University of Colorado **Boulder**

PAUL M. RADY MECHANICAL ENGINEERING

Research & Industry Summit

Engineering Across Scales: From Lab Discovery to Industry Impact

Tuesday, August 18, 2026

At a Glance

Time	Event	Location
8:00 – 9:00	Check-in & Breakfast	Foyer Outside of ECCS 201
9:00 – 10:00	**Session 1: Kick-Off & Industry–CU Research Partnerships**	ECCS 201
10:00 – 10:20	Coffee Break & Posters	Foyer & Caruso Connector
10:20 – 12:00	**Session 2: Energy, Environment & Quantum Sensing**	KOBL 352
10:20 – 12:00	**Session 3: Robotics, Design & Global Impact**	ECCS 201
12:00 – 12:30	Lunch Pick-Up	Foyer & Caruso Connector
12:30 – 1:30	**Session 4: Panel Discussion & Q&A with Industry Research Partnerships**	ECCS 201
1:30 – 1:50	Coffee Break & Posters	Foyer & Caruso Connector
1:50 – 3:30	**Session 5: Advanced Materials, Mechanics & Manufacturing**	ECCS 201
1:50 – 3:30	**Session 6: Biomedical Engineering & Human Health**	KOBL 352
3:50 – 4:35	**Plenary Talk — Leslie Holton**	ECCS 201
4:35 – 4:45	Closing Remarks	ECCS 201
4:45 – 6:00	Happy Hour & Poster Session	ECCS 201 & Foyer

Meeting Website: https://www.colorado.edu/mechanical/me-research-and-industry-summit
Meeting Location: https://maps.app.goo.gl/4jksEwrkYrU38FiH8

Full Program

Session 1 — Kick-Off & Industry–CU Research Partnerships

Chairs: Peter Hamlington, Ginger Ferguson, Greg Whiting, Daria Kotys-Schwartz | Location: ECCS 201

#	Time	Speaker	Affiliation	Talk Title
1.1	9:00 – 9:20	**Peter Hamlington**	Chair	Welcome
1.2	9:20 – 9:40	**Daria Kotys-Schwartz**	Teaching Professor	Capstone Projects
1.3	9:40 – 10:00	**Ginger Ferguson / Greg Whiting**	Professor	Symposium Summary/Goals

10:00 – 10:20 *Coffee Break & Posters* — Foyer & Caruso Connector

Morning Parallel Sessions — 10:20 a.m.– 12:00 p.m.

Session 2 — Energy, Environment & Quantum Sensing

Chairs: Victor Bright, Max Saccone | Location: KOBL 352

#	Time	Speaker	Affiliation	Talk Title
2.1	10:20 – 10:40	**Geoff Stahl**	Apple	Master Research Agreement: Unlocking Broad Partnership Opportunities
2.2	10:40 – 11:00	**Kelvin Bates**	Assistant Professor	Detection, Attribution, and Implications of Trace Organic Gases in the Atmosphere
2.3	11:00 – 11:20	**Greg Rieker**	Professor	Amplifying Impact – Lessons Learned at the Interface Between Science, Engineering, and Business
2.4	11:20 – 11:40	**Jun Li**	Assistant Professor	Piezoelectric Biomaterials for Biomedical Devices: Design and Discovery through Advanced Manufacturing
2.5	11:40 – 12:00	**Esther Ozuruoha**	PhD Student	Secondary Organic Aerosol (SOA) Formation from Reactions of Chlorine Bleach and Cleaning Liquids Under Different Lighting Conditions

Session 3 — Robotics, Design & Global Impact

Chairs: Rob MacCurdy, Chahat Singh | Location: ECCS 201

#	Time	Speaker	Affiliation	Talk Title
3.1	10:20 – 10:40	**Nicole Xu**	Assistant Professor	Biohybrid Robotic Jellyfish and Bioinspired Designs for Next-Generation Ocean Technologies and Biomedical Applications
3.2	10:40 – 11:00	**Sean Humbert**	Professor	Sensing What Matters: Embodied Control for Agile, Autonomous Systems
3.3	11:00 – 11:20	**Joe Sargent**	Google X	X: The Moonshot Factory – How X Accelerates Innovation with Multidisciplinary Teams and External Collaborations
3.4	11:20 – 11:40	**Joseph Passarello**	PhD Student	3D Multi-Material Inkjet Fabricated Medical Training Models
3.5	11:40 – 12:00	**Grace Burleson**	Assistant Professor	Designing Better Futures: Research on Human Problem Solving, Innovation, and Social Impact

12:00 – 12:30 *Lunch Pick-Up* — Foyer & Caruso Connector

Session 4 — Industry Relations and Partnerships Panel Discussion and Q&A

12:30 – 1:30 | Chair: Mark Rentschler | Panelists: Greg Rieker, Chris Gustavson, Bhavna Chhabra, Chip Bollendonk | Location: ECCS 201

1:30 – 1:50 *Coffee Break & Posters* — Foyer & Caruso Connector

Afternoon Parallel Sessions — 1:50 – 3:30 p.m.

