11:45
The Global Landscape of Research on AI Literacy: a Bibliometric Analysis of Trends, Collaborations, and Emerging Themes
Jeya Amantha David Pandya Kumar (Michigan State University, USA)

10:30 - 12:00
T2-WPA: Pedagogical & Instructional Approaches 7: Enhancing Student Productivity, Metacognition, and Self-Assessment
Session Chair: Tingjun Lei (University of North Dakota, USA)
Room: Willow Pond A

10:30
WIP: Improving Individual Productivity Utilizing SCRUM-for-One
Massood Towhidnejad and Zackary Hagerty-Posell (Embry-Riddle Aeronautical University, USA)

10:45
Enhancing Metacognition Through Cooperative Problem-Based Learning: a Phenomenological Insight of an Engineering Student's Experience
Nur Shahira Samsuri (Universiti Teknologi Malaysia, Malaysia & Center for Engineering Education, Malaysia); Fatin Phang and Nur Fazirah Jumari (Universiti Teknologi Malaysia, Malaysia); Shih Hui Lee (Purdue University, USA & Universiti Teknologi Malaysia, Malaysia); Khairiyah Mohd-Yusof (Purdue University, USA)

11:00
Enhancing Student Understanding of Phase Diagrams Through Conceptual Writing-Based Exercises
Amir Saeidi (University of California, Davis, USA); James Becker (Montana State University, USA)

11:15
WIP: Comparing the Impact of Learning Strategy Interventions in Varied Teaching Contexts
Alex Phan (University of California, San Diego, USA); Huihui Qi (UC San Diego, USA); Minju Kim (Chapman University, USA); Marko V. Lubarda and Curt Schurgers (University of California San Diego, USA)

11:30
Enhancing Student Success in CS1: a Self-Selected Experience-Based Grouping Approach
April R Crockett and Gerald Gannod (Tennessee Technological University, USA); Neena Thota (University of Massachusetts Amherst, USA & UpCERG, Uppsala University, Sweden)

11:45
The Other Side of the Screen: Motivations to Watch and Engage in Software Development Live Streams
Ella Kokinda and David M Boyer (Clemson University, USA)

10:30 - 12:00
T2-WPB: Broadening Participation 7: Supporting Student Resilience and Stress
Session Chair: Arko Barman (Rice University, USA)
Room: Willow Pond B

10:30
WIP: Using Hybrid Cognitive Interviews to Examine Validity of the Life Stressor Checklist to Study Racialized Stress Among Undergraduate Engineering Students
Mark O Onyango and Elahe Vahidi (University of Cincinnati, USA); Kaitlyn A Thomas (University of Nevada, Reno, USA); Kelly J. Cross (Georgia Institute of Technology, USA); Adam Kirn (University of Nevada, Reno, USA); Whitney Gaskins (University of Cincinnati, USA)

10:45
Characterizing Engineering Graduate Students' Longitudinal Stress Landscapes and Stressor Cascades
Boni F Yraguen and Kyeonghun Jwa (Penn State, USA); Catherine Berdanier (Pennsylvania State University, USA)

11:00
Machine Learning for Stress Management in Education Using Wearable Biomarkers and NLP-Based Reflections
Yuexin Liu (Texas A&M University, USA); Ben Zoghi (SMU, USA)

11:15
WIP: Designing Content-Relevant Interventions to Promote Academic Resilience in an Engineering Project Course
Alessandra O Napoli, Ross D Venook and Shima Salehi (Stanford University, USA)

11:30
GoodBot: the Engineering and Computer Science Student's Best Friend
Otavio Santos (Universidade Federal do Espírito Santo & Faculdades Integradas Espírito-Santenses, Brazil); Davidson Cury (UFES-Universidade Federal do Espirito Santo, Brazil); Pedro David Netto Silveira (UFES & IFES, Brazil); Wagner de Andrade Perin (Universidade Federal do Espírito Santo, Brazil); Jadson do Prado Rafalski (Instituto Federal do Espírito Santo - Brazil, Brazil & IFES, Brazil)

11:45
From Zero to Poster: Formalizing Undergraduate Research Experiences in Engineering Education
Heidi A. Diefes-Dux and Grace Panther (University of Nebraska-Lincoln, USA)

10:30 - 12:00
T2-WPC: Attitudes & Perceptions 3: Technology Adoption, Digital Literacy, and Engagement
Session Chair: Deborah Trytten (University of Oklahoma, USA)
Room: Willow Pond C

10:30
Profiling Digital Readiness Among Undergraduates: A Person-Centered Approach
Thien T Nguyen and Alexander Helberg (Trinity College, USA)

10:45
Explaining Undergraduate Student Adoption of Integrated Development Environments
Lakshita Malhotra and Jennifer Parham-Mocello (Oregon State University, USA)

11:00
Robots in Synch, Engineers in Harmony: A Synchronizing Firefly Robot Kit for Enhancing Student Engagement Through Positive, Community-Centered Emotions (WIP)
Derrick W Yeo, Krystelle Fernandez and Hadi H Soweidan (University of Michigan, USA)

10:30 - 12:00
T2-WPC: Attitudes & Perceptions 3: Technology Adoption, Digital Literacy, and Engagement (cont.)

11:15
CacheLab: Enhancing Memory Hierarchy Learning Through Interactive Exploration
Hugo Jeller Ferreira and Vinicius Shinohara (Federal University of Mato Grosso do Sul, Brazil); Gregorio Koslinski Neto (Universidade Federal de Mato Grosso do Sul, Brazil); Liana Dessandre Duenha (Federal University of Mato Grosso do Sul, Brazil)

11:30
AI Literacy for Community Colleges: Instructors' Perspectives on Scenario-Based and Interactive Approaches to Teaching AI
Aparna Maya Warrier, Arav K Agarwal, Jaromir Savelka, Christopher A Bogart and Heather Burte (Carnegie Mellon University, USA)

11:45
Adoption, Usage, and Perceptions of LLM-Generated Feedback in Computer Science Education: a Cross-Cultural Study of Students and Academics
Eyman Abdulrahman Alyahyan (The University of Glasgow, United Kingdom (Great Britain) & Imam Abdulrahman Bin Faisal University, Saudi Arabia); Mireilla Bikanga Ada and Jake Lever (University of Glasgow, United Kingdom (Great Britain))

10:30 - 12:00
T2-WPD: Curriculum & Course Design 3: Supporting Student Success and Development
Session Chair: Radheshyam Tewari (Michigan Technological University, USA)
Room: Willow Pond D

10:30
WIP: Calls for Change in Foundational Engineering Courses in Middle Years: a Scoping Literature Review
Adaugo Enuka and Alexandra C Strong (Cornell University, USA)

10:45
Competencies to Educate the Whole Engineer: Building a Modern Engineering Curriculum at Wake Forest Engineering
Olga Pierrakos (Wake Forest University, USA)

11:00
The Energy Literacy Spectrum: Understanding Students' Thoughts, Feelings, and Behaviors
Sakshi Solanki, Achal Duhoon and Desen S Özkan (University of Connecticut, USA)

11:15
Examining Shifts in Sense of Belonging, Engineering Identity, Intent to Persist and Stress Levels: A Repeated Measures Study of First-Generation Students in a First-Year Engineering Program
Muhammad Asghar, David Reeping and Sheryl Sorby (University of Cincinnati, USA)

11:30
WIP Development of a Qualitative Codebook to Study Reflective Depth in Engineering Courses
Campbell J McColley, Mohammed Alrizqi and Alexandra Werth (Cornell University, USA)

11:45
WIP: Exploring the Value of a Debugging Cheat Sheet and Mini Lecture in Improving Undergraduate Debugging Skills and Mindset
Andrew J Ash and John Hu (Oklahoma State University, USA)

10:30 - 12:00
T2-WPE: ***Student Panel Session: Summer Bridge and First-Year Engineering Experience***
Organizers: Lorena Benavides-Riano and Mahnas Jean Mohammadi-Aragh (Mississippi State University, USA)
Room: Willow Pond E

12:00 - 13:30
T-LK: Lunch & Keynote
Inside the AI Engine: Search, Intelligence, and the Convergence Powering the Future of Knowledge
Speaker: Krishna Madhavan (Microsoft AI, USA)
Room: Meadow Ballroom

Enjoy a buffet meal and engaging talk—please arrive promptly to be seated before the talk begins.

13:30 - 15:00
T3-RBA: K-12 Education & Outreach 3: Building Teacher Competencies and Student Engagement
Session Chair: Andrea Ragonese (Penn State University, USA)
Room: Riverbed A

13:30
Enhancing K-12 Teachers' AI Competencies Through a Professional Development Program
Lechen Zhang and Linda Mannila (University of Helsinki, Finland); Yuki Nagae (Stockholm University, Sweden & International Christian University, Japan); Jalal Nouri (Stockholm University, Sweden)

13:45
A Comparative State-Level Analysis of Computer Science Teacher Capacity in Georgia and Wisconsin Public High Schools
Sujeeth Goud Ramagoni and Christian Marowski (Marquette University, USA); Aaja Christie (Georgia State University, USA); Bryan Cox (Georgia Institute of Technology, USA & Constellations Center for Education in Computing, USA); Dennis Brylow (Marquette University, USA); Anu G Bourgeois (Georgia State University, USA)

14:00
Computing and Sciences Summer Program for Middle School Students
Sujing Wang and Raymond Doe (Lamar University, USA)

14:15
Visualization of Logic Concepts Through Integrated Tools for Emergent Bilinguals
Shary Shimray (International High School, Austin ISD, USA); Sheng-Jen Hsieh (Texas A&M University, USA)

14:30
Enhancing Student Engagement in Computational Thinking by Encouraging Exploration in Horizontal STEM Learning Activities
Edward C Mayeux, Ting Liu, Joshua Earl Howell and Rebecca Schlegel (Texas A&M University, USA)

14:45
WIP: Implementing and Assessing Maker Laboratory Networks in Amazonian Schools: a Multi-Context Analysis
Diego Sales (Federal University of Amazonas & Institute Federal of Amazon, Brazil); Adriana Gama Do Nascimento Maia and Jose Pinheiro Queiroz Neto (IFAM, Brazil)

13:30 - 15:00
T3-RBB: ***Special Session: Design Your Ideal Work Group: Intentionally Structuring Research and Teaching Group Culture to Better Navigate Differences in Thinking***
Organizers: Courtney J Faber, Danielle Lewis and Lorna Treffert (University at Buffalo, USA)
Room: Riverbed B

13:30 - 15:00
T3-RBC: Gen AI 8: Code Quality and Analysis in Undergraduate Courses
Session Chair: Lexy Arinze (Purdue University, USA)
Room: Riverbed C

13:30
Assessing Refactoring in Education: a Systematic Literature Review on Evaluation, Goals, and Impact
Sarah Alanqari (Rochester Institute of Technology, USA); Mohamed Wiem Mkaouer (University of Michigan-Flint, USA); Christian Newman (Rochester Institute of Technology, USA)

13:45
WiP: Literature Review on LLMs to Improve Code
Sucharitha Nadendla, Sravya Karanam and Edward F. Gehringer (North Carolina State University, USA)

14:00
Use of Generative AI Tools in Software Quality Assurance Work
Bruce Maxim (University of Michigan-Dearborn, USA); Zheng Song (University of Michigan at Dearborn, USA); Belen Garcia de Hurtado (University of Michigan-Dearborn, USA); Foyzul Hassan (Universsity of Michigan-Dearborn, USA); Shimil Shijo (University of Michigan-Dearborn, USA)

14:15
Teaching Code Refactoring Using LLMs
Anshul Khairnar, Aarya Rajoju and Edward F. Gehringer (North Carolina State University, USA)

14:30
WIP: Leveraging LLMs for Enforcing Design Principles in Student Code: Analysis of Prompting Strategies and RAG
Dhruv Kolhatkar, Soubhagya Akkena and Edward F. Gehringer (North Carolina State University, USA)

14:45
WIP Active Learning of Foundational Software Engineering Skills Supported by GitHub Education
Alejandro Adorjan, Patricia De León and Martin Solari (Universidad ORT Uruguay, Uruguay)

13:30 - 15:00
T3-WPA: Pedagogical & Instructional Approaches 8: Enhancing Project-Based Learning
Session Chair: Khalid Al-Olimat (Ohio Northern University, USA)
Room: Willow Pond A

13:30
Fostering Practical Skills in Computer Networks with IoT-Centric Project-Based Learning
Khairul Mottakin, Zheng Song and Khalid Kattan (University of Michigan at Dearborn, USA)

13:30 - 15:00
T3-WPA: Pedagogical & Instructional Approaches 8: Enhancing Project-Based Learning (cont.)

