University of Colorado Boulder

ENGINEERING MECHANICS INSTITUTE

ASCE Engineering Mechanics Institute 2026 Conference

Boulder, Colorado, USA | June 2 – 5, 2026

Program at a Glance

- **UMC** – University Memorial Center; **C4C** – Center for Community; **HUMN** – Humanities.

Tuesday, June 2	Wednesday, June 3	Thursday, June 4	Friday, June 5
8:00–13:30 Board of Governors Meeting (Limelight - Bear Peak) 8:00–15:00 Workshop: The Phase-Field Approach to Fracture (HUMN 150) 13:30–18:00 Registration (Limelight - Flatirons Foyer) 14:30–18:00 EMI Technical Committee Meetings (Limelight) 18:00–20:30 Welcome Reception (Limelight - Viewpoint Deck / The Lawn)	7:00–7:50 Breakfast (C4C; UMC 235)	7:00–8:00 Breakfast (C4C; UMC 235)	7:00–8:00 Breakfast (C4C; UMC 235)
	7:30–18:00 Registration (UMC - Aspen Rooms)	7:30–18:00 Registration (UMC - Aspen Rooms)	7:30–12:00 Registration (UMC - Aspen Rooms)
	8:00–8:10 Opening Remarks (UMC - Glenn Miller Ballroom)		
	8:10–9:10 Plenary: Glaucio H. Paulino (UMC - Glenn Miller Ballroom)	8:00–9:00 Plenary: George Em Karniadakis (UMC - Glenn Miller Ballroom)	8:00–9:00 Plenary: Andrew Childs (UMC - Glenn Miller Ballroom)
	9:10–9:30 Coffee Break (UMC - Aspen Rooms)	9:00–9:30 Coffee Break (UMC - Aspen Rooms)	9:00–9:30 Coffee Break (UMC - Aspen Rooms)
	9:30–11:30 Technical Sessions	9:30–11:30 Technical Sessions[3]	9:30–11:30 Technical Sessions
	11:30–13:00 Lunch Break (UMC - patio; UClub lawn)	11:30–13:00 Lunch Break (UMC - patio; UClub lawn)	11:30–13:00 Lunch Break (UMC - patio; UClub lawn)
	11:30–13:00 Student Competitions / Committee Meetings[1]	11:45–12:45 Committee Meeting / Student Competition Awards[4]	
	13:00–14:00 Plenary: Laura J. Pyrak-Nolte (UMC - Glenn Miller Ballroom)	13:00–14:00 Plenary: Itai Einav (UMC - Glenn Miller Ballroom)	13:00–14:00 Plenary: Joel P. Conte (UMC - Glenn Miller Ballroom)
	14:15–15:35 Technical Sessions	14:15–15:35 Technical Sessions	14:15–15:35 Technical Sessions
	15:35–16:00 Coffee Break (UMC - Aspen Rooms)	15:35–16:00 Coffee Break (UMC - Aspen Rooms)	
	16:00–18:00 Technical Sessions	16:00–18:00 Technical Sessions	
	18:05–19:00 Young Member Town Hall / CU Boulder Events[2]	18:30–21:00 Banquet (Limelight – Flatirons 1)	

[1] Wednesday lunch period includes student competitions / committee meetings.

[2] Wednesday evening includes Young Member Town Hall, Engineering mechanics analysis in action at CU Boulder, and CIEST tour.

[3] Thursday 9:30–11:00 includes Careers & Mentorship: Insights and Advice (HUMN 1B90).

[4] Thursday 11:45–12:45 includes Mechanics of Pavements committee meeting and Student Competition Awards Ceremony.

ASCE EMI 2026

ASCE ENGINEERING MECHANICS INSTITUTE 2026 CONFERENCE

Boulder, Colorado, USA

June 2 – 5, 2026

ORGANIZED BY

UNIVERSITY OF COLORADO BOULDER (CU BOULDER)

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Welcome Message from the EMI President

Michele Barbato, Ph.D., C.Eng, P.E., F.EMI, F.SEI, F.ASCE

University of California, Davis

EMI President

Dear members of EMI and the broader Engineering Mechanics community,

On behalf of the Engineering Mechanics Institute Board of Governors and the conference organizing committee, it is my great pleasure to welcome you to Boulder, CO, and to the 2026 Engineering Mechanics Institute Conference (EMI 2026). This year's conference, themed "*Mechanics for Engineering Innovation*", is jointly hosted by the University of Colorado, Boulder and the Engineering Mechanics Institute of ASCE.

EMI 2026 brings together leading scholars, industry professionals, practitioners, emerging researchers, and students from around the world to exchange ideas, present innovative research, and foster meaningful collaborations in the broad and evolving field of engineering mechanics. Our conference serves as one of the premier platforms of our beloved Institute for advancing scientific knowledge and addressing critical societal challenges through mechanics, materials, computation, and interdisciplinary engineering research.

This year's program includes more than 100 minisymposia, an EMI Younger Member Town Hall, a special session on career development and mentorship, a workshop on fracture mechanics, 14 student competitions, two campus tours, and six keynote sessions delivered by our distinguished plenary speakers on topics of great relevance and interest to both researchers and practicing engineers. The EMI 2026 program reflects the remarkable diversity and vitality of our field. We are especially proud to provide numerous opportunities for students and early-career researchers to engage with distinguished experts and contribute to shaping the future of engineering mechanics. Their energy, creativity, and dedication continue to inspire the next generation of scientific and technological advancement. Thanks to our vibrant community, this conference will also provide us with an opportunity to engage in productive discussions on the future of our profession and higher education, highlight the role of engineering mechanics in our modern society and its relationship with novel technologies, appreciate the importance of curiosity in research, create lifelong friendships, and have a good time with colleagues and friends who share our interest for engineering mechanics.

I would like to express my sincere gratitude to the conference co-chairs, Professors Mija Hubler and Yida Zhang of the University of Colorado, Boulder, the members of the organizing committee, the leadership and members of the technical committees, the minisymposia organizers, as well as the staff, sponsors, volunteers, and all participants whose hard work and dedication have made this event possible. I also extend a warm welcome to our international attendees whose presence enriches the global spirit of our community. Last but not least, I would like to recognize our outstanding EMI staff, Verna Jameson and Tisha Kramer, whose consistent effort, professionalism, positive attitude, and attention to detail enable our organization to thrive, even during challenging times.

Thanks to Professor Stein Sture at the University of Colorado, Boulder, I also learned that this year marks two significant anniversaries for EMI. The Engineering Mechanics Division (the ASCE division that evolved into the EMI we know today in 2008) was officially established 70 years ago, in 1956. In addition, the first specialty conference on engineering mechanics organized by the Engineering Mechanics Division was held 50 years ago, in 1976, at the University of Waterloo, Canada. These milestones provide us with an opportunity to celebrate the rich history of our community while continuing to innovate and grow as an organization. At the same time, we also look forward to our upcoming EMI-IC 2026, organized by Professors Luigi Di Sarno (University of Liverpool), Andrea Prota (Università degli Studi di Napoli Federico II), and Paolo Gardoni (University of Illinois at Urbana-Champaign), which will take place this September in Naples, Italy.

I encourage you to take full advantage of the EMI 2026 conference by participating actively in technical discussions, attending networking events, exploring opportunities for collaboration, and enjoying the beauty of Boulder, its university campus, and the surrounding area. I am confident that your participation will make this conference both professionally rewarding and personally memorable. Thank you for joining us, and I wish you a productive, engaging, and enjoyable conference experience.

Warm Regards,
Michele Barbato

Special Events

- **UMC** - *University Memorial Center;* **HUMN** - *Humanities;* **CHEM** - *Chemistry;* **VAC** - *Visual Arts Complex;* **CLUB** - *University Club;* **C4C** - *Center for Community;* **Limelight** - *Limelight Boulder Hotel*

Tuesday June 2, 2026

8:00 – 15:00 Workshop: The Phase-Field Approach to Fracture: Theory and Numerical Implementation, *HUMN 150*

16:00 – 18:00 Structural Health Monitoring and Control committee meeting and student competition, *Limelight - Flatirons 3*

16:30 – 18:00 Experimental Analysis & Instrumentation committee meeting and student competition, *Limelight - Royal Arch*

18:00 – 20:30 Welcome Reception, *Limelight - Viewpoint Deck / The Lawn*

Wednesday June 3, 2026

08:00 – 08:10 Opening Remarks, *UMC - Glenn Miller Ballroom*

08:10 – 09:10 Plenary lecture: Glaucio H. Paulino, *UMC - Glenn Miller Ballroom*

11:30 – 13:00 Lunch Break (Lunch tent #1: UMC patio; Lunch tent #2: UClub lawn)

13:00 – 14:00 Plenary lecture: Laura J. Pyrak-Nolte, *UMC - Glenn Miller Ballroom*

18:05 – 18:45 EMI Younger Member Town Hall, *CHEM 140*

18:05 – 19:00 Engineering mechanics analysis in action at CU Boulder, *UMC - Glenn Miller Ballroom*

18:05 – 19:00 CU Boulder Center for Infrastructure, Energy, and Space Testing (CIEST) tour, *UMC - Glenn Miller Ballroom*

Thursday June 4, 2026

08:00 – 09:00 Plenary lecture: George Em Karniadakis, *UMC - Glenn Miller Ballroom*

09:30 – 11:00 Careers & Mentorship: Insights and Advice - Arghavan Louhghalam, *HUMN 1B90*

11:30 – 13:00 Lunch Break (Lunch tent #1: UMC patio; Lunch tent #2: UClub lawn)

13:00 – 14:00 Plenary lecture: Itai Einav, *UMC - Glenn Miller Ballroom*

18:30 – 21:00 Banquet, *Limelight - Flatirons 1*

Friday June 5, 2026

08:00 – 09:00 Plenary lecture: Andrew Childs, *UMC - Glenn Miller Ballroom*

11:30 – 13:00 Lunch Break (Lunch tent #1: UMC patio; Lunch tent #2: UClub lawn)

13:00 – 14:00 Plenary lecture: Joel P. Conte, *UMC - Glenn Miller Ballroom*

EMI Technical Committee Meetings and Student Competitions

- **UMC** - *University Memorial Center;* **HUMN** - *Humanities;* **CHEM** - *Chemistry;* **VAC** - *Visual Arts Complex;* **CLUB** - *University Club;* **C4C** - *Center for Community;* **Limelight** - *Limelight Boulder Hotel*

- All committee events are committee meetings by default. Student competitions are noted in parentheses.

Tuesday June 2, 2026

08:00 – 13:30 Board of Governors Meeting, *Limelight - Bear Peak*
13:30 – 14:30 Board and Chair Meeting (invitation only), *Limelight - Bear Peak*
14:30 – 15:30 Objective Resilience, *Limelight - Royal Arch*
15:00 – 16:00 Architected Materials, *Limelight - Bear Peak*
15:00 - 16:00 Fluid Dynamics, *Limelight - Trailhead*
15:00 – 16:00 Dynamics, *Limelight - Flatirons 3*
15:00 – 16:00 Machine Learning, *Limelight - Flatirons 4*
15:00 – 16:00 Elasticity, *Limelight - Meadows A*
15:00 – 16:00 Modeling Inelasticity & Multiscale Behavior, *Limelight - Meadows B*
15:00 – 16:00 Granular Materials, *https://northwestern.zoom.us/j/2188987153*
15:30 – 16:30 Poromechanics, *Limelight - Royal Arch*
15:30 – 16:30 Mentoring and Early Career Advancement, *Limelight - Meadows C&D*
16:00 – 17:00 Computational Mechanics, *Limelight - Bear Peak*
16:00 – 17:00 Structural Stability, *Limelight - Trailhead*
16:00 – 18:00 Structural Health Monitoring and Control (Meeting and Competition), *Limelight - Flatirons 3*
16:30 – 18:00 Experimental Analysis & Instrumentation (Meeting and Competition), *Limelight - Royal Arch*
16:30 – 18:00 Probabilistic Methods, *Limelight - Flatirons 4*
17:00 – 18:00 Nanomechanics and Micromechanics, *Limelight - Bear Peak*
17:00 – 18:00 Biomechanics, *Limelight - Trailhead*

Wednesday June 3, 2026

11:30 – 13:00 Objective Resilience (Competition), *UMC 247*
11:30 – 13:00 Probabilistic Methods (Competition), *UMC 382-384-386*
11:30 – 13:00 Properties of Materials (Meeting and Competition), *UMC 425*
11:45 – 12:45 Education, *HUMN 125*
11:45 – 12:45 Poromechanics (Competition), *CLUB 4-5*
11:45 – 12:45 Machine Learning (Competition), *HUMN 135*
11:45 – 12:45 Computational Mechanics (Competition), *VAC 1B20*
11:45 – 12:45 Modeling Inelasticity & Multiscale Behavior (Competition), *HUMN 1B80*
11:45 – 12:45 Structural Stability (Competition), *HUMN 1B90*
12:00 – 13:00 Dynamics (Competition), *UMC 415-417*

Thursday June 4, 2026

11:45 – 12:45 Mechanics of Pavements, *UMC 247*
11:45 – 12:45 Student Competition Awards Ceremony, *CHEM 140*

2026 SOCIETY/EMI AWARD RECIPIENTS

The Executive Committee of the ASCE Board of Direction approved the list of recipients of several prestigious 2026 Society awards administered by the Engineering Mechanics Institute.

Congratulations to the Award Winners!

Wilfred D. Iwan Award for Mentors in Mechanics Research

Ahsan Kareem Ph.D., Dist. M. ASCE, NAE, for educating and mentoring an impressive number of students, postdoctoral fellows and practicing engineers who have gone on to improve the safety, sustainability and resilience of civil infrastructure in the face of natural hazards and climate change.

Jack E. Cermak Medal

Kurtis R. Gurley, Ph.D., M.ASCE, for his contributions to laboratory research, computational modeling and simulation, and full-scale monitoring of wind effects during landfalling hurricanes, as well as his dedication to educating and mentoring the next generation of wind engineering professionals.

Zdeněk P. Bažant Medal for Failure and Damage Prevention

Horacio Dante Espinosa Ph.D., M.ASCE, for outstanding experimental, computational, and leadership contributions to the mechanics of failure and damage — spanning scales from nano- to structural, and advancing material design, fracture theory, and structural resilience.

Nathan M. Newmark Medal

Held jointly with the Structural Engineering Institute of ASCE

Armen Der Kiureghian Ph.D., M.ASCE, for fundamental contributions to earthquake response spectrum analysis, random vibrations, structural reliability, stochastic modeling of ground motions, computational stochastic mechanics and finite-element reliability methods, structural response to spatially varying excitations, and seismic fragility of structural components and systems.

EMI Leonardo da Vinci Award

Rebecca Napolitano, Ph.D., M.ASCE, for transformative contributions that bridge the gap between post-disaster structural assessment and community-led intervention, translating mechanistic insights from reconnaissance data into interactive, generative design tools for participatory resilience planning.

Raymond D. Mindlin Medal

Haiyan Hu, Ph.D., for the pioneering achievements in nonlinear dynamics and control of structural systems, which revealed the essential roles of delayed feedback and hysteresis, and upgraded the design of nonlinear vibration control, active flutter suppression and deployable space structures.

Maurice A. Biot Medal

Gilles Pijaudier-Cabot, Ph.D., M.ASCE, for his pioneering contributions to nonlocal damage mechanics, fracture and permeability coupling in porous materials, and chemo-mechanical degradation of geomaterials. His work has profoundly advanced the theoretical and applied foundations of poromechanics inspired by Biot's legacy.

Theodore von Karman Medal

Glaucio H. Paulino, Ph.D., NAE, F.EMI, M.ASCE, for pioneering contributions to the field of mechanics, including advances in geometric mechanics associated to origami and tensegrity engineering, which led to the creation of multifunctional structures and configurational metamaterials with unprecedented properties.

George W. Housner Structural Control & Monitoring Medal

Chung-Bang Yun, Ph.D., for his pioneering and transformative contributions to structural control and health monitoring (extended Kalman filter for structural identification, neural networks for damage identification, and smart active and wireless sensors); and for his international leadership in research and education (ANCRiSST, SPIE, APESS, SISTeC).

Alfred M. Freudenthal Medal

Kok-Kwang Phoon, Ph.D., P.E., F.ASCE, for his technical contributions and leadership to research and practice in geotechnical risk and reliability.

Robert H. Scanlan Medal

Christos Georgakis, Ph.D., M.ASCE, for extraordinary contributions to wind and aerodynamics engineering, by: (1) developing pioneering bridge aerodynamics models, (2) delivering practical solutions to enhance the design and safety of major bridges worldwide, and (3) educating and mentoring the next generation of bridge engineers.

EMI FELLOWS CLASS OF 2026

- **M Ahmer Wadee, Ph.D., M.ASCE**
- **Steve Waiching Sun, Ph.D., M.ASCE**

Plenary Lecture

Engineering Origami Structures and Metamaterials

Glaucio H. Paulino, Ph.D., NAE, F.EMI, M.ASCE, *Princeton University*

8:10 – 9:10 am, Wednesday June 3, 2026

Abstract:
Metamaterials with multimodal deformation mechanisms resemble machines, especially when endowed with autonomous functionality. A representative architected assembly, with tunable chirality, converts linear motion into rotation. These chiral systems with a machine-like dual modality have potential use in areas such as wave manipulation, optical activity related to circular polarization and chiral active fluids. However, in previous literature, the dual motions are essentially coupled and cannot be independently controlled. Moreover, they are restricted to small deformations, which limits their applications. We use a ground-structure based topology optimization formulation to establish modular chiral structures and metamaterials, consisting of auxetic planar tessellations and origami-inspired columnar arrays, with decoupled actuation. Under single-degree-of-freedom actuation, the assembly twists between 0° and 90°, contracts in-plane up to 25% and shrinks out-of-plane more than 50%. Using experiments and simulations, we show that the deformation of the assembly involves in-plane twist and contraction dominated by the rotating-square tessellations and out-of-plane shrinkage dominated by the tubular Kresling origami arrays. Moreover, we demonstrate two distinct actuation conditions: twist with free translation and linear displacement with free rotation. Our metamaterial is built on a highly modular assembly, which enables reprogrammable instability, local chirality control, tunable loading capacity and scalability. Our concept provides routes towards multimodal, multistable and reprogrammable machines, with applications in robotic transformers, thermoregulation, mechanical memories in hysteresis loops, non-commutative state transition and plug-and-play functional assemblies for energy absorption and information encryption.

Biosketch:
Professor Paulino is the Margareta E. Augustine Professor of Engineering at Princeton University. He is a member of the US National Academy of Engineering (NAE) and European Academy of Sciences and Arts (EASA). His seminal contributions include the development of methodologies to characterize the deformation and fracture behavior of existing and emerging materials; topology optimization for large-scale multiscale/multiphysics problems; variational methods; deployable and adaptable structures; and origami engineering (topic of his lecture at the EMI CONFERENCE). He is a fellow of all major professional societies, including EMI, ASME (American Soc. of Mechanical Engineers), AAM (American Academy of Mechanics), SES (Society of Engineering Science), ISSMO (International Society for Structural & Multidisciplinary Optimization), USACM (US Association for Computational Mechanics), IACM (International Association for Computational Mechanics). He received the Mindlin Medal of ASCE, the Drucker Medal and the Melville Medal of ASME, the Eringen Medal from SES, the Reddy Medal from Mechanics of Advanced Materials and Structures, and the Belytschko Medal twice, one from ASME and one from USACM. He also received the 2015 Cozzarelli Prize from the National Academy of Sciences, "which recognizes recently published PNAS papers of outstanding scientific excellence and originality."

Plenary Lecture

Why Fracture Geometry is Important

Laura J. Pyrak-Nolte, Ph.D., *Purdue University*

1:00 – 2:00 pm, Wednesday June 3, 2026

Abstract:
We may think of rock as "solid", but all rocks have mechanical discontinuities, generally referred to as fractures. These range in length scale from micro-cracks (μm - mm) to fractures (cm – m) to faults (m – km) and are easily affected by natural and engineered processes, causing them to open, close, initiate, coalesce and/or propagate. Furthermore, natural and engineered fluids can cause geochemical alterations that lead to crack growth or sealing through mineralization. All these changes affect the movement of fluids through fractures. Fractures can be beneficial, for example, to geothermal energy production where fluids are injected and withdrawn from subsurface rocks to extract heat. On the other hand, fractures are detrimental to subsurface sites used for storing fluids (H2, CO2) because they act as well-connected "fast" paths for fluids to leak. Thus, the detection and characterization of fractures is crucial for sustained production/isolation of fluid throughout the life-cycle of a subsurface site. Over the last three decades, steady progress by the community has led to a deeper understanding of the hydraulic, mechanical, and seismic responses of fractures. A key finding of these efforts is the role of fracture geometry in controlling and linking these responses. In this presentation, I will highlight the importance of fracture geometry in understanding the behavior of fractures and fracture networks.

Acknowledgment: This work was supported by U.S. Department of Energy, Office of Science, Office of Basic Energy Sciences, Geosciences Research Program under Award Number (DE-SC0001048).

Biosketch:
Laura J. Pyrak-Nolte is a Distinguished Professor of Physics and Astronomy at Purdue University. She holds courtesy appointments in the Lyle School of Civil Engineering and in the Department of Earth, Atmospheric and Planetary Sciences, also in the College of Science. Dr. Pyrak-Nolte holds a B.S. in Engineering Science from the State University of New York at Buffalo, an M.S. in Geophysics from Virginia Polytechnic Institute and State University, and a Ph.D. in Materials Science and Mineral Engineering from the University of California at Berkeley. She is a member of the American Academy of Arts and Sciences, the National Academy of Engineering, and a Fellow of the American Geophysical Union. In 2020 Pyrak-Nolte was awarded the Society of Exploration Geophysicists Reginald Fessenden Award. She is the former President of the International Society of Porous Media, former President of the American Rock Mechanics Association and former Vice-President for North America for the International Society of Rock Mechanics and Rock Engineering. Her research interests include fractures, experimental and theoretical seismic wave propagation, laboratory rock mechanics, micro-fluidics, particle swarms, and fluid flow through Earth materials.

Plenary Lecture

Agentic Scientific Machine Learning

George Em Karniadakis, Ph.D., *Brown University*

8:00 – 9:00 am, Thursday June 4, 2026

Abstract:
Scientific Machine Learning (SciML) integrates data-driven inference with physical modeling to solve complex problems in science and engineering. However, the design of SciML architectures, loss formulations, and training strategies remains an expert-driven research process, requiring extensive experimentation and problem-specific insights. We introduce AgenticSciML, a collaborative multi-agent system in which over 10 specialized AI agents collaborate to propose, critique, and refine SciML solutions through structured reasoning and iterative evolution. The framework integrates structured debate, retrieval-augmented method memory, and ensemble-guided evolutionary search, enabling the agents to generate and assess new hypotheses about architectures and optimization procedures. Across physics-informed learning and operator learning tasks, the framework discovers solution methods that outperform single-agent and human-designed baselines by up to four orders of magnitude in error reduction. The agents produce novel strategies -- including adaptive mixture-of-expert architectures, decomposition-based PINNs, and physics-informed operator learning models -- that do not appear explicitly in the curated knowledge base. These results show that collaborative reasoning among AI agents can yield emergent methodological innovation, suggesting a path toward scalable, transparent, and autonomous discovery in scientific computing.

Biosketch:
George Karniadakis is from Crete. He is an elected member of the National Academy of Engineering, National Academy of Arts and Sciences, and a Vannevar Bush Faculty Fellow. He received his S.M. and Ph.D. from Massachusetts Institute of Technology (1984/87). He was appointed Lecturer in the Department of Mechanical Engineering at MIT and subsequently he joined the Center for Turbulence Research at Stanford / NASA Ames. He joined Princeton University as Assistant Professor in the Department of Mechanical and Aerospace Engineering and as Associate Faculty in the Program of Applied and Computational Mathematics. He was a Visiting Professor at Caltech in 1993 in the Aeronautics Department and joined Brown University as Associate Professor of Applied Mathematics in the Center for Fluid Mechanics in 1994. After becoming a full professor in 1996, he continued to be a Visiting Professor and Senior Lecturer of Ocean/Mechanical Engineering at MIT. He is an AAAS Fellow (2018-), Fellow of the Society for Industrial and Applied Mathematics (SIAM, 2010-), Fellow of the American Physical Society (APS, 2004-), Fellow of the American Society of Mechanical Engineers (ASME, 2003-) and Associate Fellow of the American Institute of Aeronautics and Astronautics (AIAA, 2006-). He received the William Benter Prize (2026), SES G.I. Taylor medal (2014), the SIAM/ACM Prize on Computational Science & Engineering (2021), the Alexander von Humboldt award in 2017, the SIAM Ralf E. Kleinman award (2015), the J. Tinsley Oden Medal (2013), and the CFD award (2007) by the US Association in Computational Mechanics. His h-index is 159 (highest in Applied Mathematics) and he has been cited over 155,000 times.

Plenary Lecture

Grains-in-motion: from x-ray rheography to heterarchical granular dynamics

Itai Einav, Ph.D., *University of Sydney*

1:00 – 2:00 pm, Thursday June 4, 2026

Abstract:
Bulk materials, often in granular form, underpin a wide range of industries and scientific fields, from minerals engineering and pharmaceutics to batteries, geophysics, and geotechnology. Far from static, these systems are inherently dynamic, and understanding their motion is key to both process performance and fundamental science. In recent years, my team and I have developed a distinctive capability in this space, advancing the science of grains-in-motion.

This talk highlights two developments that translate fundamental insights into practical tools. First, DynamiX, a world-unique simultaneous three-way X-ray imaging system, enables X-ray rheography, a new method for measuring three-dimensional internal motion in granular systems. Second, heterarchical granular dynamics introduces a computational framework for modelling complex particulate systems. It enables tracking of arbitrary grain-size distributions across large systems and overcomes key limitations of conventional discrete element methods.

Together, these approaches provide experimentally validated, quantitative access to bulk material dynamics across scales, supporting improved modelling, design, and optimisation of particulate processes.

Biosketch:
After completing his PhD at the Technion, Israel, in 2002, Itai Einav moved to the University of Western Australia for his postdoc. In 2005, he joined the University of Sydney as a Senior Lecturer and was promoted to Full Professor in 2012. While in Sydney, he has served as the Director of the Sydney Centre in Geomechanics and Mining Materials (SciGEM). His research is guided by a passion for bridging physics and engineering. This interdisciplinary focus has enabled him to make significant contributions across both domains while developing a versatile toolkit of theoretical, computational, and experimental methods. Building on this foundation, Itai has advanced research in areas such as geomechanics, granular physics, geophysics, solid and fluid mechanics, and minerals processing, as well as in interdisciplinary collaborations at the interface with the arts.

Plenary Lecture

Quantum algorithms for differential equations: Opportunities and challenges

Andrew Childs, Ph.D., *University of Maryland Institute for Advanced Computer Studies (UMIACS)*

8:00 – 9:00 am, Friday June 5, 2026

Abstract:
Quantum computers have the potential to solve certain problems dramatically faster than ordinary classical computers. In particular, quantum algorithms can potentially accelerate the solution of high-dimensional systems of differential equations by representing them using quantum states. However, this approach imposes strong constraints on the problem input and provides limited access to the solution, making it unclear whether it will be advantageous in practice. This talk will review the techniques and prospects for quantum algorithms for linear and nonlinear differential equations, considering both the potential strengths and the known limitations of such approaches.

Biosketch:
Andrew Childs is a professor in the Department of Computer Science and interim director of the University of Maryland Institute for Advanced Computer Studies (UMIACS). He was a co-director of QuICS from 2014-2024, and is the director of the NSF Quantum Leap Challenge Institute for Robust Quantum Simulation.

Childs's research interests are in the theory of quantum information processing, especially quantum algorithms. He has explored the computational power of quantum walk, providing an example of exponential speedup, demonstrating computational universality, and constructing algorithms for problems including search and formula evaluation. Childs has also developed fast quantum algorithms for simulating Hamiltonian dynamics. His other areas of interest include quantum query complexity and quantum algorithms for algebraic problems.
Before coming to UMD, Childs was a DuBridge Postdoctoral Scholar at Caltech from 2004-2007 and a faculty member in Combinatorics & Optimization and the Institute for Quantum Computing at the University of Waterloo from 2007-2014. Childs received his doctorate in physics from MIT in 2004.

Plenary Lecture

Redefining the Computation-Mechanics Nexus in Large-Scale 6-DOF Shake-Table Testing

Joel P. Conte, Ph.D., P.E., F. EMI, F. ASCE,
University of California, San Diego

1:00 – 2:00 pm, Friday June 5, 2026

Abstract:
The UC San Diego Large High-Performance Outdoor Shake Table (LHPOST) was commissioned on October 1, 2004, as a shared-use facility under the U.S. National Science Foundation (NSF) Network for Earthquake Engineering Simulation (NEES) program. Although originally conceived as a six-degree-of-freedom system, budget constraints led to its initial construction as a single-degree-of-freedom table. After 15 years of operation, it was upgraded to its intended 6-DOF capabilities between October 2019 and April 2022 and renamed LHPOST6.
A multi-physics model (digital twin) of the LHPOST6 was developed. Under bare-table conditions, the model integrates three subsystems: (1) hydraulic dynamics, (2) pneumatic (nitrogen-precharged) hold-down struts, and (3) three-dimensional kinematics and dynamics of the mechanical components, including the platen and actuators. A methodology was established to calibrate model parameters and validate the model using acceptance and characterization test data.
For loaded-table conditions, a coupled dynamic model was developed by integrating: (a) the MTS 469D table motion controller, (b) the LHPOST6 model in Simulink, and (c) nonlinear structural specimen models in OpenSees. A numerical solution algorithm was formulated for the resulting nonlinear equations of motion. The model was validated against two full-scale experiments: the 10-story mass timber building tested in the NHERI TallWood project and the 6-story mass timber building tested in the NHERI Converging Design project. We explored the long-standing, powerful concept of model-based controller tuning to improve ground motion tracking using a numerical model of the shake table-specimen-controller system, thereby reducing the risk of damaging high-value test specimens during tuning.
The presentation will highlight and discuss key aspects of the model, its validation, and potential applications in large-scale shake table testing.

Biosketch:
Joel Conte received his Civil Engineering Diploma in 1985 from the Swiss Federal Institute of Technology in Lausanne, Switzerland, and his M.S. (1986) and Ph.D. (1990) in Civil Engineering from the University of California, Berkeley. He is currently a Distinguished Professor of Structural Engineering at the University of California, San Diego, where he holds the Eric and Johanna Reissner Chair in Applied Mechanics and Structural Engineering. Before joining UC San Diego in 2001, he served on the faculty at Rice University (1990–1997) and UCLA (1998–2001). He is a Fellow of the ASCE Engineering Mechanics Institute (class of 2018) and a Fellow of ASCE (class of 2025). He is also a Fulbright scholar (class of 2006).

Professor Conte's primary research interests include structural modeling and analysis; earthquake engineering and structural dynamics; random vibrations; structural reliability and risk analysis; probabilistic performance-based analysis and design; shake table dynamics and control; experimental-analytical correlation studies; structural identification; Bayesian inference and calibration of mechanics-based structural models; and structural health monitoring. He has published over 300 papers in international journals and conference proceedings.

Professor Conte was a member of the design team for the Large High-Performance Outdoor Shake Table (LHPOST) at UC San Diego, developed as part of the NSF George E. Brown Network for Earthquake Engineering Simulation (NEES). He served as Principal Investigator for the NSF-funded project to upgrade the LHPOST to six degrees of freedom (2018–2022) and was Director of the UC San Diego Englekirk Structural Engineering Center (2011–2023), which houses the NSF Natural Hazards Engineering Research Infrastructure (NHERI) LHPOST6 shake table experimental facility.

Tuesday, June 2, Events and Meetings

Time	Event / Meeting	Room/Location
8:00 AM - 3:00 PM	Workshop: The Phase-Field Approach to Fracture: Theory and Numerical Implementation	HUMN 150
8:00 AM - 1:30 PM	Board of Governors Meeting	Limelight - Bear Peak
1:30 PM - 2:30 PM	Board and Chair Meeting (invitation only)	Limelight - Bear Peak
1:30 PM - 6:00 PM	Registration	Limelight - Flatirons Foyer
2:30 PM - 3:30 PM	Objective Resilience committee meeting	Limelight - Royal Arch
3:00 PM - 4:00 PM	Architected Materials committee meeting	Limelight - Bear Peak
3:00 PM - 4:00 PM	Fluid Dynamics committee meeting	Limelight - Trailhead
3:00 PM - 4:00 PM	Dynamics committee meeting	Limelight - Flatirons 3
3:00 PM - 4:00 PM	Machine Learning committee meeting	Limelight - Flatirons 4
3:00 PM - 4:00 PM	Elasticity committee meeting	Limelight - Meadows A
3:00 PM - 4:00 PM	Modeling Inelasticity & Multiscale Behavior committee meeting	Limelight - Meadows B
3:00 PM - 4:00 PM	Granular Materials committee meeting	https://northwestern.zoom.us/j/2188987153
3:30 PM - 4:30 PM	Poromechanics committee meeting	Limelight - Royal Arch
3:30 PM - 4:30 PM	Mentoring and Early Career Advancement committee meeting	Limelight - Meadows C&D
4:00 PM - 5:00 PM	Computational Mechanics committee meeting	Limelight - Bear Peak
4:00 PM - 5:00 PM	Structural Stability committee meeting	Limelight - Trailhead
4:00 PM - 6:00 PM	Structural Health Monitoring and Control committee meeting and student competition	Limelight - Flatirons 3
4:30 PM - 6:00 PM	Experimental Analysis & Instrumentation committee meeting and student competition	Limelight - Royal Arch
4:30 PM - 6:00 PM	Probabilistic Methods committee meeting	Limelight - Flatirons 4
5:00 PM - 6:00 PM	Nanomechanics and Micromechanics committee meeting	Limelight - Bear Peak
5:00 PM - 6:00 PM	Biomechanics committee meeting	Limelight - Trailhead
6:00 PM - 8:30 PM	Welcome Reception	Limelight - Viewpoint Deck / The Lawn

Wednesday, June 3, Events and Meetings

Time	Event / Meeting	Room/Location
7:00 AM - 7:50 AM	Breakfast	C4C; UMC - 235
7:30 AM - 6:00 PM	Registration	UMC - Aspen Rooms
8:00 AM - 8:10 AM	Opening Remarks	UMC - Glenn Miller Ballroom
8:10 AM - 9:10 AM	Plenary Lecture: Engineering Origami Structures and Metamaterials Speaker(s): Glaucio H. Paulino	UMC - Glenn Miller Ballroom
9:10 AM - 9:30 AM	Coffee Break	UMC - Aspen Rooms
11:30 AM - 1:00 PM	Lunch Break	UMC - patio, UClub lawn
11:30 AM - 1:00 PM	Objective Resilience student competition	UMC 247
11:30 AM - 1:00 PM	Probabilistic Methods Student Competition	UMC 382-384-386
11:30 AM - 1:00 PM	Properties of Materials committee meeting and student competition	UMC 425
11:45 AM - 12:45 PM	Education committee meeting	HUMN 125
11:45 AM - 12:45 PM	Poromechanics student competition	Club 4-5
11:45 AM - 12:45 PM	Machine Learning student competition	HUMN 135
11:45 AM - 12:45 PM	Computational Mechanics student competition	VAC 1B20
11:45 AM - 12:45 PM	Modeling Inelasticity & Multiscale Behavior student competition	HUMN 1B80
11:45 AM - 12:45 PM	Structural Stability student competition	HUMN 1B90
12:00 PM - 1:00 PM	Dynamics student competition	UMC 415-417
1:00 PM - 2:00 PM	Plenary Lecture: Why Fracture Geometry is Important Speaker(s): Laura J. Pyrak-Nolte	UMC - Glenn Miller Ballroom
3:35 PM - 4:00 PM	Coffee Break	UMC - Aspen Rooms
6:05 PM - 6:45 PM	Young Member Town Hall	CHEM 140
6:00 PM - 7:00 PM	Engineering mechanics analysis in action at CU Boulder	UMC - Glenn Miller Ballroom
6:00 PM - 7:00 PM	CU Boulder Center for Infrastructure, Energy, and Space Testing (CIEST) tour	UMC - Glenn Miller Ballroom