13:45
Community-Oriented Project-Based Learning for a Web Technologies Course
Zheng Song and Sai Vikram Patnaik (University of Michigan at Dearborn, USA); Hayat Hachem (City of Dearborn, USA); Ali Abazeed (City of Dearborn, USA & Department of Public Health, USA)

14:00
When Project-Based Learning Meets Edge Computing: an Experience Report
Zheng Song and Summit Shrestha (University of Michigan at Dearborn, USA); Zhengquan Li (University of Michigan- Dearborn, USA); Khairul Mottakin (University of Michigan at Dearborn, USA); Zhu Qiang (University of Michigan - Dearborn, USA)

14:15
WIP: Easing the Transition to Project-Based Software Engineering Courses with Externally Sourced Projects
Nathan Sommer (Xavier Univerity, USA); Stan Kurkovsky and Chad A Williams (Central Connecticut State University, USA); Mikey Goldweber (Denison University, USA)

14:30
Agile Game Production Instruction: Integrating Agile Methodologies with Project-Based Learning in Game Development Education
Víctor Manuel Pérez Colado (Nord University, Norway); Aedan Soellaart (University of Inland, Norway); Chris Hart (Nord University, Norway); Adam Palmquist (Mälardalen University, Sweden)

14:45
WIP: PROTECT: a Framework for Preserving Project-Based Learning Integrity in the AI Era
Xiaoguang Ma (University of Wisconsin-Platteville, USA); Yanwei Wu and Mehdi Roopaei (University of Wisconsin - Platteville, USA); Jing Wang (Gallop Academy, USA)

13:30 - 15:00
T3-WPB: Broadening Participation 8: Designing for Student Success
Session Chair: Priyanka Kumar (Computer Science, USA)
Room: Willow Pond B

13:30
WIP: Centering African American Culture in Engineering Education: Impact of an African-Centered Pedagogy and Curriculum
DeAnna Bailey (Morgan State University, USA); Kate Rotindo (Impact Allies, USA); Kendal Knox (Morgan State University, USA); Charnee Bowens and Krystal Dunn (Conscious Ingenuity, USA); James Holly Jr (University of Michigan, USA)

13:45
WIP: Coding Neurodivergent - a Systematic Literature Review
Veronica M Bramlett, Davis Flanders and Anna Manley (Kennesaw State University, USA)

14:00
Development of a Digital Game to Stimulate Logical Reasoning in Individuals with Intellectual Disabilities (ID)
Ailime F. Rodrigues (Federal University of Rio Grande, Brazil); Luiz Carlos Begosso (Fundacao Educacional Do Municipio de Assis & FATEC Assis, Brazil); Luiz R Begosso (Fundacao Educacional do Municipio de Assis - FEMA & Centro de Pesquisas em Informatica - Cepein, Brazil); Fernanda Mota (Universidade Federal do Rio Grande, Brazil); Darlise Nunes Ferreira (Universidade Federal do Pampa, Brazil); Rosa Vicari (Universidade Federal do Rio Grande do Sul, Brazil); Regina Barwaldt (Federal University of Rio Grande (FURG), Brazil & Center of Computational Sciences (C3), Brazil)

13:30 - 15:00
T3-WPB: Broadening Participation 8: Designing for Student Success (cont.)

14:15
WIP: Moverè: Interactive Motivational Model to Promote Diabetic Patients' Adherence to Health Protocols
Fernanda Mota (Universidade Federal do Rio Grande, Brazil); Adenauer Correa Yamin (Federal University of Pelotas (UFPel), Brazil); Ana Marilza Pernas (Universidade Federal de Pelotas, Brazil)

14:30
iAthena: Research Challenges in the Use of Persuasive Technologies to Monitor People with Depressive Disorder
Fernanda Mota (Universidade Federal do Rio Grande, Brazil); Daniel Capua (Universidade Católica de Pelotas, Brazil); Adriana Da Silva Pinto (INSTITUTO FEDERAL DO RIO GRANDE DO SUL Rio, Brazil); Regina Barwaldt (Federal University of Rio Grande (FURG), Brazil & Center of Computational Sciences (C3), Brazil); Adenauer Correa Yamin (Federal University of Pelotas (UFPel), Brazil)

14:45
Bringing More Girls to STEM: a Systematic Review of Brazilian Initiatives
Mariana Pereira Santos and Isabela Makiolka Montingelli (Pontifícia Universidade Católica do Paraná, Brazil); Andreia Malucelli (Pontificia Universidade Católica Paraná, Brazil); Sheila Reinehr (Pontifícia Universidade Católica do Paraná, Brazil); Carlos Silla (Halmstad University, Sweden)

13:30 - 15:00
T3-WPC: Attitudes & Perceptions 4: Fostering Resilience and Wellbeing
Session Chair: Deborah Moyaki (University of Georgia, USA)
Room: Willow Pond C

13:30
Empowering Neurodivergent Student Voices in Engineering: a Participatory Action Approach to Inclusion and Retention
Elahe Vahidi, Elizabeth Pawley and Whitney Gaskins (University of Cincinnati, USA)

13:45
WIP: Academic Resilience in Engineering - the Role of Risk and Protective Factors on Student Performance
Olanrewaju Paul Olaogun (Merrimack College, USA); Vincent Fakiyesi (University of Georgia, USA); Adurangba Victor Oje (JPMC & University of Georgia, USA); Nathaniel Hunsu (University of Georgia, USA); Peter O Olaogun (FUNAAB, Nigeria)

14:00
WIP: Retaining Future Innovators: Strategies to Foster Resilience & Persistence in Robotics & AI
Rachel Burcin (Carnegie Mellon University, USA); Sergio Sedas (Tec de Monterey, Mexico)

14:15
Developing Effective Attitudinal Character Indicators to Support Character Development
Stephen T Frezza (Franciscan University of Steubenville, USA); Iryna Ashby and Marisa Exter (Purdue University, USA)

14:30
WIP: Exploring the Impact of Scrum on Underrepresented Students in Engineering
Sarah A Reynolds and Alexandra Davidoff (Embry-Riddle Aeronautical University, USA); Lynn Vonderhaar (Embry-Riddle Aeronautical Unviersity, USA); Omar Ochoa, Massood Towhidnejad and James Pembridge (Embry-Riddle Aeronautical University, USA)

14:45
Unpacking Wellbeing and Professional Skill Development: a Study of Engineering Graduate Students
Syed Ali Kamal and Matilde Sánchez-Peña (University at Buffalo, USA)

13:30 - 15:00
T3-WPD: Curriculum & Course Design 4: Innovative Strategies for Teamwork, Design, and Skill Development
Session Chair: Chaomin Luo (Mississippi State University, USA)
Room: Willow Pond D

13:30
Exploring Educational Video Games for Learning Scrum
Javier Alegre (Universidad Politecnica de Madrid, Spain); Daniel Lopez, Jesús Mayor and Edmundo Tovar (Universidad Politécnica de Madrid, Spain)

13:45
WIP: Incorporating Active Learning and Group Work into Specifications Grading for Graduate Level Data Science Courses
Mahima Agumbe Suresh (San Jose State University, USA)

14:00
WIP: Defining Collaborative Educational Standards for AI Hardware
Ben Arie Tanay, Kerrie A. Douglas, Peter Bermel and Maria Oliveri (Purdue University, USA)

14:15
Early Introduction of Electrical and Computer Engineers to Design Problems: A Study on Design Thinking and Learning Outcomes
Mohamed Zaghloul (The University of Pittsburgh, USA); Heather M Phillips and Amr Hassan (University of Pittsburgh, USA)

14:30
A New Method of Collaboration in Block-Based Programming Environments
Isabella White (North Carolina State University, USA); Madison Thomas (North Carolina State Unviersity, USA); Veronica Cateté (North Carolina State University, USA)

14:45
PhawAI - Code, Culture, and Collaboration: Reflections on Pioneering an AI Workshop for Emerging Computer Scientists in Arequipa, Perú
Nils Murrugarra-Llerena (University of Pittsburgh, USA); Rosa Y. G. Paccotacya-Yanque (Universidad Católica San Pablo, Peru); Sreyoshi Bhaduri (Amazon, USA); Lourdes Ramirez Cerna (Universidad de Lima, Peru); Jeffri Murrugarra-Llerena (Stony Brook University, USA); Tilsa Oré Mónago (Rice University, USA); Cristhian Chavez Ruiz (PhawAI, Peru)

13:30 - 15:00
T3-WPE: Computer-Based Instruction 1: Innovative Platforms and Collaborative Efforts
Session Chair: Hanan Kuzat (East Texas A&M University, USA)
Room: Willow Pond E

13:30
WIP: QUINTET: a Platform for Quantum Internet Education and Training
Sahil Mangotra and Abhishek Parakh (Kennesaw State University, USA); Mahadevan Subramaniam (University of Nebraska at Omaha, USA)

13:45
The Use of a Prototype Environment for Programming Learning in Higher Education in the Mozambique Context
Geraldo Nhadumbuque (Portugal-Coimbra, Mozambique); Anabela Gomes (Polytechnic University of Coimbra & CISUC, Portugal & ISEC, Portugal); Maria José Marcelino (University of Coimbra, Portugal)

Technical Program: Tuesday, November 4 (cont.)

13:30 - 15:00
T3-WPE: Computer-Based Instruction 1: Innovative Platforms and Collaborative Efforts (cont.)

14:00
WIP: Outcomes Based Evaluation of a Virtual Multi-Institutional Program Showcase: Student and Program Director Perspectives
Cheryl A. Bodnar (The Ohio State University, USA); Holly Matusovich (Virginia Tech, USA)

14:15
WIP: Supporting Graduate Students in the Integration of Artificial Intelligence and Agriculture
Wendy Chi (ABC Evaluation & Research, USA); Adan Delval, Ruth C Torres Castillo, Enrico Pontelli and Huiping Cao (New Mexico State University, USA)

14:30
Bridging Time Gaps in Computer-Supported Collaborative Learning: Quantifying the Effects of Time Zone Differences
Han Kyul Kim, Aleyeh Roknaldin and Yiji Yoon (University of Southern California, USA); Stephen Lu (University of Southern California)

14:45
WIP: Minority Mentors' Learning and Awareness: Role Models for Undergraduate Engineering Students in a Research Program
Hilda Cecilia Contreras Aguirre, Stephanie L Zackery and Luis Rodolfo Garcia Carrillo (New Mexico State University, USA)

15:00 - 15:30
T-CB2: Focus on Exhibitors & Coffee Break
Room: Meadow Prefunction Area

15:30 - 17:00
T4-RBA: K-12 Education & Outreach 4: Integrating Innovative Technologies and Interdisciplinary Approaches
Session Chair: Paul Amoruso (University of Central Florida, USA)
Room: Riverbed A

15:30
Integrating Errorless and Scaffolding Learning Theories in a Generative Artificial Intelligence Supported Virtual Learning Environment: Demonstration and Validation
Masood Khan, Ryan Liebregts and Chris Ford (Curtin University, Australia)

15:45
From Code to Crop: A Novel STEM-Based Approach Integrating Agriculture, Programming and Electronics
Jose Geraldo L Noronha Filho (Pontifícia Universidade Católica Do Paraná, Brazil); Maicon A Tibola (Pontifícia Universidade Católica Do Paraná (PUCPR), Brazil); Dilmeire Vosgerau (PUCPR, Brazil); Claudio Carvilhe (Pontifícia Universidade Católica do Paraná, Brazil); Carlos Silla (Halmstad University, Sweden)

16:00
Enhancing Technical Skills and Interest of K-12 Students in Construction Engineering Using Mixed Reality Learning Environment
Mariam A Tomori I, Joshua Nsiah Addo Ofori and Omobolanle Ogunseiju (Georgia Institute of Technology, USA)

16:15
Integrating Engineering Through Bio-Inspired Robots in K-6 Classrooms: a Case Study of a Goldfish Robot
Daniel Whitman and Deeksha Seth (Villanova University, USA)

15:30 - 17:00
T4-RBA: K-12 Education & Outreach 4: Integrating Innovative Technologies and Interdisciplinary Approaches

16:30
MoveIt! - a Board Game for Teaching Computer Science Concepts
Martin Erwig and Jennifer Parham-Mocello (Oregon State University, USA)

16:45
WIP: the Traininator: Making Machine Learning Accessible to Elementary School Students
Gordon Stein, Dun Na and Atefeh Behboudi (Vanderbilt University, USA); Tolulope Famaye and Cinamon Bailey (Clemson University, USA); Golnaz Arastoopour Irgens (Vanderbilt University, USA)

15:30 - 17:00
T4-RBB: *Special Session: a Hands-on Exploration of the Engineering Education Community in Our Ever-Changing World*
Organizers: Krista M Kecskemety, Rachel L. Kajfez and Tyler Stump (The Ohio State University, USA)
Room: Riverbed B

15:30 - 17:00
T4-RBC: Gen AI 9: Case Studies in Undergraduate Courses
Session Chair: Laura Christian (Georgia Tech, USA)
Room: Riverbed C

15:30
Improving Class Quality and Learning Experience for Students Through the Use of LLMs: a Case Study
Juan Ortiz Couder (Embry-Riddle Aeronautical University, USA); Lynn Vonderhaar (Embry-Riddle Aeronautical Unviersity, USA); Omar Ochoa and Massood Towhidnejad (Embry-Riddle Aeronautical University, USA)

15:45
WIP: Enhancing Calculus Learning with AI: a Study of GPT-4o vs. Fine-Tuned GPT
Keke Wang (Embry-Riddle Aeronautical University, USA)

16:00
Exploring Undergraduate Students' Utilization and Perceptions of Generative AI in Engineering: Insights from an Introductory Statics and Mechanics of Materials Course
David A. DeFrancisis, David M. Pabst, Lee A Dosse, Jacklyn Wyszynski and Matthew Barry (University of Pittsburgh, USA)

16:15
Evaluating Handwritten and Multimodal, Free-Style Responses in Algorithms and Data Structures: a RAG-LLM-Based Feedback Framework
Samhith Dara and Qiong Cheng (University of North Carolina at Charlotte, USA)

16:30
Stop! Yield! Do Not Enter: a Web-Based Self-Driving Vehicle Simulator for Building AI Literacy and Trust
Justin Marwad (University of Massachusetts Lowell, USA); Jasmin Marwad (University of Massachessuts Lowell, USA); Maryam Abbasalizadeh, Pranathi Rayavaram, Samantha Reig, Claire Seungeun Lee and Sashank Narain (University of Massachusetts Lowell, USA)

15:30 - 17:00
T4-RBD: Supporting Student Transitions into and within Universities
Session Chair: Benjamin Chaback (Virginia Tech, USA)
Room: Riverbed D