Wednesday, June 3, Morning Sessions, 9:30 AM - 11:30 AM

MS007: Advances in Computer Vision, Deep Learning, & Artificial Intelligence for Structural Monitoring, Inspections, and Digital Twins Chair(s): Vedhus Hoskere; Mohammad Jahanshahi; Jian Li; Wei Song		
HUMN 250	09:30 AM - 09:50 AM	ID 60: Improved vision transformer for post disaster damage classification Author(s): Carlos Canchila, Wei Song
	09:50 AM - 10:10 AM	ID 329: CycleGAN-Based Unsupervised Shadow Removal for Pavement Crack Detection Enhancement Author(s): Ming-Shi Tsai, Yu-Ting Huang, Mohammad Reza Jahanshahi
	10:10 AM - 10:30 AM	ID 492: Toward Smart Structural Inspections: Merging ARKit, LiDAR, and YOLOv8 on iOS Author(s): Chia-Ming Chang, Yen-Teng Chang
	10:30 AM - 10:50 AM	ID 498: Automated Structural Assessment and Tilt Measurement of Coastal Utility Poles: Leveraging Human-Refined Grounded SAM 3 and LiDAR Integration Author(s): Jangjae Lee, Abigail Beck
	10:50 AM - 11:10 AM	ID 580: A Multi-Attention Vision Framework for Standards-Aligned Steel Bridge Corrosion Assessment Author(s): Yao-Teng (Ted) Hu, Jian Tao, Arash Noshadravan
	11:10 AM - 11:30 AM	ID 722: Bridging Local Details and Global Context for Vision-Based Corrosion Segmentation Using Transformer-CNN Hybrid Architecture Author(s): Abhishek Subedi, Mohammad Jahanshahi
MS004: Computer vision and vibration-based damage identification using machine and deep learning Chair(s): YoungJin Cha; Oral Buyukozturk		
HUMN 135	09:30 AM - 09:50 AM	ID 386: Deep learning-based structural health monitoring Author(s): YoungJin Cha, Oral Buyukozturk
	09:50 AM - 10:10 AM	ID 292: Damage Estimation to Enhance Micro-Damage Detection in Scaffolding Steel Pipes Using a Portable MFL Sensor Author(s): Hansun Kim, Taeheon Kim, Soojung Shin, Sung-Han Sim, Seunghee Park
	10:10 AM - 10:30 AM	ID 372: Monocular vision-based depth estimation using self-supervised deep learning for infrastructure inspection Author(s): Kalena Chernesky, YoungJin Cha
	10:30 AM - 10:50 AM	ID 397: Structural Damage Identification in Railroad Bridges Combining Multi-modal Information with Physics-informed Machine Learning Author(s): Althaf Shajihan
	10:50 AM - 11:10 AM	ID 433: Deep Learning Enabled Vision and Inertial Fusion for Railway Track Geometry Author(s): Chang Liu, Amirali Najafi
	11:10 AM - 11:30 AM	ID 991: Occlusion-Robust Computer Vision Framework for Finite Element–Compatible Digital Twins Author(s): Robin Eunju Kim, Jun-Yong Lee

MS019: High-speed Railroad, Transportation Infrastructure, Lifelines, Structural Health Monitoring, and Management Chair(s): Fernando Moreu; Hoon Sohn; Hae Young Noh; Jinwoo Lee; Yiqing Ni		
HUMN 125	09:30 AM - 09:50 AM	ID 528: Cost-Effective Structural Health Monitoring of Railroad Bridges via Solar-Powered Wireless Sensors and Cellular Data Transmission Author(s): Hussein Ali Ahmad, Ronan Reza, Fernando Moreu
	09:50 AM - 10:10 AM	ID 699: Observing Shock Waves generated by the High-Speed Rail passing Tunnel through Telecommunication Optical Fiber Cables Author(s): Jatin Aggarwal, Doyun Hwang, Jingxiao Liu, Hae Young Noh
	10:10 AM - 10:30 AM	ID 711: Bridge Displacement Field Estimation with Pre-existing Telecommunication Fiber Author(s): Doyun Hwang, Jatin Aggarwal, Jingxiao Liu, Biondo Biondi, Hae Young Noh
	10:30 AM - 10:50 AM	ID 858: Distributed Displacement Monitoring of Bridge Structures Using Multi-Modal Sensing with Low-Cost FMCW Radar–Accelerometer Fusion and Existing Fiber-Optic Cable Author(s): Jigu Lee, Daurl Kim, Haeyoung Noh, Jingxiao Liu, Doyun Hwang, Jatin Aggarwal, Sungdong Il, Soyeon Kim, Hoon Sohn
MS022: Integration of Physics-based Models with Data for Identification, Monitoring, Estimation, and Uncertainty Quantification Chair(s): Yang Wang; Hamed Ebrahimian; Babak Moaveni; Haeyoung Noh		
HUMN 1B50	09:30 AM - 09:50 AM	ID 85: Unscented KalmanNet: Physics-Based, Data-Driven Framework for Nonlinear State Estimation in Structural Systems Author(s): Minhyeok Ko, Abdollah Shafieezadeh
	09:50 AM - 10:10 AM	ID 94: Solution reconstruction with the explicit constraint force method Author(s): Conor Rowan, Kurt Maute, Alireza Doostan
	10:10 AM - 10:30 AM	ID 109: Field test on tunnel indirect damage identification from moving train response Author(s): QI LI, Xiongyao Xie, Kun Zeng
	10:30 AM - 10:50 AM	ID 116: Active learning with physics-informed neural networks for optimal sensor placement in deep tunneling through transversely isotropic elastic rocks Author(s): Alec Tristani, Chloé Arson
	10:50 AM - 11:10 AM	ID 150: Physics Enhanced Gradual-Learning for Sensing-Based Simulation of RC Column Force- Displacement Response Author(s): Mahsa Panahi, Amir Iranmanesh, Farhad Ansari
	11:10 AM - 11:30 AM	ID 283: Inverse Finite Element Method-based Deformation Reconstruction of Structures through Distributed Fiber Optic Sensor and Kirchhoff-Love Strip Method Author(s): Yongfei Li, Xingyu Wang, Jiannan Ding, Rongze Hu, Ying Huang, Chengcheng Tao
MS026: Modeling of Materials with Interfaces and Scales Using Physics-Based and Machine-Learning Methods Chair(s): Xiang Zhang; Pinlei Chen; Kamalendu Ghosh; Balavignesh Vemparala Narayana Murthy; Ravindra Duddu; Soheil Soghrati; Reza Abedi		
HUMN 150	09:30 AM - 09:50 AM	ID 80: A deep learning U-Net-based surrogate model for the prediction of dynamic fracture propagation in heterogeneous materials Author(s): Chandu Parimi, Krishnendu Sivadas, Bhavya Karnawat, Hriday Bhuta
	09:50 AM - 10:10 AM	ID 91: Data-driven and physics-informed deep learning approaches for solving fracture and diffusion problems in multi-material domains or with multiscale features Author(s): Yuxiang Gao, Ravindra Duddu, Soheil Kolouri, Abhinav Gupta
	10:10 AM - 10:30 AM	ID 132: Physics-Informed Diffusion Models for Dynamic Fracture Prediction Author(s): Yi-Chia (Ika) Han, Chloé Arson

	10:30 AM - 10:50 AM	ID 238: Crystal Plasticity Modeling of Ti-6Al-4V Alloy: Explicit Tracking and Mitigation of Micro-Textured Regions for Optimized Thermomechanical Processing Author(s): Debangshu Paul, Michael Gram, Adam Pilchak, Manish Kamal, Timothy Truster
	10:50 AM - 11:10 AM	ID 323: Investigation of Surface Roughness and Void Effects on the Fracture Behavior of Adhesively Bonded Joints Author(s): Kinan Bezem, Stephanie TerMaath
	11:10 AM - 11:30 AM	ID 347: Multiscale Image-Based Inference of Concrete Mechanical Properties Using Deep Learning Author(s): Naiara R. Tonin, Mija Hubler
MS029: Leveraging Artificial Intelligence for the Computational Modeling of Quasi-Brittle Infrastructure Materials Chair(s): Gianluca Cusatis; Gilles Pijaudier-Cabot; M. Z. Naser; Mohammed Alnaggar; Giovanni Di Luzio		
HUMN 1B90	09:30 AM - 09:50 AM	ID 38: Data-Driven Uncertainty Quantification of Concrete Mesoscale Behavior Using Multiscale Observations Author(s): Baixi Chen, Alessandro Fascetti
	09:50 AM - 10:10 AM	ID 278: Integrated Finite Element Neural Networks (I-FENN) for accelerating the solution of coupled problems Author(s): Mostafa Mobasher, Panos Pantidis, Diab Abueidda, Habiba Eldababy, Fouad Amin
	10:10 AM - 10:30 AM	ID 318: Concrete Modeling in the Era of Machine Learning Author(s): Gianluca Cusatis
	10:30 AM - 10:50 AM	ID 643: Data-Driven Hyper-Reduction of the Lattice Discrete Particle Model for Fracture Simulation Author(s): Nima Noorollahi, John Brigham, Alessandro Fascetti
	10:50 AM - 11:10 AM	ID 813: On the calibration and formulation of a damage-based model for structural failure on the basis of meso-structural simulations Author(s): Gilles Pijaudier-Cabot, Jad Mounayer, Sebastian Rodriguez, Francisco Chiniesta, Cino Viggiani, Filippo Masi, Julien Khoury, Gianluca Cusatis
	11:10 AM - 11:30 AM	ID 640: Optimizing Concrete Mixtures with AI: From Open-Source Models to Data-Center Deployment Author(s): Nishant Garg
MS041: Cementitious Materials: Experiments and Modeling Across the Scales Chair(s): Bernhard Pichler; Gilles Pijaudier-Cabot; Günther Meschke; Christian Hellmich; Franz Josef Ulm		
CLUB 4-5	09:30 AM - 09:50 AM	ID 510: Bridging the scales of microstructural and structural concrete fatigue degradation using a thermodynamically based discrete modeling framework Author(s): Mario Aguilar, Miroslav Vořechovský, Rostislav Chudoba
	09:50 AM - 10:10 AM	ID 576: Numerical analysis and evaluation of fiber pullout behavior of steel fibers embedded in ultra-high-performance concrete Author(s): Seda Mursel, Berkin Dortdivanlioglu, Anca Ferche
	10:10 AM - 10:30 AM	ID 606: Framework for Mix Design Relations of Low-embedded Carbon Using Local Materials Author(s): Bola Odunaro, Mija Hubler, Jeong-Hoon Song
	10:30 AM - 10:50 AM	ID 637: From Days to Minutes Author(s): Nishant Garg
	10:50 AM - 11:10 AM	ID 962: Modeling Moisture Capacity of Cementitious Materials Incorporating Nano-Silica Using BET Test Analysis Author(s): Mohammed Z. Zainy, Hailey C. Loehde-Woolard, Alan W. Weimer, Mija H. Hubler, Jeong-Hoon Song, Yunping Xi
	11:10 AM - 11:30 AM	ID 734: Colloidal nanosilica promotes high-density calcium-silicate-hydrates in fine recycled concrete aggregate mortar Author(s): Ange Therese Akono, Nathanial Buettner

MS038: Mechanics and Modeling of Durable and Resilient Pavements Chair(s): Jamilla Teixeira; Shane Underwood; Nam Tran; Ramez Hajj		
CASE E230	09:30 AM - 09:50 AM	ID 57: Response Characteristics of Asphalt Pavements under Moving Truck Loads Author(s): Zhaojie Sun, Ze Zhou Wang, Xiang Wang, Linjun Lu, Lavindra de Silva, Ioannis Brilakis
	09:50 AM - 10:10 AM	ID 185: Probabilistic Modeling of Spacings of Thermal Cracks in Asphalt Pavements Author(s): Jia-Liang Le, Yangyi Liu, Mihai Marasteanu
	10:10 AM - 10:30 AM	ID 560: Comparison of Finite Difference and Finite Element Methods for Modeling Chloride Diffusion in Concrete Author(s): Ramin Pahnabi, Kendrick Shepherd, Spencer Guthrie
	10:30 AM - 10:50 AM	ID 767: Rutting performance prediction of flexible airfield pavements using nonlinear mechanistic models Author(s): Masoud Darabi
	10:50 AM - 11:10 AM	ID 815: Effects of temperature and loading rate on traffic speed deflection measurements Author(s): Ramez Hajj
	11:10 AM - 11:30 AM	ID 841: A Two-Scale Computational Framework to Quantify Effective Oxygen Diffusivity in Asphalt Concrete Author(s): Masoud K. Darabi, Bisher Matalkeh
MS061: Topology Optimization: from Algorithmic Developments to Applications Chair(s): Mazdak Tootkaboni; Chuan Luo; Josephine Carstensen; Shelly Zhang; James Guest		
CASE E240	09:30 AM - 09:50 AM	ID 159: Machine Learning-Augmented Human Interaction for High-Performance Topology Optimization Author(s): Dat Ha, Faez Ahmed, Markus Buehler, Md Ferdous Alam, Josephine Carstensen
	09:50 AM - 10:10 AM	ID 202: Multi-dimensional topology optimization of beams considering sectional-longitudinal coupling Author(s): Christos Kostopoulos, Ameer Marzok, Haim Waisman
	10:10 AM - 10:30 AM	ID 246: Topology Optimization Framework for Symmetric Structures: Simple/Multiple Eigenmode Classification and Tracking Author(s): Shiyao Sun, Kapil Khandelwal
	10:30 AM - 10:50 AM	ID 270: Elastoplastic Topology Optimization with Global Enrichment for Thin-Walled Structures Author(s): Gopal Agarwal, Ameer Marzok, Haim Waisman
	10:50 AM - 11:10 AM	ID 431: PDE-constrained optimisation for multiphysics problems with Gridap.jl Author(s): Connor Mallon, Zachary Wegert, Jordi Manyer, Santiago Badia, Anthony Roberts, Vivien Challis
	11:10 AM - 11:30 AM	ID 495: Level Set Topology Optimization using the Interpolation-based Immersed Finite Element Method Author(s): Sumedh Soman, John Evans, Kurt Maute
MS058: Origami/Kirigami Inspired Structures and Metamaterials Chair(s): Evgueni Filipov; John Brigham; Tanmoy Mukhopadhyay; Susmita Naskar; Mark Schenk; Martin Walker		
KTCH 1B87	09:30 AM - 09:50 AM	ID 16: Kirigami Metastructures for Multidirectional Vibration Energy Harvesting: A Mechanics-Based Investigation Author(s): Yaowen Zhang, Susmita Naskar, Tanmoy Mukhopadhyay
	09:50 AM - 10:10 AM	ID 17: Folding Intelligence: Magnetically Programmable Bistable Origami Metasurfaces Author(s): Soumyadeep Mondal, Tanmoy Mukhopadhyay, Susmita Naskar
	10:10 AM - 10:30 AM	ID 18: Shaping Metasurfaces: Spatially varying origami architecture for Programmable Shape-Morphing Curvatures Author(s): Aditi Sharma, Susmita Naskar, Tanmoy Mukhopadhyay

	10:30 AM - 10:50 AM	ID 256: The Flexural Performance of Construction-Oriented Structural Origami Author(s): Jacob Pavelka, Sherif El-Tawil, Evgueni Filipov
	10:50 AM - 11:10 AM	ID 555: Dual-Surrogate-Assisted Control Co-Design Optimization Framework for Kirigami-Inspired Adaptive Facade Author(s): Elaheh Mehdizadeh, Raj Pradip Khawale, Evgueni Filipov, John Brigham
	11:10 AM - 11:30 AM	ID 667: Mechanical Response of Origami-Based Architected Materials: Effects of Geometry and Material Properties Author(s): Melika Alavi, Larissa Novelino
MS064: Structural Identification and Damage Detection Chair(s): Eleni Chatzi; Eleonora Tronci; Babak Moaveni; Costas Papadimitriou; Zhilu Lai		
GUGG 205	09:30 AM - 09:50 AM	ID 105: Interpretable β-Variational Autoencoders for Discovering Higher-Order Sensitivities in Nonlinear Hysteretic Structures Author(s): Reza Farzad, Patrick Brewick
	09:50 AM - 10:10 AM	ID 258: Adaptive Covariance Selection for Filter-Based Joint Input-State Estimation of Hysteretic Structures Author(s): Taeha Kim, Sang-ri Yi, Junho Song
	10:10 AM - 10:30 AM	ID 355: A Bayesian Inference Approach for Site Characterization Using Surface Wave Measurements Author(s): Koosha Raisi, Babak Moaveni, Laurie Baise
	10:30 AM - 10:50 AM	ID 440: Model Updating under Multi-Setup Conditions using NExT-based Unscented Kalman Filter in Ambient Excitation Author(s): Wonhui Goh, Yunbyeong Chae
	10:50 AM - 11:10 AM	ID 647: A novel, consistency-based metric for probabilistic remaining useful life model selection Author(s): Dongjin Du, Pranav Karve, Sankaran Mahadevan
	11:10 AM - 11:30 AM	ID 880: Monitoring of Music-Induced Vibrations in the National Gallery Author(s): Will Owens, Catherine Higgitt, Manolis Chatzis
MS068: Surrogate Modeling for Uncertainty Quantification, Optimization, and Statistical Inference in Engineering Applications Chair(s): Alexandros Taflanidis; Bruno Sudret; Abdollah Shafieezadeh; Gaofeng Jia; Min Li		
ECON 119	09:30 AM - 09:50 AM	ID 149: Adaptive and Uncertainty-Aware Surrogate Modeling for Reliability Analysis of Nonlinear Dynamic Systems Author(s): Zhiwei Wang, Michael D. Todd, Zhen Hu
	09:50 AM - 10:10 AM	ID 214: Neural Operator-based Fatigue Reliability Analysis of Floating Offshore Structures under Wave-Induced Excitations Author(s): Wangyu Choi, Jungho Kim, Seonghyun Lim, Junho Song
	10:10 AM - 10:30 AM	ID 255: Active Subspace Dimension Reduction for Surrogate Modeling in UQ Author(s): Promit Chakroborty, Ramesh Babu J., Pranav Karve, Sankaran Mahadevan
	10:30 AM - 10:50 AM	ID 272: PINN-DGP: Coupling Physics-Informed Neural Networks with Deep Gaussian Processes for Uncertainty-Calibrated Parameter Discovery Author(s): Boyuan Deng, Hongyang Zhang, Kshitiz Upadhyay, Michael Shields
	10:50 AM - 11:10 AM	ID 472: A stochastic emulator framework for high-dimensional reliability-based design optimization Author(s): Maliki Moustapha, Jaad Bel Houari-Durand, Bruno Sudret
	11:10 AM - 11:30 AM	ID 503: Adaptation of Stochastic Emulation to Shift of Distribution Author(s): Seonghyun Lim, Sang-ri Yi

MS074: Innovations in CFD and FSI: Rigorous Methods with Practical Applications Chair(s): Yuri Bazilevs; Ming-Chen Hsu; Artem Korobenko; Georgios Moutsanidis; Jinhui Yan		
CHEM 140	09:30 AM - 09:50 AM	ID 23: Preliminary Simulation of Thermal and Structural Behavior in Toroidal Combustion Systems Author(s): Domingo Fontiveros, Sean Khan, Andres Tremante
	09:50 AM - 10:10 AM	ID 84: Rheology of dense fiber suspensions Author(s): Arezoo Ardekani
	10:10 AM - 10:30 AM	ID 134: Simulation of hydrodynamic loading on navigation lock miter gates Author(s): J. Ezequiel Martin, Christopher R. Denney
	10:30 AM - 10:50 AM	ID 145: The monolithic finite element method for CFD simulations: from bio-inspired fliers to soccer ball aerodynamics Author(s): Jinhui Yan
	10:50 AM - 11:10 AM	ID 192: OpenFSI–Magttice: A Scalable Lattice-Based CFD/FSI Platform for Magneto-Active Soft Structures and Underwater Locomotion Author(s): Ying Li
	11:10 AM - 11:30 AM	ID 332: Modelling Ground-Shock resulting from Free-Air Blast via a Coupled Finite-Volume and Cellular Automata Technique Author(s): Michael Naranjo, Hussam Mahmoud
MS078: Wind, surge-wave, flooding and their impacts on infrastructure systems and coastal land Chair(s): Chao Sun; Celalettin Ozdemir		
UMC 247	09:30 AM - 09:50 AM	ID 127: Estimation of Wind-Induced Dynamic Response of Ground-Mounted Solar Panel Arrays under Lake Superior Wind Conditions Author(s): Hanshu Zhang, You-Jia Li, Matthew DeJong
	09:50 AM - 10:10 AM	ID 199: High-fidelity Modeling of Integrated Aero-Hydro-Structural-Mooring Dynamics of Floating Wind Turbines Author(s): Chao Sun, Pengxu Zou
	10:10 AM - 10:30 AM	ID 261: Application of a Multi-layer Model to Shoaling and Breaking Waves Author(s): Hunter Boswell, Christopher (Ryan) Denney, Frank D. Han, Guirong Yan, Wouter Mostert
	10:30 AM - 10:50 AM	ID 324: Breaking wave effects on a floating offshore wind turbine with varying pontoon orientations Author(s): Lucas Baumgartner, Shengzhe Wang
	10:50 AM - 11:10 AM	ID 402: Multiscale Modeling of Backward Erosion Piping Initiation and Evolution in Flood Protection Infrastructure Author(s): Zhijie Wang, Caglar Oskay, Alessandro Fascetti
	11:10 AM - 11:30 AM	ID 501: LES-based Quantitative Analysis of Hurricane Boundary-Layer Aerodynamic Loading on a 15-MW Floating Wind Turbine Author(s): Hossein Babaei, Chao Sun
MS090: 10th Mini-Symposium on 4M (Modeling of Multiphysics, Multiscale, Multifunctional) Engineering Materials and Structures Chair(s): Yong-Rak Kim; Huiming Yin; Chung Song; Jianqiang Wei		
UMC 415-417	09:30 AM - 09:50 AM	ID 42: A chemo-mechanical analysis of the creep behavior of structural adhesives with different curing degrees Author(s): Yilin Wang, Jan Vorel, Roman Wan-Wendner
	09:50 AM - 10:10 AM	ID 92: Multiscale Modeling of Dislocation–Precipitate–PPB Interactions in Powder-Metallurgy Nickel Superalloys Author(s): Divyesh Mistry, Avik Mahata

	10:10 AM - 10:30 AM	ID 108: A coupled thermodynamic–micromechanical framework for predicting the elastic behavior of carbonated cementitious materials Author(s): Seoyoung Moon, H.K. Lee
	10:30 AM - 10:50 AM	ID 234: Chemo-Mechanical Phase-Field Fracture Modeling for Cement-Based Materials Author(s): Yindun Zhao, Congjie Wei, Chenglin Wu
	10:50 AM - 11:10 AM	ID 343: Data-Driven Prediction of Mechanical Properties of Graphene Oxide–Reinforced Cementitious Composites Author(s): Mehdi Ranjkesh Rashteh Roudi, Omid Nayeri, Ramin Shabanpour, Congrui Jin
	11:10 AM - 11:30 AM	ID 574: Strength Reduction and Geotechnical/Geological Condition in Nebraska and Midwestern States Author(s): Chung Song, Bashar Al-Nimri, Basil Abualshar, Dhurba Pandey, Jongwan Eun, Seunghee Kim
MS091: Advances in Modeling of Material Damage and Fracture Chair(s): Mostafa Mobasher; Lampros Svolos; Aditya Kumar; Georgios Moutsanidis; Alessandro Fascetti; Ravindra Duddu; Haim Waisman		
UMC 382-384-386	09:30 AM - 09:50 AM	ID 78: Microstructure-based simulation for predicting microscale mechanical behavior of cement paste Author(s): Donghwi Eum, Branko Šavija, Erik Schlangen, Tong-Seok Han
	09:50 AM - 10:10 AM	ID 81: Interpreting crack healing in brittle solids using a Surface Force-based Fracture Theory (SFFT) Author(s): Hooman Dadras, Yida Zhang
	10:10 AM - 10:30 AM	ID 455: One-dimensional analysis of failure and localization with a data driven approach Author(s): Gilles Pijaudier-Cabot, Julien Khoury
	10:30 AM - 10:50 AM	ID 224: Experimental and Numerical Investigation of Stress-Driven Interaction Between Hydraulic and Natural Fractures Author(s): Maithah Alaleeli, Shivesh Shandilaya, Mostafa Mobasher, Shahrzad Roshankhah
	10:50 AM - 11:10 AM	ID 225: Resolving pathological damage widening in gradient-enhanced models Author(s): Roshan Philip Saji, Panos Pantidis, Mostafa Mobasher
	11:10 AM - 11:30 AM	ID 294: Characterization and constitutive modeling of CNT-PLA piezoresistive materials Author(s): Habiba Eldababy, Panos Pantidis, Georgios Tzortzinis, Mostafa Mobasher
MS100: Computational Geomechanics Chair(s): Hyoung Suk Suh; Shabnam Semnani; Jinhyun Choo; WaiChing Sun; Craig Foster; Richard Regueiro; Ronaldo Borja		
HUMN 1B80	09:30 AM - 09:50 AM	ID 937: Physics-integrated machine learning for landslide risk assessment Author(s): Shabnam Semnani
	09:50 AM - 10:10 AM	ID 131: A diffuse interface approach for non-isothermal Stokes-Darcy flow with immersed transmissibility conditions in heterogeneous porous media Author(s): Hyoung Suk Suh
	10:10 AM - 10:30 AM	ID 204: Multi-scale DEM Modeling of Aggregate Crushing Author(s): Tannaz Karimi Soumehsaraei, Flynn Basehart, Aryong Yun, Sheng Dai, Chloe Arson
	10:30 AM - 10:50 AM	ID 222: Physics–AI Metamodels for Geometry-Aware Computational Mechanics Author(s): Jiaji Wang, Chawit Kaewnuratchadasorn
	10:50 AM - 11:10 AM	ID 280: I-FENN: An Integrated Finite Element Neural Network Framework with DeepONets for Large-Scale Coupled Multiphysics Simulations Author(s): Fouad Amin, Diab Abueidda, Panos Pantidis, Mostafa Mobasher

	11:10 AM - 11:30 AM	ID 316: Hybrid staggered SNS-FEM framework for axisymmetric multi-physics analysis of elastoplastic porous media Author(s): Xiaoran Sheng, Qi ZHANG
MS094: Mechanics and Physics of Granular Materials Chair(s): Ryan Hurley; Marcial Gonzalez; Yimin Lu; Dawa Seo; Alessandro Rotta Loria; Ali Daouadji		
VAC 1B20	09:30 AM - 09:50 AM	ID 27: Effect of load–unload–reload cycles on the shear resistance of railroad ballast in triaxial monotonic tests Author(s): Shihao Huang, Yu Qian
	09:50 AM - 10:10 AM	ID 146: Measuring the feedback between contact area evolution and stiffness nonlinearity in granular solids Author(s): Shubjot Singh, Oluwaseyi Balogun, Giuseppe Buscarnera
	10:10 AM - 10:30 AM	ID 266: Graph Neural Network Forecast of Density Relaxation Author(s): Vishagan Ratnaswamy, Anthony Rosato
	10:30 AM - 10:50 AM	ID 351: Origin, General Definition, and Implications of Cryosuction in Frozen Soil Author(s): Lingyun Gou, William Likos, Ziyi Wang, Ning Lu
	10:50 AM - 11:10 AM	ID 374: Mesoscale studies on weak shock granular compaction: the role of friction and explicit grain fracture Author(s): Samuel Lamont, Nitin Daphalapurkar
	11:10 AM - 11:30 AM	ID 377: Graph Neural Network Prediction of Interparticle Forces in Granular Media Author(s): Mobina Taghaddosi, Nariman Mahabadi
MS007: Advances in Computer Vision, Deep Learning, & Artificial Intelligence for Structural Monitoring, Inspections, and Digital Twins Chair(s): Vedhus Hoskere; Mohammad Jahanshahi; Jian Li; Wei Song		
HUMN 250	02:15 PM - 02:35 PM	ID 636: Edge Computing-Based Image Acquisition and Stitching for Infrastructure Inspection in Confined Environments Author(s): Shufan Liu, Shanyue Guan, ChengCheng Tao, Huaixiao Yan, Yongfei Li, Xiaoli Xiong
	02:35 PM - 02:55 PM	ID 663: Error Analysis and Prediction of Structural Motion Measured by Stereo Vision Systems Author(s): Garrett Jankord, Liang Hu, Yanlin Guo
	02:55 PM - 03:15 PM	ID 709: Human-Centered Corrosion Inspection of Steel Bridges Using Augmented Reality and Meta-Ensemble Learning Author(s): Luke Attard, Saeid Ataei, William Collins, Caroline Bennett, Jian Li
	03:15 PM - 03:35 PM	ID 899: Vision-Based Assessment of Extrudability in 3D Printed Concrete Using Data-Efficient Machine Learning Author(s): Sama Taha, Oral Buyukozturk
MS004: Computer vision and vibration-based damage identification using machine and deep learning Chair(s): YoungJin Cha; Oral Buyukozturk		
HUMN 135	02:15 PM - 02:35 PM	ID 139: Underwater Image Enhancement for Robust Structural Vibration Estimation in the Underwater Environment Author(s): Enjian Cai, Zihan Wu, Michael D. Todd, Zhen Hu
	02:35 PM - 02:55 PM	ID 381: Hidden Crack Segmentation Using Multimodal Deep Learning with Multispectral Thermal Imaging Author(s): Elaheh Mohammadikhah, YoungJin Cha
	02:55 PM - 03:15 PM	ID 376: Autonomous UAV-Based Advanced 3D Reconstruction for Structural Health Monitoring of Civil Infrastructure Author(s): Qasim Bin Saeed, YoungJin Cha
	03:15 PM - 03:35 PM	ID 90: Conditional GANomaly: Unsupervised Damage Detection for Connectors in Modular Floating Structures Author(s): Siyun Park, Sunjoong Kim

MS002: Repurposing Urban Data Streams for Scalable Infrastructure Monitoring Chair(s): Jingxiao Liu; Furkan Luleci; Liangfu Ge; Zhenkun Li; Debasish Jana; Valentina Giglioni		
HUMN 125	02:15 PM - 02:35 PM	ID 366: LiDAR and Satellite-Based Sensing for Ground Movements Author(s): Bozhou Zhuang, Debasish Jana, Sriram Narasimhan, Yousef Bozorgnia
	02:35 PM - 02:55 PM	ID 545: Bridge Monitoring Using Pre-Existing Telecommunication Fiber-Optic Networks Author(s): Jingxiao Liu, Jatin Aggarwal, Doyun Hwang, Biondo Biondi, Hae Young Noh
	02:55 PM - 03:15 PM	ID 76: Graph-Based Deep Reinforcement Learning for Resilience-Oriented Decision-Making in Critical Infrastructure System Author(s): Xudong (Andrew) Fan, Jürgen Hackl, Xiong (Bill) Yu
	03:15 PM - 03:35 PM	ID 714: Investigating Fault Activation in Enhanced Geothermal Systems Using Microseismic and Low-Frequency Distributed Acoustic Sensing Author(s): Jingxiao Liu, Linqing Luo, Nori Nakata
MS022: Integration of Physics-based Models with Data for Identification, Monitoring, Estimation, and Uncertainty Quantification Chair(s): Yang Wang; Hamed Ebrahimian; Babak Moaveni; Haeyoung Noh		
HUMN 1B50	02:15 PM - 02:35 PM	ID 313: Physics-Encoded Deep Learning CQC Method for Direct Floor Response Spectrum Estimation Author(s): Dongjin Kim, Qiujin Ma, Oh-Sung Kwon, Junho Song
	02:35 PM - 02:55 PM	ID 337: Physics-Based Model Calibration and Uncertainty Quantification of Transient Seepage in Levees Using Field Measurements Author(s): Hossein Bazdar, Farshid Vahedifard, Babak Moaveni
	02:55 PM - 03:15 PM	ID 541: Constrained Ensemble Kalman Inversion with DeepONet Surrogates for Finite-Element Model Updating: Application to Seismic Response of Dry Storage Casks Author(s): Ahmed Yaseen, Elnaz Seylabi
	03:15 PM - 03:35 PM	ID 579: Hybrid Residual Learning for Unscented Kalman Filters Author(s): Shayan Mazloom, Abdollah Shafieezadeh, Jieun Hur, Jae-Wook Jung, Jeong-Gon Ha, Daegi Hahm
MS026: Modeling of Materials with Interfaces and Scales Using Physics-Based and Machine-Learning Methods Chair(s): Xiang Zhang; Pinlei Chen; Kamalendu Ghosh; Balavignesh Vemparala Narayana Murthy; Ravindra Duddu; Soheil Soghrati; Reza Abedi		
HUMN 150	02:15 PM - 02:35 PM	ID 419: A gradient-enhanced phase-field model for ductile fracture at finite strain Author(s): Giang Huynh, Benjamin Spencer
	02:35 PM - 02:55 PM	ID 439: Machine Learning-Enriched RKPM for Image-Based Modeling of Crack Propagation in Composite Materials Author(s): Yanran Wang, Jiun-Shyan (J.S.) Chen
	02:55 PM - 03:15 PM	ID 487: Effect of Spatial Correlation on Extreme-Value-Based Upscaling of Fatigue Nucleation Author(s): Anik Das Anto, Erdem Caliskan, Massimiliano Lupo Pasini, Stephanie TerMaath, Reza Abedi
	03:15 PM - 03:35 PM	ID 632: A Refined Variational Multiscale Enrichment Method for Selective Interfacial Modeling in Heterogeneous Solids Author(s): Hye-eun Kong, Pinlei Chen
MS034: Machine Learning Applications in Natural Hazards Engineering for Enhancing Civil Infrastructure Resilience Chair(s): Pedro Fernandez-Caban; Haifeng Wang		
HUMN 1B90	02:15 PM - 02:35 PM	ID 181: Hypernetwork-Based Adaptive Response Prediction for Structural Dynamics Author(s): Dominik Weiss, Konstantinos Vlachas, Pantelis Vlachas, Eleni Chatzi

	02:35 PM - 02:55 PM	ID 262: Real-Time Urban Flood Forecasting Using a Machine-Learning Surrogate Trained on Automated HEC-RAS 2D Simulations Author(s): Muhammad Waqar Saleem, Binbin Wang
	02:55 PM - 03:15 PM	ID 450: PhyULSTM: Integrating Slow Feature U-net and LSTM with Physics-Based Regularisation for Seismic Surrogate Modeling Author(s): Sutirtha Biswas, Kshitij Kumar Yadav
	03:15 PM - 03:35 PM	ID 602: Leveraging Machine Learning to Predict Effective Roof Cover Age and Assess Roof Cover Vulnerability Author(s): Jorge Santiago-Hernandez, Amin Enderami, Arpit Bhusar, Oscar Lafontaine, Daniel Smith
MS086: Complex Dynamics Modeling and Vibration Control of Infrastructure Systems Under Single/Multiple Hazards Chair(s): Chao Sun; Mariantonieta Soto; Zhen Sun; Zili Zhang		
CLUB 4-5	02:15 PM - 02:35 PM	ID 662: A Molecular-Dynamics-Inspired Lattice Element Method for Dynamic Structural Response Author(s): Ermia Pourvaghar, Mazdak Tootkaboni, Arghavan Louhghalam
	02:35 PM - 02:55 PM	ID 774: Experimental Investigation on Hydro-elastic Response of Sea-Crossing Cable-Stayed Bridge under Spatial Concurrent Wave and Current Conditions Author(s): Kai Wei, Haoyu Li
	02:55 PM - 03:15 PM	ID 963: Modeling Slab–Wall–Column Interaction in Tall Core Wall Buildings Under Earthquake Loading Author(s): Connie Chen, Jack Moehle
	03:15 PM - 03:35 PM	ID 979: Development of Response-Based Decoupling Criteria for Acceleration-Sensitive Nonstructural Components Author(s): Goktug Tufekci, Dimitrios Konstantinidis
MS038: Mechanics and Modeling of Durable and Resilient Pavements Chair(s): Jamilla Teixeira; Shane Underwood; Nam Tran; Ramez Hajj		
CASE E230	02:15 PM - 02:35 PM	ID 843: Validation of Permanent Deformation using Pavement Analysis Using Nonlinear Damage Approach (PANDA) against test sections at National Airport Pavement and Materials Research Center (NAPMRC) Author(s): Ghaith Khresat, Masoud Darabi
	02:35 PM - 02:55 PM	ID 875: Effects of RAP aging level on non-linear viscoelastic cohesive zone model parameters of recycled asphalt mixtures Author(s): Farzad Yazdipanah, Jamilla Teixeira
	02:55 PM - 03:15 PM	ID 897: Coupled Hydromechanical Modeling of Moisture Diffusion and Damage Evolution in Flexible Pavements Author(s): Ryah Nadjafi, Maryam Shakiba
	03:15 PM - 03:35 PM	ID 964: Mechanistic Assessment of Binder Rejuvenation and Tensile Performance in 100% RAP Asphalt Mixtures Author(s): Jeffrey Krebs, Jacob Kuhn, Md Islam, Chris Wacinski, Gregory George, Saqib Gulzar, Hasan Faisal
MS061: Topology Optimization: from Algorithmic Developments to Applications Chair(s): Mazdak Tootkaboni; Chuan Luo; Josephine Carstensen; Shelly Zhang; James Guest		
CASE E240	02:15 PM - 02:35 PM	ID 500: Topology optimization of anisotropic multi-material structures under local stress constraints Author(s): Juan Pablo Giraldo-Isaza, Oliver Giraldo-Londoño
	02:35 PM - 02:55 PM	ID L3: Two-state topology optimization for adaptable structures
	02:55 PM - 03:15 PM	ID 549: Optimal Reinforcement Layout in Anisotropic 3D Printed Concrete Structures with Mechanical and Connectivity Constraints Author(s): Sri Keerthana Chakravarthula, Petros Sideris, Eric Kreiger

	03:15 PM - 03:35 PM	ID 617: Uncertainty Aware Multi Scale Design of Stress Constrained Mechanical Metamaterials Author(s): Abhinav Gupta, Ravindra Duddu, Rajib Chowdhury
MS053: Tensegrity – Form finding, analysis, mechanical behaviour, control, and design of tensegrity and tensegrity-like systems Chair(s): Landolf Rhode-Barbarigos; Muhao Chen; Ajay Harish		
KTCH 1B87	02:15 PM - 02:35 PM	ID 243: Form finding and analysis of 3D super-stable tensegrities Author(s): Borui Xu, Xiangxin Dang, Glaucio Paulino
	02:35 PM - 02:55 PM	ID 1004: Enantiomerism and phase transformations in tensegrity structures Author(s): tarisha moncrief, Mohammad hodaei, Joshua Jones, Anil Misra, Nikhil Admal, Ranganathan Parthasarathy, Youngjae Choi
	02:55 PM - 03:15 PM	ID 1040: Bistable origami thermal switch with ultra-high switching ratios Author(s): Ke Liu
	03:15 PM - 03:35 PM	ID 537: On the performance of sub-problem solvers for stress-constrained topology optimization using the augmented Lagrangian method Author(s): Camdon Murphy, Juan Pablo Giraldo-Isaza, Oliver Giraldo-Londoño
MS065: Advanced Computational Methods for Uncertainty Propagation and Risk Assessment in Engineering Chair(s): Liuyun Xu; Meng-Ze Lyu; Seymour Spence; Jian-Bing Chen; Michael Beer		
GUGG 205	02:15 PM - 02:35 PM	ID 993: A Probabilistic Digital Twin Framework for Optimal Sensing and Seismic Monitoring of Structural Systems Author(s): Milad Roohi
	02:35 PM - 02:55 PM	ID 1020: Bayesian Updating of Structural, Nonstructural, and Isolation Parameters of a Base-Isolated Building Using Surrogate Models Author(s): Kléver Gastón Parra, Rodrigo Astroza, Saeed Eftekhar Azam
	02:55 PM - 03:15 PM	ID 764: Community-Scale Hurricane Risk Assessment Considering Wind–Water Interaction Author(s): Sejin Kim, Liuyun Xu, Srinivasan Arunachalam, Seymour Spence, Jeremy Bricker
	03:15 PM - 03:35 PM	ID 1009: Time-Dependent Structural Capacity Models for Performance-Based Design of Floating Offshore Wind Turbine Structures Author(s): Pawan Chand, Doeun Choe
MS068: Surrogate Modeling for Uncertainty Quantification, Optimization, and Statistical Inference in Engineering Applications Chair(s): Alexandros Taflanidis; Bruno Sudret; Abdollah Shafieezadeh; Gaofeng Jia; Min Li		
ECON 119	02:15 PM - 02:35 PM	ID 520: An Approach for Reduced-Order Modeling with the Lattice Boltzmann Method for Applications in Wellbore Isolation Fluid Simulations Author(s): Ali Farahani, Carlos Garcia, John Brigham
	02:35 PM - 02:55 PM	ID 721: Bayesian Deep Learning for Aleatoric and Epistemic Uncertainty Propagation in Nonlinear Structural Dynamics Author(s): Manisha Sapkota, Min Li, Bowei Li
	02:55 PM - 03:15 PM	ID 742: A Graph Attention Transformer for Real-Time Economic Dispatch Author(s): Wenwen Han, Roger Ghanem
	03:15 PM - 03:35 PM	ID 824: Functional Generative Neural Operators for Coherent Aleatory and Epistemic Uncertainty Quantification in Flood Forecasting Author(s): Mehdi Taghizadeh, Zanko Zandsalimi, Majid Shafiee-Jood, Negin Alemazkoor

MS074: Innovations in CFD and FSI: Rigorous Methods with Practical Applications Chair(s): Yuri Bazilevs; Ming-Chen Hsu; Artem Korobenko; Georgios Moutsanidis; Jinhui Yan		
CHEM 140	02:15 PM - 02:35 PM	ID 585: Study of Salinity Intrusion Mitigation Associated with the Performance of the Augmented Mississippi River Sill (AMRS) Author(s): Daniel Barreca, Ezequiel Martin
	02:35 PM - 02:55 PM	ID 615: Recovering accurate wall shear stress in point cloud-based CFD Author(s): Monu Jaiswal, Ming-Chen Hsu
	02:55 PM - 03:15 PM	ID 638: Multiscale CFD Analysis Using Divergence-Conforming Truncated Hierarchical B-Splines Author(s): Kendrick Shepherd, Caleb Goates
	03:15 PM - 03:35 PM	ID 660: A Multiscale Elastohydrodynamic Modeling Framework for Investigating Failure of Wind Turbine Bearings Author(s): Otero, Kendrick Shepherd, Quentin Allen
MS078: Wind, surge-wave, flooding and their impacts on infrastructure systems and coastal land Chair(s): Chao Sun; Celalettin Ozdemir		
UMC 247	02:15 PM - 02:35 PM	ID 558: Inlet-Outlet Boundary Conditions for OpenFOAM Multiphase Flow in a U-Bend Channel Author(s): Khanh Hoang
	02:35 PM - 02:55 PM	ID 628: Nonlinear Response of Corroded Coastal Bridge Piers Subjected to Extreme Wave Forces Author(s): Ali Jarrar, Monique Head, Alemu Legese, Shaymaa Obayes
	02:55 PM - 03:15 PM	ID 661: Reconstruction of Local Scour Flow Fields Using Generative Adversarial Networks Author(s): Haq Murad Nazari, Celalettin Ozdemir, Mayank Tyagi
	03:15 PM - 03:35 PM	ID 848: Stochastic framework for assessing structural performance of coastal buildings under tsunami-driven debris impact and damming forces Author(s): Jayasekara Ravindu Jayasekara, Jaril Deschamps, Sabarethinam Kameshwar, Hyoungsu Park
MS090: 10th Mini-Symposium on 4M (Modeling of Multiphysics, Multiscale, Multifunctional) Engineering Materials and Structures Chair(s): Yong-Rak Kim; Huiming Yin; Chung Song; Jianqiang Wei		
UMC 415-417	02:15 PM - 02:35 PM	ID 599: Nano-Level Evaluation of Moisture Dependent Strength Degradation of Montmorillonite based on Nano-Indentation and Nano-Scratch Tests Author(s): Chung Song, Dhurba Pandey, Elliot Seoh, Alexander Silvy, Nicholas Glennie
	02:35 PM - 02:55 PM	ID 861: Effective mechanical properties of foam concrete transitioning from continuous matrix to cellular microstructure Author(s): Xinhuan Deng, Byung-Wook Kim, Jinming Zhang, Huiming Yin
	02:55 PM - 03:15 PM	ID 866: Experimental and Multiphysics-based Numerical Investigation of Freeze–Thaw-Induced Microstructural Damage Evolution in Bituminous Composites Author(s): Nitish Bastola, Jamilla Teixeira, Chun-Hsing Ho
	03:15 PM - 03:35 PM	ID 900: Development of Multifunctional Self-heating Alkali-activated Composites with Biochar and Nano Carbon Black for Bridge Applications Author(s): In Kyu Jeon, Yong-Rak Kim

MS091: Advances in Modeling of Material Damage and Fracture Chair(s): Mostafa Mobasher; Lampros Svolos; Aditya Kumar; Georgios Moutsanidis; Alessandro Fascetti; Ravindra Duddu; Haim Waisman		
UMC 382-384-386	02:15 PM - 02:35 PM	ID 339: A Connector–Beam Lattice (CBL) Model for Microscale Mechanical Modeling of Wood Author(s): Wisdom Akpan, Erol Lale, Gianluca Cusatis
	02:35 PM - 02:55 PM	ID 408: Coupled Viscoplasticity-Damage Modeling of Metal Alloys Using a Gradient-Enhanced GVIPS Framework Author(s): Sungwon La, Sina Abrari Vajari, Steven M. Arnold, Christian Linder
	02:55 PM - 03:15 PM	ID 421: Effect of Particle Shape on the Fracture Toughness of Particle-Based Materials Author(s): Shahlaa Al Wakeel
	03:15 PM - 03:35 PM	ID 627: Innovative Design Tools to Efficiently Analyze Concrete Structures for High-Temperature Loading Author(s): William Orben, Colin Allen, Ethan Pennywitt
MS094: Mechanics and Physics of Granular Materials Chair(s): Ryan Hurley; Marcial Gonzalez; Yimin Lu; Dawa Seo; Alessandro Rotta Loria; Ali Daouadji		
VAC 1B20	02:15 PM - 02:35 PM	ID 391: Dynamic Characterization of Ballast Mechanical Properties Post-Tamping Maintenance Author(s): Ahmed El Saei, Usama El Shamy
	02:35 PM - 02:55 PM	ID 417: Scaling discrepancy on the screening of elongated and plate-shaped biomass particles Author(s): Weihe Sun, Yidong Xia, Jordan Klinger, Yimin Lu
	02:55 PM - 03:15 PM	ID 418: Granular deposition by dry pluviation: a discrete element study on segregation and packing mechanics Author(s): Jimin Park, Dawa Seo, Tae Sup Yun
	03:15 PM - 03:35 PM	ID 512: Entangled granular materials: Designing particles with barbs and hooks to maximize tensile strength Author(s): Youhan Sohn, Saeed Pezeshki, Francois Barthelat
MS041: Cementitious Materials: Experiments and Modeling Across the Scales Chair(s): Bernhard Pichler; Gilles Pijaudier-Cabot; Günther Meschke; Christian Hellmich; Franz Josef Ulm		
HUMN 1B80	02:15 PM - 02:35 PM	ID 1035: Characterization of a Cracked RC Beam using Synthetic Aperture Radar Imaging and the K-R-I Transform Author(s): Tzuyang Yu
	02:35 PM - 02:55 PM	ID 206: Differentiable Physics-Informed Learning for Multi-Scale Design of Fiber-Reinforced Cementitious Composites: From Micromechanics to Macroscopic Optimization Author(s): Jiawei ZHONG
	02:55 PM - 03:15 PM	ID 514: Next-Generation Concrete Reinforcement: The Case for Auxetic and Non-auxetic Steel Lattices. Author(s): Neeraj Sharma, Kshitij Kumar Yadav
	03:15 PM - 03:35 PM	ID 947: Impact of loading rate on dynamic response of aged concrete Author(s): Sannidhya Ghosh, Mija Hubler, Petros Sideris
MS075: Wildfire Impacts and Resilience in WUI Communities: From Field Data to AI-Driven Future Planning Chair(s): Serdar Selamet; Ertugrul Taciroglu; Negar Elhami-Khorasani; Sriram Narasimhan; Erica Fischer		
HUMN 250	04:00 PM - 04:20 PM	ID 298: A Multi-Level Framework for Modeling Wildfires in a Wildland-Urban Interface: Case Study of the 2025 Eaton Fire Author(s): Tanmay Vora, Seymour Spence, Ann Jeffers
	04:20 PM - 04:40 PM	ID 409: Automating Building-Level Fire Damage Classification with AI Using UW RAPID Post-Disaster Imagery Author(s): Barbaros Cetiner, Jeffrey Berman, Karen Dedinsky, Jaqueline Zdebski, Joseph Wartman

	04:40 PM - 05:00 PM	ID 434: Statewide Road Network–Specific Wildfire Risk Profiling Using Accelerated Fire Spread Models Author(s): Binita Dahal, Debasish Jana
	05:00 PM - 05:20 PM	ID 594: WUIgniS: A Physics-Informed and Inference-Guided Numerical Ignition Simulator for Wildland-Urban Interface Fire Spread Author(s): Devasmit Dutta, Patrick Nicholas Hadinata, Riyaaz Shaik, Ertugrul Taciroglu
	05:20 PM - 05:40 PM	ID 883: Inverse method quantification and validation of the hysteretic, temperature-dependent thermal properties of spray-applied fire resistive material (SFRM) up to 1100 °C Author(s): Jumari Robinson
	05:40 PM - 06:00 PM	ID 293: Quantifying residential ventilation ratios for wui fire risk Author(s): Serdar Selamet, Gamze Dogan, Zafer Yilmaz, Liana Wang, Ertugrul Taciroglu
MS007: Advances in Computer Vision, Deep Learning, & Artificial Intelligence for Structural Monitoring, Inspections, and Digital Twins Chair(s): Vedhus Hoskere; Mohammad Jahanshahi; Jian Li; Wei Song		
HUMN 135	04:00 PM - 04:20 PM	ID 917: Integrating Hierarchical Deep Learning and RAG-based LLM Agent for Rapid Post-earthquake Building Damage Assessments Author(s): CHENG-JU TSAI, Rih-Teng Wu
	04:20 PM - 04:40 PM	ID 945: CrackSegFlow: Controllable Flow Matching Synthesis for Generalizable Crack Segmentation with a 50K Image–Mask Benchmark Author(s): Babak Asadi, Peiyang Wu, Mani Golparvar-Fard, Ramez Hajj
	04:40 PM - 05:00 PM	ID 976: An Uncertainty-Aware Computer Vision Approach to Quantifying Element-Level Conditions in Bridges Author(s): Parham Bakhtiari, Mohsen Zaker Esteghamati
	05:00 PM - 05:20 PM	ID 965: Efficient UAV Bridge Inspection by Integrating Risk-Informed Decision-Making, LLM-Powered Deterioration Modeling, and Occlusion-Aware Coverage Analysis Author(s): Delaram Hassanlou, Vedhus Hoskere
	05:20 PM - 05:40 PM	ID 1017: BridgeEQA: Virtual Embodied Agents for Real Bridge Inspections Author(s): Subin Varghese, Joshua Gao, Asad Rahman, Vedhus Hoskere
MS017: Learning-Based Structural Health Monitoring Under Limited Damage Data: Adaptation, Transfer, and Unsupervised Approaches Chair(s): Xiao Liang; Kareem Eltouny; Jian Li		
HUMN 125	04:00 PM - 04:20 PM	ID 70: Domain-Adaptive Signal Segmentation for Vortex-Induced Vibration Detection Across Long-Span Bridges Author(s): Sunho Lee, Sunjoong Kim
	04:20 PM - 04:40 PM	ID 226: Consistency-guided Model-contrastive Federated Learning for Scalable Road Damage Detection Author(s): Ziluo Xiong, Gaofeng Jia
	04:40 PM - 05:00 PM	ID 466: Complexity-Aware Curriculum Learning with Iterative Annotation and Refinement for Damage Segmentation Author(s): Vahidreza Gharehbaghi, Jian Li, Hang Zhao, Rémy D. Lequesne, Caroline Bennett
	05:00 PM - 05:20 PM	ID 690: Active Learning for Surrogate-Assisted Structural Model Updating in a Sensitivity Based Singular Value Decomposition Reduced Subspace Author(s): Tazwar Bakhtiyar Zahid, Xiao Liang

	05:20 PM - 05:40 PM	ID 692: A Generative Model-Assisted FEMU Framework for Localized Structural Damage Identification Author(s): Ben Li, Xiao Liang
	05:40 PM - 06:00 PM	ID 693: Structural Damage detection under Severe Data Scarcity via Instance Reweighting Approach Author(s): Yifeng Zhang, Xiao Liang
MS022: Integration of Physics-based Models with Data for Identification, Monitoring, Estimation, and Uncertainty Quantification Chair(s): Yang Wang; Hamed Ebrahimian; Babak Moaveni; Haeyoung Noh		
HUMN 1B50	04:00 PM - 04:20 PM	ID 634: Hierarchical Gaussian Process Modeling of Modal Quantities Residuals for Bayesian Updating of Structural Systems Author(s): Eleonora Maria Tronci, Mingming Song, Babak Moaveni
	04:20 PM - 04:40 PM	ID 706: Physics-Guided Neural-Operator-Based Hybrid Digital Twins for Probabilistic Structural Damage Detection Author(s): Sikandar Ali Khokhar, Zixin Wang, Mohammad Reza Jahanshahi
	04:40 PM - 05:00 PM	ID 717: Model-Assisted Force Identification in Truss Bridges Using Deep Learning Author(s): Hyunjoong Kim, Sebastian Aviles
	05:00 PM - 05:20 PM	ID 839: Multiphysics Modeling and Model Updating of a Jacket-Supported Offshore Wind Turbine Using Measured Vibration and SCADA Data Author(s): Nasim Partovi-Mehr, Rad Haghi, Babak Moaveni, Eric Hines
	05:20 PM - 05:40 PM	ID 854: A Proposition on the Solvability of Dynamic Model Updating Problems Author(s): Harry Ashimatey, Dahye Han, Santanu Dey, Yang Wang
	05:40 PM - 06:00 PM	ID 972: Quantifying Long-Term Sensor Aging in a Field-Deployed Accelerometer Network Author(s): Manuel Salmeron, Shirley Dyke, Monica Kohler
MS026: Modeling of Materials with Interfaces and Scales Using Physics-Based and Machine-Learning Methods Chair(s): Xiang Zhang; Pinlei Chen; Kamalendu Ghosh; Balavignesh Vemparala Narayana Murthy; Ravindra Duddu; Soheil Soghrati; Reza Abedi		
HUMN 150	04:00 PM - 04:20 PM	ID 789: Numerical Methods with Computational Intelligence for Materials Processing and Layered Additive Manufacturing Author(s): Arif Masud, Ignasius Wijaya
	04:20 PM - 04:40 PM	ID 790: Elastomers filled with liquid inclusions: Theory, numerical implementation, and results Author(s): Kamalendu Ghosh
	04:40 PM - 05:00 PM	ID 849: Variational multiscale enrichment method for dynamic response of hyperelastic composites at finite deformation Author(s): Abhishek Arora, Gloria Odenyo, Caglar Oskay
	05:00 PM - 05:20 PM	ID 885: ϕ-DeepONet: A Discontinuity-Capturing Neural Operator Author(s): Sumanta Roy, Stephen T Castonguay, Pratanu Roy, Michael D. Shields
	05:20 PM - 05:40 PM	ID 926: Elasto-Plastic Material Response with Neural Operators Author(s): Meer Mehran Rashid, Lori Graham-Brady
	05:40 PM - 06:00 PM	ID 1019: Interface-Aware PINN Frameworks for Mechanical Response of Composite Materials: Comparative Analysis Author(s): Ali Hodaei, Maryam Shakiba
MS024: Experimental Mechanics in the Age of Big Data: Design, Sensing, and Integration Chair(s): Yiwen Dong; Kostas Kalfas; Mehrdad Aghagholizadeh		
HUMN 1B90	04:00 PM - 04:20 PM	ID 348: LLM-Assisted Pseudo-Experiment Generation for Physics-Based Synthesis of Structural Response Data Author(s): Ziluo Yao, Jinsi Guo, Billie F. Spencer Jr., Yiwen Dong

	04:20 PM - 04:40 PM	ID 390: Full field Dynamic Deformation of Passive Adaptive Marine Current Turbine Blades using Digital Image Correlation Author(s): Trevor Zalud, Katherine Van Ness, Richard Wiebe, Owen Williams
	04:40 PM - 05:00 PM	ID 653: Humidity and temperature effects in sand dampers Author(s): Kostas Kalfas, Liang Cao, Usama El Shamy, James Ricles, Nicos Makris
	05:00 PM - 05:20 PM	ID 679: Field measurements of passive adaptive blades for a marine current turbine using fiber optic strain sensing Author(s): Katherine Van Ness, Justin Burnett, Benjamin Cunningham, Jesse Dosher, Tracy Tran, Harlin Wood, Christopher Bassett
	05:20 PM - 05:40 PM	ID 188: Hybrid Experimental-Computational Framework for Modeling Deployable Ground Anchors Author(s): Khuzaima Hummad, Ann C. Sychterz
	05:40 PM - 06:00 PM	ID 648: Hypernetwork-Based Structural Response Estimation Across Variable Structural Configurations Author(s): Haifeng Wang
MS049: Mechanics of Soft Synthetic and Biological Materials: Theory, Simulation, and Experiment Chair(s): Berkin Dortdivanlioglu; Aditya Kumar; Raudel Avila		
CLUB 4-5	04:00 PM - 04:20 PM	ID 63: Reproducing Biological Catch Bonds in Simple Newtonian Mechanical Systems Author(s): Kerim C. Dansuk
	04:20 PM - 04:40 PM	ID 250: Homogenization-based micromechanics model for polydomain liquid crystal elastomers Author(s): Tingting Xu, Thao D. Nguyen
	04:40 PM - 05:00 PM	ID 428: Simulation of Blood Clots Under Mechanical Loads Author(s): Morteza Ghiyasi Varzaghan, Hamidreza Marvi
	05:00 PM - 05:20 PM	ID 437: A Hybrid FE-Neural Network Approach for Real-Time Prediction of Hyperelastic Cardiac Valve Mechanics Author(s): Maedeh Makki, Chung-Hao Lee, Maziar Raissi
	05:20 PM - 05:40 PM	ID 610: Smart flexible minimally invasive probe for electrophysiological signal monitoring and diagnosis Author(s): Aishwarya Pravin Kakade, Jianliang Xiao
	05:40 PM - 06:00 PM	ID 73: Characterization of Multifunctional Properties of Biofidelic Solid-Liquid Composites Author(s): Vinu Unnikrishnan, Karthik Kundapur, Francis Nwokwu, Oyshrojo Talukder
MS047: Mechanics and Data-Driven Innovations in Road Paving Materials Chair(s): Augusto Cannone Falchetto; Ramez Hajj		
CASE E230	04:20 PM - 04:40 PM	ID 557: Hybrid Machine Learning and Mechanistic Back Calculation Approach for Predicting Surface Layer Modulus of Rigid Pavements Using LTPP Data Author(s): Usama Asif, Osama Aljarrah, Jongwan Eun
	04:40 PM - 05:00 PM	ID 104: A Sustainable Method to Recycle Waste Plastic as Fiber into Asphalt Mixes Author(s): Daeeui Hong, Songsu Son
	05:00 PM - 05:20 PM	ID 120: Probabilistic Investigation of TSD-induced Critical Strains in Multi-layer Pavement Systems Author(s): Ze Zhou Wang, Zhaojie Sun, Bachar Hakim, Abir Al-Tabbaa
	05:20 PM - 05:40 PM	ID 934: Moisture Susceptibility and Meso-Structural Evolution of High-RAP Asphalt Mixtures after Multiple Recycling Cycles Author(s): Yuxuan Sun, Fan Zhang, Di Wang, Weiwei Lin, Augusto Cannone Falchetto

MS061: Topology Optimization: from Algorithmic Developments to Applications Chair(s): Mazdak Tootkaboni; Chuan Luo; Josephine Carstensen; Shelly Zhang; James Guest		
CASE E240	04:00 PM - 04:20 PM	ID 652: Level-Set Topology Optimization with XIGA in Finite-Strain Contact Problems Author(s): Anna Chotzalli, Kurt Maute
	04:20 PM - 04:40 PM	ID 654: A comparison of methods to compute geometric measures for gradient-based level-set topology optimization Author(s): Brendan Chong, Kurt Maute
	04:40 PM - 05:00 PM	ID 666: Optimizing for Connections: How Surrounding Structures Experimentally Impact the Performance of Interlocking Joints Author(s): Inés Ortea Varela, Zane Schemmer, Anthony Koh, Josephine Carstensen
	05:00 PM - 05:20 PM	ID 669: 3D Truss-Continuum Topology Optimization of Reinforced Concrete Floor with Demolding Constraint Author(s): Pitipat Wongsittikan, Jackson Jewett, Josephine Carstensen
	05:20 PM - 05:40 PM	ID 896: Leveraging Human Knowledge to Improve Multi-Material Topology Optimization Author(s): Jacqueline Orr, Josephine Carstensen
	05:40 PM - 06:00 PM	ID L2: Simultaneous Optimization of Topology and Local Material for Functionally Graded Structures
MS053: Tensegrity – Form finding, analysis, mechanical behaviour, control, and design of tensegrity and tensegrity-like systems Chair(s): Landolf Rhode-Barbarigos; Muhao Chen; Ajay Harish		
KTCH 1B87	04:00 PM - 04:20 PM	ID 550: Preliminary investigations on a mobile tensegrity robot with shape transformation possibility between a Tetrahedron and an Octahedron Author(s): Lukas Lehmann, Sumit Kumar, Subhamoy Sen, Valter Böhm, Landolf Rhode-Barbarigos
	04:20 PM - 04:40 PM	ID 664: Tensegrity Free-Free Beam: Design and Analysis Author(s): Benjamin Ingalls, Manoranjan Majji
	04:40 PM - 05:00 PM	ID 723: Generation and Transformation of Multistate Tensegrity Systems via Cellular Morphogenesis Author(s): Sumit Kumar, Landolf Rhode-Barbarigos
	05:00 PM - 05:20 PM	ID 792: Invariant dual mechanics of tensegrity and origami Author(s): Xiangxin Dang, Glaucio Paulino
	05:20 PM - 05:40 PM	ID 980: Morphological Design and Parametric Characterization of Core-Expander Tensegrity Structures Author(s): Muhao Chen, Aguinaldo Fraddosio, Andrea Micheletti, Gaetano Pavone, Mario Daniele Piccioni
	05:40 PM - 06:00 PM	ID 1006: Data-Driven Control of Tensegrity Robots for Reference Tracking and Obstacle Avoidance Author(s): Muhao Chen
MS065: Advanced Computational Methods for Uncertainty Propagation and Risk Assessment in Engineering Chair(s): Liuyun Xu; Meng-Ze Lyu; Seymour Spence; Jian-Bing Chen; Michael Beer		
GUGG 205	04:00 PM - 04:20 PM	ID 147: Decoupled multi-probability density evolution method for uncertainty propagation and risk assessment in nonlinear engineering systems Author(s): Meng-Ze Lyu, De-Cheng Feng, Jian-Bing Chen, Michael Beer, Jie Li
	04:20 PM - 04:40 PM	ID 274: Subset Simulation with a Modified Component-wise Intrepid MCMC Sampler for Structural Reliability Estimation Author(s): Adwait Sharma, Promit Chakroborty, Michael Shields

	04:40 PM - 05:00 PM	ID 299: A decoupled density-evolution framework for dynamic reliability of engineering structures with multiple failure criteria Author(s): Yongfeng Zhou, Jie Li
	05:00 PM - 05:20 PM	ID 414: Quantifying Thermal Failure Risk for NASA's Dragonfly Titan Entry Under Chemical–Radiative Uncertainty Author(s): Audrey Gaymann, Alireza Doostan, Michael Sands, Sung Min Jo
	05:20 PM - 05:40 PM	ID 505: High-Dimensional Emulation of Hurricane-Driven Coastal Flood Evolution using Hybrid Neural Networks Author(s): Liuyun Xu, Sejin Kim, Seymour M.J. Spence
	05:40 PM - 06:00 PM	ID 603: Generative AI-enhanced Probabilistic Multi-Fidelity Surrogate Modeling Via Transfer Learning Author(s): Jice Zeng, David Barajas-Solanoa, Hui Chen
MS068: Surrogate Modeling for Uncertainty Quantification, Optimization, and Statistical Inference in Engineering Applications Chair(s): Alexandros Taflanidis; Bruno Sudret; Abdollah Shafieezadeh; Gaofeng Jia; Min Li		
ECON 119	04:00 PM - 04:20 PM	ID 853: Robust Design Optimization under Dependent Random Variables by a Generalized Polynomial Dimensional Decomposition Author(s): Muhammad Talukdar, Sharif Rahman
	04:20 PM - 04:40 PM	ID 878: A study of reduced stochasticity Bayesian neural networks with application to surrogate modeling of power flow solvers Author(s): Nicholas Casaprima, Somayajulu L. N. Dhulipala, Audrey Olivier, Bjorn Vaagensmith
	04:40 PM - 05:00 PM	ID 943: Differentiable Predictive Control for Rapid Flood Mitigation Author(s): Graham Hults, Susu Xu, Ján Drgoňa
	05:00 PM - 05:20 PM	ID 1007: An Efficient Arbitrary-Order Sensitivity Analysis Method Using Hybrid Hypercomplex Automatic Differentiation for Finite Element Models Author(s): Mauricio Aristizabal, Manuel Garcia
	05:20 PM - 05:40 PM	ID 968: Optimal design of experiments: An approach based on differential geometry-inspired scoring measures: Author(s): David Gillcrist, Arghavan Louhghalam, Yanlai Chen, Mazdak Tootkaboni
MS074: Innovations in CFD and FSI: Rigorous Methods with Practical Applications Chair(s): Yuri Bazilevs; Ming-Chen Hsu; Artem Korobenko; Georgios Moutsanidis; Jinhui Yan		
CHEM 140	04:00 PM - 04:20 PM	ID 718: A Particle-Based Fluid–Structure Interaction Framework for Brittle Fracture under Extreme Hydrodynamic Loading Author(s): George Moutsanidis, Mohammad Naqib Rahimi
	04:20 PM - 04:40 PM	ID 787: Dynamic Fluid-Structure Interaction at the Atomic Limit Author(s): Narayana Aluru
	04:40 PM - 05:00 PM	ID 944: A stabilized finite element formulation for fluid-structure interaction with non-conforming interfaces Author(s): Yusuf Salaudeen, Ghadir Haikal
	05:00 PM - 05:20 PM	ID 984: A Volterra Theory-Guided Network for Modeling Nonlinear Post-flutter Behaviors of Solar Trackers Author(s): Seyed Pejman Fatehi, Yanlin Guo, Teng Wu
	05:20 PM - 05:40 PM	ID 1037: Determination of Wave Transmission Coefficients for a Moored Floating Breakwater Author(s): Jacob Milliken, Christopher Denney
	05:40 PM - 06:00 PM	ID 134: Simulation of hydrodynamic loading on navigation lock miter gates Author(s): J. Ezequiel Martin, Christopher R. Denney

MS078: Wind, surge-wave, flooding and their impacts on infrastructure systems and coastal land Chair(s): Chao Sun; Celalettin Ozdemir		
UMC 247	04:00 PM - 04:20 PM	ID 778: High-Resolution Numerical Modeling of Near-Field Free-Surface and Ground Response to Impulsive Marine Events Author(s): Ryan Denney, Jacob Milliken
	04:20 PM - 04:40 PM	ID 837: The Effects of Debris Impact and Damming on Prestressed Girders Due to Flooding Author(s): Nida Virabalin
	04:40 PM - 05:00 PM	ID 986: Measuring Coastal Conditions during the 2024 Atlantic Hurricane Season Using an Advanced Wind-Surge-Wave Experimental Platform (Project Sentinel) Author(s): Ehsan Ahmadi Afzadi, Zanti Rains, Brian Phillips, Justin Davis, Forrest Master, Chris Ferraro, Pedro Fernández-Cabán, Britt Raubenheimer, Elise Morrison, Maitane Olabarrieta
	05:00 PM - 05:20 PM	ID 915: Numerical Investigation of Reduction in Wave and Current Loads on Coastline Structures behind Nature-Based Defense Author(s): Navid Tahvildari, Abdollah Ojaghi, Pedro Lomonaco
	05:20 PM - 05:40 PM	ID 646: Seismic response of a resilient and sustainable system via real-time hybrid simulation Author(s): Kostas Kalfas, Liang Cao, James Ricles, Nicos Makris
	05:40 PM - 06:00 PM	ID 608: A Semi-Analytical 3D Linear Tropical Cyclone Boundary Layer (TCBL) Model Driven by Asymmetric Gradient Winds Author(s): Ahsan Kareem
MS090: 10th Mini-Symposium on 4M (Modeling of Multiphysics, Multiscale, Multifunctional) Engineering Materials and Structures Chair(s): Yong-Rak Kim; Huiming Yin; Chung Song; Jianqiang Wei		
UMC 415-417	04:00 PM - 04:20 PM	ID 904: Predictive Modeling of Sediment Erosion Rates under Flow through a Physics-Informed Machine Learning Author(s): Dong Hyun Kim, Yurhee Ahn, Yong-Rak Kim
	04:20 PM - 04:40 PM	ID 912: Enhanced reliability of nanocomposite sensors with AC method Author(s): Byung-Wook Kim, Jinming Zhang, Huiming Yin
	04:40 PM - 05:00 PM	ID 955: A Physics and Chemistry-Informed Phase-Field Constitutive Framework for Thermo-Oxidative Aging of Semi-Crystalline Polyimide Author(s): Marwa Yacouti, Santiago Marin Jimenez, Maryam Shakiba
	05:00 PM - 05:20 PM	ID 1029: From Idealized to Realistic Pores: Phase-Field Fracture Modeling of Porous Materials Author(s): Ryan Nielsen, Pania Newell
	05:20 PM - 05:40 PM	ID 914: Influence of Composition on Calcium Silicate Hydrate: from Atomic Structure to Macro-Performance Author(s): Jianqiang Wei
	05:40 PM - 06:00 PM	ID 237: Coupled Shrinkage and Hydro-Mechanical Behavior of Carbon Fiber–Reinforced Bentonite Author(s): Yuan Feng, Jongwan Eun, Semih Ciftci
MS091: Advances in Modeling of Material Damage and Fracture Chair(s): Mostafa Mobasher; Lampros Svolos; Aditya Kumar; Georgios Moutsanidis; Alessandro Fascetti; Ravindra Duddu; Haim Waisman		
UMC 382-384-386	04:00 PM - 04:20 PM	ID 493: Phase-Field Modeling of Fracture in Multiphase, Rate- and Temperature-Dependent Materials Author(s): Rogelio Muneton-Lopez, Oliver Giraldo-Londono
	04:20 PM - 04:40 PM	ID 597: Why planar cracks fragment into echelon cracks Author(s): Aditya Kumar, Olivia Ward

	04:40 PM - 05:00 PM	ID 625: Strength-Based Orthotropic Phase-Field Fracture Model for 3D-Printed Materials Author(s): Bishal Koirala, Lampros Svolos
	05:00 PM - 05:20 PM	ID 197: A full-Stokes phase field fracture model for simulating creeping flow and brittle fracture of glaciers Author(s): Ashvin Oli, Tim Hageman, Abhinav Gupta, Ravindra Duddu
	05:20 PM - 05:40 PM	ID 675: Efficient Phase-Field Fracture Modeling Using the I-FENN Framework Author(s): Lampros Svolos, Prakash Dulal, Panos Pantidis, Diab Abueidda, Mostafa Mobasher
	05:40 PM - 06:00 PM	ID 780: Arbitrary-order virtual element methods for high-order phase-field modeling of ductile fracture Author(s): Yu Leng, Hashem Mourad
MS094: Mechanics and Physics of Granular Materials Chair(s): Ryan Hurley; Marcial Gonzalez; Yimin Lu; Dawa Seo; Alessandro Rotta Loria; Ali Daouadji		
VAC 1B20	04:00 PM - 04:20 PM	ID 513: High and low-speed penetration of "architected" FCC granular crystals: Experiments and models Author(s): Ashta Navdeep Karuriya, Francois Barthelat
	04:20 PM - 04:40 PM	ID 521: Impact mechanics of FCC granular crystals: Experiments and models. Author(s): Armin Yousefi, Francois Barthelat
	04:40 PM - 05:00 PM	ID 614: Exotic Metamaterials Conceived using Granular Micromechanics Author(s): Anil Misra
	05:00 PM - 05:20 PM	ID 808: Micromechanical origins of changes in shear localisation in cemented sands Author(s): Anne-Catherine Dieudonné, Aoxi Zhang, Antoine Wautier, Frédéric Collin
	05:20 PM - 05:40 PM	ID 886: A Micromechanics-based Hyperelastic Framework for Anisotropic Granular Materials Author(s): Hongwei Wu, Giuseppe Buscarnera
MS100: Computational Geomechanics Chair(s): Hyoung Suk Suh; Shabnam Semnani; Jinhyun Choo; WaiChing Sun; Craig Foster; Richard Regueiro; Ronaldo Borja		
HUMN 1B80	04:00 PM - 04:20 PM	ID 422: Computational Modeling and Validation of Wave Barriers for Mitigating Train-Induced Vibrations Author(s): Isaac Banes, Kanishka Kolhatkar, Ryan Shin, Craig Foster
	04:20 PM - 04:40 PM	ID 735: A phase-field model for fractured poroelastic rocks under cyclic fluid injection Author(s): Sabrina CY Ip, Mengsu Hu
	04:40 PM - 05:00 PM	ID 794: Considerations in Development of Ground Movement Prediction by Tunnel Boring Machine - Ground Interaction Digital Twins Author(s): Joseph Verkler
	05:00 PM - 05:20 PM	ID 803: Validation of Numerical Models to Simulate Robotic Muscle Actuation in Soil Author(s): Austin Hoyle, Hyun-Woo Joo, Mike Mooney
	05:20 PM - 05:40 PM	ID 1026: Forecasting land subsidence due to groundwater withdrawal in the San Joaquin Valley, California and in Yunlin, Taiwan Author(s): Ronaldo Borja, Yangqing Sun, Chih-Yu Liu, Nan-Chieh Chao, WeiCheng Lo
	05:40 PM - 06:00 PM	ID 106: Dual-Skeleton Effective Stress Modeling for Frozen Soils and Artificial Ground Freezing Author(s): Yingxiao Liu, WaiChing Sun, Ronaldo Borja