15:30
The Impact of a Career Counseling Program on Grade Nine Students in a Jamaican Secondary School
Balvin O Thorpe (UTech, Jamaica); D'Andre A Thorpe (Stony Brook University, USA)

15:45
WIP: Professional Identity and Design Engagement: a Study of Practicing Engineers' Identity in Industry Settings
Stephanie Adams and Shane Brown (Oregon State University, USA); James Huff (University of Georgia, USA); Elliott Clement (Oregon State University, USA)

16:00
(WIP) Bridging the Industry-Academia Gap: Assessing the Need for AI Tools in Technical Interview Preparation and Workforce Readiness
Oluwagbeminiyi Rest Johnson, Marlon Mejias and Melissa Kouaho (University of North Carolina at Charlotte, USA)

16:15
WIP Academia to Industry: Mapping Skills and Careers for Engineering Education Doctorates
Lilianny Virguez (University of Florida, USA); Debarati Basu (Embry-Riddle Aeronautical University, USA); Sreyoshi Bhaduri (Amazon, USA)

16:30
WIP: How Do Computing Professionals and Faculty Rank the Importance of Dispositions and Cross-Disciplinary Skills?
Marisa Exter and Nursah Yakut (Purdue University, USA); Deepti Tagare (University of Texas at San Antonio, USA); Mihaela Sabin (University of New Hampshire, USA)

15:30 - 17:00
T4-WPA: Pedagogical & Instructional Approaches 9: Fostering Leadership, Teamwork, and Mindfulness
Session Chair: Bono Po-Jen Shih (Penn State University, USA)
Room: Willow Pond A

15:30
Developing Lifelong Learning Competencies Through Team-Based Literature Review Assignments for Online Graduate Courses
Arko Barman (Rice University, USA)

15:45
Developing Leadership Skills in Software Engineering Students - a Case Study of a Leadership Development Framework
Nicolas Pereira do Nascimento (Pontifical Catholic University of Rio Grande do Sul, Brazil); Afonso Sales (PUCRS - University, Brazil); Rafael Chanin (PUCRS, Brazil)

15:30 - 17:00
T4-WPA: Pedagogical & Instructional Approaches 9: Fostering Leadership, Teamwork, and Mindfulness (cont.)

16:00
WIP: Negative and Positive Behaviors Exhibited by Students in the Context of Engineering Project Teams
Fazel Ranjbar (University of Cincinnati, USA); Junqiu Wang (University of North Carolina Charlotte, USA); Samieh Askarian Khanamani (University of Cincinnati, USA); Jutshi Agarwal (University at Buffalo, SUNY, USA); PK Imbrie (University of Oklahoma, USA)

16:15
WIP: Integrating Contemplative Practices into First-Year Engineering Education to Foster Compassion and Mindfulness
Prisha Bhatia (Olin College of Engineering, USA); Madhvi J Venkatesh (Vanderbilt University, USA); Yevgeniya V Zastavker (Olin College of Engineering, USA)

16:30
WIP: the Impact and Effectiveness of Sociotechnical Interventions in Engineering Courses
Salman Mohagheghi (Colorado School of Mines, USA)

16:45
Applying Just-in-Time Learning Strategies to Equip Students with Project Management Tools and Knowledge
Nadhirah Binti Ayub Khan and Alex Q. Chen (Singapore Institute of Technology, Singapore); Qi Cao (University of Glasgow, United Kingdom (Great Britain)); Malcolm Yoke Hean Low (Singapore Institute of Technology, Singapore)

15:30 - 17:00
T4-WPB: Broadening Participation 9: Increasing Opportunities
Session Chair: Sharon Mason (Rochester Institute of Technology, USA)
Room: Willow Pond B

15:30
WIP: High School Student Experiences in Engineering: Perspectives and Insights
Sanjeev M Kavale and Medha Dalal (Arizona State University, USA)

15:45
WIP: Utilizing Community-Centered Practices to Develop Innovation Skills in Rural K12 Schools
Julia Kim and Danyelle Larkin (Georgia Institute of Technology, USA); Willie Allen (Southern Regional Technical College, USA); Love Park and Nisha Detchprohm (Georgia Institute of Technology, USA); Candace Christian (Southern Regional Technical College, USA); Roxanne Moore (Georgia Institute of Technology, USA)

16:00
WIP: Fostering Community Integration Through Family Creative Coding
Nina Bresnihan and Louise Caldwell (Trinity College Dublin, Ireland); Mary O'Mahony (Trinity College Dublin, Ireland & CNY, Ireland); Richard Millwood and Glenn Strong (Trinity College Dublin, Ireland)

16:15
Exploring Disciplinary Identities and Computational Thinking Through Bugs, Repairs, and Resistance
Alicia Lane, Efrat Ayalon, Gabriella Anton and Noel Enyedy (Vanderbilt University, USA)

15:30 - 17:00
T4-WPB: Broadening Participation 9: Increasing Opportunities (cont.)

16:30
WIP: Examining Geospatial Differences in the Gender Wage Gap in STEM
Akshay Bansal (Virginia Polytechnic Institute and State University, USA); Cam Kormyolo (University of Notre Dame, USA); Mahdis Tajdari (Virginia Tech, USA); Jharana Sapkota (Virginia Polytechnic Institute and State University, USA); Mohammed Farghally (Virginia Tech, USA)

16:45
Women in Cybersecurity: A Literature Mapping (2010-2024)
Maristela Holanda (University of Brasilia, Brazil); Adrielly Lima and Luana Cruz Silva (Universidade de Brasilia, Brazil); Marjorie Mitzi (Universidade de Brasília, Brazil); Emilly Victoria Bernardes (Universidade de Brasilia, Brazil); João Gondim (UnB - Universidade de Brasília, Brazil); Aletéia P. F. Araúdo (Universidade de Brasília (UnB), Brazil); Christiana Chamon (Virginia Tech, USA); Dilma Da Silva (TAMU, USA); Maria Emilia M. T. Walter (University of Brasilia, Brazil)

15:30 - 17:00
T4-WPC: Attitudes & Perceptions 5: Exploring Student and Instructor Experiences
Session Chair: Hongbo Zhou (Montclair State University, USA)
Room: Willow Pond C

15:30
WIP: Feeling Behind in an Introductory Programming Course
Katherine A Panciera and Ronald J Nowling (Milwaukee School of Engineering, USA)

15:45
WIP: Applying Self-Regulated Learning Principles in an Undergraduate Computer Science Seminar
Sophie Engle, Kelsey Urgo and Alark Joshi (University of San Francisco, USA)

16:00
Examining Perception Differences in Context Familiarity Between Students and Instructors in Computing Education: a Case Study on Introductory Database Concepts
Yuzhe Zhou, Paul J Thomas and Tianyi Li (Purdue University, USA)

16:15
Comparing Feedback Practices in Higher Education: Perspectives from Academics and Students in the UK and Saudi Arabia
Eyman Abdulrahman Alyahyan (The University of Glasgow, United Kingdom (Great Britain) & Imam Abdulrahman Bin Faisal University, Saudi Arabia); Mireilla Bikanga Ada and Jake Lever (University of Glasgow, United Kingdom (Great Britain))

16:30
WIP Second-Year Engineering Student Perceptions of Workload and Its Influence on Conceptual Understanding
Marin Fisher (Virginia Tech, USA)

16:45
A Multi-Modal Investigation of Instructional Practices in an Undergraduate Engineering Classroom
Umer Farooq, Omar Al-Ani, Syeda Fizza Ali, Radhika Viruru and Saira Anwar (Texas A&M University, USA)

15:30 - 17:00
T4-WPD: Curriculum & Course Design 5: Enhancing Skill Development and Knowledge Integration
Session Chair: Chaomin Luo (Mississippi State University, USA)
Room: Willow Pond D

15:30
WIP: Teaching Students to Synthesize Knowledge by Recognition of Connections
Steffen P Link and Chandrasekhar Radhakrishnan (University of Illinois Urbana-Champaign, USA); Arijit Banerjee, Christopher Schmitz, Olga Mironenko and Jonathon K Schuh (University of Illinois at Urbana-Champaign, USA); Yang Shao (University of Illinois at Urbana Champaign, USA); Rebecca M Reck (University of Illinois Urbana-Champaign, USA)

15:45
A Qualitative Study of How Computer Science Students Develop Debugging Skills in a Curriculum
Keerti Banweer (The University of Oklahoma, USA); Deborah Trytten (University of Oklahoma, USA)

16:00
Code Insight: Evaluating an Active Learning Framework for Novice Programmers to Promote the Development of Code Review Skills
Keerti Banweer (The University of Oklahoma, USA); Deborah Trytten (University of Oklahoma, USA)

16:15
Designing Laboratory Courses for Undergraduate Students in Materials Science and Engineering - a Systematic Review
Anurag Srivastava (Texas A&M University, USA); Bilal Mansoor (Texas A&M University at Qatar, Qatar); Saira Anwar (Texas A&M University, USA)

16:30
The Dissonance in the Use of Bloom's Taxonomy in Designing Curricula of Engineering Courses
Brainerd Prince, Preesha Kaur Katial, Aadi Jain and Lakshit Tyagi (Plaksha University, India)

16:45
WIP: Crafting a Modern Data Visualization Course: Bridging Practice, Reflection, and Innovation
Sergiu Dascalu and Hossein Jamali (University of Nevada Reno, USA)

15:30 - 17:00
T4-WPE: Computer-Based Instruction 2: Gamification and Digital Learning Environments
Session Chair: Daniel Joseph Ringis (The University of the West Indies, St Augustine, Trinidad and Tobago)
Room: Willow Pond E

15:30
Guidelines for the Development of Digital Educational Game Software Based on Vygotsky's Socio-Interactionist Theory
Silvia Dotta and Diego Marques (Federal University of ABC, Brazil); Juliana Cristina Braga (Universidade Federal do ABC, Brazil); Itana Stiubiener (Universidade Federal do ABC UFABC, Brazil)

15:45
Enhancing Engagement and Learning in IT Courses: a Pedagogical Approach to Gamification
Anum Masood (Queen Mary University of London, United Kingdom (Great Britain))

16:00
Gamification for Cultural Heritage Education: a Case Study on Learning Through Digital
Mario Casillo (Università degli Studi di Salerno, Italy); Constanza Fiorella Duarte Petti, Angela Passeggiato and Michele Pellegrino (University of Salerno, Italy); Domenico Santaniello (Università degli Studi di Salerno, Italy); Giusy Strollo (University of Salerno, Italy)

15:30 - 17:00
T4-WPE: Computer-Based Instruction 2: Gamification and Digital Learning Environments

16:15
Understanding the Impact of the FossilSketch Application Using Students' Perceptions
Anna Stepanova (Texas A&M University, USA); Christina Belanger and Tracy Hammond (Texas A and M University, USA); Saira Anwar (Texas A&M University, USA)

16:30
WIP: Design and Usability of an Interactive Educational Application for Teaching Undergraduate Sedimentology
Syeda Fizza Ali, Anna Stepanova, Daniel S Bahng, Utsav Dabhi, Divij Bajaj, Juan C. Laya and Carlos A. Alvarez Zarikian (Texas A&M University, USA); Tracy Hammond (Texas A and M University, USA); Saira Anwar (Texas A&M University, USA)

16:45
Exploring the Impact of Virtual and Augmented Reality on User Experience and Engagement With Visualized Building Energy Simulations
Kifah Alhazzaa (Texas A&M University, USA & Qassim University, Saudi Arabia); Wei Yan (Texas A&M University, USA)

17:00 - 18:30
T5-RBA: K-12 Education & Outreach 5: Empowering Educators and Advancing Computational Thinking Across Grade Levels
Session Chair: Maryam Multani (University of Florida, USA)
Room: Riverbed A

17:00
Computer Science Literacy Atlas: Unpacking the Computer Science Education Standards Across Grade Levels
Sumi Hagiwara (Montclair State University, USA); Katherine Herbert (1 Normal Ave & Montclair State University, USA); Minsun Shin (Montclair State University, USA)

17:15
Bridging Educator Gaps in Computer Science: a Collaborative Professional Development Model
Aetesam Ali Khan Ashar, Sharmin Akhter and Jiangjiang Liu (Lamar University, USA)

17:30
Impacts of Professional Development on Knowledge for Teaching Middle School Computer Science
Garrett Berliner, Jennifer Parham-Mocello and Margaret Niess (Oregon State University, USA)

17:45
WIP: Empowering Appalachian K-8 Educators to Teach Computational Thinking: a Culturally Responsive Research-Practice Partnership
Chulin Chen and Lynn L. Hodge (University of Tennessee, USA)

18:00
WIP: Empowering Teachers and Engaging Students Through Flow-Based Music Programming in K-12 CS Education
Zifeng Liu (University of Florida & USA, USA); Fan Zhang (University of Florida, USA); Alec Barron (University of California, San Diego, USA); Wanli Xing and Maya Israel (University of Florida, USA); Victor Hugo Minces (UCSD, USA)

17:00 - 18:30
T5-RBB: ***Special Session: Students' Experiences and Sense of Academic and Social Belonging Within the 'Globalized' Engineering Graduate Education: Translating Research into Practice***
Organizers: Eunsil Lee (University at Buffalo, USA); Susan Sajadi (Virginia Tech, USA)
Room: Riverbed B

17:00 - 18:30
T5-RBC: Gen AI 10: Broad Issues in Graduate Education
Session Chair: Priyanka Kumar (Computer Science, USA)
Room: Riverbed C

17:00
Human in the Loop Systems for Adaptive Learning Using Generative AI
Bhavishya Tarun, Haoze Du, Dinesh Kannan and Edward F. Gehringer (North Carolina State University, USA)

17:15
Leveraging Large Language Models and Human-in-the-Loop for Interactive Learning Pipelines
Haoze Du, Dinesh Kannan, Bhavishya Tarun and Edward F. Gehringer (North Carolina State University, USA)

17:30
WIP: Integrating Generative AI into Project-Based Learning for Advanced Power Systems Analysis
Anthony Robol, Robert J Kerestes and April Dukes (University of Pittsburgh, USA); Mary Besterfield-Sacre (University of Pittsbugh, USA)

17:45
Multimodal Quiz Generation via RAG with LLM-as-Judge Evaluation
Mourya Teja Kunuku and Nasrin Dehbozorgi (Kennesaw State University, USA)

18:00
WIP: An Adaptive, AI-Driven Course Redesign for Data Science and Analytics
Weiwei Stone, Lei Zhang, Lizhou Cao, Cui Fang and Yixiao Ma (University of Maryland Eastern Shore, USA)

17:00 - 18:30
T5-RBD: Academic & Institutional Change 1: Undergraduate Course Level Initiatives
Session Chair: Jacqueline Rohde (Georgia Institute of Technology, USA)
Room: Riverbed D

17:00
WIP: Impact of the CHIPS & Science Act on Engineering Education: Analyzing Funding Trends and Institutional Growth
Wenjing Gong and Yuchen Wang (Texas A&M University, USA); Suxia Cui (Prairie View A&M University, USA); Xinyue Ye (Texas A&M University, USA)

17:15
WIP: Iterative Change: Stories of SCCT and Integration in an Experimental Engineering Course
Rebecca L Thomas, Jenny Tilsen, Michael S. Thompson and R. Alan Cheville (Bucknell University, USA)

17:00 - 18:30
T5-RBD: Academic & Institutional Change 1: Undergraduate Course Level Initiatives (cont.)