Wednesday, June 3, Early Afternoon Sessions, 2:15 PM - 3:35 PM

MS007: Advances in Computer Vision, Deep Learning, & Artificial Intelligence for Structural Monitoring, Inspections, and Digital Twins Chair(s): Vedhus Hoskere; Mohammad Jahanshahi; Jian Li; Wei Song		
HUMN 250	02:15 PM - 02:35 PM	ID 636: Edge Computing-Based Image Acquisition and Stitching for Infrastructure Inspection in Confined Environments Author(s): Shufan Liu, Shanyue Guan, ChengCheng Tao, Huaixiao Yan, Yongfei Li, Xiaoli Xiong
	02:35 PM - 02:55 PM	ID 663: Error Analysis and Prediction of Structural Motion Measured by Stereo Vision Systems Author(s): Garrett Jankord, Liang Hu, Yanlin Guo
	02:55 PM - 03:15 PM	ID 709: Human-Centered Corrosion Inspection of Steel Bridges Using Augmented Reality and Meta-Ensemble Learning Author(s): Luke Attard, Saeid Ataei, William Collins, Caroline Bennett, Jian Li
	03:15 PM - 03:35 PM	ID 899: Vision-Based Assessment of Extrudability in 3D Printed Concrete Using Data-Efficient Machine Learning Author(s): Sama Taha, Oral Buyukozturk
MS004: Computer vision and vibration-based damage identification using machine and deep learning Chair(s): YoungJin Cha; Oral Buyukozturk		
HUMN 135	02:15 PM - 02:35 PM	ID 139: Underwater Image Enhancement for Robust Structural Vibration Estimation in the Underwater Environment Author(s): Enjian Cai, Zihan Wu, Michael D. Todd, Zhen Hu
	02:35 PM - 02:55 PM	ID 381: Hidden Crack Segmentation Using Multimodal Deep Learning with Multispectral Thermal Imaging Author(s): Elaheh Mohammadikhah, YoungJin Cha
	02:55 PM - 03:15 PM	ID 376: Autonomous UAV-Based Advanced 3D Reconstruction for Structural Health Monitoring of Civil Infrastructure Author(s): Qasim Bin Saeed, YoungJin Cha
	03:15 PM - 03:35 PM	ID 90: Conditional GANomaly: Unsupervised Damage Detection for Connectors in Modular Floating Structures Author(s): Siyun Park, Sunjoong Kim
MS002: Repurposing Urban Data Streams for Scalable Infrastructure Monitoring Chair(s): Jingxiao Liu; Furkan Luleci; Liangfu Ge; Zhenkun Li; Debasish Jana; Valentina Giglioni		
HUMN 125	02:15 PM - 02:35 PM	ID 366: LiDAR and Satellite-Based Sensing for Ground Movements Author(s): Bozhou Zhuang, Debasish Jana, Sriram Narasimhan, Yousef Bozorgnia
	02:35 PM - 02:55 PM	ID 545: Bridge Monitoring Using Pre-Existing Telecommunication Fiber-Optic Networks Author(s): Jingxiao Liu, Jatin Aggarwal, Doyun Hwang, Biondo Biondi, Hae Young Noh
	02:55 PM - 03:15 PM	ID 76: Graph-Based Deep Reinforcement Learning for Resilience-Oriented Decision-Making in Critical Infrastructure System Author(s): Xudong (Andrew) Fan, Jürgen Hackl, Xiong (Bill) Yu
	03:15 PM - 03:35 PM	ID 714: Investigating Fault Activation in Enhanced Geothermal Systems Using Microseismic and Low-Frequency Distributed Acoustic Sensing Author(s): Jingxiao Liu, Linqing Luo, Nori Nakata

MS022: Integration of Physics-based Models with Data for Identification, Monitoring, Estimation, and Uncertainty Quantification Chair(s): Yang Wang; Hamed Ebrahimian; Babak Moaveni; Haeyoung Noh		
HUMN 1B50	02:15 PM - 02:35 PM	ID 313: Physics-Encoded Deep Learning CQC Method for Direct Floor Response Spectrum Estimation Author(s): Dongjin Kim, Qiujin Ma, Oh-Sung Kwon, Junho Song
	02:35 PM - 02:55 PM	ID 337: Physics-Based Model Calibration and Uncertainty Quantification of Transient Seepage in Levees Using Field Measurements Author(s): Hossein Bazdar, Farshid Vahedifard, Babak Moaveni
	02:55 PM - 03:15 PM	ID 541: Constrained Ensemble Kalman Inversion with DeepONet Surrogates for Finite-Element Model Updating: Application to Seismic Response of Dry Storage Casks Author(s): Ahmed Yaseen, Elnaz Seylabi
	03:15 PM - 03:35 PM	ID 579: Hybrid Residual Learning for Unscented Kalman Filters Author(s): Shayan Mazloom, Abdollah Shafieezadeh, Jieun Hur, Jae-Wook Jung, Jeong-Gon Ha, Daegi Hahm
	02:15 PM - 02:35 PM	ID 419: A gradient-enhanced phase-field model for ductile fracture at finite strain Author(s): Giang Huynh, Benjamin Spencer
	02:35 PM - 02:55 PM	ID 439: Machine Learning-Enriched RKPM for Image-Based Modeling of Crack Propagation in Composite Materials Author(s): Yanran Wang, Jiun-Shyan (J.S.) Chen
	02:55 PM - 03:15 PM	ID 487: Effect of Spatial Correlation on Extreme-Value-Based Upscaling of Fatigue Nucleation Author(s): Anik Das Anto, Erdem Caliskan, Massimiliano Lupo Pasini, Stephanie TerMaath, Reza Abedi
	03:15 PM - 03:35 PM	ID 632: A Refined the Variational Multiscale Enrichment Method for Selective Interfacial Modeling in Heterogeneous Solids Author(s): Hye-eun Kong, Pinlei Chen
MS034: Machine Learning Applications in Natural Hazards Engineering for Enhancing Civil Infrastructure Resilience Chair(s): Pedro Fernandez-Caban; Haifeng Wang		
HUMN 1B90	02:15 PM - 02:35 PM	ID 181: Hypernetwork-Based Adaptive Response Prediction for Structural Dynamics Author(s): Dominik Weiss, Konstantinos Vlachas, Pantelis Vlachas, Eleni Chatzi
	02:35 PM - 02:55 PM	ID 262: Real-Time Urban Flood Forecasting Using a Machine-Learning Surrogate Trained on Automated HEC-RAS 2D Simulations Author(s): Muhammad Waqar Saleem, Binbin Wang
	02:55 PM - 03:15 PM	ID 450: PhyULSTM: Integrating Slow Feature U-net and LSTM with Physics-Based Regularisation for Seismic Surrogate Modeling Author(s): Sutirtha Biswas, Kshitij Kumar Yadav
	03:15 PM - 03:35 PM	ID 602: Leveraging Machine Learning to Predict Effective Roof Cover Age and Assess Roof Cover Vulnerability Author(s): Jorge Santiago-Hernandez, Amin Enderami, Arpit Bhusar, Oscar Lafontaine, Daniel Smith
MS086: Complex Dynamics Modeling and Vibration Control of Infrastructure Systems Under Single/Multiple Hazards Chair(s): Chao Sun; Mariantonieta Soto; Zhen Sun; Zili Zhang		
CLUB 4-5	02:15 PM - 02:35 PM	ID 662: A Molecular-Dynamics-Inspired Lattice Element Method for Dynamic Structural Response Author(s): Ermia Pourvaghar, Mazdak Tootkaboni, Arghavan Louhghalam
	02:35 PM - 02:55 PM	ID 774: Experimental Investigation on Hydro-elastic Response of Sea-Crossing Cable-Stayed Bridge under Spatial Concurrent Wave and Current Conditions Author(s): Kai Wei, Haoyu Li

	02:55 PM - 03:15 PM	ID 963: Modeling Slab–Wall–Column Interaction in Tall Core Wall Buildings Under Earthquake Loading Author(s): Connie Chen, Jack Moehle
	03:15 PM - 03:35 PM	ID 979: Development of Response-Based Decoupling Criteria for Acceleration-Sensitive Nonstructural Components Author(s): Goktug Tufekci, Dimitrios Konstantinidis
MS038: Mechanics and Modeling of Durable and Resilient Pavements Chair(s): Jamilla Teixeira; Shane Underwood; Nam Tran; Ramez Hajj		
CASE E230	02:15 PM - 02:35 PM	ID 843: Validation of Permanent Deformation using Pavement Analysis Using Nonlinear Damage Approach (PANDA) against test sections at National Airport Pavement and Materials Research Center (NAPMRC) Author(s): Ghaith Khresat, Masoud Darabi
	02:35 PM - 02:55 PM	ID 875: Effects of RAP aging level on non-linear viscoelastic cohesive zone model parameters of recycled asphalt mixtures Author(s): Farzad Yazdipanah, Jamilla Teixeira
	02:55 PM - 03:15 PM	ID 897: Coupled Hydromechanical Modeling of Moisture Diffusion and Damage Evolution in Flexible Pavements Author(s): Ryah Nadjafi, Maryam Shakiba
	03:15 PM - 03:35 PM	ID 964: Mechanistic Assessment of Binder Rejuvenation and Tensile Performance in 100% RAP Asphalt Mixtures Author(s): Jeffrey Krebs, Jacob Kuhn, Md Islam, Chris Wacinski, Gregory George, Saqib Gulzar, Hasan Faisal
MS061: Topology Optimization: from Algorithmic Developments to Applications Chair(s): Mazdak Tootkaboni; Chuan Luo; Josephine Carstensen; Shelly Zhang; James Guest		
CASE E240	02:15 PM - 02:35 PM	ID 500: Topology optimization of anisotropic multi-material structures under local stress constraints Author(s): Juan Pablo Giraldo-Isaza, Oliver Giraldo-Londoño
	02:35 PM - 02:55 PM	ID L3: Two-state topology optimization for adaptable structures
	02:55 PM - 03:15 PM	ID 549: Optimal Reinforcement Layout in Anisotropic 3D Printed Concrete Structures with Mechanical and Connectivity Constraints Author(s): Sri Keerthana Chakravarthula, Petros Sideris, Eric Kreiger
	03:15 PM - 03:35 PM	ID 617: Uncertainty Aware Multi Scale Design of Stress Constrained Mechanical Metamaterials Author(s): Abhinav Gupta, Ravindra Duddu, Rajib Chowdhury
MS053: Tensegrity – Form finding, analysis, mechanical behaviour, control, and design of tensegrity and tensegrity-like systems Chair(s): Landolf Rhode-Barbarigos; Muhao Chen; Ajay Harish		
KTCH 1B87	02:15 PM - 02:35 PM	ID 243: Form finding and analysis of 3D super-stable tensegrities Author(s): Borui Xu, Xiangxin Dang, Glaucio Paulino
	02:35 PM - 02:55 PM	ID 1004: Enantiomerism and phase transformations in tensegrity structures Author(s): tarisha moncrief, Mohammad hodaei, Joshua Jones, Anil Misra, Nikhil Admal, Ranganathan Parthasarathy, Youngjae Choi
	02:55 PM - 03:15 PM	ID 1040: Bistable origami thermal switch with ultra-high switching ratios Author(s): Ke Liu
	03:15 PM - 03:35 PM	ID 537: On the performance of sub-problem solvers for stress-constrained topology optimization using the augmented Lagrangian method Author(s): Camdon Murphy, Juan Pablo Giraldo-Isaza, Oliver Giraldo-Londoño

MS065: Advanced Computational Methods for Uncertainty Propagation and Risk Assessment in Engineering Chair(s): Liuyun Xu; Meng-Ze Lyu; Seymour Spence; Jian-Bing Chen; Michael Beer		
GUGG 205	02:15 PM - 02:35 PM	ID 993: A Probabilistic Digital Twin Framework for Optimal Sensing and Seismic Monitoring of Structural Systems Author(s): Milad Roohi
	02:35 PM - 02:55 PM	ID 1020: Bayesian Updating of Structural, Nonstructural, and Isolation Parameters of a Base-Isolated Building Using Surrogate Models Author(s): Kléver Gastón Parra, Rodrigo Astroza, Saeed Eftekhar Azam
	02:55 PM - 03:15 PM	ID 764: Community-Scale Hurricane Risk Assessment Considering Wind–Water Interaction Author(s): Sejin Kim, Liuyun Xu, Srinivasan Arunachalam, Seymour Spence, Jeremy Bricker
	03:15 PM - 03:35 PM	ID 1009: Time-Dependent Structural Capacity Models for Performance-Based Design of Floating Offshore Wind Turbine Structures Author(s): Pawan Chand, Doeun Choe
MS068: Surrogate Modeling for Uncertainty Quantification, Optimization, and Statistical Inference in Engineering Applications Chair(s): Alexandros Taflanidis; Bruno Sudret; Abdollah Shafieezadeh; Gaofeng Jia; Min Li		
ECON 119	02:15 PM - 02:35 PM	ID 520: An Approach for Reduced-Order Modeling with the Lattice Boltzmann Method for Applications in Wellbore Isolation Fluid Simulations Author(s): Ali Farahani, Carlos Garcia, John Brigham
	02:35 PM - 02:55 PM	ID 721: Bayesian Deep Learning for Aleatoric and Epistemic Uncertainty Propagation in Nonlinear Structural Dynamics Author(s): Manisha Sapkota, Min Li, Bowei Li
	02:55 PM - 03:15 PM	ID 742: A Graph Attention Transformer for Real-Time Economic Dispatch Author(s): Wenwen Han, Roger Ghanem
	03:15 PM - 03:35 PM	ID 824: Functional Generative Neural Operators for Coherent Aleatory and Epistemic Uncertainty Quantification in Flood Forecasting Author(s): Mehdi Taghizadeh, Zanko Zandsalimi, Majid Shafiee-Jood, Negin Alemazkoor
MS074: Innovations in CFD and FSI: Rigorous Methods with Practical Applications Chair(s): Yuri Bazilevs; Ming-Chen Hsu; Artem Korobenko; Georgios Moutsanidis; Jinhui Yan		
CHEM 140	02:15 PM - 02:35 PM	ID 585: Study of Salinity Intrusion Mitigation Associated with the Performance of the Augmented Mississippi River Sill (AMRS) Author(s): Daniel Barreca, Ezequiel Martin
	02:35 PM - 02:55 PM	ID 615: Recovering accurate wall shear stress in point cloud-based CFD Author(s): Monu Jaiswal, Ming-Chen Hsu
	02:55 PM - 03:15 PM	ID 638: Multiscale CFD Analysis Using Divergence-Conforming Truncated Hierarchical B-Splines Author(s): Kendrick Shepherd, Caleb Goates
	03:15 PM - 03:35 PM	ID 660: A Multiscale Elastohydrodynamic Modeling Framework for Investigating Failure of Wind Turbine Bearings Author(s): Otero, Kendrick Shepherd, Quentin Allen
MS078: Wind, surge-wave, flooding and their impacts on infrastructure systems and coastal land Chair(s): Chao Sun; Celalettin Ozdemir		
UMC 247	02:15 PM - 02:35 PM	ID 558: Inlet-Outlet Boundary Conditions for OpenFOAM Multiphase Flow in a U-Bend Channel Author(s): Khanh Hoang

	02:35 PM - 02:55 PM	ID 628: Nonlinear Response of Corroded Coastal Bridge Piers Subjected to Extreme Wave Forces Author(s): Ali Jarrar, Monique Head, Alemu Legese, Shaymaa Obayes
	02:55 PM - 03:15 PM	ID 661: Reconstruction of Local Scour Flow Fields Using Generative Adversarial Networks Author(s): Haq Murad Nazari, Celalettin Ozdemir, Mayank Tyagi
	03:15 PM - 03:35 PM	ID 848: Stochastic framework for assessing structural performance of coastal buildings under tsunami-driven debris impact and damming forces Author(s): Jayasekara Ravindu Jayasekara, Jaril Deschamps, Sabarethinam Kameshwar, Hyoungsu Park
MS090: 10th Mini-Symposium on 4M (Modeling of Multiphysics, Multiscale, Multifunctional) Engineering Materials and Structures Chair(s): Yong-Rak Kim; Huiming Yin; Chung Song; Jianqiang Wei		
UMC 415-417	02:15 PM - 02:35 PM	ID 599: Nano-Level Evaluation of Moisture Dependent Strength Degradation of Montmorillonite based on Nano-Indentation and Nano-Scratch Tests Author(s): Chung Song, Dhurba Pandey, Elliot Seoh, Alexander Silvy, Nicholas Glennie
	02:35 PM - 02:55 PM	ID 861: Effective mechanical properties of foam concrete transitioning from continuous matrix to cellular microstructure Author(s): Xinhuan Deng, Byung-Wook Kim, Jinming Zhang, Huiming Yin
	02:55 PM - 03:15 PM	ID 866: Experimental and Multiphysics-based Numerical Investigation of Freeze–Thaw-Induced Microstructural Damage Evolution in Bituminous Composites Author(s): Nitish Bastola, Jamilla Teixeira, Chun-Hsing Ho
	03:15 PM - 03:35 PM	ID 900: Development of Multifunctional Self-heating Alkali-activated Composites with Biochar and Nano Carbon Black for Bridge Applications Author(s): In Kyu Jeon, Yong-Rak Kim
MS091: Advances in Modeling of Material Damage and Fracture Chair(s): Mostafa Mobasher; Lampros Svolos; Aditya Kumar; Georgios Moutsanidis; Alessandro Fascetti; Ravindra Duddu; Haim Waisman		
UMC 382-384-386	02:15 PM - 02:35 PM	ID 339: A Connector–Beam Lattice (CBL) Model for Microscale Mechanical Modeling of Wood Author(s): Wisdom Akpan, Erol Lale, Gianluca Cusatis
	02:35 PM - 02:55 PM	ID 408: Coupled Viscoplasticity-Damage Modeling of Metal Alloys Using a Gradient-Enhanced GVIPS Framework Author(s): Sungwon La, Sina Abrari Vajari, Steven M. Arnold, Christian Linder
	02:55 PM - 03:15 PM	ID 421: Effect of Particle Shape on the Fracture Toughness of Particle-Based Materials Author(s): Shahlaa Al Wakeel
	03:15 PM - 03:35 PM	ID 627: Innovative Design Tools to Efficiently Analyze Concrete Structures for High-Temperature Loading Author(s): William Orben, Colin Allen, Ethan Pennywitt
MS094: Mechanics and Physics of Granular Materials Chair(s): Ryan Hurley; Marcial Gonzalez; Yimin Lu; Dawa Seo; Alessandro Rotta Loria; Ali Daouadji		
VAC 1B20	02:15 PM - 02:35 PM	ID 391: Dynamic Characterization of Ballast Mechanical Properties Post-Tamping Maintenance Author(s): Ahmed El Saei, Usama El Shamy
	02:35 PM - 02:55 PM	ID 417: Scaling discrepancy on the screening of elongated and plate-shaped biomass particles Author(s): Weihe Sun, Yidong Xia, Jordan Klinger, Yimin Lu

	02:55 PM - 03:15 PM	ID 418: Granular deposition by dry pluviation: a discrete element study on segregation and packing mechanics Author(s): Jimin Park, Dawa Seo, Tae Sup Yun
	03:15 PM - 03:35 PM	ID 512: Entangled granular materials: Designing particles with barbs and hooks to maximize tensile strength Author(s): Youhan Sohn, Saeed Pezeshki, Francois Barthelat
MS041: Cementitious Materials: Experiments and Modeling Across the Scales Chair(s): Bernhard Pichler; Gilles Pijaudier-Cabot; Günther Meschke; Christian Hellmich; Franz Josef Ulm		
HUMN 1B80	02:15 PM - 02:35 PM	ID 1035: Characterization of a Cracked RC Beam using Synthetic Aperture Radar Imaging and the K-R-I Transform Author(s): Tzuyang Yu
	02:35 PM - 02:55 PM	ID 206: Differentiable Physics-Informed Learning for Multi-Scale Design of Fiber-Reinforced Cementitious Composites: From Micromechanics to Macroscopic Optimization Author(s): Jiawei ZHONG
	02:55 PM - 03:15 PM	ID 514: Next-Generation Concrete Reinforcement: The Case for Auxetic and Non-auxetic Steel Lattices. Author(s): Neeraj Sharma, Kshitij Kumar Yadav
	03:15 PM - 03:35 PM	ID 947: Impact of loading rate on dynamic response of aged concrete Author(s): Sannidhya Ghosh, Mija Hubler, Petros Sideris

Wednesday, June 3, Late Afternoon Sessions, 4:00 PM - 6:00 PM

MS075: Wildfire Impacts and Resilience in WUI Communities: From Field Data to AI-Driven Future Planning **Chair(s): Serdar Selamet; Ertugrul Taciroglu; Negar Elhami-Khorasani; Sriram Narasimhan; Erica Fischer**		
HUMN 250	04:00 PM - 04:20 PM	ID 298: A Multi-Level Framework for Modeling Wildfires in a Wildland-Urban Interface: Case Study of the 2025 Eaton Fire Author(s): Tanmay Vora, Seymour Spence, Ann Jeffers
	04:20 PM - 04:40 PM	ID 409: Automating Building-Level Fire Damage Classification with AI Using UW RAPID Post-Disaster Imagery Author(s): Barbaros Cetiner, Jeffrey Berman, Karen Dedinsky, Jaqueline Zdebski, Joseph Wartman
	04:40 PM - 05:00 PM	ID 434: Statewide Road Network–Specific Wildfire Risk Profiling Using Accelerated Fire Spread Models Author(s): Binita Dahal, Debasish Jana
	05:00 PM - 05:20 PM	ID 594: WUIgniS: A Physics-Informed and Inference-Guided Numerical Ignition Simulator for Wildland-Urban Interface Fire Spread Author(s): Devasmit Dutta, Patrick Nicholas Hadinata, Riyaaz Shaik, Ertugrul Taciroglu
	05:20 PM - 05:40 PM	ID 883: Inverse method quantification and validation of the hysteretic, temperature-dependent thermal properties of spray-applied fire resistive material (SFRM) up to 1100 °C Author(s): Jumari Robinson
	05:40 PM - 06:00 PM	ID 293: Quantifying residential ventilation ratios for wui fire risk Author(s): Serdar Selamet, Gamze Dogan, Zafer Yilmaz, Liana Wang, Ertugrul Taciroglu
MS007: Advances in Computer Vision, Deep Learning, & Artificial Intelligence for Structural Monitoring, Inspections, and Digital Twins **Chair(s): Vedhus Hoskere; Mohammad Jahanshahi; Jian Li; Wei Song**		
HUMN 135	04:00 PM - 04:20 PM	ID 917: Integrating Hierarchical Deep Learning and RAG-based LLM Agent for Rapid Post-earthquake Building Damage Assessments Author(s): CHENG-JU TSAI, Rih-Teng Wu
	04:20 PM - 04:40 PM	ID 945: CrackSegFlow: Controllable Flow Matching Synthesis for Generalizable Crack Segmentation with a 50K Image–Mask Benchmark Author(s): Babak Asadi, Peiyang Wu, Mani Golparvar-Fard, Ramez Hajj
	04:40 PM - 05:00 PM	ID 976: An Uncertainty-Aware Computer Vision Approach to Quantifying Element-Level Conditions in Bridges Author(s): Parham Bakhtiari, Mohsen Zaker Esteghamati
	05:00 PM - 05:20 PM	ID 965: Efficient UAV Bridge Inspection by Integrating Risk-Informed Decision-Making, LLM-Powered Deterioration Modeling, and Occlusion-Aware Coverage Analysis Author(s): Delaram Hassanlou, Vedhus Hoskere
	05:20 PM - 05:40 PM	ID 1017: BridgeEQA: Virtual Embodied Agents for Real Bridge Inspections Author(s): Subin Varghese, Joshua Gao, Asad Rahman, Vedhus Hoskere

MS017: Learning-Based Structural Health Monitoring Under Limited Damage Data: Adaptation, Transfer, and Unsupervised Approaches Chair(s): Xiao Liang; Kareem Eltouny; Jian Li		
HUMN 125	04:00 PM - 04:20 PM	ID 70: Domain-Adaptive Signal Segmentation for Vortex-Induced Vibration Detection Across Long-Span Bridges Author(s): Sunho Lee, Sunjoong Kim
	04:20 PM - 04:40 PM	ID 226: Consistency-guided Model-contrastive Federated Learning for Scalable Road Damage Detection Author(s): Ziluo Xiong, Gaofeng Jia
	04:40 PM - 05:00 PM	ID 466: Complexity-Aware Curriculum Learning with Iterative Annotation and Refinement for Damage Segmentation Author(s): Vahidreza Gharehbaghi, Jian Li, Hang Zhao, Rémy D. Lequesne, Caroline Bennett
	05:00 PM - 05:20 PM	ID 690: Active Learning for Surrogate-Assisted Structural Model Updating in a Sensitivity Based Singular Value Decomposition Reduced Subspace Author(s): Tazwar Bakhtiyar Zahid, Xiao Liang
	05:20 PM - 05:40 PM	ID 692: A Generative Model-Assisted FEMU Framework for Localized Structural Damage Identification Author(s): Ben Li, Xiao Liang
	05:40 PM - 06:00 PM	ID 693: Structural Damage detection under Severe Data Scarcity via Instance Reweighting Approach Author(s): Yifeng Zhang, Xiao Liang
MS022: Integration of Physics-based Models with Data for Identification, Monitoring, Estimation, and Uncertainty Quantification Chair(s): Yang Wang; Hamed Ebrahimian; Babak Moaveni; Haeyoung Noh		
HUMN 1B50	04:00 PM - 04:20 PM	ID 634: Hierarchical Gaussian Process Modeling of Modal Quantities Residuals for Bayesian Updating of Structural Systems Author(s): Eleonora Maria Tronci, Mingming Song, Babak Moaveni
	04:20 PM - 04:40 PM	ID 706: Physics-Guided Neural-Operator-Based Hybrid Digital Twins for Probabilistic Structural Damage Detection Author(s): Sikandar Ali Khokhar, Zixin Wang, Mohammad Reza Jahanshahi
	04:40 PM - 05:00 PM	ID 717: Model-Assisted Force Identification in Truss Bridges Using Deep Learning Author(s): Hyunjoong Kim, Sebastian Aviles
	05:00 PM - 05:20 PM	ID 839: Multiphysics Modeling and Model Updating of a Jacket-Supported Offshore Wind Turbine Using Measured Vibration and SCADA Data Author(s): Nasim Partovi-Mehr, Rad Haghi, Babak Moaveni, Eric Hines
	05:20 PM - 05:40 PM	ID 854: A Proposition on the Solvability of Dynamic Model Updating Problems Author(s): Harry Ashimatey, Dahye Han, Santanu Dey, Yang Wang
	05:40 PM - 06:00 PM	ID 972: Quantifying Long-Term Sensor Aging in a Field-Deployed Accelerometer Network Author(s): Manuel Salmeron, Shirley Dyke, Monica Kohler
MS026: Modeling of Materials with Interfaces and Scales Using Physics-Based and Machine-Learning Methods Chair(s): Xiang Zhang; Pinlei Chen; Kamalendu Ghosh; Balavignesh Vemparala Narayana Murthy; Ravindra Duddu; Soheil Soghrati; Reza Abedi		
HUMN 150	04:00 PM - 04:20 PM	ID 789: Numerical Methods with Computational Intelligence for Materials Processing and Layered Additive Manufacturing Author(s): Arif Masud, Ignasius Wijaya
	04:20 PM - 04:40 PM	ID 790: Elastomers filled with liquid inclusions: Theory, numerical implementation, and results Author(s): Kamalendu Ghosh

	04:40 PM - 05:00 PM	ID 849: Variational multiscale enrichment method for dynamic response of hyperelastic composites at finite deformation Author(s): Abhishek Arora, Gloria Odenyo, Caglar Oskay
	05:00 PM - 05:20 PM	ID 885: ϕ-DeepONet: A Discontinuity-Capturing Neural Operator Author(s): Sumanta Roy, Stephen T Castonguay, Pratanu Roy, Michael D. Shields
	05:20 PM - 05:40 PM	ID 926: Elasto-Plastic Material Response with Neural Operators Author(s): Meer Mehran Rashid, Lori Graham-Brady
	05:40 PM - 06:00 PM	ID 1019: Interface-Aware PINN Frameworks for Mechanical Response of Composite Materials: Comparative Analysis Author(s): Ali Hodaei, Maryam Shakiba
MS024: Experimental Mechanics in the Age of Big Data: Design, Sensing, and Integration Chair(s): Yiwen Dong; Kostas Kalfas; Mehrdad Aghagholizadeh		
HUMN 1B90	04:00 PM - 04:20 PM	ID 348: LLM-Assisted Pseudo-Experiment Generation for Physics-Based Synthesis of Structural Response Data Author(s): Ziluo Yao, Jinsi Guo, Billie F. Spencer Jr., Yiwen Dong
	04:20 PM - 04:40 PM	ID 390: Full field Dynamic Deformation of Passive Adaptive Marine Current Turbine Blades using Digital Image Correlation Author(s): Trevor Zalud, Katherine Van Ness, Richard Wiebe, Owen Williams
	04:40 PM - 05:00 PM	ID 653: Humidity and temperature effects in sand dampers Author(s): Kostas Kalfas, Liang Cao, Usama El Shamy, James Ricles, Nicos Makris
	05:00 PM - 05:20 PM	ID 679: Field measurements of passive adaptive blades for a marine current turbine using fiber optic strain sensing Author(s): Katherine Van Ness, Justin Burnett, Benjamin Cunningham, Jesse Dosher, Tracy Tran, Harlin Wood, Christopher Bassett
	05:20 PM - 05:40 PM	ID 188: Hybrid Experimental-Computational Framework for Modeling Deployable Ground Anchors Author(s): Khuzaima Hummad, Ann C. Sychterz
	05:40 PM - 06:00 PM	ID 648: Hypernetwork-Based Structural Response Estimation Across Variable Structural Configurations Author(s): Haifeng Wang
MS049: Mechanics of Soft Synthetic and Biological Materials: Theory, Simulation, and Experiment Chair(s): Berkin Dortdivanlioglu; Aditya Kumar; Raudel Avila		
CLUB 4-5	04:00 PM - 04:20 PM	ID 63: Reproducing Biological Catch Bonds in Simple Newtonian Mechanical Systems Author(s): Kerim C. Dansuk
	04:20 PM - 04:40 PM	ID 250: Homogenization-based micromechanics model for polydomain liquid crystal elastomers Author(s): Tingting Xu, Thao D. Nguyen
	04:40 PM - 05:00 PM	ID 428: Simulation of Blood Clots Under Mechanical Loads Author(s): Morteza Ghiyasi Varzaghan, Hamidreza Marvi
	05:00 PM - 05:20 PM	ID 437: A Hybrid FE-Neural Network Approach for Real-Time Prediction of Hyperelastic Cardiac Valve Mechanics Author(s): Maedeh Makki, Chung-Hao Lee, Maziar Raissi
	05:20 PM - 05:40 PM	ID 610: Smart flexible minimally invasive probe for electrophysiological signal monitoring and diagnosis Author(s): Aishwarya Pravin Kakade, Jianliang Xiao
	05:40 PM - 06:00 PM	ID 73: Characterization of Multifunctional Properties of Biofidelic Solid-Liquid Composites Author(s): Vinu Unnikrishnan, Karthik Kundapur, Francis Nwokwu, Oyshrojo Talukder

MS047: Mechanics and Data-Driven Innovations in Road Paving Materials Chair(s): Augusto Cannone Falchetto; Ramez Hajj		
CASE E230	04:20 PM - 04:40 PM	ID 557: Hybrid Machine Learning and Mechanistic Back Calculation Approach for Predicting Surface Layer Modulus of Rigid Pavements Using LTPP Data Author(s): Usama Asif, Osama Aljarrah, Jongwan Eun
	04:40 PM - 05:00 PM	ID 104: A Sustainable Method to Recycle Waste Plastic as Fiber into Asphalt Mixes Author(s): Daeeui Hong, Songsu Son
	05:00 PM - 05:20 PM	ID 120: Probabilistic Investigation of TSD-induced Critical Strains in Multi-layer Pavement Systems Author(s): Ze Zhou Wang, Zhaojie Sun, Bachar Hakim, Abir Al-Tabbaa
	05:20 PM - 05:40 PM	ID 934: Moisture Susceptibility and Meso-Structural Evolution of High-RAP Asphalt Mixtures after Multiple Recycling Cycles Author(s): Yuxuan Sun, Fan Zhang, Di Wang, Weiwei Lin, Augusto Cannone Falchetto
MS061: Topology Optimization: from Algorithmic Developments to Applications Chair(s): Mazdak Tootkaboni; Chuan Luo; Josephine Carstensen; Shelly Zhang; James Guest		
CASE E240	04:00 PM - 04:20 PM	ID 652: Level-Set Topology Optimization with XIGA in Finite-Strain Contact Problems Author(s): Anna Chotzalli, Kurt Maute
	04:20 PM - 04:40 PM	ID 654: A comparison of methods to compute geometric measures for gradient-based level-set topology optimization Author(s): Brendan Chong, Kurt Maute
	04:40 PM - 05:00 PM	ID 666: Optimizing for Connections: How Surrounding Structures Experimentally Impact the Performance of Interlocking Joints Author(s): Inés Ortea Varela, Zane Schemmer, Anthony Koh, Josephine Carstensen
	05:00 PM - 05:20 PM	ID 669: 3D Truss-Continuum Topology Optimization of Reinforced Concrete Floor with Demolding Constraint Author(s): Pitipat Wongsittikan, Jackson Jewett, Josephine Carstensen
	05:20 PM - 05:40 PM	ID 896: Leveraging Human Knowledge to Improve Multi-Material Topology Optimization Author(s): Jacqueline Orr, Josephine Carstensen
	05:40 PM - 06:00 PM	ID L2: Simultaneous Optimization of Topology and Local Material for Functionally Graded Structures
MS053: Tensegrity – Form finding, analysis, mechanical behaviour, control, and design of tensegrity and tensegrity-like systems Chair(s): Landolf Rhode-Barbarigos; Muhao Chen; Ajay Harish		
KTCH 1B87	04:00 PM - 04:20 PM	ID 550: Preliminary investigations on a mobile tensegrity robot with shape transformation possibility between a Tetrahedron and an Octahedron Author(s): Lukas Lehmann, Sumit Kumar, Subhamoy Sen, Valter Böhm, Landolf Rhode-Barbarigos
	04:20 PM - 04:40 PM	ID 664: Tensegrity Free-Free Beam: Design and Analysis Author(s): Benjamin Ingalls, Manoranjan Majji
	04:40 PM - 05:00 PM	ID 723: Generation and Transformation of Multistate Tensegrity Systems via Cellular Morphogenesis Author(s): Sumit Kumar, Landolf Rhode-Barbarigos
	05:00 PM - 05:20 PM	ID 792: Invariant dual mechanics of tensegrity and origami Author(s): Xiangxin Dang, Glaucio Paulino
	05:20 PM - 05:40 PM	ID 980: Morphological Design and Parametric Characterization of Core-Expander Tensegrity Structures Author(s): Muhao Chen, Aguinaldo Fraddosio, Andrea Micheletti, Gaetano Pavone, Mario Daniele Piccioni

	05:40 PM - 06:00 PM	ID 1006: Data-Driven Control of Tensegrity Robots for Reference Tracking and Obstacle Avoidance Author(s): Muhao Chen
MS065: Advanced Computational Methods for Uncertainty Propagation and Risk Assessment in Engineering Chair(s): Liuyun Xu; Meng-Ze Lyu; Seymour Spence; Jian-Bing Chen; Michael Beer		
GUGG 205	04:00 PM - 04:20 PM	ID 147: Decoupled multi-probability density evolution method for uncertainty propagation and risk assessment in nonlinear engineering systems Author(s): Meng-Ze Lyu, De-Cheng Feng, Jian-Bing Chen, Michael Beer, Jie Li
	04:20 PM - 04:40 PM	ID 274: Subset Simulation with a Modified Component-wise Intrepid MCMC Sampler for Structural Reliability Estimation Author(s): Adwait Sharma, Promit Chakroborty, Michael Shields
	04:40 PM - 05:00 PM	ID 299: A decoupled density-evolution framework for dynamic reliability of engineering structures with multiple failure criteria Author(s): Yongfeng Zhou, Jie Li
	05:00 PM - 05:20 PM	ID 414: Quantifying Thermal Failure Risk for NASA's Dragonfly Titan Entry Under Chemical–Radiative Uncertainty Author(s): Audrey Gaymann, Alireza Doostan, Michael Sands, Sung Min Jo
	05:20 PM - 05:40 PM	ID 505: High-Dimensional Emulation of Hurricane-Driven Coastal Flood Evolution using Hybrid Neural Networks Author(s): Liuyun Xu, Sejin Kim, Seymour M.J. Spence
	05:40 PM - 06:00 PM	ID 603: Generative AI-enhanced Probabilistic Multi-Fidelity Surrogate Modeling Via Transfer Learning Author(s): Jice Zeng, David Barajas-Solanoa, Hui Chen
MS068: Surrogate Modeling for Uncertainty Quantification, Optimization, and Statistical Inference in Engineering Applications Chair(s): Alexandros Taflanidis; Bruno Sudret; Abdollah Shafieezadeh; Gaofeng Jia; Min Li		
ECON 119	04:00 PM - 04:20 PM	ID 853: Robust Design Optimization under Dependent Random Variables by a Generalized Polynomial Dimensional Decomposition Author(s): Muhammad Talukdar, Sharif Rahman
	04:20 PM - 04:40 PM	ID 878: A study of reduced stochasticity Bayesian neural networks with application to surrogate modeling of power flow solvers Author(s): Nicholas Casaprima, Somayajulu L. N. Dhulipala, Audrey Olivier, Bjorn Vaagensmith
	04:40 PM - 05:00 PM	ID 943: Differentiable Predictive Control for Rapid Flood Mitigation Author(s): Graham Hults, Susu Xu, Ján Drgoňa
	05:00 PM - 05:20 PM	ID 1007: An Efficient Arbitrary-Order Sensitivity Analysis Method Using Hybrid Hypercomplex Automatic Differentiation for Finite Element Models Author(s): Mauricio Aristizabal, Manuel Garcia
	05:20 PM - 05:40 PM	ID 968: Optimal design of experiments: An approach based on differential geometry-inspired scoring measures: Author(s): David Gillcrist, Arghavan Louhghalam, Yanlai Chen, Mazdak Tootkaboni
MS074: Innovations in CFD and FSI: Rigorous Methods with Practical Applications Chair(s): Yuri Bazilevs; Ming-Chen Hsu; Artem Korobenko; Georgios Moutsanidis; Jinhui Yan		
CHEM 140	04:00 PM - 04:20 PM	ID 718: A Particle-Based Fluid–Structure Interaction Framework for Brittle Fracture under Extreme Hydrodynamic Loading Author(s): George Moutsanidis, Mohammad Naqib Rahimi
	04:20 PM - 04:40 PM	ID 787: Dynamic Fluid-Structure Interaction at the Atomic Limit Author(s): Narayana Aluru

	04:40 PM - 05:00 PM	ID 944: A stabilized finite element formulation for fluid-structure interaction with non-conforming interfaces Author(s): Yusuf Salaudeen, Ghadir Haikal
	05:00 PM - 05:20 PM	ID 984: A Volterra Theory-Guided Network for Modeling Nonlinear Post-flutter Behaviors of Solar Trackers Author(s): Seyed Pejman Fatehi, Yanlin Guo, Teng Wu
	05:20 PM - 05:40 PM	ID 1037: Determination of Wave Transmission Coefficients for a Moored Floating Breakwater Author(s): Jacob Milliken, Christopher Denney
	05:40 PM - 06:00 PM	ID 134: Simulation of hydrodynamic loading on navigation lock miter gates Author(s): J. Ezequiel Martin, Christopher R. Denney
MS078: Wind, surge-wave, flooding and their impacts on infrastructure systems and coastal land Chair(s): Chao Sun; Celalettin Ozdemir		
UMC 247	04:00 PM - 04:20 PM	ID 778: High-Resolution Numerical Modeling of Near-Field Free-Surface and Ground Response to Impulsive Marine Events Author(s): Ryan Denney, Jacob Milliken
	04:20 PM - 04:40 PM	ID 837: The Effects of Debris Impact and Damming on Prestressed Girders Due to Flooding Author(s): Nida Virabalin
	04:40 PM - 05:00 PM	ID 986: Measuring Coastal Conditions during the 2024 Atlantic Hurricane Season Using an Advanced Wind-Surge-Wave Experimental Platform (Project Sentinel) Author(s): Ehsan Ahmadi Afzadi, Zanti Rains, Brian Phillips, Justin Davis, Forrest Master, Chris Ferraro, Pedro Fernández-Cabán, Britt Raubenheimer, Elise Morrison, Maitane Olabarrieta
	05:00 PM - 05:20 PM	ID 915: Numerical Investigation of Reduction in Wave and Current Loads on Coastline Structures behind Nature-Based Defense Author(s): Navid Tahvildari, Abdollah Ojaghi, Pedro Lomonaco
	05:20 PM - 05:40 PM	ID 646: Seismic response of a resilient and sustainable system via real-time hybrid simulation Author(s): Kostas Kalfas, Liang Cao, James Ricles, Nicos Makris
MS090: 10th Mini-Symposium on 4M (Modeling of Multiphysics, Multiscale, Multifunctional) Engineering Materials and Structures Chair(s): Yong-Rak Kim; Huiming Yin; Chung Song; Jianqiang Wei		
UMC 415-417	04:00 PM - 04:20 PM	ID 904: Predictive Modeling of Sediment Erosion Rates under Flow through a Physics-Informed Machine Learning Author(s): Dong Hyun Kim, Yurhee Ahn, Yong-Rak Kim
	04:20 PM - 04:40 PM	ID 912: Enhanced reliability of nanocomposite sensors with AC method Author(s): Byung-Wook Kim, Jinming Zhang, Huiming Yin
	04:40 PM - 05:00 PM	ID 955: A Physics and Chemistry-Informed Phase-Field Constitutive Framework for Thermo-Oxidative Aging of Semi-Crystalline Polyimide Author(s): Marwa Yacouti, Santiago Marin Jimenez, Maryam Shakiba
	05:00 PM - 05:20 PM	ID 1029: From Idealized to Realistic Pores: Phase-Field Fracture Modeling of Porous Materials Author(s): Ryan Nielsen, Pania Newell
	05:20 PM - 05:40 PM	ID 914: Influence of Composition on Calcium Silicate Hydrate: from Atomic Structure to Macro-Performance Author(s): Jianqiang Wei
	05:40 PM - 06:00 PM	ID 237: Coupled Shrinkage and Hydro-Mechanical Behavior of Carbon Fiber–Reinforced Bentonite Author(s): Yuan Feng, Jongwan Eun, Semih Ciftci

MS091: Advances in Modeling of Material Damage and Fracture Chair(s): Mostafa Mobasher; Lampros Svolos; Aditya Kumar; Georgios Moutsanidis; Alessandro Fascetti; Ravindra Duddu; Haim Waisman		
UMC 382-384-386	04:00 PM - 04:20 PM	ID 493: Phase-Field Modeling of Fracture in Multiphase, Rate- and Temperature-Dependent Materials Author(s): Rogelio Muneton-Lopez, Oliver Giraldo-Londono
	04:20 PM - 04:40 PM	ID 597: Why planar cracks fragment into echelon cracks Author(s): Aditya Kumar, Olivia Ward
	04:40 PM - 05:00 PM	ID 625: Strength-Based Orthotropic Phase-Field Fracture Model for 3D-Printed Materials Author(s): Bishal Koirala, Lampros Svolos
	05:00 PM - 05:20 PM	ID 197: A full-Stokes phase field fracture model for simulating creeping flow and brittle fracture of glaciers Author(s): Ashvin Oli, Tim Hageman, Abhinav Gupta, Ravindra Duddu
	05:20 PM - 05:40 PM	ID 675: Efficient Phase-Field Fracture Modeling Using the I-FENN Framework Author(s): Lampros Svolos, Prakash Dulal, Panos Pantidis, Diab Abueidda, Mostafa Mobasher
	05:40 PM - 06:00 PM	ID 780: Arbitrary-order virtual element methods for high-order phase-field modeling of ductile fracture Author(s): Yu Leng, Hashem Mourad
MS094: Mechanics and Physics of Granular Materials Chair(s): Ryan Hurley; Marcial Gonzalez; Yimin Lu; Dawa Seo; Alessandro Rotta Loria; Ali Daouadji		
VAC 1B20	04:00 PM - 04:20 PM	ID 513: High and low-speed penetration of "architected" FCC granular crystals: Experiments and models Author(s): Ashta Navdeep Karuriya, Francois Barthelat
	04:20 PM - 04:40 PM	ID 521: Impact mechanics of FCC granular crystals: Experiments and models. Author(s): Armin Yousefi, Francois Barthelat
	04:40 PM - 05:00 PM	ID 614: Exotic Metamaterials Conceived using Granular Micromechanics Author(s): Anil Misra
	05:00 PM - 05:20 PM	ID 808: Micromechanical origins of changes in shear localisation in cemented sands Author(s): Anne-Catherine Dieudonné, Aoxi Zhang, Antoine Wautier, Frédéric Collin
	05:20 PM - 05:40 PM	ID 886: A Micromechanics-based Hyperelastic Framework for Anisotropic Granular Materials Author(s): Hongwei Wu, Giuseppe Buscarnera
MS100: Computational Geomechanics Chair(s): Hyoung Suk Suh; Shabnam Semnani; Jinhyun Choo; WaiChing Sun; Craig Foster; Richard Regueiro; Ronaldo Borja		
HUMN 1B80	04:00 PM - 04:20 PM	ID 422: Computational Modeling and Validation of Wave Barriers for Mitigating Train-Induced Vibrations Author(s): Isaac Banes, Kanishka Kolhatkar, Ryan Shin, Craig Foster
	04:20 PM - 04:40 PM	ID 735: A phase-field model for fractured poroelastic rocks under cyclic fluid injection Author(s): Sabrina CY Ip, Mengsu Hu
	04:40 PM - 05:00 PM	ID 794: Considerations in Development of Ground Movement Prediction by Tunnel Boring Machine - Ground Interaction Digital Twins Author(s): Joseph Verkler
	05:00 PM - 05:20 PM	ID 803: Validation of Numerical Models to Simulate Robotic Muscle Actuation in Soil Author(s): Austin Hoyle, Hyun-Woo Joo, Mike Mooney

	05:20 PM - 05:40 PM	ID 1026: Forecasting land subsidence due to groundwater withdrawal in the San Joaquin Valley, California and in Yunlin, Taiwan Author(s): Ronaldo Borja, Yangqing Sun, Chih-Yu Liu, Nan-Chieh Chao, WeiCheng Lo
	05:40 PM - 06:00 PM	ID 106: Dual-Skeleton Effective Stress Modeling for Frozen Soils and Artificial Ground Freezing Author(s): Yingxiao Liu, WaiChing Sun, Ronaldo Borja

Thursday, June 4, Events and Meetings

Time	Event / Meeting	Room/Location
07:00 AM - 08:00 AM	Breakfast	C4C Dining Center; UMC 235
07:30 AM - 06:00 PM	Registration	UMC - Aspen Rooms
08:00 AM - 09:00 AM	Plenary Lecture: Agentic Scientific Machine Learning Speaker(s): George Em Karniadakis	UMC - Glenn Miller Ballroom
09:00 AM - 09:30 AM	Coffee Break	UMC - Aspen Rooms
09:30 AM - 11:00 AM	Careers & Mentorship: Insights and Advice	HUMN 1B90
11:30 AM - 01:00 PM	Lunch Break	UMC – patio, UClub lawn
11:45 AM - 12:45 PM	Mechanics of Pavements committee meeting	UMC 247
11:45 AM - 12:45 PM	Student Competition Awards Ceremony	CHEM 140
01:00 PM - 02:00 PM	Plenary Lecture: Grains-in-motion: from x-ray rheography to heterarchical granular dynamics Speaker(s): Itai Einav	UMC - Glenn Miller Ballroom
03:35 PM - 04:00 PM	Coffee Break	UMC - Aspen Rooms
06:30 PM - 09:00 PM	Banquet	Limelight - Flatirons 1

Thursday, June 4, Morning Sessions, 9:30 AM - 11:30 AM

MS015: Digital and sensing technologies for smart monitoring of infrastructure and buildings Chair(s): Bryan G. Pantoja Rosero; Shenghan Zhang; Salvatore Salamone; Matthew DeJong		
HUMN 250	09:30 AM - 09:50 AM	ID 182: Monitoring Method for a Spread Footing Foundation Using Embedded Crossed Long-Gauge Sensors Author(s): Yitian Liang, Branko Glisic
	09:50 AM - 10:10 AM	ID 279: Understanding Measurement Noise and Error Propagation in Backscatter-based Radio Frequency Sensing for Spatial Displacement Structural Health Monitoring Author(s): Kent Eng, Yuanqing Song, Yang Xie, Zygmunt Haas, Samir Das, Petar Djurić, Milutin Stanaćević, Branko Glisic
	10:10 AM - 10:30 AM	ID 388: Embedded Self-Sensing Cementitious Composite Layers in 3D Printed Functional Materials for Structural Health Monitoring Author(s): Moneef Mohamed Elobaid Musa, Han Liu, Israel Nilton Lopes Sousa, Pushp Raj Poudel, Antonella D'Alessandro, Filippo Ubertini, Shelby Doyle, Simon Laflamme
	10:30 AM - 10:50 AM	ID 447: Vision-driven finite element modeling of earthquake-damaged masonry elements Author(s): Bryan German Pantoja-Rosero, Qianqing Wang, Leon Lobo, Raul Durand
	10:50 AM - 11:10 AM	ID 596: Stevenson Creek Experimental Dam: Centenary of and Advancements in Modern Strain- and Displacement-Based Monitoring of Civil Structures Author(s): Branko Glisic
	11:10 AM - 11:30 AM	ID 756: Strain Field Reconstruction and Crack Quantification Using Distributed Fiber Optic Sensing Author(s): Xuanyi Lu, Sudao He, Shenghan Zhang
MS003: Robotics and automation for SHM and construction management Chair(s): Yang Wang; SangHyun Lee; Genda Chen; YoungJin Cha		
HUMN 135	09:30 AM - 09:50 AM	ID 48: Context-Aware Human-Robot Interaction in Construction Author(s): Xin Wang
	09:50 AM - 10:10 AM	ID 370: A Photoelasticity-Based Robotic Tactile Sensor: Advances in Stress Sensing for Human-like Touch Author(s): Zijie Xu, Rakibul Islam Prince, Jiabin Liu, Shaoting Lin, Yu She, Wei Li
	10:10 AM - 10:30 AM	ID 378: Developing Approaches for Robotic Excavation of Nuclear Waste Author(s): Evelyn Fernandez, Anthony Starleaf, Thanatat Thanaravisara, Moises Mello da Silva, Andre Green, David Mascarenas
	10:30 AM - 10:50 AM	ID 1039: Real-time Adaptive Control for Robotic Concrete 3D Printing Author(s): Muhammad Arslan, Vedhus Hoskere
	10:50 AM - 11:10 AM	ID 216: Agentic Large Language Models for Automated Structural Analysis of 2D Frames Author(s): Ziheng Geng, Minghui Cheng
MS006: Digital twins for SHM and infrastructure management Chair(s): David Lattanzi; Youngjin Cha; Mani Golparvar Fard		
HUMN 125	09:30 AM - 09:50 AM	ID 43: Integrating thermal point clouds, object detection, and virtual reality for building envelope assessments Author(s): Gaurav Chandrakant Modak, Max Cohn, Jordan Allspaw, Holly Yanco, Christopher Niezrecki, Alessandro Sabato

	09:50 AM - 10:10 AM	ID 99: GateBlend LSTM Models for Predicting Nonlinear Structural Responses in Digital Twin Implementation Author(s): Baiping Dong, Ahsan Shahbaz, Theodoros Karavasilis
	10:10 AM - 10:30 AM	ID 289: Development of a Multi-View-Based Verticality Measurement Method for PC Segment Vertical Shafts Author(s): kyoung min kim, Seung soo Lee, Seung Hee Kwon, Eom sik Ko, Seunghee Park
	10:30 AM - 10:50 AM	ID 291: LLM-Based Interactive Decision Support Framework for Bridge Maintenance Author(s): Mingeon Cho, Ki Hwan Kim, Inhi Kim, Seunghee Park
	10:50 AM - 11:10 AM	ID 379: Advances in 3D Reconstruction for Civil Engineering: From Structure-from-Motion to NeRF and Gaussian Splatting Author(s): Qasim Bin Saeed, YoungJin Cha
	11:10 AM - 11:30 AM	ID 710: Structure-preserving Operator Inference for Nonlinear Mechanical Systems: Foundations for Predictive Digital Twins Author(s): Harsh Sharma
MS039: Architected Materials Chair(s): Yunlan (Emma) Zhang; David Restrepo; Josephine Carstensen; Nilesh Mankame; Pablo Zavattieri		
HUMN 1B50	09:30 AM - 09:50 AM	ID 194: On the surface waves in truncated phononic crystals Author(s): Long Nguyen, Prasannakumar Salasiya, Bojan Guzina, Shixu Meng
	09:50 AM - 10:10 AM	ID 913: Breaking Passivity Limits in Wave-Based Analog Computing via Complex-Frequency Excitation Author(s): Moonyeup Shin, Heedong Goh
	10:10 AM - 10:30 AM	ID 354: A reduced order model of scalar surface Bloch waves in truncated periodic media Author(s): Prasanna Salasiya, Long Nguyen, Shixu Meng, Bojan Guzina
	10:30 AM - 10:50 AM	ID 405: Enabling Advanced Multifunctional Materials Through Synergies of Mechanical Metamaterials and Triboelectric Nanogenerators Author(s): Roshira Premadasa, Qianyun Zhang
	10:50 AM - 11:10 AM	ID 601: Enhanced Matrix Interpolation for Dynamic Analysis of Metamaterials Author(s): Jesus Pereira, Rafael Ruiz
	11:10 AM - 11:30 AM	ID 1015: Flexure-induced Architected Instability-based Metamaterials (AIMs) Author(s): Sibo Zhang, Yunlan Zhang, Dominic Vella
MS069: Uncertainty Quantification and System Reliability Methods for Regional Risk and Resilience Assessment Chair(s): Sang-ri Yi; Ziqi Wang; Ji-Eun Byun; Alexandros Taflanidis		
HUMN 150	09:30 AM - 09:50 AM	ID 211: System Reliability-based Design Optimization of Floating Offshore Wind Turbines Considering Energy Production Author(s): Junseob Shin, Seonghyun Lim, Junho Song
	09:50 AM - 10:10 AM	ID 231: Tensor-based rule extraction for scalable risk assessment of regional-scale infrastructure networks Author(s): Ji-Eun Byun, Hyeuk Ryu, Junho Song
	10:10 AM - 10:30 AM	ID 590: Regional Risk Assessment of Rainfall-Induced Cut-Slope Failures: Methodology Validation and Application to Chile Author(s): Manuel Contreras-Jara, Alondra Chamorro, Esteban Saez, Tomás Echaveguren, Cristina Torres-Machi
	10:30 AM - 10:50 AM	ID 361: Comprehensive Uncertainty Quantification for Regional Seismic Risk Assessment of Bridge Networks Author(s): Esteban Amaya, Alexandros Taflanidis
	10:50 AM - 11:10 AM	ID 532: Stochastic Emulation for Seismic Risk Assessment and the Impact of Intensity Measure Selection Author(s): Sang-ri Yi, Parisa Toofani Movaghar, Alexandros Taflanidis, Carmine Galasso, Dimitrios Vamvatsikos

MS070: Probabilistic assessment, data-driven inference, and optimization for decision-making under uncertainty Chair(s): Kostas G. Papakonstantinou; Charalampos P. Andriotis; Dan M. Frangopol; George Deodatis		
CLUB 4-5	09:30 AM - 09:50 AM	ID 129: Reliability-based calibration of imposed loads for office buildings Author(s): James Whiteley, Will Hawkins, Jurgen Becque, Josephine Carstensen, David Watson
	09:50 AM - 10:10 AM	ID 309: Stochastic Modeling of Microdamage Evolution in Steel Fiber Reinforced Concrete using Acoustic Emissions Author(s): Nikhil Gupta, Vidya Sagar Remalli, Chandra Kishen J. M.
	10:10 AM - 10:30 AM	ID 901: Incorporating Structure-Dependent Hazard and Structural Parameter Uncertainty in the Performance-Based Earthquake Engineering Framework Author(s): Lei Zhou, Maria Jose Echeverria, Michele Barbato
	10:30 AM - 10:50 AM	ID 724: Higher-Order Statistical Characterization of Tropical Cyclone Extremes Using Generalized Linear Models and Machine Learning Approaches Author(s): Yu Chang, Jiayao Wang, Sunwei Li
	10:50 AM - 11:10 AM	ID 771: Residual drift-informed nonlinear structural model parameter updating and its effect on aftershock performance and risk Author(s): Budhaditya De, Henry Burton
	11:10 AM - 11:30 AM	ID 826: Lifetime Reliability Versus Annual Risk: How ASCE SEI Live Loads Should be Changed Author(s): Sanjay Arwade, Ross Corotis, Khanh Duy Ha
MS042: 24th Symposium on Biological and Biologically Inspired Materials and Structures Chair(s): Dinesh Katti; Christian Hellmich		
CASE E230	09:30 AM - 09:50 AM	ID 252: Establishing Design Principles for Mechanosensitive Living-Light Materials Author(s): Giulia Brachi, Cheng Pau Lee, Jessica McKean, Joy Chinazaekpere Edwin-Ezeh, Wil V. Srubar III
	09:50 AM - 10:10 AM	ID 935: Controlling Ionic Fluxes in Charge-Patterned Wavy Nanochannels Author(s): Pouya Golchin, Jinwoo Im, Felipe P. J. de Barros, Thomas Petersen
	10:10 AM - 10:30 AM	ID 499: Development of Flexible Tactile Sensors Based on Electrical Impedance Tomography Author(s): Paul Choi, John Acevedo, Philip Park
	10:30 AM - 10:50 AM	ID 524: "Bio-metals": Uncovering ancient biological materials with nanoindentation size effects arising from manifold micromechanics Author(s): Christian Hellmich, Luis Zelaya-Lainez, Friedrich Schuster, Stefan Manhartseder, Maximilian Landegger, Kyojiro Ikeda, Florian Raible, Olaf Lahayne, Stefan Scheiner
	10:50 AM - 11:10 AM	ID 630: The effects of the chemical composition of human bone on its nanoscale mechanical properties Author(s): Elisa Budyn, Ana Chee, Arnavaz Hakimiyan, Shelby Pietro del Rivero, Romain Dupouy, Elias Aloaui-Chrifi, Christophe Sandt, James Williams, Susan Chubinskaya, Brian David
	11:10 AM - 11:30 AM	ID 635: Finite Element Analysis of Brain Tissue Mechanics for Traumatic Brain Injury Assessment Author(s): Sujata Ghimire, Madura Pathirage
MS055: Optimization in Civil Engineering: Methods, Challenges and Solutions Chair(s): Yakov Zelickman; Edvard Bruun; Josephine Carstensen		
CASE E240	09:30 AM - 09:50 AM	ID 156: An Integrated Computational Framework for Design Optimization and 3D Printing of Prestressed Concrete Structures Author(s): Oded Amir, Emad Shakur

	09:50 AM - 10:10 AM	ID 989: Combinatorial optimization of tall building aerodynamics using cyber-physical wind tunnel testing Author(s): Wei-Ting Lu, Brian Phillips, Zhaoshuo Jiang
	10:10 AM - 10:30 AM	ID 762: Residual-Stress–Driven Response Spectrum Optimization of Lightweight Structures Subject to Impact Author(s): Paul T. Kühner, Michal Habera, Andreas Zilian
	10:30 AM - 10:50 AM	ID 786: Realistic optimality: Printability constrained truss optimization for 3d printed concrete Author(s): Hajin Kim-Tackowiak, Zane Schemmer, Josephine Carstensen
	10:50 AM - 11:10 AM	ID 796: Challenging Traditional Column Layouts in Buildings with Structural Optimization Author(s): Yakov Zelickman, Oded Amir
MS091: Advances in Modeling of Material Damage and Fracture Chair(s): Mostafa Mobasher; Lampros Svolos; Aditya Kumar; Georgios Moutsanidis; Alessandro Fascetti; Ravindra Duddu; Haim Waisman		
KTCH 1B87	09:30 AM - 09:50 AM	ID 818: Lattice discrete particle model for reinforced concrete structures: A novel geometrically consistent approach Author(s): Yingbo Zhu, Dongge Jia, John Brigham, Alessandro Fascetti
	09:50 AM - 10:10 AM	ID 978: A Finite-Strain Microplane Damage Model for Fracture of Soft Materials Author(s): Anh T Nguyen, Yang Zhao, Zdenek Bazant
	10:10 AM - 10:30 AM	ID 995: Crack-Parallel Stress Effects in Fracture of Knitted Soft Composites Author(s): Xiaoxiao Ding, Yanzhao Niu, Yang Zhao, Zdeněk Bažant, Jian Cao
	10:30 AM - 10:50 AM	ID 694: Predicting ductile fracture in additively manufactured hot isostatically pressed stainless steel 316L Author(s): Surajit Dey, Subramaniam Rajan, Ravi Kiran
	10:50 AM - 11:10 AM	ID 219: Multiscale Modeling of the Elastic Modulus of Recycled Aggregate Concrete Author(s): Osamah Dehwah, Stephanie Watson
	11:10 AM - 11:30 AM	ID 975: Cohesive Zone Modeling of Mode-II Interfacial Fracture in Cementitious Repairs Author(s): Ayumi Manawadu, Pizhong Qiao
MS062: Analysis of Heritage Structures: Tools and Methods for Assessing Historic Monuments and Structures Chair(s): Rebecca Napolitano; Linda Seymore; Branko Glisic; Admir Masic; Daniele Paulino		
GUGG 205	09:30 AM - 09:50 AM	ID 345: Case studies in landmark office-to-residential conversions in the United States Author(s): Roman Shipley, Demi Fang
	09:50 AM - 10:10 AM	ID 358: Machine Learning Analysis of Historic Building Vulnerability to Tornado Damage: A Multi-Model Framework for Preservation Planning Author(s): Saanchi Kaushal, Yishuang Wang, Mariant Gutierrez Soto, Rebecca Napolitano
	10:10 AM - 10:30 AM	ID 542: Structural classification and identification of historical timber barn frames Author(s): Moriah Hughes, Branko Glisic
	10:30 AM - 10:50 AM	ID 598: Data Integration and Visualization for Damage Assessment of Historic Masonry Walls Author(s): Daniele Paulino, Anna Blyth, Margaret Cowie
	10:50 AM - 11:10 AM	ID 1016: Cultural heritage protection: shaping the future Author(s): Antonina Pirrotta, Chiara Masnata
	11:10 AM - 11:30 AM	ID 1043: Assessing Historic Masonry on the University of Colorado Boulder Campus Author(s): Peter Babaian, Christopher Sachs

MS063: Advanced Spatiotemporal Modeling and Risk Assessment of Natural Hazards for Resilient Infrastructure Systems Chair(s): Abdollah Shafieezadeh; Yue Li; Hanbyeol Shin		
ECON 119	09:30 AM - 09:50 AM	ID 340: Generative Spatiotemporal Modeling of Extreme Wind Fields for Network-Level Infrastructure Resilience Analysis Author(s): Hanbyeol Shin, Abdollah Shafieezadeh
	09:50 AM - 10:10 AM	ID 350: On the Applicability of Risk-Targeted Seismic Criteria to Existing Bridges Author(s): Shaymaa Obayes, Monique Head
	10:10 AM - 10:30 AM	ID 389: Probabilistic Seismic Risk Assessment of Interdependent Utility Systems for Functional Recovery Author(s): Shuochuan Meng, Laxman Dahal, Mike Mieler
	10:30 AM - 10:50 AM	ID 497: Severe convective storm wind and hail compound fragility assessment of low-rise structures Author(s): Andres Calvo, Jamie Padgett, Guirong Yan
	10:50 AM - 11:10 AM	ID 727: Spatially interpretable dimensionality reduction for storm surge analysis: a unified treatment to overcome missing data, model bias and high dimensionality Author(s): Xi Zhong, Jize Zhang
	11:10 AM - 11:30 AM	ID 939: Learning Boundary–Interior Coupling for Compound Flood Forecasting Using Graph Neural Networks Author(s): Zanko Zandsalimi, Mehdi Taghizadeh, Majid Shafiee-Jood, Negin Alemazkoor
MS076: Advances in Modeling Wind and Its Effects on the Built Environment Chair(s): Teng Wu; Catherine Gorle; Marco Giometto		
CHEM 140	09:30 AM - 09:50 AM	ID 155: Machine Learning Enhanced Stationary and Non-Stationary Wind Control in the University of Florida Boundary Layer Wind Tunnel Author(s): Xiaobang Zhang, Brian Phillips, Jennifer Bridge, Ryan Catarelli, Tai-An Chen
	09:50 AM - 10:10 AM	ID 230: AI-Empowered Physical Modeling of Flow in a Wind Tunnel Author(s): Baoheng Li, Teng Wu, Andrew S. Whittaker, Scot Weinreber
	10:10 AM - 10:30 AM	ID 357: Cooling-Source LES of Downburst Generation and Stationary Reconstruction of Extreme Near-Ground Wind Profiles for Building Load Statistics Author(s): Jianyu Wang, Linqian Zheng, Catherine Gorlé
	10:30 AM - 10:50 AM	ID 403: Agentic AI-based Autonomous Meshing for CFD Author(s): Fei Ding, Teng Wu
	10:50 AM - 11:10 AM	ID 429: Windborne Debris Risk Analysis Using Synchronized Building Surface Pressure and Surrounding Flow Field Author(s): Kimia Yousefi Anarak, Shaopeng Li, Ryan Catarelli, Yanlin Guo, Kurtis Gurley, John van de Lindt
	11:10 AM - 11:30 AM	ID 570: Self-Driven and Data-Efficient Wind Flow Prediction via Adaptive Experimental Sampling Author(s): Arezoo Bakhshizadeh, Pedro Fernandez-Caban
MS088: Advances in Damage Mechanics and Micromechanics - in Honor of the 2025 Blaise Pascal Medal in Engineering to Professor Jiann-Wen Woody Ju Chair(s): Huiming Yin; Lizhi Sun; Glaucio Paulino; Yong-Rak Kim		
UMC 247	09:30 AM - 09:50 AM	ID 151: A Novel Explicit Micromechanical Model for Homogenized Effective Elastic Moduli of Random Composite Materials Author(s): Liam P. Deng, J. Woody Ju
	09:50 AM - 10:10 AM	ID 187: Effective hysteresis of magnetorheological composites due to interfacial debonding Author(s): Shengwei Feng, Lizhi Sun

	10:10 AM - 10:30 AM	ID 232: A Smeared Joint Model for Extrusion-Based 3D Printed Concrete Author(s): Chunpeng Qu, Qian Zhang
	10:30 AM - 10:50 AM	ID 249: Direct correlation function-dependent homogenization Author(s): Anna Gorgogianni, Chloé Arson
	10:50 AM - 11:10 AM	ID 446: Multiphysics Multiscale Mechanical Modeling of Permafrost Subgrade on the Qinghai–Tibet Plateau for Digital Twin Applications Author(s): Yingjie Deng, Shuangjie Wang, Jiann-Wen Woody Ju, Jianbing Chen, Shengliang Cao
	11:10 AM - 11:30 AM	ID 795: A Framework for Image-Based Coupled 3D Electrochemical–Mechanical Damage Simulation in Fuel Cell and Electrolyzer Electrodes Using Reproduced Kernel Particle Method (RKPM) Author(s): Xin He, Jeff Allen, Kristen Susuki, Jacob Wrubel
MS037: Shaping Tomorrow: State-of-the-Art Innovations in Advanced Cementitious Materials and Concrete Technologies Chair(s): Jianqiang Wei; Sung-Hwan Jang; Linfei Li; Yen-Fang Su		
UMC 415-417	09:30 AM - 09:50 AM	ID 161: Experimental and Numerical Assessment of the Axial Strength of Ultra-High Performance Concrete Hollow Columns Author(s): Yuqing Tan, Michele Barbato, Zhao Cheng
	09:50 AM - 10:10 AM	ID 284: Experimental and Computational Investigation of Rheological Behavior of Cellulose Nanofibers-Enhanced Ultra-High-Performance Concrete Author(s): Xiaoli Xiong, Rongze Hu, Yongfei Li, Kamal Khayat, Chengcheng Tao
	10:10 AM - 10:30 AM	ID 685: Self-Sensing CNT/Epoxy Concrete for Rapid Pothole Repair and Post Repair Monitoring Author(s): Yu-Jin Jung, Ga-Hyeon Eom, Sung-Hwan Jang
	10:30 AM - 10:50 AM	ID 697: Bio-based alkali-activated starch hydrogel coatings for evaporation control and early-age shrinkage mitigation in UHPC and cementitious mortar Author(s): Aniket Kumar Patel, Maedeh Hesami, Asif Jalal, Avinaya Tripathi, Narayanan Neithalath, Ravi Kiran
	10:50 AM - 11:10 AM	ID 757: Combined Effect of Cyclic Loading and Autogenous Healing on the Flexural Performance of PVA-FRCC Author(s): Reina Nette Daguio, Jishen Qiu
	11:10 AM - 11:30 AM	ID 518: Physics-Informed Machine Learning for Ultrasonic Non-destructive Evaluation of Concrete affected by Alkali-Silica Reaction Author(s): Mohammed Alnaggar, Hongbin Sun
MS067: Computational statistics for natural hazards engineering: Advances in Uncertainty Quantification, Surrogate Modeling, and Dimension Reduction for Performance-based design of Structures and Systems Chair(s): Dimitris Giovanis; Somdatta Goswami; Bowei Li; Michael Shields; Seymour Spence; Alexandros Taflanidis		
UMC 382-384-386	09:30 AM - 09:50 AM	ID 102: Explainable Trajectory Modeling for Convective Storms with Data-Driven Tracks Author(s): Guangzhao Chen, Shengshen Li
	09:50 AM - 10:10 AM	ID 321: Data-Driven Seismic Risk Assessment Aided by Supervised Neural-based Excitation Embeddings Learned from Ground-Motion Records Author(s): Parisa Toofani Movaghar, Alexandros Taflanidis
	10:10 AM - 10:30 AM	ID 496: Bayesian Inference of Independent and Progressive Failure Mechanisms in Wind-Induced Structural Damage Author(s): Jordan Nakayama, David Roueche

	10:30 AM - 10:50 AM	ID 704: Computationally Efficient Estimation of Bayesian Model Evidence Using Adaptive Likelihood Levels Author(s): Subhayan De, Reza Farzad, Patrick Brewick, Erik Johnson, Steven Wojtkiewicz
	10:50 AM - 11:10 AM	ID 903: Development of reliability-based experimental loading protocols for steel structures to support performance-based wind engineering Author(s): James Ban, Srinivasan Arunachalam, Seymour Spence
	11:10 AM - 11:30 AM	ID 938: Probability-based residual displacement estimation of nonlinear hysteretic systems subject to seismic loads Author(s): Lianxu Zhou, Michele Barbato
MS099: Computational Generalized Continua, Gradients, and Nonlocal Mechanics Chair(s): Richard Regueiro; Remi Dingreville; Alexander Dummer; Christian Linder; Nathan Miller; Matthias Neuner; Leong Hien Poh		
HUMN 1B80	09:30 AM - 09:50 AM	ID 15: Computational approaches for Predicting Thermomechanical Responses in Friction Stir Welding of Aluminum Plates Author(s): Surendra Bhatta, Kim Jeongho, Sayed A Niknam, Haoyu Wang, Ralph Shortt, Dongsheng Li
	09:50 AM - 10:10 AM	ID 235: Nonlocal Dislocation-based Plasticity Incorporating Micromorphic Approach Author(s): George Z Voyiadjis, Ahmad J. Aljaafreh
	10:10 AM - 10:30 AM	ID 254: An FFT-based Method for Micropolar Field Dislocation and Disclination Mechanics Author(s): Noah Francis, Rémi Dingreville, Stéphane Berbenni
	10:30 AM - 10:50 AM	ID 312: A Conservative Probabilistic Framework for Damage Evolution via Doob's h-Transform Author(s): Upadhyayula M M Aditya Sai Gopal, Ved Prakash, Ananth Ramaswamy, Debasish Roy
	10:50 AM - 11:10 AM	ID 363: Internal Length Scale in Continuum Field Theories: Regularization of Strain Softening in Cauchy's Classical and Eringen's Micropolar Continua Author(s): Madura Pathirage
	11:10 AM - 11:30 AM	ID 452: A Phase-Field Cohesive Zone Framework for Frequency-Dependent Fatigue in Quasi-Brittle Materials Author(s): RAJEEV KUMAR RANJAN, Ananth Ramaswamy
MS094: Mechanics and Physics of Granular Materials Chair(s): Ryan Hurley; Marcial Gonzalez; Yimin Lu; Dawa Seo; Alessandro Rotta Loria; Ali Daouadji		
VAC 1B20	09:30 AM - 09:50 AM	ID 949: Statistical Shape-Size Coevolution in Crushable Granular Solids: A Continuum Thermodynamics Framework Author(s): Divyanshu Lal, Giuseppe Buscarnera
	09:50 AM - 10:10 AM	ID 522: Tuning entanglement and strength in staple-like granular materials through particle geometry and mechanical vibrations Author(s): Saeed Pezeshki, Youhan Sohn, Francois Barthelat
	10:10 AM - 10:30 AM	ID 1034: Numerical Quantification of Scale Effects in Non-standard Subsurface Installations interacting with Shear Bands Author(s): Dawei Xue, Giuseppe Buscarnera
	10:30 AM - 10:50 AM	ID 167: Micromechanical origins of morphology-dependent shear behavior in coral sands: A 3D in-situ analysis Author(s): Ruidong Li, Zhen-Yu Yin
	10:50 AM - 11:10 AM	ID 183: A DEM-DFM Coupled Framework for Thermo-Hydro-Mechanical-Chemical Modelling of Methane Hydrate-Bearing Sediments Author(s): Chengkai XU, Zhen-Yu YIN, Pei WANG
	11:10 AM - 11:30 AM	ID 931: A Framework for Extracting Basic Soil Moduli from Undrained Cyclic Triaxial Responses Author(s): Qinlin Yu, Srikanth Madabhushi