17:30
A Qualitative Study to Analyze the Level of Preparedness for Electrical and Computer Engineering Graduates from the Viewpoint of Their Department Heads and Professional Engineers
Mohammad Al Mestiraihi (University of Texas Rio Grande Valley, USA); Kurt Becker (Utah State University, USA); Muhammad Asghar (University of Cincinnati, USA)

17:45
Experiential Learning Through H-Bridge Motor Control Design: Integrating Industry Practices in Electric Circuits Classes
Khalid Al-Olimat, Heath J. LeBlanc, Ahmed Ammar and M. Ajmal Khan (Ohio Northern University, USA)

18:00
WIP: Exploring Student Reported Barriers to Success in a Computer Engineering Department
Andrew Danowitz (California Polytechnic State University San Luis Obispo, USA); Lynne Slivovsky (California Polytechnic State University, USA)

18:15
Enhancing Cross-Level Collaboration in HCI Education Through Diary Studies
Jixiang Fan, Yusheng Cao and Wei Lu Wang (Virginia Polytechnic Institute and State University, USA); Natalie Andrus (Virginia Tech, USA); Morva Saaty and Shiva Ghasemi (Virginia Polytechnic Institute and State University, USA); Lei Xia (Tongji University, China); Shuai Liu (CATL, China); Scott McCrickard (Virginia Tech, USA)

17:00 - 18:30
T5-WPA: Pedagogical & Instructional Approaches 10: Enhancing Student Engagement Through Hybrid, Collaborative, and AI-Driven Learning
Session Chair: Ying Zhang (Georgia Institute of Technology, USA)
Room: Willow Pond A

17:00
Inspiring Student Engagement in a Hybrid Signals and Systems Course
Mary Lanzerotti, Scott Dunning and R. Michael Buehrer (Virginia Tech, USA); Ahmad Safaai-Jazi (Virginia Tech, Saudi Arabia); Nektaria Tryfona and Luke Lester (Virginia Tech, USA); Creed Farris Jones (Virginia Tech, USA & Globe Biomedical, USA); Kenneth Reid (University of Indianapolis, USA); Muhammad Dawood (New Mexico State University, USA)

17:15
Enhancing Student Engagement Through Example-Based Short Videos
Suman Saha and Mahfuza Farooque (Pennsylvania State University, USA)

17:30
Improving Student Engagement in Online Courses Through Team-Based Learning
Arko Barman (Rice University, USA)

17:45
WIP: Enhancing Student Engagement and Learning Activity Relevance Through Cross-Course Student Collaboration
Stefan Kleinke (Embry-Riddle Aeronautical University WW, USA); Jillian Schiano (Embry-Riddle Aeronautical University, Worldwide, USA)

17:00 - 18:30
T5-WPA: Pedagogical & Instructional Approaches 10: Enhancing Student Engagement Through Hybrid, Collaborative, and AI-Driven Learning (cont.)

18:00
WIP: Exploring Student-Created AI Agents and Instructional Videos to Foster Engagement in Computing Education
Lucas G. Zangari, Olufisayo Omojokun and Pedro Guillermo Feijóo-García (Georgia Institute of Technology, USA)

18:15
WIP: Examining the Relationship Between Student's Emotional Engagement and Objective Emotion Metrics in Synchronous Hybrid Learning Environments
Satori Hachisuka, Akiko Nakazawa, Hanako Itsubo, Naomi Iwazawa, Toru Fujimoto and Yuhei Yamauchi (The University of Tokyo, Japan)

17:00 - 18:30
T5-WPB: Assessment 1: Measuring Skills, Character, and Performance
Session Chair: Sharon Mason (Rochester Institute of Technology, USA)
Room: Willow Pond B

17:00
WIP: Diary of an Engineer: Using Project Notebooks as a Formative Assessment in Project-Based Courses
Alessandra O Napoli, L'Nard E.T. Tufts II, Ross D Venook and Shima Salehi (Stanford University, USA)

17:15
Development of Situational Judgment Tests to Educate the Whole Engineer and Assess Complex Character-Based Ethical Decision-Making
Jessica Koehler, Olga Pierrakos and Kyle Luthy (Wake Forest University, USA); Farnoosh Brock (Prolific Living, INC, USA); Robin Anderson (James Madison University, USA); Andy Brock (Prolific Living INC, USA); John Karabelas (Wake Forest University, USA)

17:30
Designing a Survey to Evaluate a Value Sensitive Design Intervention on Healthcare Disparities in a Core Biomedical Engineering Course
Marianne Al Haj and Maysam Nezafati (Georgia Institute of Technology, USA)

17:45
Student Competency Assessment and Presentation Methods Based on Algorithm Courses
Yingqi Zhang, Ninghan Zheng, ShanShan Li and Weidong Liu (Tsinghua University, China)

18:00
WIP: Teaming Performance as Measured by Peer Evaluations: A Comparison Between Hyflex Team and Face to Face Team
Junqiu Wang (University of North Carolina Charlotte, USA); Fazel Ranjbar (University of Cincinnati, USA); PK Imbrie (University of Oklahoma, USA)

18:15
WIP: Development of a Dual Feedback System for Engineering Mechanics
Benjamin E Chaback (Virginia Polytechnic Institute and State University, USA); Jacob Grohs, James Lord, Olivia Ryan, Cassie Wallwey, David Dillard, Devashree Bhagwat, Mani Saujanya and Ognen Duzlevski (Virginia Tech, USA)

17:00 - 18:30
T5-WPC: Attitudes & Perceptions 6: Fostering Support, Skills, and Professional Growth
Session Chair: Anurag Srivastava (Texas A&M University, Qatar)
Room: Willow Pond C

17:00
Effectiveness of Workshops on Energy Management
Umer Farooq, Digvijaysinh Barad, Hannah Farias, Matt Elliott, Bryan Rasmussen and Saira Anwar (Texas A&M University, USA)

17:15
The Overlooked Role of 'Academic' Sense of Belonging: A Multi-Methods Study of Academic and Social Sense of Belonging Among Students in Globalized Engineering Graduate Education
Monica Itzel Perez Olmedo, Alexander Struck Jannini, Wilson Macias and Eunsil Lee (University at Buffalo, USA)

17:30
WIP: Navigating Reintegration Challenges After a Research Abroad Experience
Chibuzor Joseph Okocha and Gloria J Kim (University of Florida, USA); Seri Park (University of Nevada, Reno, USA); Young-Jae Lee (Morgan State University, USA)

17:45
Epistemic Learning Through Work Placements: Boundary Crossing, and Tools as Boundary Objects
Maartje Van den Bogaard (UTEP, USA); Johannes Strobel (Missouri State University, USA); Yezenia Marquez and America Rodriguez (University of Texas at El Paso, USA)

18:00
Tangible Approaches to Improving Value Congruence Between Undergraduate Computer Science Students and Their Institutions
Jeremy Grifski and Emily Dringenberg (The Ohio State University, USA)

18:15
WIP: Research Skills Development Among Minority Engineering Students Through a Research Mentored Program
Hilda Cecilia Contreras Aguirre, Stephanie L Zackery and Luis Rodolfo Garcia Carrillo (New Mexico State University, USA)

17:00 - 18:30
T5-WPD: Curriculum & Course Design 6: Implementing Active Learning and Innovative Assessment in First-Year Engineering Education
Session Chair: Essa Imhmed (Eastern New Mexico University, USA)
Room: Willow Pond D

17:00
From Structured Labs to Agile Teams: a Curriculum-Based Approach to Active Learning in First-Year Computer Engineering
Priit Ruberg, Peeter Ellervee, Risto Heinsar, Hardi Selg and Andres Eek (Tallinn University of Technology, Estonia)

17:15
Evaluating the Impact of Curriculum Redesign on Structural Complexity and Student Progression in First-Year Engineering Programs
Sanjivan Manoharan, Lindsay M Corneal and Shabbir Choudhuri (Grand Valley State University, USA)

17:00 - 18:30
T5-WPD: Curriculum & Course Design 6: Implementing Active Learning and Innovative Assessment in First-Year Engineering Education (cont.)

17:30
Learning Styles in Computer Science: a Cross-National Study of First-Year Students
Anabela Gomes (Polytechnic University of Coimbra & CISUC, Portugal & ISEC, Portugal); Nuno Gil Fonseca (College of Technology and Management of Oliveira do Hospital, Polytechnic Institute of Coimbra & Center for Informatics and Systems of the University of Coimbra, Portugal); Philip I.S. Lei (Macao Polytechnic University, Macao & University of Coimbra, Portugal); Chan-Tong Lam and Calana Mei-Pou Chan (Macao Polytechnic University, Macao); Geraldo Nhadumbuque (Portugal-Coimbra, Mozambique); Maria José Marcelino (University of Coimbra, Portugal); Leonardo Soares (Federal University of Campina Grande, Brazil); António José Mendes (University of Coimbra & Dep. of Informatics Engineering, CISUC, Portugal)

17:45
Microelectronics Device Fabrication Studio for First Year Engineering Students
Albrecht Jander, Pallavi Dhagat, Rachael Cate and Martin Storksdieck (Oregon State University, USA)

18:00
First Steps in Alternative Grading With an Introduction to Data Analytics Course
Ben Clark (Freed-Hardeman University, USA)

18:15
WIP: Using Freelisting as a Self-Assessment Method for Freshmen Mechanical Engineering Students
Cristian Vargas-Ordonez and Srikanth Janga (South Dakota School of Mines and Technology, USA)

17:00 - 18:30
T5-WPE: Computer-Based Instruction 3: Undergraduate Outcomes and Perceptions
Session Chair: Carlos Landaverde Alvarado (The University of Texas at Austin, USA)
Room: Willow Pond E

17:00
Can Technology Promote Self-Directed Learning in Introductory Computing Courses?
Debarati Basu, Abigail Blalock and Chad Rohrbacher (Embry-Riddle Aeronautical University, USA)

17:15
Analyzing Student Adoption of a Collaborative Live Coding Software in a Programming Course
Nicholas Caporusso (Northern Kentucky University, USA)

17:30
Reconstructing Historical Monuments and Environments: a Digital Approach to Education
Mario Casillo (Università degli Studi di Salerno, Italy); Liliana Cecere, Francesco Colace, Angelo Lorusso and Michele Pellegrino (University of Salerno, Italy)

17:45
Digital Twin and Predictive Maintenance in Cultural Heritage: a Multidisciplinary Educational Experience with HBIM and IoT
Francesco Colace and Flavia Ferrandino (University of Salerno, Italy); Marco Lombardi (Università degli Studi di Salerno, Italy); Angelo Lorusso (University of Salerno, Italy); Carmine Valentino (Universityof Salerno, Italy)

17:00 - 18:30
T5-WPE: Computer-Based Instruction 3: Undergraduate Outcomes and Perceptions (cont.)

18:00
Developing Written Communication Skills in Engineering Education Using Automated Short Answer Grading
Jan-Mikael Rybicki (Aalto University, Finland); Sami Sarsa (University of Jyväskylä, Finland); Juho Leinonen and Arto Hellas (Aalto University, Finland)

18:15
Integrative AI Practices Across Disciplines: Innovations in Computer Science, Electrical Engineering, and Economics Education
Xiaoguang Ma (University of Wisconsin-Platteville, USA); Yanwei Wu (University of Wisconsin - Platteville, USA); Xiaotong Liu (California State University Monterey Bay, USA); Jing Wang (Gallop Academy, USA)

18:30 - 20:00
TS-1: Reviewer Appreciation Reception
Room: Overlook Terrace

We're raising a glass to our amazing reviewers! Join us on the Overlook Terrace for a special reception honoring those who contributed three or more reviews to make this conference possible.

Technical Program: Wednesday, November 5

6:30 – 18:00
Registration
Room: 3rd Floor, Across from East Lounge

6:30 - 9:30
MB1-B: Breakfast
Room: Harmony Restaurant
For any attendees staying off site: Please check in with the registration desk before proceeding to Harmony Restaurant for your breakfast voucher. Attendees staying at the Embassy Suites do not need breakfast vouchers.