Thursday, June 4, Early Afternoon Sessions, 2:15 PM - 3:35 PM

MS015: Digital and sensing technologies for smart monitoring of infrastructure and buildings Chair(s): Bryan G. Pantoja Rosero; Shenghan Zhang; Salvatore Salamone; Matthew DeJong		
HUMN 250	02:15 PM - 02:35 PM	ID 766: Post-Earthquake Damage Assessment via Uncertainty-Aware Fusion of Heterogeneous Sensing Data Author(s): Sudao He, Shenghan Zhang
	02:35 PM - 02:55 PM	ID 799: Autonomous Mobile Robotic System for Real-Time Crack Detection and 3D Profiling for Automated Repair Author(s): Yong Voeurn, Emmanuella Ogun, Doyun Lee
	02:55 PM - 03:15 PM	ID 827: High Precision Deformation Measurement During Structural Integrity Testing on Nuclear Reactor Containment Building Using a Combined FMCW radar and Accelerometer Sensor Author(s): Daurl Kim, Jigu Lee, Kiyoung Kim, Hoon Sohn
	03:15 PM - 03:35 PM	ID 834: Multi-Modal Monitoring of a Scour-Critical Bridge Using Sensors and PTZ Imaging Author(s): Byunghyun Kim, Salvatore Salamone
MS008: Advances in AI-enabled Approaches, Robotic Inspection, and Smart Sensing for Civil Infrastructure Chair(s): Hadi Salehi; Rih-Teng Wu; Mohammad Reza Jahanshahi; Kenneth J Loh		
HUMN 135	02:15 PM - 02:35 PM	ID 180: Digital Twin-Guided Localization and Assistive Navigation for UAS-Based Infrastructure Visual Inspection Author(s): Yuxiang Zhao, Martin Xu, Zhengyu Tao, Ziyi Rong, Mohamad Alipour
	02:35 PM - 02:55 PM	ID 260: Dynamic Assessment & Reconnaissance Targeting: A Human-Centered AI Copilot for Targeted Post-Disaster Reconnaissance Author(s): Pedro Romero Santiago, Zihao "Scott" Li, Chenchen Kuai, Stephanie Paal
	02:55 PM - 03:15 PM	ID 335: Asphalt Pavement Surface 3D Reconstruction and Texture-Based Distress Assessment through Depth-Supervised Neural Radiance Fields Author(s): You-Lin Chuang, Yu-Ting Huang, Wei-Sheng Lin
	03:15 PM - 03:35 PM	ID 782: Temporal Windowing for 3D Attention Analysis in Bridge Inspections Using Eye Tracking Author(s): Daniel Jimenez Gil
MS039: Architected Materials Chair(s): Yunlan (Emma) Zhang; David Restrepo; Josephine Carstensen; Nilesh Mankame; Pablo Zavattieri		
HUMN 125	02:15 PM - 02:35 PM	ID 645: A Statistical Mechanics Approach to Understanding Fracture in Brittle Architected Materials: Disordered Bone-Inspired Architected Cementitious Materials Author(s): Shashank Gupta, Reza Moini
	02:35 PM - 02:55 PM	ID 296: Numerical Modeling of Bio-inspired 3D Printed Concrete for Impact Resistance Author(s): Loukham Shyamsunder, Yu Wang, Pablo Zavattieri

	02:55 PM - 03:15 PM	ID 265: Sub-Sized Fracture Testing Enabled by Electroplating: Experimental and Computational Feasibility Study Author(s): Benjamin Spencer, Malachi Nelson, Giang Huynh, Yuxin Hu, Muhammad Jahangir Khan Lodhi, Fei Teng, Peter Hosemann
	03:15 PM - 03:35 PM	ID 623: Durable Carbon-Negative Enzymatic Structural Materials Author(s): Nima Rahbar
MS025: AI and Machine Learning for Risk, Uncertainty, and Resilience Assessment of Structural and Infrastructure Systems Chair(s): Milad Roohi; Mohsen Zaker Esteghamati; Doeun Choe; John van de Lindt		
HUMN 1B50	02:15 PM - 02:35 PM	ID 223: Adaptive Algorithm for Efficient Urban Seismic Loss Assessment Considering Time-Varying Population Characteristics Author(s): Hyeonju Park, Taeyong Kim
	02:35 PM - 02:55 PM	ID 253: Enhancing tornado damage prediction for Older URM Buildings through feature importance analysis Author(s): Yishuang Wang, Rebecca Napolitano
	02:55 PM - 03:15 PM	ID 325: Scalable Graph-Based Surrogate Modeling for Regional Storm Surge Hazard Estimation Author(s): Parisa Toofani Movaghar, Alexandros Taflanidis, Norberto Nadal-Caraballo, Madison Yawn, Luce Aucoin, Kohl Morris
	03:15 PM - 03:35 PM	ID 464: Integrated Path Optimization for Wildfire Evacuation and Firefighting Access using Multi-Agent Reinforcement Learning Author(s): Taehoon Kang, Taeyong Kim
MS027: Bridging Numerical Modeling and Scientific Machine Learning for Next-Generation Computational Mechanics Chair(s): Somdatta Goswami; Souvik Chakraborty		
HUMN 150	02:15 PM - 02:35 PM	ID 133: Resolution-Agnostic Operator Learning for Transient Mechanics Author(s): Diab Abueidda, Mbebo Nonna, Panos Pantidis, Mostafa Mobasher
	02:35 PM - 02:55 PM	ID 288: The Integrated Finite Element Neural Network (IFENN) approach to phase-field fracture initiation and propagation Author(s): Panos Pantidis, Fouad Amin, Diab Abueidda, Mostafa Mobasher
	02:55 PM - 03:15 PM	ID 383: GAPS GAN Framework for Robust Extrapolation in Data Limited Computational Mechanics Author(s): Emiliano Garcia de la Cadena Gonzalez, Stephanie Paal
	03:15 PM - 03:35 PM	ID 385: An Adaptive Hybrid Neural Operator–Implicit Solver Framework for Metamodeling of Nonlinear Stochastic Dynamic Systems Author(s): Haimiti Atila, Somdatta Goswami, Seymour Spence
MS036: Human-Centered AI and Data-Driven Systems for Infrastructure and Community Resilience Chair(s): Katherine Flanigan; Hadi Salehi		
HUMN 1B90	02:15 PM - 02:35 PM	ID 463: Between People and Space: Modeling the Ecologies of Hybrid Work for Human-Centered Sustainability Author(s): Giovanna Pilot, Andrew Sonta
	02:35 PM - 02:55 PM	ID 613: Constructing Sociometric Networks Through LLM-Enabled Human Dialogue Author(s): Cheyu Lin, Katherine Flanigan
	02:55 PM - 03:15 PM	ID 619: Street View Images as a Multi-Application Data Source for Urban Digital Twins: Data Collection and Bias Correction Author(s): Kieran Elrod, Katherine Flanigan, Mario Berges
	03:15 PM - 03:35 PM	ID 992: Modeling Human-Induced Coastal Vulnerability Through Multimodal Spatiotemporal Data Fusion Author(s): Rashmi Bhaila, Hadi Salehi

MS066: Evaluating the Credibility of Computational Models and Digital Twins Chair(s): Patrick Brewick; Pranav Karve; Kyle Neal; Sankaran Mahadevan		
CLUB 4-5	02:15 PM - 02:35 PM	ID 135: Considering Credibility and Confidence for Complex Engineering Models and Digital Twins Author(s): Patrick Brewick, Ruijia Wang, Jen Pazour
	02:35 PM - 02:55 PM	ID 333: Quantitative Assessment of Model Credibility Across the Project Lifecycle Author(s): Kyle Neal, Pranav Karve, Sankaran Mahadevan, Alden Pack, Aaron Krueger, Josh Mullins
	02:55 PM - 03:15 PM	ID 563: Model risk quantification using evidence assessment Author(s): Pranav Karve, Sankaran Mahadevan, Kyle Neal, Joshua Mullins
MS059: Retrofitting, Inspection, and Repair for Resilient Infrastructure Systems Chair(s): Emad Hassan; Hussam Mahmoud; Mohamed ElGawady; Genda Chen		
CASE E230	02:15 PM - 02:35 PM	ID 905: Novel and Sustainable Strengthening Solution for Prestressed Bridge Girders Author(s): Mohammad Bani Hani, Hayder Rasheed
	02:35 PM - 02:55 PM	ID 588: A decision-support framework for selecting optimal water erosion control measures on roadside slopes Author(s): Eduardo Arancibia-Ruiz, Alondra Chamorro Giné, Esteban Sáez, Manuel Contreras-Jara, Tomás Echaveguren
	02:55 PM - 03:15 PM	ID 592: Network-Based Assessment of First Responder Functionality Under Seismic Hazards Author(s): Emad Hassan
	03:15 PM - 03:35 PM	ID 700: Damage Assessment and Recovery Estimation of Buildings and Electric Power Networks Following the March 2025 Rolla Tornado Author(s): Emad Hassan, Ibrahim Gomaa
MS052: Stability of structures: Advances across time and scales Chair(s): Noël Challamel; Hayder Rasheed; C.W. Lim; Stylianos Yiatros; Hyeyoung Koh		
CASE E240	02:15 PM - 02:35 PM	ID 154: Exact Buckling Solutions of Anisotropic Laminated Columns with Classical Boundary Conditions under Axial Compression Author(s): Hayder Rasheed, Ahmad Ghadban
	02:35 PM - 02:55 PM	ID 228: Geometrically exact strain-gradient Reissner elastica – Asymptotic, FDM and FEM analyses Author(s): Noël Challamel, Philippe Le Grognec
	02:55 PM - 03:15 PM	ID 830: Harnessing Topological Phases and Structural Instabilities for Polarization-Controlled Elastic Wave Manipulation in a Hexagonal Metamaterial Author(s): Guifeng Wang, C.W. Lim
	03:15 PM - 03:35 PM	ID 1042: Mode-Consistent Bifurcation Loads in the Vibration Correlation Technique for Improved Buckling Prediction of Composite Cylindrical Shells Author(s): Adrian Gliszczyński
MS060: Advancing a Functionality-Based Design Paradigm Grounded in Mechanics, System Modeling, and Decision Theory Chair(s): Lisa Wang; Milad Roohi; Emad Hassan		
KTCH 1B87	02:15 PM - 02:35 PM	ID 506: Power Distribution Restoration with Data Center Anchors via Graph-Based Reinforcement Learning for Enhanced Grid Resilience Author(s): Kamiar Khayambashi, Negin Alemazkoor

	02:35 PM - 02:55 PM	ID 644: A Data-Driven Building Demolition, Reconstruction, and Vacancy Methodology Considering Geospatial Social Vulnerability Author(s): Sai Kiran Simhadri, Wanting (Lisa) Wang, John W. van de Lindt, Blythe Johnston, P. Shane Crawford
	02:55 PM - 03:15 PM	ID 365: Using Open-source LLMs for Construction Information Retrieval Author(s): Bozhou Zhuang, Sriram Narasimhan, Eric Goldwyn, Elif Ensari
MS069: Uncertainty Quantification and System Reliability Methods for Regional Risk and Resilience Assessment Chair(s): Sang-ri Yi; Ziqi Wang; Ji-Eun Byun; Alexandros Taflanidis		
GUGG 205	02:15 PM - 02:35 PM	ID 705: A Multi-Scale Framework for Regional Seismic Risk Analysis via Random-Field Renormalization Author(s): Sebin Oh, Ziqi Wang
	02:35 PM - 02:55 PM	ID 785: Integrated Framework for Load Factor Calibration and System Reliability Assessment of Hydraulic Steel Miter Gates Author(s): Shweta Shrestha, Hussam Mahmoud, Christine Lozano
	02:55 PM - 03:15 PM	ID 212: AI-based Causal Analysis of Infrastructure Networks under Shifting Conditions for System Reliability Assessment and Intervention Planning Author(s): Rayeon Kim, Youngjun Kwon, Junho Song
	03:15 PM - 03:35 PM	ID 483: Probabilistic Wildfire Spread Forecasting with Sequential Bayesian Updating using Physics-Based Fire Spread Simulator and Satellite Observations Author(s): Youngjun Kwon, Abdollah Shafieezadeh
MS070: Probabilistic assessment, data-driven inference, and optimization for decision-making under uncertainty Chair(s): Kostas G. Papakonstantinou; Charalampos P. Andriotis; Dan M. Frangopol; George Deodatis		
ECON 119	02:15 PM - 02:35 PM	ID 892: On the use of stochastic simulation-optimization to improve EMS dispatch strategies Author(s): Sevin Mohammadi, Antonina Kosikova, Derek Long, Javad Ghorbanian, Andrew Smyth, Henry Lam, Audrey Olivier
	02:35 PM - 02:55 PM	ID 420: A Time-Varying Observation Model for POMDP-Based SHM Author(s): Junyi Li, Eleonora Maria Tronci
	02:55 PM - 03:15 PM	ID 909: Interpretable Deep Reinforcement Learning for Element-level Bridge Life-cycle Optimization Author(s): David Yang, Seyyed Amirhossein Moayyedi
	03:15 PM - 03:35 PM	ID 930: Integrating Pre-Posterior Analysis and POMDPs for Engineering Decisions Author(s): Kostas G. Papakonstantinou, Pablo G. Morato, Charalampos P. Andriotis
MS076: Advances in Modeling Wind and Its Effects on the Built Environment Chair(s): Teng Wu; Catherine Gorle; Marco Giometto		
CHEM 140	02:15 PM - 02:35 PM	ID 626: Automating ASCE 7-22–Informed Pressure Tap Layouts for Efficient Wind Tunnel Testing of Low-Rise Buildings Author(s): Robyn Andrews, Stephanie Paal, Dejiang Chen, Arindam Chowdhury
	02:35 PM - 02:55 PM	ID 811: Revisiting Modified Ibarra-Medina-Krawinkler Model for Hysteretic Restoring Forces of RC Frame Building Components under Hurricanes Author(s): Baichuan Deng, Teng Wu
	02:55 PM - 03:15 PM	ID 629: Development of Loading Protocols for Testing Solar Tracker Components under Synoptic and Thunderstorm Winds Author(s): Mahmoud Elnahla, Yanlin Guo, Teng Wu
	03:15 PM - 03:35 PM	ID 650: Wind-Induced Base Shear and Torsion in Low-Rise Flat-Roof Buildings with Irregular (Non-Rectangular) Plans Author(s): Mahmoud Abdallah, Omar Abdallah, Rani Al Sayegh, Ioannis Zisis

MS088: Advances in Damage Mechanics and Micromechanics - in Honor of the 2025 Blaise Pascal Medal in Engineering to Professor Jiann-Wen Woody Ju Chair(s): Huiming Yin; Lizhi Sun; Glaucio Paulino; Yong-Rak Kim		
UMC 247	02:15 PM - 02:35 PM	ID 804: Towards a Plasticity-Based Fatigue Damage Model for Asphalt Binder Author(s): Haifang Wen
	02:35 PM - 02:55 PM	ID 805: A localizing gradient damage model for the dynamic fracture of quasi-brittle materials with strain rate dependency Author(s): Leong Hien Poh
	02:55 PM - 03:15 PM	ID 869: An Integrated iBEM-Neural Network Framework for Rapid Detection of Structural Defects or Inhomogeneities Author(s): Jinming Zhang, Huiming Yin
	03:15 PM - 03:35 PM	ID 873: Effective multi-physical behavior of a lattice with defects Author(s): Huiming Yin
MS037: Shaping Tomorrow: State-of-the-Art Innovations in Advanced Cementitious Materials and Concrete Technologies Chair(s): Jianqiang Wei; Sung-Hwan Jang; Linfei Li; Yen-Fang Su		
UMC 415-417	02:15 PM - 02:35 PM	ID 360: Quantifying Washout and Surface Defects in Underwater 3D Concrete Printing with AI-Enabled Image Analytics Author(s): Yen-Fang Su, Nasser Mohammed, Masoud Pasbani
	02:35 PM - 02:55 PM	ID 430: Embedded CNRP Bars for Real-Time Structural Health Monitoring of Concrete Structures Author(s): Ga-Hyeon Eom, Yu-Jin Jung, Sung-Hwan Jang
	02:55 PM - 03:15 PM	ID 515: The Influence of Environmental Factors on the Stress-Sensitivity of Self-Sensing Cementitious Composites Author(s): Khalilullah Taj, Mohammed Alnaggar, Yen-Fang Su
	03:15 PM - 03:35 PM	ID 565: Durability Performance of Portland Limestone Cement (Type IL) under Sequential Carbonation and Alkali–Silica Reaction Author(s): Awetehagn Gebremariam, Mahmoud Shakouri
MS012: Objective Resilience: Advancing Multi-Hazard Physical- Socio-Economic Community Resilience using Physics- and AI-based Modeling and Digital Technologies Chair(s): Omar Nofal; Milad Roohi; Yousef Darestani; Lisa Wang		
UMC 382-384-386	02:15 PM - 02:35 PM	ID 855: Field-Calibrated Reliability Framework for Performance-Based Tornado Design of Wood-Framed Residential Structures Author(s): Pramodit Adhikari, Milad Roohi
	02:35 PM - 02:55 PM	ID 895: Probabilistic Hurricane Damage and Loss Modeling for Residential Structures under Future Climate Conditions Author(s): Xukai Zhang, Samira Garshasbi, Hessam AzariJafari, Randolph Kirchain
	02:55 PM - 03:15 PM	ID 218: A Scalable Socio-Physical Framework for Community-Level Post-Hazard Functionality Assessment Author(s): Omar Nofal
	03:15 PM - 03:35 PM	ID 751: Deep reinforcement learning-based post-disaster resource allocation for enhancing community resilience Author(s): Trevor Mogaka, Debarshi Sen
MS013: Advances in Digital Twins for Civil Infrastructure Chair(s): Adriana Trias Blanco; Maurizio Morgese; Amirali Najafi		
HUMN 1B80	02:15 PM - 02:35 PM	ID 582: Developing a Multimodal Bridge Digital Twin Model for Predicting Deterioration and Structural Response Using a Video-Language Model. Author(s): Prashank Singh Yadav, Ali MohebiAlidash, Amirali Najafi, Stefan Hurlebaus

	02:35 PM - 02:55 PM	ID 621: Agent-based modeling approach to Transportation Networks during Flooding Events Author(s): Scott Northedge
	02:55 PM - 03:15 PM	ID 676: SCADA-Driven Mooring Load Estimation for Floating Platforms Using Recursive Bayesian Estimation Author(s): Ibrahim Engin Taze, Md Armanul Hoda, Yashar Eftekhar Azam
	03:15 PM - 03:35 PM	ID 1036: Development of a BIM-based digital twin for disaster performance of road facility networks Author(s): Hyojoon An, Jong-Han Lee
MS093: Advances in geomechanics and geophysics for sub-surface technology and natural hazard Chair(s): Ghassan Shahin; John Rudnicki; Giuseppe Buscarnera		
VAC 1B20	02:15 PM - 02:35 PM	ID 82: A Surface Poroplasticity Model for Water-Induced Weakening and Instability in Carbonate Rocks Author(s): Hooman Dadras, Yida Zhang
	02:35 PM - 02:55 PM	ID 658: Nascent In-Situ X-ray Probes and Digital Twins for Rock Mechanics Author(s): Ryan Hurley, Subham Bose, Ahmed Al Busaidi
	02:55 PM - 03:15 PM	ID 887: A Kinematics-Driven Framework for Progressive Failure Assessment in Slopes Author(s): Plenyo Nahen Gonzaga Araujo, Giuseppe Buscarnera
	03:15 PM - 03:35 PM	ID 888: Surrogate Modeling of Surface Fault Rupture From 3D Discrete Element Simulations Author(s): Joan Atieno Onyango, Xin Wei, Estéfan Garcia Fernando

Thursday, June 4, Late Afternoon Sessions, 4:00 PM - 6:00 PM

MS010: Digital Twin and AI Innovations in Smarter Civil Infrastructure Monitoring and Management Chair(s): Yuguang Fu; Yasutaka Narazaki; Kareem Eltouny; Wenjun Cao		
HUMN 250	04:00 PM - 04:20 PM	ID 276: Finite Element Model-Integrated Fourier Neural Operators for Output-Only Ground Motion Inference Author(s): Eunchan Oh, Sunjoong Kim
	04:20 PM - 04:40 PM	ID 469: Bridge Inspection Embodied Question Answering (BIEQA): Vision Language Model-based navigation strategy in 3D scenes for Bridge Inspection Embodied Question Answering Author(s): Yasutaka Narazaki, Mingyu Shi, Wenhao Chai, Robin Kim
	04:40 PM - 05:00 PM	ID 682: Dmg2Former: A Computationally Efficient Vision Transformer Architecture for AI-Driven Infrastructure Monitoring Author(s): Kareem Eltouny, Xiao Liang
	05:00 PM - 05:20 PM	ID 891: Structural identification and load estimation using fiber optic sensing and differentiable simulators Author(s): Matthew DeJong, James Xu, Jeffrey Cheng
	05:20 PM - 05:40 PM	ID 680: Forecasting Bridge Deck Deterioration with Trustworthy AI: A Temporal Fusion Transformer Framework for Decision Support Author(s): Rohit Battula, Hayden Gilbert, Arif Sadri, Aikaterini Kyprioti

MS008: Advances in AI-enabled Approaches, Robotic Inspection, and Smart Sensing for Civil Infrastructure Chair(s): Hadi Salehi; Rih-Teng Wu; Mohammad Reza Jahanshahi; Kenneth J Loh		
HUMN 135	04:00 PM - 04:20 PM	ID 870: Physics-Aware Deep Learning for Full-Field Deformation Sensing: A Local–Global Benchmark of cGAN, CUT, and Vision Transformers Author(s): Shao-Chung Peng, Wei-Cheng Chao, Tung-Yen Chuang, Chi-Ying Lin
	04:20 PM - 04:40 PM	ID 918: Target-free Displacement Measurement Using Advanced Optical Flow and Structural Geometry Author(s): Chen Wei Chang, Yi Chang Chen, Rih-Teng Wu
	04:40 PM - 05:00 PM	ID 919: A Deep Reinforcement Learning-based Framework with Global Information Encoding for UAV Robotic Inspection Author(s): YungI Chang, RihTeng Wu
	05:00 PM - 05:20 PM	ID 725: Network-Level Pavement Condition Index Estimation Using Deep Learning and Image Processing of RGB-D Images Author(s): Abhishek Subedi, Nikkhil Sankar, Malleswari Kachireddy, Mohammad Jahanshahi
	05:20 PM - 05:40 PM	ID 273: A Multi-Modal AI Framework for Network-Level Assessment of Urban Transportation Infrastructure and Traffic Stress Author(s): Debasish Jana, Ryan Alimo, Aniruddha Kalkar, Sven Malama, Ehsan Asali, Pranav Chaudhary, Alison Olmstead, Melis Fidansoy, Maryam Hosseini, Sriram Narasimhan
MS099: Computational Generalized Continua, Gradients, and Nonlocal Mechanics Chair(s): Richard Regueiro; Remi Dingreville; Alexander Dummer; Christian Linder; Nathan Miller; Matthias Neuner; Leong Hien Poh		
HUMN 125	04:00 PM - 04:20 PM	ID 488: Adaptive and kinematics-based homogenization domain selection for a micromorphic filter Author(s): Thomas Allard, Nathan Miller, Richard Regueiro
	04:20 PM - 04:40 PM	ID 517: Strong form formulation for a high order beam theory with polynomially augmented radial basis function kinematics Author(s): Ruturaj Chiddarwar, Petros Sideris
	04:40 PM - 05:00 PM	ID 609: Localizing gradient-enhanced damage-plasticity for quasi-brittle materials with application to concrete Author(s): Alexander Dummer, Konstantin Basche, Paul Hofer, Peter Gamnitzer, Günter Hofstetter, Thomas Mader, Matthias Neuner
	05:00 PM - 05:20 PM	ID 668: A generalized continuum based elastoplastic phase field model for fracture in concrete Author(s): Sina Abrari Vajari, Christian Linder
	05:20 PM - 05:40 PM	ID 494: Development, implementation, and response of higher-order elasto-plastic material models of geo-materials Author(s): Nathan Miller, Thomas Allard, Richard Regueiro
	05:40 PM - 06:00 PM	ID 491: Choosing the appropriate multiphase lattice Boltzmann approach for simulating pore-scale fluid distributions in unsaturated granular soils Author(s): Reihaneh Hosseini, Clara Toffoli
MS025: AI and Machine Learning for Risk, Uncertainty, and Resilience Assessment of Structural and Infrastructure Systems Chair(s): Milad Roohi; Mohsen Zaker Esteghamati; Doeun Choe; John van de Lindt		
HUMN 1B50	04:00 PM - 04:20 PM	ID 577: Artificial Intelligence for improved surrogate modeling and class fragility generation of structures with correlated loads Author(s): Sushreyo Misra, Paolo Bocchini
	04:20 PM - 04:40 PM	ID 620: An AI-driven computational framework for quantifying cascading effects in the built environment during extreme wind events Author(s): Rohith Swaminathan, Sumukh Bharadvaja Shivaram, Catalina Gonzalez Duenas

	04:40 PM - 05:00 PM	ID 738: Physics-Informed Foundation Models for Structural Digital Twin Updating via 4D Gaussian Splatting Author(s): Parham Bakhtiari, Mohsen Zaker Esteghamati
	05:00 PM - 05:20 PM	ID 747: A Variable-Length Transformer for Inverse Performance-Based Design of Steel Buildings Author(s): Ali Namin, Shiva Baddipalli, Mohsen Zaker Esteghamati
	05:20 PM - 05:40 PM	ID 810: Opening the Black Box: Interpretable Surrogates for Tornado Loss Modeling Author(s): Mohamad Habibnia, John van de Lindt
	05:40 PM - 06:00 PM	ID 1008: AI-Driven Imputation of Missing Attributes in Building Inventories for Community Resilience Assessment Author(s): Saeid Ghasemi Gavabar, Milad Roohi
MS027: Bridging Numerical Modeling and Scientific Machine Learning for Next-Generation Computational Mechanics Chair(s): Somdatta Goswami; Souvik Chakraborty		
HUMN 150	04:00 PM - 04:20 PM	ID 618: Physics-Guided Machine Learning Acceleration of Force-Based Beam–Column Elements Author(s): Utkarsh Yadav, Eduardo Montalto
	04:20 PM - 04:40 PM	ID 695: Coupling Generalized Runge-Kutta-Nyström (GRKN) time-integration schemes with a machine learning (ML) assisted multi-time-step (MTS) framework Author(s): Sun-Beom Kwon, Arun Prakash
	04:40 PM - 05:00 PM	ID 701: Fourier Neural Operators for Structural Dynamics Models: Challenges, Limitations and Advantages of Using a Spectrogram Loss Author(s): Rad Haghi, Bipin Jairaj Gaikwad, Abani Patra
	05:00 PM - 05:20 PM	ID 739: Bi-Fidelity Variational Inference for Data-Driven Equation Discovery Author(s): Damilola Adebayo, Jamie Dellwardt, Rajdip Nayek, Subhayan De
	05:20 PM - 05:40 PM	ID 860: Accelerating finite element solvers for parametric PDEs using low-fidelity neural surrogates Author(s): Victor Alcantara-Arias, Amuthan Ramabathiran
	05:40 PM - 06:00 PM	ID 1001: A 3D SciML Surrogate for Mitral Valve Regurgitation Simulation Author(s): Mohammad Hossein Kazemi, Weiheng Zhong, Jing Bi, Victor Oancea, Hadi Meidani
MS033: Nondestructive testing-based damage identification using machine and deep learning Chair(s): Chanseok Jeong; Fernando Moreu; Hoon Sohn; Young-Jin Cha		
HUMN 1B90	04:00 PM - 04:20 PM	ID 208: Hidden defect detection in coated steel using time-frequency analysis of pulse thermography Author(s): Hyeonjin Kim, Yongmin Kim, Hanbi Byun, Jaeseung Kim, Hyunsung Hwang, Hoon Sohn
	04:20 PM - 04:40 PM	ID 259: Machine Learning and Advanced Sensor Systems to monitor and predict the impact of water-induced corrosion on the integrity of long-distance mild steel oil pipelines: A review Author(s): Oluwatoyin Joseph Gbadeyan
	04:40 PM - 05:00 PM	ID 326: Identification of delamination of arbitrary geometries in 3D layered anisotropic composite structures via ultrasonic wave measurement and machine learning Author(s): Boyoung Kim, Chanseok Jeong
	05:00 PM - 05:20 PM	ID 328: Deep learning–based ultrasonic imaging for detection and localization of hidden defects within irregular-shaped structures Author(s): Boyoung Kim, Chanseok Jeong

	05:20 PM - 05:40 PM	ID 382: Non-Destructive Structural Damage Identification: A Systematic Review Author(s): Elaheh Mohammadikhah, YoungJin Cha
MS050: Mechanics of Network Materials: Linking Structure, Dynamics, and Function Chair(s): Frank Vernerey; Nikolaos Bouklas; Trisha Sain; Noy Cohen		
CLUB 4-5	04:00 PM - 04:20 PM	ID 52: Critical-Strain Creep Failure in a Model Colloidal Gel Author(s): Florence Müller, Julien Bauland, Theo Tervoort, Leon Govaert, Jan Vermant
	04:20 PM - 04:40 PM	ID 474: Predicting Hydrolytic Aging of Vitrimers via A Coupled Reaction–Diffusion Network Theory Author(s): Md Rezaul Karim, Trisha Sain
	04:40 PM - 05:00 PM	ID 655: Unifying Mechano-Sorptive Phenomena in Polymers：From Environmental Stress Cracking to Mechano-Sorptive Creep Author(s): Yue Yan, Ranganathan Parthasarathy, Anil Misra, Paulette Spencer, Viraj Singh
	05:00 PM - 05:20 PM	ID 781: From Chain Physics to Network Function: Multiscale Models for Responsive Hydrogel Mechanics Author(s): Noy Cohen
	05:20 PM - 05:40 PM	ID 951: Experimental and Computational Assessment of Thermo-Oxidative Degradation in Semi-Crystalline Polyimides Author(s): Santiago Marin Jimenez, Marwa Yacouti, Maryam Shakiba
	05:40 PM - 06:00 PM	ID 894: Flexoelectric Enhancement through Geometric Instabilities in Highly Deformable Polymers Author(s): Berkin Dortdivanlioglu, Ahmet Umurhan, Jun Wang
MS087: 11th Symposium on Molecular Scale Modeling and Experimentation Chair(s): Dinesh Katti; Sinan Keten; Nima Rahbar; Kalpana Katti; Steven Cranford; Wenjie Xia		
CASE E230	04:00 PM - 04:20 PM	ID 825: Molecular Insights into the Mechanical and Interfacial Behaviors of Functional Polymers Author(s): Wenjie Xia
	04:20 PM - 04:40 PM	ID 881: Label-Free Separation of microRNA Signatures via Raman Spectroscopy and Spectral Unmixing Author(s): Dinesh Katti, Benjamin Vahidi Pashaki, Hanmant Gaikwad, Jeon Woong Khang, Peter T.C. So, Ramasamy Paulmurugan, Dorian Liepmann, Renugopalakrishnan Venkatesan, Kalpana Katti
	04:40 PM - 05:00 PM	ID 659: Multi-scale mechanical model for Tungsten in plasma facing components (PFCs) of nuclear fusion reactors Author(s): Ranganathan Parthasarathy, Mohammed Alnaggar, Lin Li, Anil Misra
	05:00 PM - 05:20 PM	ID 882: Nanoclays in Regenerative Medicine Author(s): Kalpana Katti, Dinesh Katti, Priyanka Kumari, Pooyan Vahidi Pashaki, Benjamin Vahidi Pashaki, Hanmant Gaikwad, Siva venkata Chaitanya Panduru
MS052: Stability of structures: Advances across time and scales Chair(s): Noël Challamel; Hayder Rasheed; C.W. Lim; Stylianos Yiatros; Hyeyoung Koh		
CASE E240	04:00 PM - 04:20 PM	ID 923: The Interplay of Steel Plate Bending and Rubber Cavitation on the Stability of Elastomeric Isolators Author(s): Eduardo Montalto, Dimitrios Konstantinidis
	04:20 PM - 04:40 PM	ID 66: Influence of Orthotropy on the Buckling of Multilayered Columns Author(s): Peter Kočman, Sabina Huč
	04:40 PM - 05:00 PM	ID 158: Nonlinear Analysis of Steel Deck Diaphragms Using the Instantaneous Center Method and Geometry-Specific Fastener Models. Author(s): Firaol Fekadu, Hyeyoung Koh

	05:00 PM - 05:20 PM	ID 548: Critical Twist for Slip Suppression in Defective Carbon Nanotube Bundles: An MD Study Author(s): Shahbaz Paramban, Hessam Yazdani
	05:20 PM - 05:40 PM	ID 572: Buckling mode shapes of tape springs under axial compression Author(s): Jacob Tersigni, Jaynie Tercovich, Hideyuki Nakanishi, Francisco López Jiménez
	05:40 PM - 06:00 PM	ID 229: Stability of Multi-Storey Frames: Analytical Prediction of Exact Critical Loads Author(s): Peter Kočman, Bojan Čas
MS030: Physics-based data-driven modeling and uncertainty quantification in computational science and engineering Chair(s): Bahador Bahmani; Ramin Bostanabad; Johann Guilleminot; Michael Shields; Wei Chen; Lori Graham Brady		
KTCH 1B87	04:00 PM - 04:20 PM	ID 703: Microstructure informed data-driven damage model for ductile materials under dynamic loading conditions Author(s): Indrashish Saha, Lori Graham-Brady
	04:20 PM - 04:40 PM	ID 820: REAL-TIME INTERACTIVE SIMULATION OF BUILDING STRUCTURES FOR HIGH-RISK SCENARIOS Author(s): Nathan Bissonnette
	04:40 PM - 05:00 PM	ID 836: Time-dependent density estimation of stochastic processes with classifiers Author(s): Agnimitra Dasgupta, Ali Fardisi, Javier Murgoitio-Esandi, Assad Oberai
	05:00 PM - 05:20 PM	ID 925: Thermodynamics-Informed Machine Learning for Concrete Fracture Prediction Author(s): Muhamad Alim, Xiaolong He, Jiun Shyan Chen
	05:20 PM - 05:40 PM	ID 940: A Neural Operator for Homogenization-Based Continuum Models of Granular Materials Author(s): Bahador Bahmani
	05:40 PM - 06:00 PM	ID 719: A Physics-Based RTM Digital Workflow for Residual-Stress and Cycle-Time-Aware Temperature-Schedule Optimization Author(s): Samir Sarieddine, Roger Ghanem
MS011: Advanced Computing for the Resilience of Networked Critical Infrastructure Systems Chair(s): Xudong (Andrew) Fan; Teng Wu; Jürgen Hackl; Abdollah Shafieezadeh		
GUGG 205	04:00 PM - 04:20 PM	ID 425: A Decision-Support Framework for Compound Flood-Aware Emergency Vehicle Routing in Urban Networks Author(s): Gwyneth Nolde, Joseph Chow, Yuki Miura
	04:20 PM - 04:40 PM	ID 530: Topology-Based Community Detection Algorithms for Aggregating Electricity Transmission Networks Author(s): Megan Thies
	04:40 PM - 05:00 PM	ID 604: Reliability of power transmission steel poles under dynamic wind loads Author(s): Urinrin Otite, Xinyue Wang, Sushreyo Misra, Paolo Bocchini
	05:00 PM - 05:20 PM	ID 631: Resilience-Oriented Strategic Siting of Solar Farms and Battery Energy Storage System: A Multi-Stage Stochastic Robust Optimization Approach Author(s): Jaeyeong Lim, Abdollah Shafieezadeh
	05:20 PM - 05:40 PM	ID 936: Adaptation Planning for Interconnected Coastal Infrastructure Systems Author(s): Aditya Sharma, Ashmita Bhattacharya, Kostas G. Papakonstantinou, Gordon P. Warn
	05:40 PM - 06:00 PM	ID 1000: Resilience Assessment and Enhancement of Interdependent Power-Transportation Systems Under Ice Storms Author(s): Safal Pathak, Guangyang Hou, Min Li

MS081: Computational Methods for Stochastic Engineering Dynamics Chair(s): Ketson dos Santos; Vasileios Fragkoulis; Ioannis Kougioumtzoglou; Antonina Pirrota; Athanasios Pantelous		
ECON 119	04:00 PM - 04:20 PM	ID 210: Operatorial Stochastic Dynamics for Efficient Time-Dependent Uncertainty Propagation and Reliability Analysis in Nonlinear Systems Author(s): João Gabriel Duarte, Ketson dos Santos
	04:20 PM - 04:40 PM	ID 251: Efficient stochastic response determination of nonlinear systems with singular matrices via a reduced-order formulation of the Wiener path integral technique Author(s): Miao Liu, Ketson dos Santos, Ioannis Kougioumtzoglou
	04:40 PM - 05:00 PM	ID 264: Efficient Uncertainty Propagation in Nonlinear Dynamical Systems Using Fourier Transform and Semi-Lagrangian Remapping: An Operatorial Dynamics Approach Author(s): Ketson dos Santos, Miao Liu, João Gabriel Duarte
	05:00 PM - 05:20 PM	ID 364: An enhanced extrapolation approach within the Wiener path integral technique for stochastic response determination of high-dimensional systems Author(s): Ilias Mavromatis, Ketson dos Santos, Ioannis Kougioumtzoglou
	05:20 PM - 05:40 PM	ID 852: A GPCE-NARX Framework for Uncertainty Quantification in Dynamical Systems in the Presence of Dependent Random Variables Author(s): Mohammadamin Ebadollahi, Sharif Rahman
	05:40 PM - 06:00 PM	ID 857: Thermodynamic Framework for Collective Dynamics in Large-Scale Nonlinear Structural Systems Author(s): Ahyeon Seo, Heedong Goh
MS076: Advances in Modeling Wind and Its Effects on the Built Environment Chair(s): Teng Wu; Catherine Gorle; Marco Giometto		
CHEM 140	04:00 PM - 04:20 PM	ID 656: Performance-Based Wind Assessment of Two-Way Coupled Structural–Envelope Systems under Extreme Winds Author(s): Jieling Jiang, Seymour Spence
	04:20 PM - 04:40 PM	ID 933: AI-Empowered Structural Optimization and Control in a Wind Tunnel Author(s): Zhehong Zhang, Teng Wu, Andrew Whittaker, Scot Weinreber
	04:40 PM - 05:00 PM	ID 583: Weak signal extraction enabled by deep neural network denoising of multi-hole velocity probe data for boundary layer wind tunnel applications Author(s): Ryan Catarelli, Brian Phillips, Tai-An Chen, Jennifer Bridge, Kurtis Gurley
	05:00 PM - 05:20 PM	ID 435 Experimental Study of Windborne Debris Flight in Turbulent Flows Author(s): Kimia Yousefi Anarak, Shaopeng Li, Ryan Catarelli, Yanlin Guo, Kurtis Gurley, John van de Lindt
MS088: Advances in Damage Mechanics and Micromechanics - in Honor of the 2025 Blaise Pascal Medal in Engineering to Professor Jiann-Wen Woody Ju Chair(s): Huiming Yin; Lizhi Sun; Glaucio Paulino; Yong-Rak Kim		
UMC 247	04:00 PM - 04:20 PM	ID 952: Investigating delamination in thermo-oxidatively aged thermoplastic carbon fiber composites Author(s): Carson Mead, Santiago Marin, Maryam Shakiba
	04:20 PM - 04:40 PM	ID 966: Homogenization of a lattice network from flow prediction to traffic routing Author(s): Angelina Shen

	04:40 PM - 05:00 PM	ID 969: Effective Elasticity of Miura-Ori–Based Lattices by Singular Continuum (Singum) Homogenization Author(s): Chao liu, huiming yin, Glaucio Paulino
	05:00 PM - 05:20 PM	ID 971: Multiphysics Characterization of Microfiber-reinforced Bentonite for Deep Geological Repositories Author(s): Abdullah Azzam, Mohammad Rahmani, Yong-Rak Kim, Jongwan Eun, Seunghee Kim
	05:20 PM - 05:40 PM	ID 996: Damage mechanics of hafnia–silica nanolaminate coatings under extreme conditions Author(s): Fariha Haque, Alok Sutradhar
	05:40 PM - 06:00 PM	ID 1021: Regularization-free 3D Ductile Fracture Simulation using Gurson-Cohesive Modeling (GCM) Author(s): Kyoungsoo Park, Jihyuk Park, Soondo Kweon, Siwoo Jeon
MS096: Coupled Multi-Physics Mechanics of Geomaterials for Energy and Environmental Applications Chair(s): Angelica Tuttolomondo; Anne-Catherine Dieudonné		
UMC 415-417	04:00 PM - 04:20 PM	ID 758: Modeling High-Temperature Effects in a Bentonite Buffer based on a Large-Scale Field Test Author(s): Radhavi Samarakoon, Liange Zheng
	04:20 PM - 04:40 PM	ID 846: A soil–water retention model for deformable soils accounting for capillary and adsorptive mechanisms Author(s): Agostino Walter Bruno, Angelica Tuttolomondo, Vincent Rozzi, Svetlana Babiy, Antonin Fabbri, Domenico Gallipoli, Lyesse Laloui
	04:40 PM - 05:00 PM	ID 876: Investigating the Prediction of Thermally Induced State and Property Changes in a Clayey Soil Author(s): Mohd Sheob, Srikanth S. C. Madabhushi
	05:00 PM - 05:20 PM	ID 911: A coupled hydro-mechanical model for gas pathway initiation and propagation in saturated bentonite Author(s): Zhaojiang Huang, Joaquín Liaudat, Philip Vardon, Michael Hicks, Anne-Catherine Dieudonné
	05:20 PM - 05:40 PM	ID 454: Damage-based modeling and poromechanics – influence of anisotropy of the Biot coefficient on hydraulic fracturing Author(s): Saif-Eddine Chadoi, Gilles Pijaudier-Cabot, Christian La Borderie
	05:40 PM - 06:00 PM	ID 544: Coupled Thermo-Hydro-Mechanical Performance of Energy Micropiles in Sands Author(s): Kaveh Roushan, Asskar Janalizadeh Choobbasti, Hessam Yazdani
MS082: Innovations and Advances in Passive, Active, and Semi- active Structural Control Chair(s): Nicholas Wierschem; P. Scott Harvey		
UMC 382-384-386	04:00 PM - 04:20 PM	ID 97: Periodic Metamaterials with Multi-Resonators for Passive Vibration Control in Civil Structures Author(s): Mohsen Amjadian, Quoc-Bao Ta
	04:20 PM - 04:40 PM	ID 195: Nonlinear Dynamic Modeling of 3D-Printed Chiral Metamaterial Beams Author(s): Pushp Raj Poudel, Han Liu, Simon Laflamme
	04:40 PM - 05:00 PM	ID 566: Tuned Inerter-based Devices in Isolation Systems: Optimization and Robustness Analysis Author(s): Deidra Anderson, Nicholas Wierschem
	05:00 PM - 05:20 PM	ID 707: Modeling, Characterization, and Testing of a Vertical Isolation System with Quasi-zero Stiffness for Building Content Protection Author(s): Bethany Hutto, Philip Harvey
	05:20 PM - 05:40 PM	ID 970: Ideal Controllable Damper Model Simulation and Challenges Author(s): Erik Johnson

	05:40 PM - 06:00 PM	ID 317: Optimized Intensifying Artificial Accelerations for Efficient Fragility and Risk Assessment under Uncertainty Author(s): Mohammad Amin Hariri-Ardebili, Siamak Sattar, Sissy Nikolaou
MS098: Meshfree, Peridynamic, and Particle Methods: Advancements and Applications Chair(s): Sheng-Wei Chi; Jiun-Shyan (JS) Chen; Mike Hillman; Pablo Seleson; Tsung-Hui (Alex) Huang; Kuan-Chung Lin		
HUMN 1B80	04:00 PM - 04:20 PM	ID 227: A Damaged-Kernel Enhanced General-Purpose Lagrangian Reproducing Kernel Kirchhoff--Love Shell Formulation Author(s): Jiarui Wang, Ke Ma, Yuri Bazilevs
	04:20 PM - 04:40 PM	ID 203: Continuum-Based Particle Gas (CPG): A Meshfree Method for Airbag Deployment Simulation Author(s): Edouard Yreux
	04:40 PM - 05:00 PM	ID 263: Dynamic Quasi-Brittle Fracture: A Blended Approach Author(s): Debdeep Bhattacharya, Semsi Coskun, Davood Damircheli, Robert Lipton
	05:00 PM - 05:20 PM	ID 281: A Comparison of F-Bar and Mixed Formulations for Mitigating Volumetric Locking in an Implicit RKPM Author(s): Thomas Mader, Peter Gamnitzer, Heiko Gimperlein, Matthias Neuner
	05:20 PM - 05:40 PM	ID 369: Crushing, Comminution and Fracture: Extreme Particle Deformation in Three-Dimensional Granular Aggregates Author(s): Debdeep Bhattacharya, Davood Damircheli, Robert Lipton
	05:40 PM - 06:00 PM	ID 715: A Neural-Network Enriched Reproducing Kernel Particle Method for Phase Transformation Localization Problems Author(s): Xuejun Li, Sheng-Wei Chi
MS095: Characterization and modeling of physical and chemical processes in porous materials across scales Chair(s): Mostafa Mobasher; Pania Newell; Sara Abedi; Manolis Vevakis; Jean-Michel Pereira; Giuseppe Buscarnera; Yanni Chen; Ghassan Shahin; Rigoberto Moncada		
VAC 1B20	04:00 PM - 04:20 PM	ID 920: Chemo-mechanical equilibrium between dissolution and precipitation in porous media Author(s): Yifan Yang, Giuseppe Buscarnera
	04:20 PM - 04:40 PM	ID 191: Thermo-poromechanical modeling of evaporation and pressure build up in soft nanoporous solids Author(s): Mohammadali Behboodi, Yida Zhang
	04:40 PM - 05:00 PM	ID 777: Changes in hydromechanical behavior of olivine-rich rocks during serpentinization Author(s): Ummu-kulthum Lawal, Kiseok Kim
	05:00 PM - 05:20 PM	ID 236: PINN-Based Modeling of Evaporation-Driven Salt Transport and Thermal Conductivity Evolution in Unsaturated Soils Author(s): Yuan Feng, Jongwan Eun, Semih Ciftci
	05:20 PM - 05:40 PM	ID 426: Computational Modeling Of Blood Clots As Soft Heterogeneous Structures Immersed In Flow Author(s): Debanjan Mukherjee, Chayut Teeraratkul, Maurizio Tomaiuolo, Timothy Stalker
	05:40 PM - 06:00 PM	ID 990: Uncertainty quantification in machine learning–based homogenization of porous materials Author(s): Minh-Chien Trinh, Pania Newell
MS077: Advanced Engineering Concepts, Designs, and Technologies for Aerospace and Extraterrestrial Applications (Sponsored by ASCE Aerospace Division) Chair(s): Ramesh Malla; Robert Mueller; Kris Zacny; Yunlan (Emma) Zhang		
UMC 425	04:00 PM - 04:20 PM	ID 819: Comprehensive Characterization of Extra-Terrestrial Regoliths: Role of Raman Imaging Author(s): Nishant Garg

	04:20 PM - 04:40 PM	ID 948: Continuum and Free Molecular Flow Approaches for Determination of Rocket Plume Impingement Loads on Lunar Launch/Landing Pads Author(s): Sushrut Vaidya, Ramesh Malla
	04:40 PM - 05:00 PM	ID 998: Internally Actuated Tensegrity Rover for Lunar and Martian Exploration Author(s): Yitao Jiang, Muhao Chen
	05:00 PM - 05:20 PM	ID 1005: Architected Design and Autonomous In-Space Assembly of a Large, Lightweight HOEE Starshade Structure Author(s): Omar Marrey, Andrea Poli, Wei-Chun Lu, Abraham Ramirez, Timothy Filemyr, Rachel Ticknor, Bob McMurray, Christine E. Gregg, Serife Tol, Othman Oudghiri-Idrissi
	05:20 PM - 05:40 PM	ID 898: Synthetic Digital Twins for Multi-Physics Simulation of Robotic Operations in Complex Unstructured Environments Author(s): Naveen Kumar Muthumanickam
	05:40 PM - 06:00 PM	ID 793: Deployable Domes for Lunar Construction Author(s): Devin Young, Lucas Laughery, Yunlan Zhang, Mike Fiske
MS048: Mechanics and Modeling of Mass Timber Structures and Materials Subjected to Extreme Loads Chair(s): David Roueche; Mark Weaver; Kadir Sener; Shiling Pei; Christian Viau; Mike Hillman		
ECON 13	04:00 PM - 04:20 PM	ID 507: A Collaborative Mechanical Characterization of Clear Wood Loblolly Pine under Various Load-Rate and Environmental Test Regimes for Advancing High-Fidelity Modeling Author(s): Ryan Holtzscher, David Roueche, Kadir Sener, Mark Weaver, Marco Ricco, Bryan Casillas, James Davidson
	04:20 PM - 04:40 PM	ID 575: Restoring Load Capacity of Glulam Beam-to-Beam Connections Author(s): Sardar Malek, Solomon Rosenberg, Phalguni Mukhopadhyaya
	04:40 PM - 05:00 PM	ID 673: Experimental and Numerical Study of the Shear- and Flexure-Controlled Response of Cross-Laminated Timber Beams Manufactured with Loblolly Pine Author(s): Blake DiSalvo, David Roueche, Kadir Sener, Erkan Mutlu, James Davidson
	05:00 PM - 05:20 PM	ID 730: Mechanics-Based Closed-Form Solution for Predicting the Two Way Bending Behavior of Cross-Laminated-Timber Panels Author(s): Erkan Mutlu, Kadir Sener, David Roueche, Jim Davidson
	05:20 PM - 05:40 PM	ID 111: Reliability-based evaluation of cross-laminated timber (CLT) ballistic resistance for performance prediction and design Author(s): Juliet Swinea, Iris Tien, Peter Stynoski, Lauren Stewart
	05:40 PM - 06:00 PM	ID 736: Comparative Seismic Response of Full-Scale Tall and Mid-Rise Mass Timber Buildings under Extreme Ground Motions Author(s): Prashanna Mishra, John van de Lindt, Shiling Pei, Andre Ramos Barbosa, Arijit Sinha, Steve Pryor, Barbara Simpson, Steven Kontra, Patricio Uarac, Morgan Mcbain

Friday, June 5, Events and Meetings

Time	Event / Meeting	Room/Location
07:00 AM - 08:00 AM	Breakfast	C4C Dining Center, UMC 235
07:30 AM - 12:00 PM	Registration	UMC - Aspen Rooms
08:00 AM - 09:00 AM	Plenary Lecture: Quantum algorithms for differential equations: Opportunities and challenges Speaker(s): Andrew Childs	UMC - Glenn Miller Ballroom
09:00 AM - 09:30 AM	Coffee Break	UMC - Aspen Rooms
11:30 AM - 01:00 PM	Lunch Break	UMC patio, UClub lawn
01:00 PM - 02:00 PM	Plenary Lecture: Redefining the Computation-Mechanics Nexus in Large-Scale 6-DOF Shake-Table Testing Speaker(s): Joel P. Conte	UMC - Glenn Miller Ballroom

Friday, June 5, Morning Sessions, 9:30 AM - 11:30 AM

MS001: Smart Sensing and Artificial Intelligence for Advanced Civil Infrastructure Monitoring and Management Chair(s): Yuguang Fu; Jian Li; Patrick Sun; Xiao Liang		
HUMN 250	09:30 AM - 09:50 AM	ID 11: Vision-Based Structural Health Monitoring: A Comparative Analysis of Computer Vision Platforms for Displacement Tracking Author(s): Sahel Niyafard, Alexandra Hain
	09:50 AM - 10:10 AM	ID 100: Self-Deployable AIoT Prototype for Scalable Mobile Sensing Author(s): Xuewen Yu, Yuguang Fu
	10:10 AM - 10:30 AM	ID 285: Monitoring and Prediction of Cracking Behavior and Reinforcement Response in Composite-concrete Systems with DFOS and Deep Learning Author(s): Sike Wang, Junyi Duan, Yizhou Lin, Huaixiao Yan, Xingyu Wang, Xiaoli Xiong, Ying Huang, Shanyue Guan, Chengcheng Tao
	10:30 AM - 10:50 AM	ID 308: Environmental Compensation for Long-Term Fatigue Crack Monitoring Using Wireless Large-Area Strain Sensors Author(s): Mona Shaheen, Jian Li, William Collins, Caroline Bennett, Simon Laflamme
	10:50 AM - 11:10 AM	ID 451: Acoustic Emission Source Localization in Concrete Structures using Modified Stockwell Transform-based CNN Architecture Author(s): JONGHOON WEON, Robin Eunju Kim
	11:10 AM - 11:30 AM	ID 691: Three-Dimensional Crack Length Measurement on Cylindrical Bridge Columns Using Vision-Based Reconstruction Author(s): Zuoxu Wang, Xiao Liang
MS012: Objective Resilience: Advancing Multi-Hazard Physical-Socio-Economic Community Resilience using Physics- and AI-based Modeling and Digital Technologies Chair(s): Omar Nofal; Milad Roohi; Yousef Darestani; Lisa Wang		
HUMN 135	09:30 AM - 09:50 AM	ID 20: Uncertainty-Aware Deep Regression Framework for Hurricane-Induced Wind Impacts on the Building Envelope Author(s): Ahmed. A Ewis, Omar Nofal
	09:50 AM - 10:10 AM	ID 22: National-level Resilience-Informed Risk Factor: Building-Level Generalized Risk Factor for Buildings in the US Author(s): Ahmed. A Ewis, Omar Nofal
	10:10 AM - 10:30 AM	ID 168: Optimal deterioration management under partial observability via reinforcement learning and system reliability-based resilience analysis Author(s): Jinseo Park, Taeyong Kim, junho song
	10:30 AM - 10:50 AM	ID 215: InsurAgent: A Large Language Model-Empowered Agent for Simulating Individual Flood Insurance Decisions Author(s): Ziheng Geng, Minghui Cheng
	10:50 AM - 11:10 AM	ID 633: Trustworthy AI for Ensuring High-Fidelity Infrastructure Data to Support Flood Resilience in Coastal Communities Author(s): Jinyuan Xie, Wanting (Lisa) Wang, Corey Holden, Lusi Li, Yin-Hsuen Chen, George M. Mcleod
	11:10 AM - 11:30 AM	ID 240: An Adaptive Optimization Framework for Life-Cycle Resilience Enhancement of Coastal Power Distribution Systems Author(s): Amir Mohammad Rabbani, Saeed Sohrabi, Yousef Darestani

MS016: Decision-making towards resilience on complex, uncertain, and evolving socio-physical systems Chair(s): Raul Rincon; Jamie E. Padgett; Mauricio Sanchez-Silva; Leonardo Duenas- Osorio; Dan M. Frangopol		
HUMN 125	09:30 AM - 09:50 AM	ID 29: Adaptive Digital Twin Framework for Online Fragility Modeling Author(s): Abdullah Braik, Maria Koliou
	09:50 AM - 10:10 AM	ID 88: Role of Natural Hazards Mitigation Engineering in Reducing Social Vulnerability in Hong Kong Author(s): Jiayao Wang, Yuxuan Lin, You Dong, Ahsan Kareem
	10:10 AM - 10:30 AM	ID 107: Supporting Decision-Making for Resilience of Coastal Communities under Earthquake-Tsunami Cascading Hazards Author(s): Mitsuyoshi Akiyama, Dan Frangopol, Ravi Thapa
	10:30 AM - 10:50 AM	ID 122: Life-Cycle Multi-Objective Optimization and Decision-Making for Sustainable and Resilient Asphalt Pavement Systems Author(s): Jiyu Xin, Mitsuyoshi Akiyama, Dan Frangopol
	10:50 AM - 11:10 AM	ID 302: Spatio-temporal probabilistic characterization of extreme rainfall events towards flood risk reduction in dense urban environments Author(s): Antonios Lyras, George Deodatis
	11:10 AM - 11:30 AM	ID 424: Expected Avoided Loss-Based ROI Analysis to Support Flood Protection Optimization Under Deep Uncertainty Author(s): Gwyneth Nolde, Yuki Miura
MS030: Physics-based data-driven modeling and uncertainty quantification in computational science and engineering Chair(s): Bahador Bahmani; Ramin Bostanabad; Johann Guilleminot; Michael Shields; Wei Chen; Lori Graham Brady		
HUMN 1B50	09:30 AM - 09:50 AM	ID 136: Reinforcement Learning for Active Solution Operators of Nonlinear Systems Author(s): Jichuan Tang, Patrick Brewick
	09:50 AM - 10:10 AM	ID 275: Ensemble-based Uncertainty Quantification for Probabilistic Surrogate Models using SINDy Author(s): Soyeon Park, Jaehwan Jeon, Junho Song
	10:10 AM - 10:30 AM	ID 277: Uncertainty Quantification in Unified Hysteresis Modeling Using a Partially Bayesian Neural Architecture Author(s): Jongha Joo, Jaehwan Jeon, Junho Song
	10:30 AM - 10:50 AM	ID 359: Accelerating Atomistic–Continuum Simulations of Rippling Deformations in Multilayer Graphene via Functional Principal Component Analysis Author(s): Jonathan Oleson, Abhishek Keripale, Shashank Pathrudkar, Susanta Ghosh
	10:50 AM - 11:10 AM	ID 416: A Physics-Constrained Machine Learning Framework for Constitutive Modeling of Quasi-brittle Materials Author(s): Houlin Xu, Chenyang Li, Michael Shields, K.T. Ramesh
	11:10 AM - 11:30 AM	ID 473: Accelerating Multiscale Simulations via Physics-Constrained Surrogate Modeling of Lower-Scale Physics Author(s): Cornelius Otchere, Kenneth Leiter, Jaroslaw Knap, Michael Shields
MS097: From Noisy Construction to Stable Structures in Soft and Granular Media Chair(s): Atanu Chatterjee; Florence Müller; Qinglin Wu; Saad Bhamla		
HUMN 150	09:30 AM - 10:10 AM	ID 877: Bees as Builders and Building Blocks of Biological Materials Author(s): Orit Peleg
	10:10 AM - 10:30 AM	ID 927: Filamentous cyanobacteria as topological active matter – reconfigurable by light Author(s): Keita Richardson, Ivan Smalyukh

	10:30 AM - 10:50 AM	ID 1033: Waiting to Branch Author(s): Qinglin Wu, Yufei Xiao, Paul Bardunias, Atanu Chatterjee, Saad Bhamla
	10:50 AM - 11:10 AM	ID 28: Flow and fabricate: morphogenesis of termite shelter-tube networks Author(s): Atanu Chatterjee, Kukhyun Lim, Nan-Yao Su, Saad Bhamla
MS021: Scientific Machine Learning for Computational Geosciences Chair(s): Arash Fathi; Kami Mohammadi; Felix Herrmann; Somdatta Goswami; Kun Wang; Marcelo DallAqua; Dakshina Valiveti		
HUMN 1B90	09:30 AM - 09:50 AM	ID 441: Discrete and Continuous Subsurface Property Retrieval from Sparse Radar Observations using Physics-Informed Neural Networks Author(s): Ishfaq Aziz, Mohamad Alipour
	09:50 AM - 10:10 AM	ID 456: Fisher-Informed Training Enables Physically Consistent Neural Operator–Based Inversion Author(s): Jeongjin Park, Grant Bruer, Huseyin Tuna Erdinc, Richard Rex Arockiasamy, Nisha Chandramoorthy, Felix Herrmann
	10:10 AM - 10:30 AM	ID 457: Well Control Optimization using Neural Operator Based Surrogate Models Author(s): Rodolfo Freitas, Gabriel Barros, Amanda Oliveira, Rômulo Silva, Ezequiel Santos, Dakshina Valiveti, Xiao-Hui Wu, Fernando Rochinha, Alvaro Coutinho
	10:30 AM - 10:50 AM	ID 534: Latent-space data assimilation for complex geological systems using generative diffusion models Author(s): Guido Di Federico, Wenchao Teng, Louis J. Durlofsky
MS040: Mechanics of Wood and Wood-Based Materials Chair(s): Markus Lukacevic; Eric Landis; Fiona O'Donnell; Luis Zelaya-Lainez; Josef Füssl		
CLUB 4-5	09:30 AM - 09:50 AM	ID 55: Experimental Stability Analysis of Glued Laminated Timber Pillars Author(s): Reyolando Brasil, Geise Aparecida Pereira
	09:50 AM - 10:10 AM	ID 176: Development of Inorganic-Bonded Bamboo Composite for Structural Applications Author(s): Ernian Zhao, Qiaoling Liu, Hanshu Zhang, Shurong Li, Qingxia Yue, Xin Zhang
	10:10 AM - 10:30 AM	ID 398: Numerical Simulation of Timber-Concrete Composite (TCC) Push-out Test By Developing a New Boundary Condition with Cohesive Interaction Author(s): Lok Hei Lee, Yuxin Pan
	10:30 AM - 10:50 AM	ID 459: Macroscopic Elastic Characterization and UV Stability of Polymer-Infused Transparent Wood Author(s): Luis Zelaya-Lainez, Markus Lukacevic, Sarah Näher, Johanna Schindler, Olaf Lahayne, Markus Königsberger, Daniele Nuvoli, Alberto Mariani, Josef Füssl
	10:50 AM - 11:10 AM	ID 523: Deep Learning-Enhanced Continuum Micromechanics Framework for Nonlinear Homogenization of Wood-Based Biocomposites with Complex Inclusion Morphologies Author(s): Markus Lukacevic, Michael Schwaighofer, Markus Königsberger, Dominik Kratzer, Josef Füssl
	11:10 AM - 11:30 AM	ID 561: Dowel bearing performance of cross laminated timber Author(s): Fiona O'Donnell, Baiyu Chen, Antonio Cristian, David Padilla-Llano, Sujit Bhandari, Jerome Hajjar
MS045: Materials Science and Mechanics of Earthen Construction Chair(s): Samuel J. Armistead; Wil V. Srubar III		
CASE E230	09:30 AM - 09:50 AM	ID 123: Amino Acid Stabilization of Bentonite and Kaolinite for Terrestrial and Extraterrestrial Construction Author(s): Yuhuan Wang, Samuel J Armistead, Wil V Srubar

	09:50 AM - 10:10 AM	ID 140: Towards Building on Mars: Interactions Between Charged Polysaccharides and Martian Regolith Author(s): Danielle N. Beatty, Samuel J. Armistead, Simon C. Cox, Wil V. Srubar
	10:10 AM - 10:30 AM	ID 271: Establishing Structure-Property Relationships for Polysaccharide-Stabilized Earthen Construction Materials Author(s): Rebecca Mikofsky, Samuel Armistead, Danielle Beatty, Wil V. Srubar III
	10:30 AM - 10:50 AM	ID 282: Recyclable Hydrogel-based Concrete Made with Yeast Author(s): Shing Chi Lam, Ning Liu, Wenwei Huang, Qikun Yi, Fei Sun, Jishen Qiu
	10:50 AM - 11:10 AM	ID 349: High-throughput Methods for Optimizing the Mechanical Properties of Bio-stabilized Earthen Construction Author(s): Samuel J. Armistead, Rebecca A. Mikofsky, Wil V. Srubar III
	11:10 AM - 11:30 AM	ID 684: Development of Compressed Earth Blocks with High Green Strength for Rapid Masonry Construction Author(s): Nitin Kumar, Michele Barbato
MS052: Stability of structures: Advances across time and scales Chair(s): Noël Challamel; Hayder Rasheed; C.W. Lim; Stylianos Yiatros; Hyeyoung Koh		
CASE E240	09:30 AM - 09:50 AM	ID 639: Thermal effects on thin-walled roof deck panels under elevated diurnal temperatures Author(s): Malik Farooq, Hyeyoung Koh
	09:50 AM - 10:10 AM	ID 404: Roll Buckling of Long-Span Girders - Experiments and Theory Author(s): William D. Galik, Richard Wiebe, John Stanton, Daniel Gaxiola
	10:10 AM - 10:30 AM	ID 295: Assessment of Temperature Induced Tilting in the Streicker Bridge Author(s): Yuxi Cao, Branko Glišić
	10:30 AM - 10:50 AM	ID 112: Drift Localization Control in Flexible Frames Using Stepping Rocking Walls Author(s): Mehrdad Aghagholizadeh
	10:50 AM - 11:10 AM	ID 740: Crowdsourced mobile sensing-based bridge monitoring: Current progress and a roadmap for the future Author(s): Liam Cronin, Debarshi Sen, Giulia Marasco, Iman Dabbaghchian, Thomas Matarazzo, Shamim Pakzad
	11:10 AM - 11:30 AM	ID 941: Predicting Limiting and Mobilized Earth Pressure in a Rocking Backfill Retained by a Rigid Wall Author(s): Kamyar Sadeghi, Srikanth Madabhushi
MS057: Performance Evolution and Control of Concrete Structures Chair(s): Chao Jiang; Yao Wang; Jinliang Liu		
KTCH 1B87	09:30 AM - 09:50 AM	ID 119: Assessing flexural bearing capacities for existing corroded RC beams based on Bayesian updating Author(s): Chao Jiang, Ting-Yu Xiang, Xiang-Lin Gu, Pei-Xi Yu
	09:50 AM - 10:10 AM	ID 346: Physicomechanical Corrosion Precursors for Early Warning of Chloride-induced Corrosion in Reinforced Concrete Author(s): Yao Wang, Shuhai Wu
	10:10 AM - 10:30 AM	ID 587: Influence of Coarse Aggregate Species on the Durability of Performance-Based Concrete Mixes in Arkansas Author(s): Shuyah Tani Aurore Ouoba, Cameron Murray
	10:30 AM - 10:50 AM	ID 612: Post-Failure Backcasting of Aging Viscoelastic Response in Concrete Structures Author(s): Naiara Tonin, Mija Hubler
	10:50 AM - 11:10 AM	ID 726: Corrosion of Carbon Steel Exposed to Superabsorbent Polymers in Chloride-Contaminated Cement Pore Solution Author(s): Muhammad Rafiul Mahdi, Narayanan Neithalath, Ravi Kiran

	11:10 AM - 11:30 AM	ID 305: Information-Conditioned Probabilistic Capacity Assessment of Pyrrhotite-Affected Concrete Walls Author(s): mohammad amin hariri-ardebili, Patrick Dixon, Golsa Mahdavi, Surya Congress
MS085: Seismic Isolation and Energy Dissipation Systems: Mechanics, Experiments, and Innovations — In Honor of Professor James M. Kelly (1935–2025) Chair(s): Dimitrios Konstantinidis; Nicos Makris		
GUGG 205	09:30 AM - 09:50 AM	ID 946: Effects of Reinforcement Thickness on the Response of Elastomeric Seismic Isolators Author(s): Eduardo J. Montalto, Dimitrios Konstantinidis
	09:50 AM - 10:10 AM	ID 213: Design of Friction Dampers for a 3D Long-Period Base Isolation System Author(s): Donggeun Kim, Seungho Baek, Inje Sung, Minyeop Kim, Giheon You, Wonhui Goh, Chunghyun Lee, Yunbyeong Chae
	10:10 AM - 10:30 AM	ID 245: Rocking Isolation of Bridge Piers with Energy Dissipation Devices: Mechanics and Lessons from the South Rangitikei Rail Bridge Author(s): Mehrdad Aghagholizadeh, Nicos Makris
	10:30 AM - 10:50 AM	ID 924: Re-Envisioning Mechanical Models for Elastomeric Seismic Isolators Author(s): Eduardo Montalto, Dimitrios Konstantinidis
	10:50 AM - 11:10 AM	ID 207: Enhanced Characterization of Friction Pendulum Bearings Using Advanced Axial Force Control Method Author(s): Chunghyun Lee, Yunbyeong Chae
	11:10 AM - 11:30 AM	ID 688: A Modified Weighted Adaptive Constrained Unscented Kalman Filter for Shape Memory Alloy Wire Dampers in Real-Time Hybrid Simulation Author(s): Florian Kolisch, Alejandro Palacio-Betancur, Sven Klinkel
MS071: 5th Mini-Symposium on civil infrastructure in a changing climate: from nonstationary risk assessment to developing adaptation strategies Chair(s): Eun Jeong Cha; Abdollah Shafieezadeh; Michele Barbato; Alexandros Taflanidis		
ECON 119	09:30 AM - 09:50 AM	ID 196: Climate-Informed Geotechnical Assessment of Rainfall-Induced Landslide Hazards for Road Network Resilience in Turin, Italy Author(s): Marco Civera, Seyedmostafa Moeini, Maria Romana Alvi, Fabrizio Aloschi, Andrea Prota
	09:50 AM - 10:10 AM	ID 41: Using an Informational Design Approach for Civil Engineering Project Planning under Climate Change Author(s): Richard Koehler
	10:10 AM - 10:30 AM	ID 163: Probabilistic Stress Testing of National-Scale Power Grids under Climate Change with Physically and Operationally Consistent Dispatch Author(s): Uichan Seok, Ji-Eun Byun, Junho Song
	10:30 AM - 10:50 AM	ID 35: Scenario-Aware Bayesian Optimization for the Optimal Design of Integrated Gray–Green Stormwater Systems Author(s): Yiyi Zhang, Jinzhu Yu
	10:50 AM - 11:10 AM	ID 307: Integrating agent-based and life-cycle modeling for system-of-systems coastal adaptation assessment Author(s): Mohamed Abdelhafez, Hussam Mahmoud, Bruce Ellingwood
	11:10 AM - 11:30 AM	ID 399: Improved Tropical-Cyclone Wind Hazard Assessment under Various Climate Change Scenarios Author(s): Jiahao Wang, Norberto C. Nadal-Caraballo, Yi Zhao, Guirong Yan, Ralf Toumi, Brian Phillips

MS079: Assessing Human-Infrastructure Interactions and their Performance Chair(s): Fernando Moreu; Haeyoung Noh; Katherine Flanigan; Yiwen Dong		
CHEM 140	09:30 AM - 09:50 AM	ID 600: Fall Risk Estimation through Footstep-Induced Floor Vibrations Author(s): Adem Taiyr, Jessica Rose, Yiwen Dong, Haeyoung Noh
	09:50 AM - 10:10 AM	ID 932: Disentangling and Classifying Real-Time Mobility Signals from Floor Vibration Mixtures Author(s): Yohanna MejiaCruz, Milad Roohi
	10:10 AM - 10:30 AM	ID 244: A Human-in-the-Loop Augmented Reality Framework for Structural Health Monitoring Author(s): Priata Saha, Anika Tabassum Sarkar
	10:30 AM - 10:50 AM	ID 320: Integrating Human Machine Interfaces for Manipulator Path Planning and Object tracking Author(s): Hector Valenzuela, Fernando Moreu
	10:50 AM - 11:10 AM	ID 393: Automated Rebar Spacing Inspection Integrating RGBD, BIM and Augmented Reality (AR) Author(s): Mahsa Sanei, Kira Kampschmidt, Fernando Moreu
	11:10 AM - 11:30 AM	ID 571: Seal Whisker–Inspired Passive Marine Animal Monitoring through Wake-Induced Whisker Vibrations Author(s): Yuyan Wu, Sanjay Giridharan, Leixin Ma, Hae Young Noh
MS101: Engineering Education: New Trends, Opportunities, and Experiences Chair(s): Rebecca Napolitano; Fernando Moreu; Roya Nasimi; Wesley Reinhart; Shahlaa Al Wakeel		
UMC 247	09:30 AM - 09:50 AM	ID 44: AI-lympics: a gamified drone programming framework to engage first-generation students in robotics and infrastructure inspection Author(s): Francesco Gasperini, Alessandro Sabato
	09:50 AM - 10:10 AM	ID 72: Teaching basic mechanics prerequisite courses before applied mechanics for optimal students' mechanics learning outcome Author(s): Jiliang Li, Jinyuan Zhai
	10:10 AM - 10:30 AM	ID 352: Bridging the Gap: A Framework for Integrating Engineering Data Science into High School Curricula Author(s): Rebecca Napolitano, Wesley Reinhart, Robert Mayne
	10:30 AM - 10:50 AM	ID 392: New Training of Rebar Inspection Using Augmented Reality and Motion Capture Analysis Author(s): Mahsa Sanei, Kira Kampschmidt, Fernando Moreu
	10:50 AM - 11:10 AM	ID 480: AI-Enhanced Multi-Media Generation Platform for Engineering Education Author(s): Yue Cui, Bao Chau To
	11:10 AM - 11:30 AM	ID 531: Teaching Structural Steel Design Through Multilevel Project-Based Learning Author(s): Hussein Ali Ahmad, Fernando Moreu
MS084: Recent Advances in Hybrid Simulation and Real-time Hybrid Simulation Chair(s): Wei Song; Richard Christenson; Amirali Najafi		
UMC 415-417	09:30 AM - 09:50 AM	ID 137: Experimental Study of Adaptive Compensation in Multi-Axial Real-Time Hybrid Simulation Author(s): Santiago Ruiz, Wei Song
	09:50 AM - 10:10 AM	ID 138: A Multi-Axial Real-Time Aerodynamics Hybrid Simulation Platform for Tall Buildings Author(s): Santiago Ruiz, Wei Song

	10:10 AM - 10:30 AM	ID 172: Development of a Real-Time Hybrid Simulation Framework for Floating Offshore Structures in a Wind Tunnel Environment Author(s): Giheon You, Minyeop Kim, Yunbyeong Chae
	10:30 AM - 10:50 AM	ID 173: Phase-Minimized Adaptive Filtering Framework for Real-Time Hybrid Simulations Author(s): Minyeop Kim, Yunbyeong Chae
	10:50 AM - 11:10 AM	ID 268: Hydrodynamic Real-Time Hybrid Simulation of Deep-Water Mooring Systems subject to Extreme Wave Loading Author(s): Elaine Liu, Abilyn Mcconnell, Yun Ni, Bret Bosma, Bryson Robertson, Barbara Simpson
	11:10 AM - 11:30 AM	ID 319: Numerical Investigation of Control–Table–Specimen Dynamic Interaction for NHERI-UCSD 6-DOF Large High-Performance Outdoor Shake Table Author(s): Chin-Ta Lai, Joel P. Conte
MS096: Coupled Multi-Physics Mechanics of Geomaterials for Energy and Environmental Applications Chair(s): Angelica Tuttolomondo; Anne-Catherine Dieudonné		
UMC 382-384-386	09:30 AM - 09:50 AM	ID 54: Coupled Thermo–Hydro–Mechanical Modeling of Heating and Hydration Processes in Bentonite: Application to a Laboratory Benchmark Experiment Author(s): Guanlong Guo, Liange Zheng
	09:50 AM - 10:10 AM	ID 118: Acidic Environment Enhances Hydro-Shearing in Carbonate Reservoirs Author(s): Sihan Zhou, Jing Chen, Manolis Veveakis, Manman Hu
	10:10 AM - 10:30 AM	ID 169: An Analytical Model for Consolidation in Unsaturated Two-Layer Soils Author(s): Nan-Chieh Chao, WeiCheng Lo, Ronaldo Borja
	10:30 AM - 10:50 AM	ID 178: Experimental investigation of the behaviour of a shallow energy wall in a PCM-improved ground Author(s): Maria Romana Alvi, Alessandra Insana, Marco Barla
	10:50 AM - 11:10 AM	ID 242: From Geomaterials to Energy Storage: Clay-Based Electrodes for Supercapacitors Author(s): Xiaohui Gong, Alessandro F Rotta Loria
	11:10 AM - 11:30 AM	ID 311: Modeling EGS Hydraulic Stimulations as Fluid-Induced Tensile and Shear Fractures Author(s): Sylvain Brisson, Brice Lecampion
MS098: Meshfree, Peridynamic, and Particle Methods: Advancements and Applications Chair(s): Sheng-Wei Chi; Jiun-Shyan (JS) Chen; Mike Hillman; Pablo Seleson; Tsung-Hui (Alex) Huang; Kuan-Chung Lin		
HUMN 1B80	09:30 AM - 09:50 AM	ID 671: Extreme Event FSI: A Consistent Volumetric Meshfree Framework for Blast and Fragmentation Author(s): Michael Hillman, Yuri Bazilevs, Jiarui Wang, Joseph Magallanes, Jeff Limbacher, Dominic Wilmes
	09:50 AM - 10:10 AM	ID 733: Variational Integrators, Least Action, and Neural Network Enriched RKPM Author(s): Samuel Casebolt, Yanran Wang, J. S. Chen
	10:10 AM - 10:30 AM	ID 753: Generalized Nodal Integration with Non-Confirming Cells for Galerkin Methods Author(s): Sheng-Wei Chi, Mohammed M. Atif
	10:30 AM - 10:50 AM	ID 847: DualSPHysics-INL: a critical state soil mechanics based Smoothed Particle Hydrodynamics solver for granular flow Author(s): Yumeng Zhao, Wencheng Jin, Lumanti Shakya
	10:50 AM - 11:10 AM	ID L1: Extended Finite Element Method for Buckling Analysis of Folded Plate Structures Author(s): Athanasios Zisimos