8:00 - 9:30
W1-RBA: K-12 Education & Outreach 6: Computing
Session Chair: Junqiu Wang (University of North Carolina Charlotte, USA)
Room: Riverbed A

8:00
Interactive Visual Programming on CASMM: the Benefits and Challenges of Children's Computational Thinking Development in STEM Learning
Charles M Cagle, Ting Liu, Edward C Mayeux and Rebecca Schlegel (Texas A&M University, USA)

8:15
WIP: Development and Pilot Results of ORBIT: a Visual Robot-Programming Tool Supporting Computational Thinking and Executive Functioning Skills in Special Education
Robert Hayes, Elissa Milto, Evelyn Goroza and Jennifer L Cross (Tufts University, USA)

8:30
An Effective and Innovative Hands-on Approach for Teaching Introductive Concepts of Computer Programming, Electric Circuits, and Geiger Counter Topics During a Short-Term Summer Camp
Stefan Andrei (Cleveland State University, USA); Ganghee Jang, George Drouant and Cecily Heiner (Oregon Institute of Technology, USA); Kevin Pintong (Binghamton University, USA); Ethan Chinander (Oregon Institute of Technology, USA)

8:45
Clicker-Free Motion-Controlled Mouse Using Arduino
Dheer Parikh, Michelle Tang, Jude Cheng, Puyuan Liu and Gyuseok L. Kim (University of Pennsylvania, USA)

9:00
WIP: Introducing Automata Theory in Basic Education Through Problem-Based Learning
Júlia Veiga, Simone André da Costa Cavalheiro and Luciana Foss (Federal University of Pelotas, Brazil)

9:15
WIP: Decoding Cybersecurity: An Ethnographic Case Study of Cybersecurity Awareness Education
Amber Williamson and Andrew O. Hall (Marymount University, USA)

8:00 - 9:30
W1-RBB: ***Special Session: Scalable K-8 Math Support for Equitable Engineering Success***
Organizers: Mohamed Y. Selim (Iowa State University, USA); Renee Gibert (Purdue University, USA); Namrata Vaswani (Iowa State University, USA)
Room: Riverbed B

8:00 - 9:30
W1-RBC: Gen AI 11: Innovative Applications
Session Chair: Qiping Zhang (Long Island University, USA)
Room: Riverbed C

8:00 ***A Comparative Analysis on Discernment of Human Versus AI-Generated Art***
Hortense Gerardo (University of California, San Diego, USA); Marie Clemenceau (Paris 1 Pantheon-Sorbonne University, France); Kevin Tellier (Synacktiv, France)

8:15
Assessing Student Attention Levels in the Classrooms Using Large Language Models
Medha Mohan Ambali Parambil (UAE University, United Arab Emirates); Kole Suzuki (International Professional University of Technology in Osaka, Japan); Kazuyuki Murase (University of Fukui, Japan); Salah Bouktif (UAE University, United Arab Emirates); Luqman Ali and Hamad Al Jassmi (United Arab Emirates University, United Arab Emirates); Fady Alnajjar (UAE University, United Arab Emirates)

8:30
Department-Wide Tutoring System Using a Large Language Model
Balaji R Rao, Naveen Mathews Renji and Carlo Lipizzi (Stevens Institute of Technology, USA)

8:45
WIP: Automated Extraction of Domain-Specific Concept Maps Using a RAG-LLM Ensemble Framework
Zane Hutchens and Qiong Cheng (University of North Carolina at Charlotte, USA)

9:00
Analysis and Evaluation of Gemini for Question Generation in Two Engineering Courses
Pedro Manuel Moreno-Marcos, Javier Gil Santiuste, Pedro J. Muñoz -Merino, Carlos Alario-Hoyos and Carlos Delgado Kloos (Universidad Carlos III de Madrid, Spain)

9:15
WIP: Enhancing the Teaching of Traditional Mechanical Engineering Courses Through the Integration of Generative AI Tools
Yucheng Liu (South Dakota State University, USA)

8:00 - 9:30
W1-RBD: Academic & Institutional Change 2: Shaping Purpose, Skills, and Agency in Engineering Education
Session Chair: Hongbo Zhou (Montclair State University, USA)
Room: Riverbed D

8:00
WIP: What is the Purpose of Education? Perspectives of Engineering Students and Their Faculty
Jonathan Stolk (Olin College, USA)

8:15
Reimagining Higher Education Governance for Student Flourishing: Building Wake Forest Engineering Using Leader Character
Olga Pierrakos (Wake Forest University, USA)

8:30
WIP: Workforce Development and Student Success Through the Hidden Curriculum
Charles Patrick, Jr, Travis Carrell, Anne-Marie Ginn-Hedman, John Horn and Staci Horn (Texas A&M University, USA)

8:00 - 9:30
W1-RBD: Academic & Institutional Change 2: Shaping Purpose, Skills, and Agency in Engineering Education (cont.)

8:45
Engineering Students' Perceptions of Value Creation in Their Impact-Centered and Changemaking Work
Jess Brown (Olin College of Engineering, USA); Madeleine N Fahey (Franklin W. Olin College of Engineering, USA); Allyson Hur (Olin College, USA); Tane Koh and Natsuki Sacks (Olin College of Engineering, USA); Isaac Walker (Franklin W. Olin College of Engineering, USA); Samuel Wisnoski and Stephanos Matsumoto (Olin College of Engineering, USA)

9:00
"Not Engineering School" Where and How Engineering Undergraduates Obtain Labor Education
Joseph Valle (Purdue University, USA)

9:15
Integrating a Cyber Range into Core Curriculum: Advancing Real-World Skills in Cybersecurity Education
Julie A. Rursch and Doug Jacobson (Iowa State University, USA)

8:00 - 9:30
W1-WPA: Pedagogical & Instructional Approaches 11: Exploring Goal Orientation, Engagement, and Problem-Solving
Session Chair: Ben Clark (Freed-Hardeman University, USA)
Room: Willow Pond A

8:00
A Systematized Literature Review on the Role of Goal Orientation in Active Learning and Engagement During Problem-Solving in STEM Education
Zain Ul Abideen and Sehrish Jabeen (Utah State University, USA); Assad Iqbal (Purdue University, USA)

8:15
Exploring the Relationship Between Achievement Goal Orientation and Cognitive Engagement in Engineering Problem-Solving
Zain Ul Abideen and Sehrish Jabeen (Utah State University, USA); Oenardi Lawanto (Utah State University & College of Engineering, USA); Angela Minichiello (Utah State University, USA); Assad Iqbal (Purdue University, USA)

8:30
WIP: The Epistemic Practices Engineering Students Used to Solve an Open-Ended Problem
Maurison N Agba, Olivia Schupbach, Jacob Brink and Courtney J Faber (University at Buffalo, USA)

8:45
Exploring Engineering Students' Artificial Intelligence (AI) Literacy and Use of AI in Problem-Solving
Huihui Qi and Yu Ming M Li (UC San Diego, USA); Changkai Chen (University of California San Diego, USA)

9:00
Guidelines for Designing Engineering Problems to Bootstrap Students' Deep Learning Based on Productive Failure Reflecting Brain Activity
Tathyana Moratti and Runu P Das (University of Georgia, USA); Yeongji Lee (Dartmouth College, USA); Aarti Singh (University of Georgia, USA); David Kraemer (Dartmouth College, USA); Beshoy Morkos (University of Georgia, USA)

9:15
Investigating Students' Self-Efficacy in Jonassen-Inspired Problem-Based Learning in an Introductory Aerospace Engineering Course
Sama Ghoreyshi (State University of New York at Buffalo, USA); Andrew Olewnik (University at Buffalo, USA); Scott Ferguson (NC State, USA)

8:00 - 9:30
W1-WPB: Assessment 2: Tools, Validation, and Insights into Competencies and Learning
Session Chair: Reza Rahdar (Embry Riddle Aeronautical University, USA)
Room: Willow Pond B

8:00
Does My Concept Map Smell? Improving Concept Map Readability via Software Engineering Principles
Yien Wang and David Umphress (Auburn University, USA)

8:15
WIP: Evaluating a Survey Tool to Measure the Longitudinal Development of Student's Perception and Confidence in Using Advanced Data Skills
Ophelia Winslett, Laura Christian and Carmen Thiemann (Georgia Institute of Technology, USA); Todd Fernandez (Georgia Institute of Technology and Emory University, USA)

8:30
Validating an Entrepreneurial Mindset (EM) Infused Teaching Practices Inventory (TPI): Insights from a Think-Aloud Protocol
Shukufe Rahman, Marcus Vinicius Melo de Lyra and Benjamin Ahn (The Ohio State University, USA); Bryant Hutson (University of North Carolina, USA)

8:45
Policy Comparison and Qualitative Analysis of Professional Engineering (PE) Licensure Between the United States and the U.S. Territories
Kevin J Kaufman-Ortiz (Purdue University, USA & Cornell University, USA)

9:00
WIP: Assessing Quantum Competency Development at Two Land-Grant R1 Institutions
Syed Hassan Tanvir and Gloria J Kim (University of Florida, USA); Ulya Karpuzcu (University of Minnesota, USA)

9:15
From Play to Proficiency: a Systematic Literature Review on Learning Modalities and Transition Strategies in CS and AI Education
Yousuf Amanuel and Johannes Krugel (Leibniz University Hannover, Germany)

8:00 - 9:30
W1-WPC: Attitudes & Perceptions 7: Examining Student Capital, Affective Dimensions, and Pedagogical Strategies
Session Chair: Anum Masood (Queen Mary University of London, UK)
Room: Willow Pond C

8:00
A Quantitative Study on the Navigational and Social Capital of Engineering Students from Multiple Institutions
Adetoun Yeaman (Northeastern University, USA); Gisella Lamas-Samanamud (University of Kentucky - Paducah, USA & Universidade Federal de Sao Joao del Rei, Brazil); Randi J Sims (Clemson University, USA); Heather R Beem (Ashesi University, Ghana); Janie Moore (Texas A and M University, USA); Xiaojing Yuan (University of Houston, USA)

8:15
WIP: How Compassionate STEM Education is Defined: A Review of Literature on the Role of Compassion in STEM Education
Theo Lazzari and Qin Zhu (Virginia Tech, USA)

8:00 - 9:30
W1-WPC: Attitudes & Perceptions 7: Examining Student Capital, Affective Dimensions, and Pedagogical Strategies (cont.)

8:30
Spotlighting Three Critical Themes from Computing Students in a Growth Mindset Program
Kimberly Fluet and Yadi Zhang (University of Rochester, USA); Sharon Mason (Rochester Institute of Technology, USA)

8:45
WIP: Conceptualizing Teacher Empathy in Engineering Education: Distinguishing Key Constructs and Contextualizing Definitions
Andres Nieto-Leal (Virginia Polytechnic Institute and State University, USA); Diana Bairaktarova (Virginia Tech, USA); Juan D Ortega-Alvarez (Virginia Tech, USA & Universidad EAFIT, Colombia); Susan Sajadi (Virginia Tech, USA)

9:00
WIP: Using Reverse Engineering to Enhance Student Confidence and Interest in ECE
Benjamin T Manning and Jason W Morphew (Purdue University, USA)

9:15
Antecedents and Outcomes of Learning Management System Usage: Evidence from Developing Country Educational Institutions
Hanan Kuzat (East Texas A&M University, USA); Ibrahim Magboul (Ahfad University for Women, Sudan); Fadi Herzallah (Palestine Technical University, Palestine)

8:00 - 9:30
W1-WPD: Curriculum & Course Design 7: Teaching Concepts Beyond Engineering
Session Chair: John Greiner (Rice University, USA)
Room: Willow Pond D

8:00
A Study on Mathematical Problem-Solving Skills for Computer Science Undergraduate Students
Thitima Srivatanakul (York College, USA); Virginia Thompson, Yonghong Mcdowell and Philip Parzygnat (York College, CUNY, USA)

8:15
WIP: Motivating Calculus for Computer Science Majors
Rajendra Raj and Aaron Deever (Rochester Institute of Technology, USA); Shari Plantz-Masters and Douglas Hart (Regis University, USA); Rahul Simha (George Washington University, USA)

8:30
Gamification of a Financial Literacy Course Offered to First Year Engineering Students at a Hispanic Serving Institution
Sarah Huizar (The University of Texas at El Paso, USA); Diane E. Golding (University of Texas at El Paso, USA); Victor M Garcia (US Army Engineer Research and Development Center, USA); Helen Geller, Peter Golding and Annalisa Perez (University of Texas at El Paso, USA)

8:45
Building a Positive Perception of Biology in Undergraduate Engineering Students
Prashanth Suresh Kumar, Harshpreet Kaur, Ishrat Ayesha Bombaywala, Arya C Vachhani, Manaasve Vij and Brainerd Prince (Plaksha University, India)

9:00
A Narrative Pedagogy to Teach Biology to Engineering Students
Prashanth Suresh Kumar, Neelam Sarmah, Aarav Mathur, Sana Arora, Maninder Kaur and Brainerd Prince (Plaksha University, India)

9:30 -10:30
W-CB1: Focus on Exhibitors & Coffee Break
Room: Meadow Prefunction Area

10:30 - 12:00
W2-RBA: K-12 Education & Outreach 7: Assorted Approaches and Technologies
Session Chair: Ibrahim Magboul (AUW, Sudan)
Room: Riverbed A

10:30
Long-Term Impacts of K-12 AI Education Interventions on Social Media Mechanisms
Henriikka Vartiainen, Juho Kahila, Nicolas Pope, Sonsoles López-Pernas, Teemu Valtonen and Matti Tedre (University of Eastern Finland, Finland)

10:45
"Why is It Doing That?" Troubleshooting Microelectronics Integration in Mathematics (WIP)
Emily M Haluschak, Virginia L Hawkins and Christine H. McDonnell (Purdue University, USA); Bruce Wellman (School of Engineering Education, Purdue University, USA); Morgan Hynes, Selcen Guzey, Greg Strimel and Tamara J. Moore (Purdue University, USA)

11:00
Visualizing Quadratic Attributes Using Projectile Simulator and Real-Life Examples
Divya Kaushal (Katy ISD, USA); Sheng-Jen Hsieh (Texas A&M University, USA)

11:15
WIP: Cultivating Semiconductors and Microelectronics Interest in High School Students Using Hands-on Learning
Andrea Ramirez-Salgado and Pasha Antonenko (University of Florida, USA)

11:30
WIP: Networking and Engagement of High School Students for Engineering Technology and Data Operation Careers
Benjamin E Chaback (Virginia Polytechnic Institute and State University, USA); Amy Richardson and Michelle Klopfer (Virginia Tech, USA); Chris Russell (Northern Virginia Community College, USA); David Knight (Virginia Tech, USA)

11:45
Empowering Pre-College Learners with GDPR Awareness: a Novel Experimental Study
Ankur Chattopadhyay, Alex Lisa and Binh Nguyen (Northern Kentucky University, USA)

10:30 - 12:00
W2-RBB: ***Special Session: a Chicana Feminist Approach to Supporting Latina Students in Engineering and Computing***
Organizers: Sarah L Rodriguez (Virginia Tech, USA)
Room: Riverbed B

10:30 - 12:00
W2-RBC: AI in Instructional Suport in Undergraduate Courses
Session Chair: Yucheng Liu (South Dakota State University, USA)
Room: Riverbed C

10:30
Research on the Practical Teaching Mode for Cultivating Autonomous Learning Abilities in Networking Courses
Wenhui Zheng, Hui Li, Rentao Gu and Ji Yuefeng (Beijing University of Posts and Telecommunications, China)

10:45
WIP - Incorporating Artificial Intelligence When Teaching in Electronics Engineering Technology Program
Moftah Ali (Northwestern State University of Louisiana, USA)

11:00
Using Alphafold to Deepen Understanding of Protein Folding and Big Data in an Engineering Cell and Molecular Physiology Course
Laura Christian, Ophelia Winslett and Carmen Thiemann (Georgia Institute of Technology, USA); Todd Fernandez (Georgia Institute of Technology and Emory University, USA)

11:15
Categorizing and Comparing Students' Interactions in eTextbooks
Jharana Sapkota and Cliff Shaffer (Virginia Polytechnic Institute and State University, USA); Mohammed Farghally (Virginia Tech, USA); Mostafa Mohammed (University at Buffalo, USA)

10:30 - 12:00
W2-RBD: Academic & Institutional Change 3: Use of Online, Game-Based, and Other Digital Platforms
Session Chair: Hossein Jamali (University of Nevada Reno, USA)
Room: Riverbed D

10:30
How Do Undergraduate Engineering Students' Technical and Social Challenges in Online Learning Impact Their Engagement?
Rashmi W Neelawathura, Li Tan and Samantha Brunhaver (Arizona State University, USA)

10:45
WIP: COMPASS - a Gamified Visual Framework for Competency Tracking in Computing Education
Jamie Sundance McDonald, Ross McLean and John N A Brown (Robert Gordon University, United Kingdom (Great Britain))

11:00
WIP: Leveling Up Learning: a Dungeons & Dragons-Inspired Approach to Teaching Object-Oriented Programming
Cassandra Thomas (Tuskegee University, USA); Iryna Ashby and Marisa Exter (Purdue University, USA)

11:15
WIP: A Canvas Public Course for Electrical Engineering
Theresa Swift and Steve E Watkins (Missouri University of Science and Technology, USA); Amardeep Kaur (Southern Illinois University Edwardsville, USA)

11:30
WIP: CourseForge: the Interactive Learning Management System to Detect and Visualize Course Bottlenecks
Nabila Ayman and Md Nour Hossain (University at Albany, USA)

10:30 - 12:00
W2-WPA: Ethics and Policy in AI Education: Developing Competencies for Responsible Technology Use
Session Chair: Jeeho Ryoo (Fairleigh Dickinson University, Canada)
Room: Willow Pond A

10:30
WIP: Considerations for Generative AI
Ronald J Glotzbach (Purdue University, USA)

10:45
The AI Policy Module: Developing Computer Science Student Competency in AI Ethics and Policy
James Weichert (University of Washington, USA); Dan Dunlap (Virginia Polytechnic Institute and State University, USA); Mohammed Farghally (Virginia Tech, USA); Hoda Eldardiry (Virginia Polytechnic and State University, USA)

11:00
WIP: Using Active Learning Methods for Ethical Reflection in Engineering Education on Emerging Technologies: the Example of Electric Aviation
Jennifer Leijon and Olof Lindahl (Uppsala University, Sweden)

11:15
Ethical Considerations in Artificial Intelligence: a Curricular Approach for STEM Disciplines
Qiping Zhang (Long Island University, USA); Elizabeth Milonas (CUNY New York City College of Technology, USA); Duo Li (Shenyang Institute of Technology, USA)

11:30
Exploring Graduate Student Views on Robotics Policy Relevant Information
Sogol Balali, Jennifer Parham-Mocello and Brent Steel (Oregon State University, USA); Michael D. Jones (University of Tennessee, Knoxville, USA); Waseq Billah (Oregon State University, USA)

11:45
Making and Analyzing Decisions Based on Ethical Principles: Core Competencies Required
Fatemeh Pariafsai (Bowling Green State University, USA & BGSU, USA); Sadjad Pariafsai (The University of Alabama, USA); Manish Kumar Dixit (Texas A&M University, USA); Shirley Nelly Tandoh (Bowling Green State University, USA); Stephen Mark Caffey (Texas A&M University, USA)

10:30 - 12:00
W2-WPB: Assessment 3: Advancing Methods for Effective Evaluation and Student Learning
Session Chair: Anum Masood (Queen Mary University of London, UK)
Room: Willow Pond B

10:30
WIP: Beyond Averages -- the Impact of Survey Administration on User Experience Metrics
Laura Albrant (Michigan Technological University, USA); Lynn Albers (Hofstra University, USA); Leo C. Ureel II (Michigan Technological University, USA)

10:30 - 12:00
W2-WPB: Assessment 3: Advancing Methods for Effective Evaluation and Student Learning

10:45
A Study and Implementation of Customizable Optical Mark Recognition Sheets for Assessments
Chengcheng Han (The University of Auckland, New Zealand); Arun Krishna K and Pranav V (Amrita Vishwa Vidyapeetham, India); Manuel Castro (Spanish University for Distance Education - UNED, Spain); Sathiamoorthy Manoharan (The University of Auckland, New Zealand); Babulakshmanan Ramachandran (Amrita Vishwa Vidyapeetham, India); Elio Sancristobal (Spanish University for Distance Education - UNED, Spain); Ulrich Speidel (University of Auckland, New Zealand); M G Thushara (Amrita School of Engineering, Amritapuri, India & Amrita Vishwa Vidyapeetham, India); Xinfeng Ye (University of Auckland, New Zealand)

11:00
WIP: Expert Feedback and Student Think-Alouds for the Learning Through Making Instrument
Leonardo Pollettini Marcos (Purdue University, USA); Robert Nagel (Carthage, USA); Julie Linsey (Georgia Institute of Technology, USA); Melissa Aleman (James Madison University, USA); Kerrie A. Douglas and Eric A. Holloway (Purdue University, USA)

11:15
Investigating Students' Programming Plan Knowledge with Time-Constrained Code Recall Tasks
Ava Heinonen and Reetta Puska (Aalto University, Finland); Francisco Castro (New York University, USA); Juha Sorva, Juho Leinonen and Arto Hellas (Aalto University, Finland)

11:30
WIP: Accurate, Fair and Transparent Approach to Random Item Selection to Reduce Grading Workload
Renny E. Badra (University of Georgia, USA)

11:45
ASTRO: a Semi-Automated Grading and Feedback System for Programming Assignments
Jonathan W. Browning (Queen's University Belfast, United Kingdom (Great Britain)); John Bustard (Queens University Belfast, United Kingdom (Great Britain)); Neil Anderson (Queen's University Belfast, United Kingdom (Great Britain))

10:30 - 12:00
W2-WPC: Teaming & Teamwork 1: Strategies and Insights for Effective Collaboration
Session Chair: Boni Yraguen (Penn State - Mechanical Engineering, USA)
Room: Willow Pond C

10:30
The Fascinating New Classroom Styles of Twenty Twenties and on…
Melany M Ciampi (World Organization on System Engineering and Information Technology (WCSEIT) & President, Portugal); Claudio R Brito (Science and Education Research Organization, Portugal)

10:45
WIP: Students in Dysfunctional Teams: First Year Engineering Design Course Perspective
Junqiu Wang (University of North Carolina Charlotte, USA); Fazel Ranjbar (University of Cincinnati, USA); PK Imbrie (University of Oklahoma, USA)

11:00
Navigating Teamwork Challenges in Project-Based Learning
Brainerd Prince (Plaksha University, India); Aparajita Jaiswal (Purdue University, West Lafayette, USA); Muna Sapkota (Purdue University, USA); Aashana Baldi (Plaksha University, India)

10:30 - 12:00
W2-WPC: Teaming & Teamwork 1: Strategies and Insights for Effective Collaboration (cont.)

11:15
Who Introduces and Who Fixes? Code Quality Dynamics in Collaborative Embedded Systems Projects
Rafael Corsi Ferrao and Igor dos Santos Montagner (Insper, Brazil); Rodolfo Azevedo (UNICAMP, Brazil)

11:30
Using Scrum to Improve Student Teamwork in a Project-Based Hybrid Learning Setting
Essa Imhmed and Edgar Ceh-Varela (Eastern New Mexico University, USA); Mustafa Elfituri (Morrisville State College, USA)

11:45
Success Factors for Implementing Scrum in Academia
Alexandra Davidoff (Embry-Riddle Aeronautical University, USA); Lynn Vonderhaar (Embry-Riddle Aeronautical Unviersity, USA); Sarah A Reynolds, Omar Ochoa, Massood Towhidnejad and James Pembridge (Embry-Riddle Aeronautical University, USA)

10:30 - 12:00
W2-WPD: Curriculum & Course Design 8: Innovative Strategies for Foundational and Emerging Topics in Computer Science and Engineering
Session Chair: Radheshyam Tewari (Michigan Technological University, USA)
Room: Willow Pond D

10:30
Effective Approaches in Teaching Computer Science Fundamentals: a Student's Perspective
Divya Nalla and Anvesh Reddy Nookala (Nalla Malla Reddy Engineering College, India)

10:45
Pedagogical Strategies for Teaching Big Data: Why, What, and How?
Raja Sooriamurthi (Carnegie Mellon University, USA)

11:00
WIP: Early Engagement Strategies for Microelectronics in Engineering Education
Jason W Morphew, Camille Johnson, Artre Turner and Kerrie A. Douglas (Purdue University, USA)

11:15
WIP: Turning Fake Chips into Learning Opportunities
Haniye Mehraban, Saad Azmeen-ur-Rahman and John Hu (Oklahoma State University, USA)

11:30
WIP: Microcontrollers or Python: How Different Tools in a Common Engineering Curriculum Shape Learning and Perceptions
Artre Turner, Jason W Morphew, Melissa A Dyehouse and Kerrie A. Douglas (Purdue University, USA)

11:45
WIP: a Pedagogy Study on Human Computer Interaction as a Necessary Foundation for Mobile Application Development
Hongbo Zhou, Michelle Zhu and Md Liaquat Hossain (Montclair State University, USA)

Technical Program: Wednesday, November 5 (cont.)

10:30 - 12:00
W2-WPE: Computer-Based Instruction 4: Tools and Strategies for Teaching, Assessment, and Feedback
Session Chair: Aarya Rajoju (North Carolina State University, USA)
Room: Willow Pond E

10:30
WIP: Improving Assessment and Feedback with Interactive Exercises
Jarkko Hurme (OAMK, Oulu University of Applied Sciences, Finland); Päivi Porras (LAB University of Applied Sciences, Finland); Henry Lähteenmäki (South-Eastern Finland University of Applied Sciences, Finland)

10:45
Using Embodied Conversational Agents for Intelligent Tutoring Systems
Xiaobu Yuan (University of Windsor, Canada)

11:00
An Approach to Learning Path Personalization in e-Tutoring with Knowledge Space Theory
Xiaobu Yuan and Y Ngoc Nhu Duong (University of Windsor, Canada)

11:15
Code Comprehension for Novice Students: Teaching, Assessment, Tools, and Challenges
Valéria Maria Bezerra Cavalcanti Maciel (IFPB, Brazil); Wilkerson L. Andrade (Federal University of Campina Grande, Brazil)

11:30
WIP: Assessing the Effectiveness of a Mixed-Reality Wisdom Community for Electrical and Computer Engineering Students
Hilda Cecilia Contreras Aguirre, Theoderic T Platt, Bill Hamilton, Cristina Esparza, Marshall Taylor and Luis Rodolfo Garcia Carrillo (New Mexico State University, USA)

12:00 - 13:30
W-LK: FIE & IEEE Education Society Awards Luncheon
Room: Meadow Ballroom

Enjoy a buffet meal and engaging talk—please arrive promptly to be seated before the talk begins.