	11:10 AM - 11:30 AM	ID 569: Performance-Portable Implementation of a Meshfree Method for Computational Mechanics Author(s): Jake Koester, Kurtis Ford
MS095: Characterization and modeling of physical and chemical processes in porous materials across scales Chair(s): Mostafa Mobasher; Pania Newell; Sara Abedi; Manolis Vevakis; Jean-Michel Pereira; Giuseppe Buscarnera; Yanni Chen; Ghassan Shahin; Rigoberto Moncada		
VAC 1B20	09:30 AM - 09:50 AM	ID 67: Exploring the Potential of Mechanically Weakened Peridotites for Enhancing and Sustaining Carbon Mineralization Author(s): Hoang Nguyen, Wenfeng Li, Chelsea Neil, Austin Selley, Cate Tilley, Michael Pettes, Luke Frash, Hari Viswanathan
	09:50 AM - 10:10 AM	ID 68: Modeling of non-coaxial deformation in sands: Roles of fabric anisotropy and non-proportional loading Author(s): Lei Huang, China, Zhongxuan Yang, China, Yannis F. Dafalias, United States
	10:10 AM - 10:30 AM	ID 148: Mechanistic Modeling of CO2-Driven Stress Corrosion Cracking and Degradation in Quartz-Rich Shale Rocks Author(s): Shaziya Ahmed Banu, Sara Abedi
	10:30 AM - 10:50 AM	ID 331: A Chemo-poromechanical Model Coupled with Reactive Transport of Mineral Reactions in Subsurface Geologic Systems Author(s): Fan Fei, Yifan Yang, Giuseppe Buscarnera, Randolph Settgast, Kari Finstad, Giovanna Bucci
	10:50 AM - 11:10 AM	ID 760: Disorder-induced flow localization in permeable matrix-inclusion morphologies Author(s): Amirmahdi Rabiee, Thomas Petersen
	11:10 AM - 11:30 AM	ID 221: Thermodynamically Consistent Modelling of Chemically Enhanced Grain Crushing in Reactive Porous Media Author(s): Chuangao Chen, Yanni Chen

Friday, June 5, Early Afternoon Sessions, 2:15 PM - 3:35 PM

MS071: 5th Mini-Symposium on civil infrastructure in a changing climate: from nonstationary risk assessment to developing adaptation strategies Chair(s): Eun Jeong Cha; Abdollah Shafieezadeh; Michele Barbato; Alexandros Taflanidis		
HUMN 250	02:15 PM - 02:35 PM	ID 511: Evaluating extreme ice loads in the United States Using Downscaled CMIP6 Climate Data Author(s): Mengting Chen, Ahmed Abdelaal, Mari Tye, Kathy Jones, Rachel McCrary, Lee Kessenich, Bimal Yadav
	02:35 PM - 02:55 PM	ID 817: An extended performance-based hurricane engineering framework including climate change and structural aging effects Author(s): Lei Zhou, Michele Barbato
	02:55 PM - 03:15 PM	ID 884: Evaluating the effectiveness of adaptation strategy for reducing long-term hurricane impacts on residential buildings in coastal communities Author(s): Jiate Li, John van de Lindt
MS012: Objective Resilience: Advancing Multi-Hazard Physical-Socio-Economic Community Resilience using Physics- and AI-based Modeling and Digital Technologies Chair(s): Omar Nofal; Milad Roohi; Yousef Darestani; Lisa Wang		
HUMN 135	02:15 PM - 02:35 PM	ID 301: Mitigation of Cascading Failures in Overhead Power Distribution Systems from Wind-induced Loads and Windthrown Fallen Trees Author(s): Amir Tajik, Yousef Darestani, Scott Holmes, Shawn Van Hoek-Patterson

	02:35 PM - 02:55 PM	ID 482: A Computational Framework for Joint Resilience and Sustainability Assessment of Coastal Power Distribution Systems under Storm Hazard Author(s): Saeed Sohrabi, Yousef Darestani, William Pringle
	02:55 PM - 03:15 PM	ID 533: Probabilistic Functional Recovery Assessment of RC Wall Buildings with Force-Limiting Connections Author(s): Sena Mursel, Paolo Bocchini, Georgios Tsampras, Carlos Franco Mayorga
	03:15 PM - 03:35 PM	ID 591: A Uniform Approach for Prioritizing Facility Resilience Investments: A Case Study on US Naval Academy Author(s): Sushreyo Misra, Andrea De Marco, Ming Liu, Nathan Lemme, Sarah Mouring, Tori Tomiczek, Paolo Bocchini
MS016: Decision-making towards resilience on complex, uncertain, and evolving socio-physical systems Chair(s): Raul Rincon; Jamie E. Padgett; Mauricio Sanchez-Silva; Leonardo Duenas- Osorio; Dan M. Frangopol		
HUMN 125	02:15 PM - 02:35 PM	ID 672: Life-cycle assessments that yield service and safety measures disaggregated by community features Author(s): Raul Rincon, Jamie E. Padgett, Mauricio Sanchez-Silva
	02:35 PM - 02:55 PM	ID 641: Systems Thinking for Construction Management: Dynamic Decision-Making in Complex Projects Author(s): Felicia Anderson
	02:55 PM - 03:15 PM	ID 750: Project Prioritization for Near-optimal Functionality Risk Reduction in Bridge Networks Author(s): Anteneh Deriba, David Yang
MS030: Physics-based data-driven modeling and uncertainty quantification in computational science and engineering Chair(s): Bahador Bahmani; Ramin Bostanabad; Johann Guilleminot; Michael Shields; Wei Chen; Lori Graham Brady		
HUMN 1B50	02:15 PM - 02:35 PM	ID 546: Batch Active Learning with Heteroscedastic Gaussian Processes for Microstructure-Property Prediction Author(s): Ozge Ozbayram, Audrey Olivier, Lori Graham-Brady
	02:35 PM - 02:55 PM	ID 593: Beyond Scalar Surrogates: High-Dimensional and Spatially Explicit Reliability Assessment of Transmission Towers via Graph Neural Networks Author(s): Mazin Al-Mahrouqi, Abdollah Shafieezadeh, Jieun Hur, Jae-Wook Jung, Jeong-Gon Ha, Daegi Hahm
	02:55 PM - 03:15 PM	ID 611: Quantitative validation methodology for physics-based process-to-structure models in additive manufacturing Author(s): Arulmurugan Senthilnathan, Pranav Karve, Sankaran Mahadevan
	03:15 PM - 03:35 PM	ID 651: Streaming Identification of Dynamics via Random Projection-based Weak-SINDy Author(s): Kyuwon Lee, Alireza Doostan
MS032: Advances in Mechanics-Informed Machine Learning for Digital Twins Chair(s): Mohamad Alipour; Zixin Wang; Zhidong Zhang; Furkan Lüleci		
HUMN 150	02:15 PM - 02:35 PM	ID 198: Physics-Guided Hierarchical Domain Adaptation for Sim-to-Real Radar-Based Subsurface Sensing Author(s): Zixin Wang, Ishfaq Aziz, Mohamad Alipour
	02:35 PM - 02:55 PM	ID 508: Noise-Robust Deep Learning-powered DIC Surrogate Model for Digital Twin Applications Author(s): Zhidong Zhang, Ayatollah Yehia, Zahra Zhiyanpour, David Wang, Devin Harris
	02:55 PM - 03:15 PM	ID 902: A Digital Representation Framework for Interpreting Short Term Monitoring in Bridge Capacity Assessment Author(s): Mohammadreza Rajaee, Mohamad Alipour, Larry A. Fahnestock
	03:15 PM - 03:35 PM	ID 985: Grounding Foundation Models in Physical Reality through Structural Graph Fusion for Cross-Condition Predictive Maintenance Author(s): Abobakr Alsufyani

MS095: Characterization and modeling of physical and chemical processes in porous materials across scales Chair(s): Mostafa Mobasher; Pania Newell; Sara Abedi; Manolis Vevakis; Jean-Michel Pereira; Giuseppe Buscarnera; Yanni Chen; Ghassan Shahin; Rigoberto Moncada		
HUMN 1B90	02:15 PM - 02:35 PM	ID 981: Stiffness properties of Living Building Material using Multi-phase Multi-scale Homogenization and Poromechanics approaches Author(s): Gadisa Merdassa, Mija Hubler
	02:35 PM - 02:55 PM	ID 205: Permeability tensor evolution: dynamic loading and crack geometry response Author(s): Rigoberto Moncada, Efrem Vitali
	02:55 PM - 03:15 PM	ID 519: Modeling the Cone Penetration Test in Saturated Granular Soils Using Coupled LBM–DEM: Challenges and Capabilities Author(s): Sina Sadeghi, Reihaneh Hosseini
	03:15 PM - 03:35 PM	ID 823: Multiscale analysis of volumetric deformation behaviour of plastic clays in the context of geological disposal of radioactive waste Author(s): Vidushi Toshniwal, Ties de Jong, Wout Broere, Michael Hicks, Anne-Catherine Dieudonné
MS031: Physics Meets AI: Foundation Models for Multiscale Mechanics Chair(s): Dibyajyoti Nayak; Dibakar Roy Sarkar; Somdatta Goswami		
HUMN 1B80	02:15 PM - 02:35 PM	ID 535: Bridging Length and Time Scales in Material Synthesis with Transferrable Representations Author(s): Wesley Reinhart, Isaiah Moses
	02:35 PM - 02:55 PM	ID 814: Reduced-Order Modeling for Multi-Mechanics Systems Author(s): Yeping Hu, Vic Castillo
	02:55 PM - 03:15 PM	ID 840: NOEM: Efficient and Scalable Finite Element Method Enabled by Reusable Neural Operators Author(s): Lu Lu, Min Zhu
	03:15 PM - 03:35 PM	ID 851: Toward Foundation-Ready Operator Surrogates in Mechanics: SetONet for Unstructured Functional Inputs Author(s): Stepan Tretiakov, Xingjian Li, Krishna Kumar
MS040: Mechanics of Wood and Wood-Based Materials Chair(s): Markus Lukacevic; Eric Landis; Fiona O'Donnell; Luis Zelaya-Lainez; Josef Füssl		
CLUB 4-5	02:15 PM - 02:35 PM	ID 605: Rate Effects in the Fracture of Cross-Laminated Timber Beams Author(s): Chinmoyee Das, Sushma Mudbhari, Leonid Wlodkowski, ERic Landis
	02:35 PM - 02:55 PM	ID 468: Permeability homogenization for assessing and optimizing the infiltration performance of delignified wood Author(s): Stefan Scheiner, Markus Königsberger, Christian Hellmich, Josef Füssl
	02:55 PM - 03:15 PM	ID 731: Two-Way Bending Response and Failure of CLT Panels with Different Load and Edge Restraint Conditions: Experiments and FE Analysis Author(s): Erkan Mutlu, Zachary Hayes, Kadir Sener, David Roueche, James Davidson
MS046: Self-Healing Structural and Material Systems Chair(s): Dryver Huston; George Voyiadjis; Sanhita Das		
CASE E230	02:15 PM - 02:35 PM	ID 910: Assessing, modeling, and mitigating shrinkage in earth materials: a Swiss perspective Author(s): Yi Du, Guillaume Habert, Ellina Bernard, Pietro Lura

	02:35 PM - 02:55 PM	ID 356: Self-healable, Recyclable and Reconfigurable Electronics for Wearable Applications Author(s): JIANLIANG XIAO
	02:55 PM - 03:15 PM	ID 712: Self-Stressing Fibers and Yarns as Promoters of Self-Healing Cementitious Materials Author(s): Emma McDonald, Mohammad Abdul Qader, Mandar Dewoolkar, Dryver Huston
	03:15 PM - 03:35 PM	ID 241: Seawater mineralization pathway for carbon-negative aggregate production Author(s): Daiki Shoji, Alessandro F. Rotta Loria
MS103: Industry Challenges in Engineering Mechanics (ICiEM) Chair(s): Kundan Goswami; Gourab Ghosh; Rudraprasad Bhattacharyya		
CASE E240	02:15 PM - 02:35 PM	ID 157: Integrity Assessment of Subsea Jumpers using Numerical Modeling Author(s): Xiang Zhou, Rudraprasad Bhattacharyya
	02:35 PM - 02:55 PM	ID 551: Fatigue Design and Evaluation for Welded In-Plane Gusset Joints Author(s): Jeong Hong, Xin Chu, Vahid Barzegar, Yuan Tian, Zhi Zhang
	02:55 PM - 03:15 PM	ID 737: Engineering Mechanics Challenges in Mitigating Wind Damage From Lab Uplift Tests to Real Asphalt Shingle Roofs Author(s): Arpit Anil Bhusar, Jorge Santiago-Hernandez, David Prevatt, Daniel Smith
	03:15 PM - 03:35 PM	ID 816: Environmental Effects on the Natural Frequency Variability in a Jacket-type Offshore Structure: A Case Study of the Gageocho Ocean Research Station Author(s): Byungmo Kim, Sunho Park, Seung-Hyun Ha, Kideok Do, Sangmin Park
MS102: Embedding AI in Structural Mechanics for Undergraduate Engineers Chair(s): Jieun Hur		
UMC 247	02:15 PM - 02:35 PM	ID 720: Integrating Research, Capstone Design, and Competition Teams for Experiential Learning in Civil Engineering Author(s): Hyunjoong Kim
	02:35 PM - 02:55 PM	ID 696: The Scholar Bridge Author(s): Adriana Trias Blanco
	02:55 PM - 03:15 PM	ID 829: Retrieval-Augmented Multi-Agent Self-Correcting AI for Civil Engineering: From FE Exam Benchmarking to Design Generation and Autonomous Evaluation Author(s): Saurav Silwal, Joshua Gao, Subin Varghese, Saurav Silwal
MS084: Recent Advances in Hybrid Simulation and Real-time Hybrid Simulation Chair(s): Wei Song; Richard Christenson; Amirali Najafi		
UMC 415-417	02:15 PM - 02:35 PM	ID 375: Multi-DOF Force Control Design for Multi-Physics Systems in Hydrodynamic Real-time hybrid simulation of Floating Offshore Wind Turbine Prototyping Author(s): Yun Ni, Akiri Seki, Bret Bosma, Ted Brekken, Bryson Robertson, Andreas Schellenberg, Pedro Lomonaco, Barbara Simpson
	02:35 PM - 02:55 PM	ID 387: Actuator Swivel Friction Compensation Method for Multi-Axial Hybrid Simulation Author(s): Yoon Jae Kim, Oh-Sung Kwon, Chin-Cheng Lin, Chung-Chan Hung
	02:55 PM - 03:15 PM	ID 529: Multi-axis Mixed-mode Hybrid Simulation for Examining FRP-Retrofitted RC Columns Author(s): Edwin Patino, Mohamed Gomaa, Juan Nicolas Villamizar, Shirley Dyke, Julio Ramirez

	03:15 PM - 03:35 PM	ID 674: Evaluating bandgap performance of seismic metamaterials using real-time hybrid simulation Author(s): Tao Zhang, Luz Maria Agudelo Urrego, Mohamed Gomaa, Tyler Martin, Arun Prakash, Christopher Gill, Shirley Dyke
MS096: Coupled Multi-Physics Mechanics of Geomaterials for Energy and Environmental Applications Chair(s): Angelica Tuttolomondo; Anne-Catherine Dieudonné		
UMC 382-384-386	02:15 PM - 02:35 PM	ID 362: Evolution of the mechanical properties of olivine due to thermal and chemical alteration: high-fidelity ultrasonic characterization by viscoelastography Author(s): Andrei S. Severin, Prasanna Salasiya, Pouyan Asem, Joseph F. Labuz, Bojan B. Guzina
	02:35 PM - 02:55 PM	ID 401: Thermo-Hydro-Mechanical Simulation of Compacted Bentonite: Analysis of High-Temperature CIEMAT Column Tests Author(s): Ju Sung Park, Sung In Cho, Yu Jin Kim, Seon Hong Na
	02:55 PM - 03:15 PM	ID 407: Multiphysics Thermo–Hydro–Mechanical Modeling of Frozen Ground Using a Coupled Discrete–Continuum Framework Author(s): Danyang Tong, Giuseppe Buscarnera, Alessandro Rotta Loria, David Grégoire, Gilles Pijaudier-Cabot, Gianluca Cusatis
MS009: Energy harvesting and intelligent sensing for sustainable structural health monitoring Chair(s): Li Ai; Mohsen Amjadian; Jinghao Yang		
KTCH 1B87	02:15 PM - 02:35 PM	ID 239: Flexible, stretchable, and wireless multilayer integrated motion sensor for physical activities monitoring Author(s): Ruili Zhang, Abhrajit Mal, Tavis Peterson, Jianliang Xiao
	02:35 PM - 02:55 PM	ID 698: Deep Learning–Enabled Health Monitoring of Wind Turbine Gearboxes Using Vibration and Acoustic Sensing Author(s): Balavignesh Vemparala Narayana Murthy
	02:55 PM - 03:15 PM	ID 879: Enhancing Localization Accuracy and Cost Optimization of Acoustic Emission Monitoring in Concrete Using Explainable Machine Learning Author(s): Kewei Li, Minzhe Wu, Li Ai

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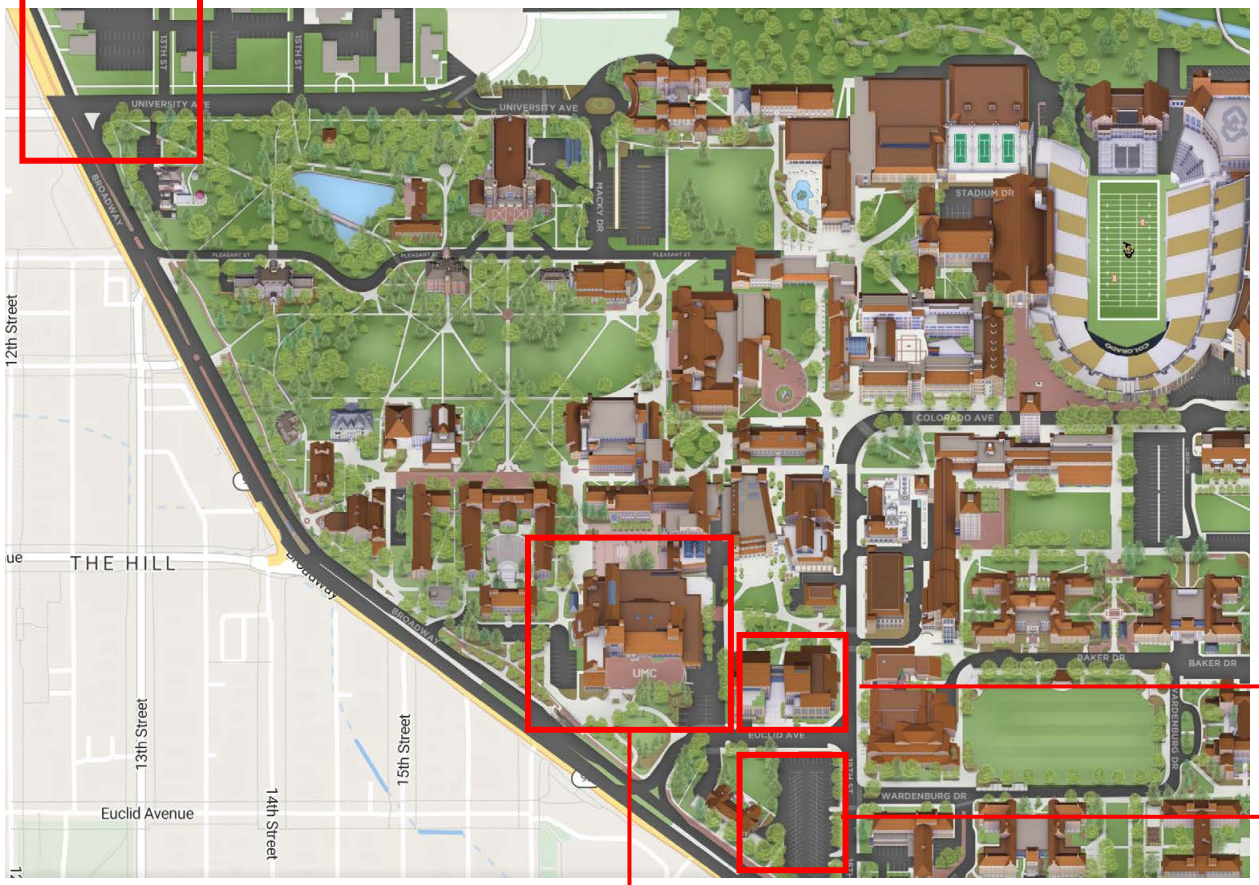
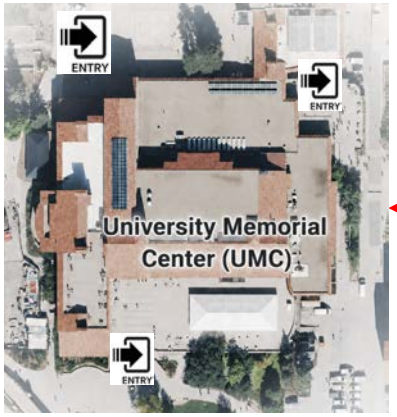
Campus Map



Conference Center Entry

Hotel Entry

Entry Plaza



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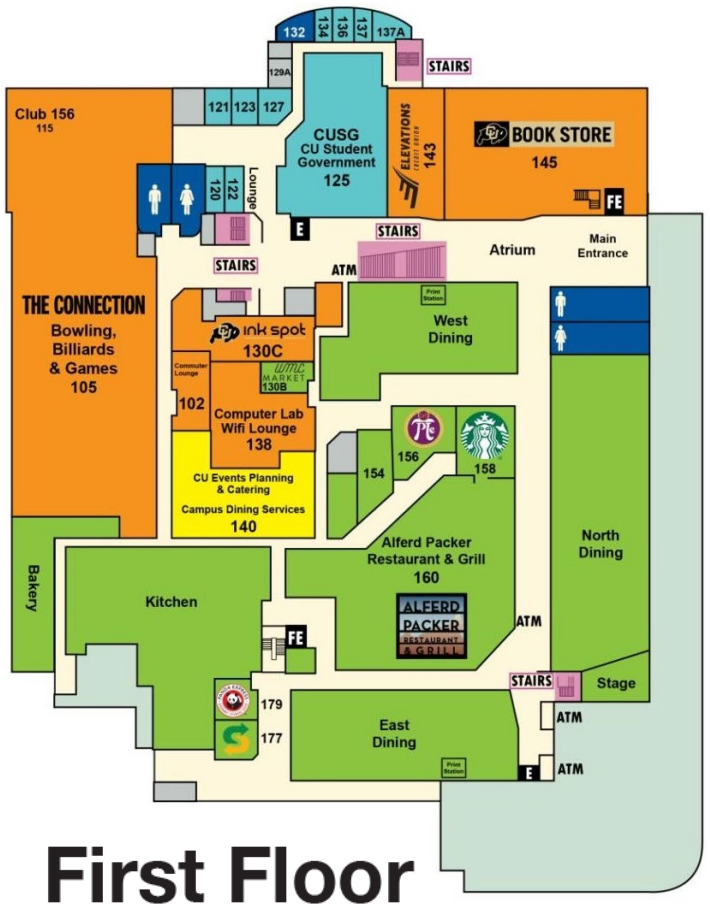
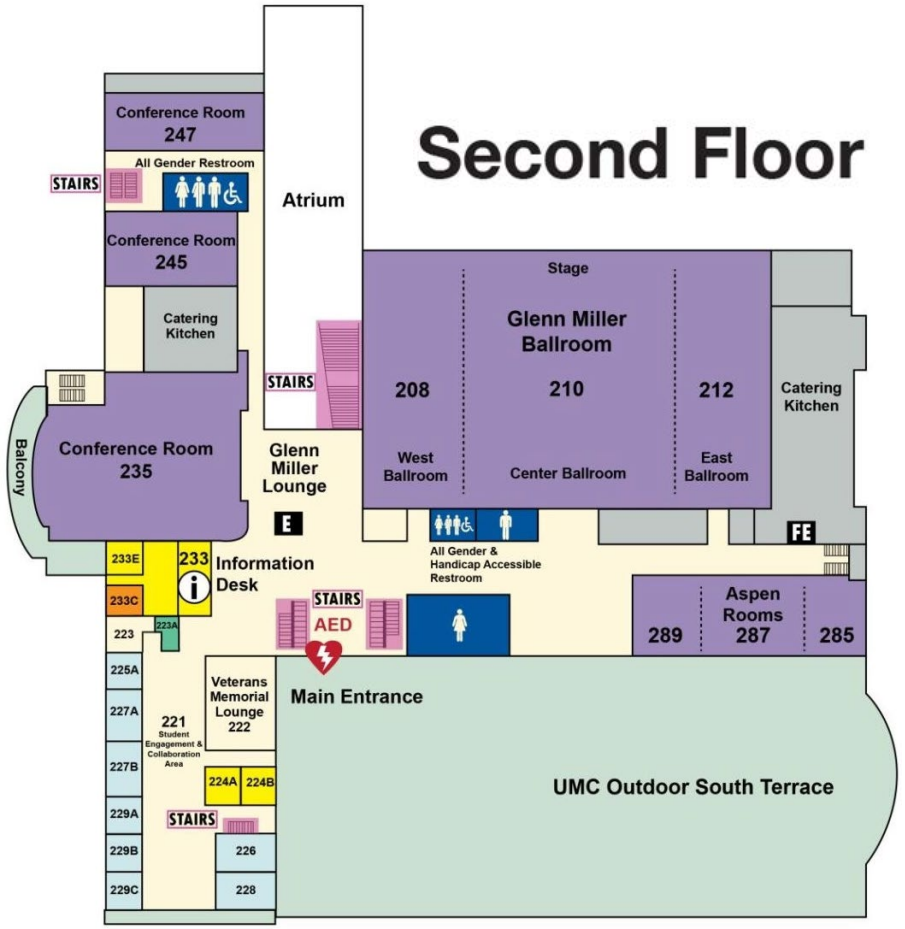
MS Session Buildings Map

University Memorial Center (UMC) Floor Maps

OFFICE	ROOM #
Alferd Packer Restaurant & Grill	160
Arts and Sciences Student Government	121
Campus Dining Services	140
Club 156	115
Commuter Lounge	102
Computer Lab and WiFi Lounge	138
The Connection Bowling, Billiards & Games	105
CU Book Store	145
CU Events Planning & Catering	140
CU Student Government	125
CUSG Appellate Court	136
Distinguished Speakers Board	123
Elevations Credit Union	143
Global Medical Brigades	120
Graduate and Professional Student Government	127
HEAL (Health Equity and Applied Learning)	120
Infinitus Pie	156
InkSpot Copy Center	130C
Joint Boards	125
Lactation Room	132
MECHA	137
Panda Express	179
Peace Corps	122
Senior Class Council	134
Starbucks	158
Subway	177
UMC Market	130B



First Floor



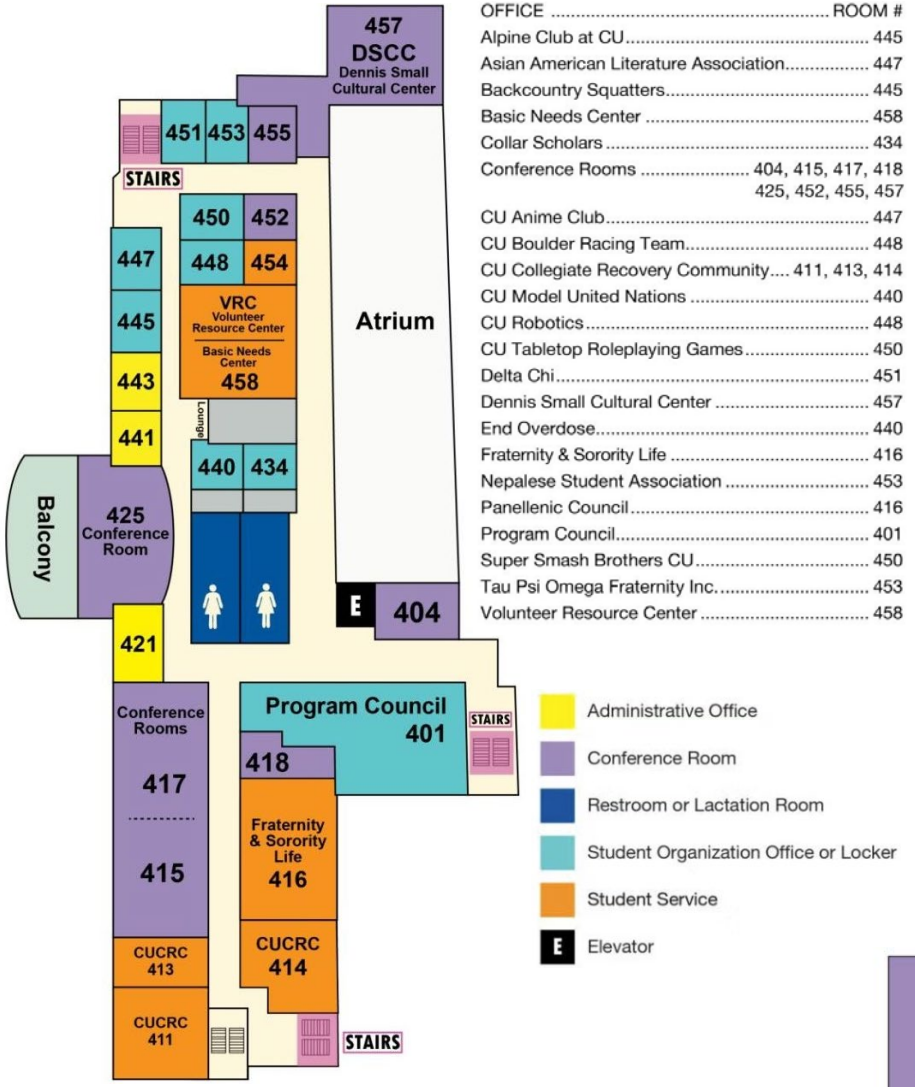
- Administrative Office
- Restroom or Lactation Room
- Restaurant or Campus Dining Service
- Student Organization Office or Locker
- Student Service
- E — Elevator
- FE — Freight Elevator

- Administrative Office
- Conference Room
- Restroom
- Washroom
- Student Organization Meeting Space
- Student Service

- Automated External Defibrillator (AED)
- E — Elevator
- FE — Freight Elevator
- Information

OFFICE	ROOM #
Aspen Rooms	285, 287, 289
Conference Rooms	235, 245, 247
CU NightRide	233C
Glenn Miller Ballroom	208, 210, 212
Quiet Space	223
Student Engagement & Collaboration Area	221
UMC Information Desk	233
UMC Security	233E
Veterans Memorial Lounge	222
Washroom (CU affiliates only)	223A

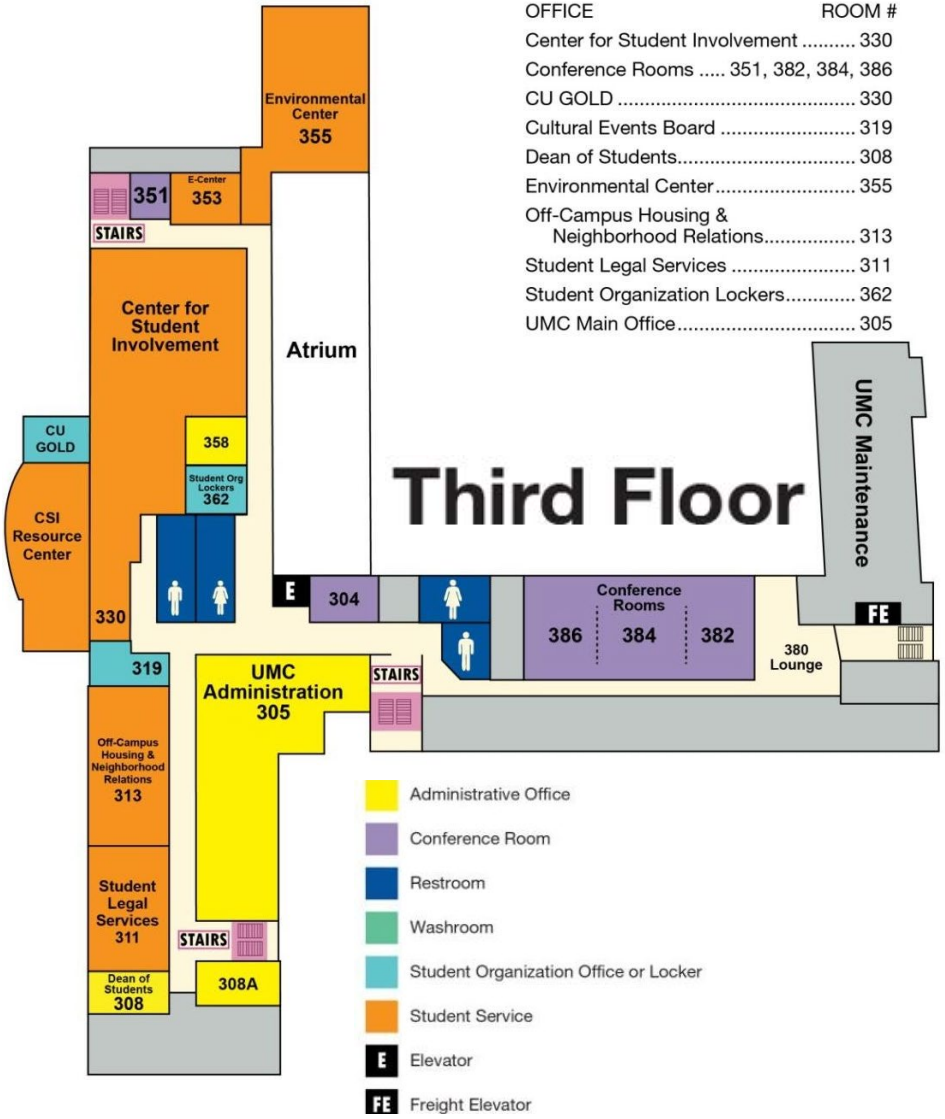
University Memorial Center (UMC) Floor Maps



OFFICE	ROOM #
Alpine Club at CU	445
Asian American Literature Association	447
Backcountry Squatters	445
Basic Needs Center	458
Collar Scholars	434
Conference Rooms	404, 415, 417, 418, 425, 452, 455, 457
CU Anime Club	447
CU Boulder Racing Team	448
CU Collegiate Recovery Community	411, 413, 414
CU Model United Nations	440
CU Robotics	448
CU Tabletop Roleplaying Games	450
Delta Chi	451
Dennis Small Cultural Center	457
End Overdose	440
Fraternity & Sorority Life	416
Nepalese Student Association	453
Panellenic Council	416
Program Council	401
Super Smash Brothers CU	450
Tau Psi Omega Fraternity Inc.	453
Volunteer Resource Center	458

- Administrative Office
- Conference Room
- Restroom or Lactation Room
- Student Organization Office or Locker
- Student Service
- E Elevator

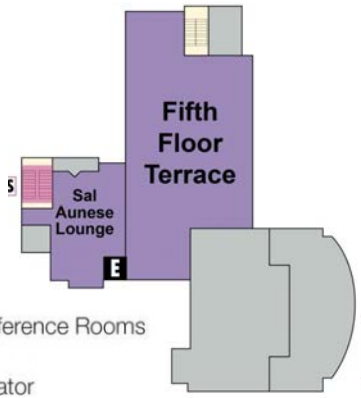
Fourth Floor



OFFICE	ROOM #
Center for Student Involvement	330
Conference Rooms	351, 382, 384, 386
CU GOLD	330
Cultural Events Board	319
Dean of Students	308
Environmental Center	355
Off-Campus Housing & Neighborhood Relations	313
Student Legal Services	311
Student Organization Lockers	362
UMC Main Office	305

- Administrative Office
- Conference Room
- Restroom
- Washroom
- Student Organization Office or Locker
- Student Service
- E Elevator
- FE Freight Elevator

Third Floor



- Conference Rooms
- E Elevator

Fifth Floor

Limelight Boulder - First Floor Layout

Limelight Boulder - Second Floor Layout