13:30 - 15:00
W3-RBA: Engineering Education Research Methods
Session Chair: Jennifer Leijon (Uppsala University, Sweden)
Room: Riverbed A

13:30
Exploring Institutional Ethnography in Engineering Education: Methods, Practice, & Possibilities
Victoria Bill (Colorado School of Mines, USA); Emily Dringenberg (The Ohio State University, USA)

13:45
WIP: Review and Analysis of Mixed Methods Approaches in Engineering Education Research
Praveen Meduri (California State University, Sacramento, USA); Chillara Venkata Varun (California State University-Sacramento, USA); Mary McCarthy Hintz, Lisa Romero and De-Laine M Cyrenne (California State University, Sacramento, USA)

13:30 - 15:00
W3-RBA: Engineering Education Research Methods (cont.)

14:00
First-Year Experiences of Asian Graduate Students in an Engineering Education PhD Program: a Collaborative Autoethnography
Shuyu Wang (The Ohio State University, USA); Jordan Peyton (Ohio State University, USA)

14:15
Challenging the de-Valuing of Education Sciences: an Analysis of U.S. Engineering Education Ph.D. Programs
Johannes Strobel (Missouri State University, USA); Emmanuel Sepulveda Guzman (University of Texas at El Paso, USA); Maartje Van den Bogaard (UTEP, USA)

14:30
WIP: Improving Codebook Application for Studying Engineering Intuition
Anu Singh (The Ohio State University, USA); Elif Eda Miskioglu (Bucknell University, USA); Kaela Martin (Embry-Riddle Aeronautical University, USA); Adam R Carberry (The Ohio State University, USA)

13:30 - 15:00
W3-RBB: *Special Session: Teaching the AI Curriculum in K-12: Technological and Engineering Education Imperatives for the 21st Century*
Organizers: Arnold N Pears (KTH Royal Institute of Technology, Sweden & Uppsala University, Sweden); Matti Tedre and Henriikka Vartiainen (University of Eastern Finland, Finland); Rajendra Raj (Rochester Institute of Technology, USA)
Room: Riverbed B

13:30 - 15:00
W3-RBC: AI in Graduate Education and AI Case Studies
Session Chair: Olof Lindahl (Uppsala University, Sweden)
Room: Riverbed C

13:30
WIP: Multi-Agent Artificial Intelligence Model to Enhance Self-Regulated Learning and Conceptual Understanding in Computer Science Education
Jeeho Ryoo (Fairleigh Dickinson University, Canada); Michael Pin-Chuan Lin (Mount Saint Vincent University, Canada); Sahil Rai (British Columbia Institute of Technology, Canada); Wenhao He and Seong Min Park (Fairleigh Dickinson University, Canada); Marco Ho (British Columbia Institute of Technology, Canada)

13:45
Educating to IoT and AI: a Case of Study Based on Automotive Applications
Liliana Cecere (University of Salerno, Italy); Domenico Santaniello (Università degli Studi di Salerno, Italy); Pietro Giuseppe Strollo (University of Basilicata, Italy); Alfredo Troiano (Netcom Engineering, Italy); Carmine Valentino (Universityof Salerno, Italy)

14:00
EdQuest: Improving Educational Resource Discovery with AI-Enhanced Web Scraping
Ashrith Kumar Devara and Nasrin Dehbozorgi (Kennesaw State University, USA)

14:15
AI-Augmented Medical Education: Transforming ICU Mortality & Length of Stay Prediction
Ameya U Kokate (The University of Texas at Dallas & HonorHealth, USA); Twinkle Paraye (Gannon University, USA); Sushanth S. Manakhari (Gannon University & Erie Insurance, USA); Ajinkya Prabhu Jadhav (Gannon University, USA & Erie Insurance Group, USA)

13:30 - 15:00
W3-RBC: AI in Graduate Education and AI Case Studies (cont.)

14:30
WIP: Learning Robotics via Embodied Artifacts in AI-ML Guided Immersive Environments-a Proof of Concept
Seth Corrigan (University of California, Irvine, USA); Mohammadreza Akbari Lor and Bhanu Vodinepally (University of Missouri, Kansas City, USA); Tisa Islam Erana, Bhavleen Kaur, Giancarlo Perez and Mark A Finlayson (Florida International University, USA); Shu-Ching Chen (University of Missouri-Kansas City, USA); Biayna Bogosian (Arizona State University, USA & University of Southern California, USA); Shahin Vassigh (Florida International University, USA)

13:30 - 15:00
W3-RBD: Academic & Institutional Change 4: Innovations and Challenges in Graduate Education and Emerging Technologies
Session Chair: Sherif Abdelhamid (Virginia Military Institute, USA)
Room: Riverbed D

13:30
How Graduate Engineering Students Learn AI: Competency Development, Conceptualizations, and Challenges
Rashmi W Neelawathura, Malle Schilling and Samantha Brunhaver (Arizona State University, USA)

13:45
Pathway to Computing: an Innovative Approach to Inviting Non-Computing Students Into Graduate Computer Science Programs
James Anderson, Xinming Ou, Sudeep Sarkar and Jing Wang (University of South Florida, USA)

14:00
Serious Games, Remote and Pockets Labs. a New Educational Approach
Elio Sancristobal (Spanish University for Distance Education - UNED, Spain); Felix Garcia Loro (Spanish University for Distance Education (UNED), Spain); Clara Pérez (Spanish University for Distance Education - UNED, Spain); Ricardo Martin (Spanish University for Distance Education, Spain); Rosario Gil and Manuel Castro (Spanish University for Distance Education - UNED, Spain)

14:15
(WIP) Developing a Generative AI Literacy Module for Engineering Graduate Teaching Assistants: a Model for Engineering Education
Ibukun S Osunbunmi, Bono Po-Jen Shih, Stephanie L Cutler and Perez Carlos (Penn State University, USA)

14:30
WIP: Artificial Intelligence in Fashion and Textile: Rethinking Education for Emerging Industry Needs
Rosa Maria Vasconcelos, Emilia Araujo, Ines Do Amaral and Ines Castro (Minho University, Portugal)

14:45
WIP: Integrating Social Learning into Engineering Education for Sustainable Water Management: Bridging Technical Solutions and Societal Needs
Samia Tarannum and Sarah Blackowski (University of Wisconsin Milwaukee, USA)

13:30 - 15:00
W3-WPA: Advancing Ethics, Character, and Responsibility in Engineering Education
Session Chair: Sreekanth Gopi (Kennesaw State University, USA)
Room: Willow Pond A

13:30
Categorizing Engineering Ethics Knowledge from Engineering Courses Across Different Disciplines
Bono Po-Jen Shih and Ivan E Esparragoza (Pennsylvania State University, USA)

13:45
Implementing a Praxis of Change: a Comparative Case Study on Interactive Methodologies and the Instruction of Engineering Ethics
Hortense Gerardo and Alessandro Marinoni (University of California, San Diego, USA); Raymond de Callafon (University of California San Diego, USA)

14:00
WIP: Teaching Ethical Decision-Making (EDM) in Undergraduate Computer Science and Software Engineering Courses
Panagiotis (Panos) Linos (Butler University, USA); Steve Chenoweth (Rose-Hulman Institute of Technology, USA)

14:15
WIP: Fostering Ethical Judgment in Undergraduate Engineering Students Through Problem-Based Ethics Instruction
Toluwalase E Opanuga and Heidi A. Diefes-Dux (University of Nebraska-Lincoln, USA)

14:30
An Exploratory Investigation on the Use of Situational Judgement Tests to Cultivate Character and Evaluate Character in Engineering Learning Environments
Olga Pierrakos, Jessica Koehler and Kyle Luthy (Wake Forest University, USA); Farnoosh Brock (Prolific Living, INC, USA); Andy Brock (Prolific Living INC, USA); John Karabelas (Wake Forest University, USA); Robin Anderson (James Madison University, USA)

14:45
A Literature Review on Engineering and Social Entrepreneurship Competencies for Developing Responsible and Entrepreneurial Engineering Workforce
Arsalan Ashraf (Virginia Tech, USA); Aileen Huang-Saad (Northeastern University, USA); Dayoung Kim (Virginia Tech, USA)

13:30 - 15:00
W3-WPB: Assessment 4: Integrating Generative AI and Automated Tools in Programming Evaluation
Session Chair: Pedro Manuel Moreno-Marcos (Universidad Carlos III de Madrid (Q2818029G), Spain)
Room: Willow Pond B

13:30
Agentic AI Quiz-Based Learning System: Enhancing MCQ Generation via Long-Context Cached Retrieval-Augmented Generation
Sreekanth Gopi, Devananda Sreekanth and Nasrin Dehbozorgi (Kennesaw State University, USA)

13:45
How Students Use Generative AI: Insights from Conversation Log Analysis
Zepei Li (University of Illinois at Urbana-Champaign, USA); Sotiria Koloutsou-Vakakis and Tomasz Kozlowski (University of Illinois Urbana Champaign, USA); Volodymyr Kindratenko and Abdussalam Alawini (University of Illinois at Urbana-Champaign, USA)

13:30 - 15:00
W3-WPB: Assessment 4: Integrating Generative AI and Automated Tools in Programming Evaluation

14:00
Permitting GenAI Use on Assessments in an Introductory Programming Course
Marko V. Lubarda (University of California San Diego, USA); Vlado A. Lubarda (University of California, San Diego, USA); Curt Schurgers (University of California San Diego, USA); Alex Phan (University of California, San Diego, USA); Saharnaz Baghdadchi and Huihui Qi (UC San Diego, USA)

14:15
A Retrospective Study to Understand Student Coding Style Quality via Static Analysis
Francisco T. S. S. Pereira (State University of Feira de Santana, Brazil); Roberto A Bittencourt (University of Victoria, Canada); Elaine H. T. de Oliveira and David B. F. de Oliveira (Federal University of Amazonas, Brazil)

14:30
WIP: CodeInspector: Automated LLM-Supported CS1-Level Code Assessment
Essa Imhmed, Edgar Ceh-Varela, Ludwig Scherer, George Candal and Ivan Sanjaya (Eastern New Mexico University, USA)

13:30 - 15:00
W3-WPC: Teaming & Teamwork 2: Strategies, Dynamics, and Data-Driven Approaches
Session Chair: Carlos Nascimento Silla Junior (Halmstad University, Sweden, Sweden)
Room: Willow Pond C

13:30
Data-Driven Team Assignment in Software Engineering Education: a GitHub-Informed, Difficulty-Aware Approach
Ruochi Li, Jialin Cui and Edward F. Gehringer (North Carolina State University, USA)

13:45
Enhancing Teamwork in Project-Based Learning: Challenges, Reflections, and Strategies for Improvement
Aparajita Jaiswal (Purdue University, West Lafayette, USA); Paul J Thomas, Sudip Vhaduri, Prateek Jaiswal and Sarah Rodenbeck (Purdue University, USA)

14:00
Investigating the Role of the Instructional Team in Enhancing Student Teamwork Experiences in an Introductory Cybersecurity Course
Aparajita Jaiswal (Purdue University, West Lafayette, USA); Paul J Thomas, Sudip Vhaduri, Prateek Jaiswal and Sarah Rodenbeck (Purdue University, USA)

14:15
Leading Undergraduate Teams in Commercial App Development: Technical Challenges, Team Dynamics and Pedagogical Reflections from an Industry-Funded Faculty-Led Project
Weiwei Stone, Lei Zhang, Russell Kohl and I Dabipi (University of Maryland Eastern Shore, USA)

14:30
The Collaborative Disposition: What Students Say
Renée McCauley (College of Charleston, USA); Mihaela Sabin (University of New Hampshire, USA); Bonnie MacKellar (St. John's University, USA); Tammy S. VanDeGrift (University of Portland, USA); Stephanos Matsumoto (Olin College of Engineering, USA); Amruth N. Kumar (Ramapo College of New Jersey, USA)

14:45
WIP: Belonging in Engineering? Grouping Strategy Development
Kristin L. Schaefer (Texas A&M University, USA)

13:30 - 15:00
W3-WPD: Curriculum & Course Design 9: Exploring Student Retention, Persistence, and Academic Trajectories
Session Chair: Lexy Arinze (Purdue University, USA)
Room: Willow Pond D

13:30
WIP: Engineering Education at Regional Campuses: A Systematic Review of Literature
Amanda S Nault and Rachel L. Kajfez (The Ohio State University, USA)

13:45
A Preliminary Study on the Retention Trends of Regional Campus Engineering Students
Sherri Youssef and Rachel L. Kajfez (The Ohio State University, USA)

14:00
Tracking Shifts in Major and Concentration Combinations: Trends and Implications in a School of Electrical and Computer Engineering
Jacqueline Rohde and Lakshmi Raju (Georgia Institute of Technology, USA); Elliot Moore (Georgia Tech, USA)

14:15
WIP: Uncovering Student Course-Taking Patterns Using a High-Dimensional Clustering Technique
David Reeping, Yunmeng Han and Nahal Rashedi (University of Cincinnati, USA)

14:30
Comparing SHAP and LIME Explanation Methods for Engineering Persistence ML Predictions
Xiaomei Wang, Alvin Tran, Christian Zuniga Navarrete, Arinan Dourado and Luis Segura Sangucho (University of Louisville, USA); Campbell R. Bego (University of Louisville & J. B. Speed School of Engineering, USA)

14:45
The Longitudinal Impact of Engineering Students' Noncognitive Attributes on Their Academic Performance and Retention During the COVID-19 Pandemic
Fazel Ranjbar and So Yoon Yoon (University of Cincinnati, USA); PK Imbrie (University of Oklahoma, USA)

13:30 - 15:00
W3-WPE: Computer-Based Instruction 5: Gamification and Game-Based Learning for Engagement and Skill Development
Session Chair: Bo Pei (University of South Florida, USA)
Room: Willow Pond E

13:30
Game on! Enhancing Learner Engagement in Large Computer Science Classes Using Gamification
Usman Naeem, Vindya Wijeratne, Habiba Akter, Md Hasanuzzaman Sagor and Laurissa Tokarchuk (Queen Mary University of London, United Kingdom (Great Britain)); Na Yao (Queen Mary, University of London, United Kingdom (Great Britain))

13:45
Game-Based Learning Meets Metacognition: a Design Reflection from a Calculus Instruction Project
Weiwei Stone, Lei Zhang, Russell Kohl and I Dabipi (University of Maryland Eastern Shore, USA)

14:00
Developing and Assessing a Customizable Educational Game
Donovan C Benson and Jinghua Zhang (Winston-Salem State University, USA)

13:30 - 15:00
W3-WPE: Computer-Based Instruction 5: Gamification and Game-Based Learning for Engagement and Skill Development

14:15
Improving Student Engagement Through Gamification in a Systems Security and Cryptography Course
Jonathan W. Browning, Ciara M Rafferty and Neil Anderson (Queen's University Belfast, United Kingdom (Great Britain))

14:30
A User-Experience Study of CyberGuardian: a Role-Playing Educational Game for Learning Cryptographic Primitives in Authentic Cybersecurity Scenarios
Shan Huang and Jiwoo Lee (University of Illinois Urbana-Champaign, USA); Geoffrey L Herman (University of Illinois at Urbana-Champaign, USA); Alan T Sherman (University of Maryland, Baltimore County (UMBC), USA)

15:00 - 15:30
W-CB2: Focus on Exhibitors & Coffee Break
Room: Meadow Prefunction Area

15:30 - 17:00
W4-RBA: Innovations and Challenges in Curriculum, Competencies, and Research Development in Graduate Education
Session Chair: Chillara Venkata Varun (California State University - Sacramento, USA)
Room: Riverbed A

15:30
WIP: Developing and Accessing Programs for Improving Safety-Related Communications in Chemical Engineering Departments
Ronald J Vogler, Isabelle L Williams, Christina Al Tawil, Aayush M Bendre and Carlos J Landaverde-Alvarado (The University of Texas at Austin, USA)

15:45
WIP: Defining Research Trends in Cybersecurity to Guide Doctoral Student Research
Diane Murphy, Nathan Green and Donna M. Schaeffer (Marymount University, USA)

16:00
Improving Retention in a Fast-Paced Software Engineering Master's Degree for Career Changers Using a Skills Profiler
Paulo Fernandes, Christopher Stuetzle, Maria-Isabel Carnasciali and Torrey Dipalma (Merrimack College, USA)

16:15
WIP: Do Your Students Learn Multiple Programming Languages? How Do Computational Thinking Skills Help Them?
Deepti Tagare (University of Texas at San Antonio, USA); Divya Chaudhary (Northeastern University, USA & Khoury Colege of Computer Sciences, USA)

16:30
WIP: Advancing Transdisciplinary Graduate Training at the Intersection of AI and Arid Land Agriculture
Adan Delval, Enrico Pontelli and Ruth C Torres Castillo (New Mexico State University, USA); Wendy Chi (ABC Evaluation & Research, USA)

15:30 - 17:00
W4-RBB: Panel Session: Engineering is Humanitarian - Creating the Best Engineers for the Most Impact
Organizers: Kirsten Heikkinen Dodson (Lipscomb University, USA)
Room: Riverbed B

15:30 - 17:00
W4-RBC: AI Applications in K-12 Education
Session Chair: Mehdi Roopaei (University of Wisconsin - Platteville, USA)
Room: Riverbed C

15:30
K-12 Leaders' Perspectives on AI's Risks and Benefits - Findings from a Follow-Up Survey Study
Raffaella Borasi and Karen DeAngelis (University of Rochester, USA); Sharon Mason (Rochester Institute of Technology, USA); Yu Jung Han, Patricia Vaughan-Brogan and David Miller (University of Rochester, USA)

15:45
WIP: Building on Teacher Perceptions to Help Bring AI to K-12 Classrooms
Joanne Barrett (University of Florida, USA); Diego Zapata-Rivera (Princeton, USA); Blair Lehman (Brighter Research, USA); Jesse Sparks (ETS, USA); Jeff Ginger (University of Illinois, USA); Reginald M Gooch (ETS, USA); Maya Israel (University of Florida, USA)

16:00
WIP: eXplainable AI is Not Self-Explainable: Findings from Design-Based K-12 AI Education
Nicolas Pope, Maria Kuismin, Eetu Arkko, Henriikka Vartiainen, Juho Kahila and Matti Tedre (University of Eastern Finland, Finland)

16:15
From Consumers to Creators: Critical Machine Learning (CML) Program for Middle School-Aged Students
Atefeh Behboudi, Golnaz Arastoopour Irgens, Ashley Markatos and Alicia Lane (Vanderbilt University, USA)

16:30
WIP: Enhancing Game-Based Learning with AI-Driven Peer Agents
Chengzhang Zhu, Cecile Huynh Sam, Gina Tang and Yanlai Wu (Rowan University, USA)

15:30 - 17:00
W4-RBD: Academic & Institutional Change 5: A Focus on AI in Undergraduate Education
Session Chair: Hossein Jamali (University of Nevada Reno, USA)
Room: Riverbed D

15:30
Adapting to AI: Innovative Approaches for Homework in Computer Science Education
James Anderson and Schinnel Small (University of South Florida, USA)

15:45
WIP: "Can You Do My Homework?" and Other Queries - an Analysis of Student Prompts to Generative AI in an Engineering Statics Course
Jacklyn Wyszynski, Lee A Dosse and Matthew Barry (University of Pittsburgh, USA)

16:00
WIP: How Effective are LLM-Implemented Autograders for Programming Assignments Compared to Human Graders?
Kevin Lewis (CUNY Graduate Center, USA); Hui Chen (CUNY Brooklyn College, USA)

16:15
Leveraging LLM/GAI Agents for Authentic Assessment in Competency-Based Online STEM Programs
Yanzhen Qu, Howard Evans, Noura Abbas, Richard Cai, Mazen Haj-Hussein, Janet Durgin, Anastasia Biggs and Daniel Letort (Colorado Technical University, USA)

15:30 - 17:00
W4-RBD: Academic & Institutional Change 5: A Focus on AI in Undergraduate Education (cont.)

16:30
WIP: Investigating Engineering Students' Adoption Intention of AI for Competency Development
Deborah Moyaki, Vincent Fakiyesi, Isaac D Dunmoye and Nathaniel Hunsu (University of Georgia, USA)

15:30 - 17:00
W4-WPD: Curriculum & Course Design 10: Innovations and Strategies for Enhancing Education
Session Chair: Margaret Blackie (Virginia Tech, USA)
Room: Willow Pond D

15:30
A Scoping Review of Multidisciplinary and Interdisciplinary Engineering in Higher Education: Unanswered Questions and Future Directions
Zane Reynolds and Shawn S. Jordan (Arizona State University, USA)

15:45
WIP: Bridging the Cybersecurity Skills Gap Through an Innovative Undergraduate Certificate Program
Doug Jacobson (Iowa State University, USA)

16:00
Beyond the Resume: Identifying Key Traits and Training Investments of Successful Undergraduate Mentors for STEM Education
Rory Petersen and Kylie Schroeder-Howard (Texas A&M University, USA); Glen Hordemann (Texas A&M University & Texas A&M Embodied Interaction Lab, USA); Rebecca Schlegel (Texas A&M University, USA)

16:15
Enhancing Undergraduate IT Curriculum With Infrastructure and Configuration Automation: a Practical Approach Using Vagrant, Ansible, and Terraform
Emil Salib (James Madison University, USA)

16:30
A Novel Approach on Teaching Dispersion in Coaxial Cables with Low Pass Filters
Lucas Ruff, Wenli Huang and Kirk Ingold (United States Military Academy, USA)

16:45
Correlation of Students' Academic Progress, Counseling, and Tutoring with Graduating Attributes in Outcome-Based Education (OBE): a Pilot Study of an OBEXcel Teaching and Learning Outcomes Project
Asad Abbas and Claudia Bautista-Flores (Tecnologico de Monterrey, Mexico); Samira Hosseini (The Autonomous Academic Accelerator, Mexico); Mehul Mahrishi (Swami Keshvanand Institute of Technology, Management & Gramothan & Rajasthan Technical University, India); Ahsan Ali (Zhejiang Sci-Tech University, China); Nada Eltaiba (German Jordanian University, Jordan)

15:30 - 17:00
W4-WPE: Computer-Based Instruction 6: Immersive and Virtual Environments for Teaching and Learning
Session Chair: Bo Pei (University of South Florida, USA)
Room: Willow Pond E

15:30
Successful Teaching Strategies in Virtual World Education for Engineering and Computing
Nova Ebrahimi, Mary Lou Maher and Harini Ramaprasad (University of North Carolina at Charlotte, USA)

15:45
Virtual Reality for Mathematics: A Tour Through Curves Presented in a Calculus Course
Aruquia Peixoto (CEFET-RJ, Brazil); Rafael Silva Da Costa, Elián Amaro Zozias and Ana Carolina Santos de Lima (UERJ, Brazil)

16:00
Developing and Assessing an Esports-Infused Course Module
Marty A. Kornegay, Jinghua Zhang and Mustafa Atay (Winston-Salem State University, USA)

16:15
Sex-Based Differences and Learning Satisfaction in Collaborative Virtual Reality: Insights from the Community of Inquiry Framework
Isaac D Dunmoye, Julie P. Martin, Deborah Moyaki and Vincent Fakiyesi (University of Georgia, USA); Olanrewaju Paul Olaogun (Merrimack College, USA); Nathaniel Hunsu (University of Georgia, USA); Ayobami Dunmoye (Morgan State University, USA)

16:30
WIP: Code Chronicles - a Virtual Museum of Programming Languages
Sherif Abdelhamid (Virginia Military Institute, USA); Tremayne Waller (Virginia Tech, USA)

16:45
Enhancing Computer Network Education Through Immersive Virtual Environments: a Study on NetVerse Edu
Erberson Evangelista Vieira (Federal Institute of Paraiba, Brazil); Francisco Petronio Alencar de Medeiros (Federal Institute of Paraiba & IFPB, Brazil); Paulo Ditarso Maciel Júnior (IFPB, Brazil)

Open Poster Sessions

In keeping with FIE's long-standing commitment to fostering collaboration, innovation, and the exchange of emerging ideas, the conference offers an **Open Poster Session** as part of its technical program. This session provides an inclusive platform for contributors whose work may not have been included in the main conference program—whether due to late-breaking developments, early-stage research, or evolving concepts still in progress. While posters and papers presented in the Open Poster Session are not published in the official conference proceedings, this forum serves as a valuable opportunity for authors to share insights, engage in meaningful dialogue, and receive constructive feedback from the broader FIE community as they continue to refine their work toward future publications.

Open Poster Session 1
Monday, November 3
9:30 - 10:30
Room: Willow Pond Prefunction Area

M1
Comparing Author Collaboration Networks in Engineering and STEM Education (Work in Process)
Jialing Wu (The Ohio State University, USA)

M2
A Scoping Literature Review on Ethical Considerations and Gaps within Touch-Based Sensors for Enhancing Data Security (WIP)
Nikhita Raghavan and Rachel Figard (University of Georgia, USA)

M3
When Informatics Meets Physics: Learning through Project-Oriented PBL
Asta Daunoriene, Kristina Bockute, Teresa Moskalioviene, Kristina Sutiene, and Giedrius Laukaitis (Kaunas University of Technology, Lithuania)

M4
A Qualitative Study to Explore Faculty Perceptions of Classroom Care in Engineering
Gadhaun Aslam and Idalis Villanueva Alarcón (University of Florida, USA); Homero Murzi (Texas A&M University, USA); Marisela Martinez-Cola (Morehouse College, USA)

M5
Strengthening the First-Year Transition: Assessing Student Outcomes from a Summer Bridge Program in Engineering
Lorena Benavides-Riano and Mahnas Jean Mohammadi-Aragh (Mississippi State University, USA)

M6
Beyond Compliance: Embedding Real-World Safety Science in Engineering Education Through the Standards Academy
Bethany King Wilkes and UrLeaka Newsome (UL Institute for Research Experiences & Education, USA)

Open Poster Session 2
Tuesday, November 4
9:30 - 10:30
Room: Willow Pond Prefunction Area

T1
Ctrl + AI + Debug: Navigating low-level programming with Generative Artificial Intelligence (GenAI)
Jeya Amantha Kumar, Ritam Ganguly, and Caitlin Kirby (Michigan State University, USA)

T2
Pytch - A System to Support Learners of Coding Moving From Blocks to Text
Glenn Strong, Ben North, Sara Fiori, Augustina Vornehm, and Nina Bresnihan (Trinity College Dublin, Ireland)

Open Poster Sessions (cont.)

FIE 2025 Open Poster Session 2
Tuesday, November 4
9:30 - 10:30
Room: Willow Pond Prefunction Area

T3
Student Use of ChatGPT and Claude in Introductory Engineering Education: Insights into Metacognition and Problem-Solving Patterns
Anthony Cortez and Paul Schmelzenbach (Point Loma Nazarene University, USA)

T4
Engaging Minds: Implementing Meaningful Learning in Engineering Courses
Nicole Pitterson (Virginia Tech, USA); Joi Mondisa (University of Michigan, USA); Tamecia Jones (North Carolina State University, USA); and Tasha Zephirin (Purdue University, USA)

T5
NSF RET Program on Sensors and Machine Learning at ASU SenSIP
Jean Larson (Arizona State University, USA)