Session 5 — Advanced Materials, Mechanics & Manufacturing

Chairs: Rong Long, Longji Cui | Location: ECCS 201

#	Time	Speaker	Affiliation	Talk Title
5.1	1:50 – 2:10	**Nicole Saro**	Lockheed Martin	Lockheed Martin Corporate Overview
5.2	2:10 – 2:30	**Jianliang Xiao**	Associate Professor	Printed Liquid Metal Electronics for Wearable Applications
5.3	2:30 – 2:50	**Peter Hamlington**	Professor	Multi-physics Simulations of Fire and High Temperature Industrial Processes
5.4	2:50 – 3:10	**Nathalie Vriend**	Associate Professor	The Challenges of Moving, Handling and Manipulating Particulate Materials
5.5	3:10 – 3:30	**Ashta Navdeep Karuriya**	Postdoc	Fully Dense Granular Crystals as Strong and Recyclable Materials

Session 6 — Biomedical Engineering & Human Health

Chairs: Maureen Lynch, Alaa Ahmed | Location: KOBL 352

#	Time	Speaker	Affiliation	Talk Title
6.1	1:50 – 2:10	**Debanjan Mukherjee**	Assistant Professor	Digital Twins for Vascular Systems: Convergence of Data, Models, and Insights
6.2	2:10 – 2:30	**Corey Neu**	Professor	Leveraging Academic-Industry Partnerships to Develop New Biomaterials for Clinical Use
6.3	2:30 – 2:50	**Michael Floren**	Allosource	Advancing Industry Innovation Through Academic Partnerships: Perspectives from a Tissue Processor and Medical Device Company
6.4	2:50 – 3:10	**Xiaoyun Ding**	Associate Professor	Cells on Chip
6.5	3:10 – 3:30	**Ellyse Schneider**	Postdoc	Substrate Stiffness Drives Mechano-Epigenetic Disruption of Cardiomyocyte Nuclear Organization

Session 7 — Plenary Talk

3:50 – 4:35 | Location: ECCS 201

#	Time	Speaker	Affiliation	Talk Title
7.1	3:50 – 4:35	**Leslie Holton**	Medtronic	Building Research Partnerships: A Medtronic Perspective

4:35 – 4:45 *Closing Remarks — Ginger Ferguson / Greg Whiting* — ECCS 201

4:45 – 6:00 *Happy Hour & Poster Session* — ECCS 201 & Foyer

Poster Session

Posters are on display throughout the day and are presented during the Happy Hour at the end of the day.

Presenter	Poster Title
Oluwafunmilayo Akinteye	Bone Material Properties and Osteocyte Network Integrity in Type 1 Diabetes
Victor Olumide Ayanwunmi	Measurements of the Plasma-Thickness Emanating from the Surface of a Yttria Stabilized Zirconia Reactor Flashed with a Range of Current Densities
Emma Balevic	Characterizing Stakeholder Engagement Approaches in Engineering for Sustainable Development (ESD) Practice
Peter Bevington	Multi-Scale, Multi-Phase, Multi-Physics: Resolving Coupled Transport, Pyrolysis, and Combustion in OpenFOAM
Matticus Brown	Distributed Pressure Sensing for Force Estimation in Aquatic Flapping Fins
Patrick J. Cavanaugh	Development of a Research Grade, Multi-Material Inkjet 3D Printing Platform
Krishnaroop Chaudhuri	Designing Tunable Photoelastic Particles
Juan Cisneros	Distributable Screen-Printed Soil pH Sensor

Presenter	Poster Title
Akhila Denduluri	Multi-Step Femtosecond Laser-Fabricated Membranes for Controlled Migration of Cells and Biomolecules
Mitra Diyanati	Tunable TPMS Scaffolds for Reinforcing Hydrogels in Cartilage Tissue Engineering
Michaela Ellmeier	Optically Pumped Magnetometers Across Scales: From Biomedical Sensing to Space Applications
Betsy Farris	Towards Mitigation Scale: Supporting Methane Emissions Management by Connecting Spatial Scales with Satellites
Shantae Gallegos	
Samuel Greene	Atomic-Scale Simulations of Water Adsorption in Heat Storage Materials
Juan Hanel	Age-Dependent Musculoskeletal Degradation in BALB/c Mice Following 39 Days of Spaceflight
James Harper	Connecting Academia and Industry Using Mentorship in a First-Year Engineering Design Course
Brandon Hayes	Arbitrary-Shaped Photoelastic Grain Solver (APEGS) for Non-Spherical Soft Granular Particles
Rylan Hodgson	Photoelastic Particles in a Rolling Drum
Aishwarya Pravin Kakade	Body Responsive Shape Memory Polymer Electronics for Physiological Signal Monitoring
Reegan Ketzenberger	Combinatorial Inorganic Material Design via 3D Printed Polymer Microreactor Infusion
Emma Letourneau	Influence of Mechanical Compression on the Vertical and Lateral Permeability of Porous Membranes
Zhihui Li	A Novel Noncentrosymmetric Biocrystal with Hydration-Enabled Symmetry Breaking and High Piezoelectricity
Nicole Luna	Development of Low-Cost, Real Time, In Situ Plastic Degradation Sensors to Aid the Identification of Plastic Degrading Microbes
J. Scott Malloy	Patient Risk Predictions in Design of Medical Device Technologies with Applications in Mechanical Circulatory Support Systems
Faith Olulana	Tissue-Specific Percolation Thresholds in Cartilage- and Dermis-Derived Granular ECM Biomaterials
Vishnu Prasad	Electric-Field-Assisted Printing Piezoelectric Biomaterials for Implants
Izaiah Ramirez	Lamin A/C Is Critical for Mechano-Epigenetic Remodeling in Mouse Cardiac Fibroblasts
Kayla Rasavanh	Fibrin Based 3D Model of the Myotendinous Junction
Jas Shahanand	Foundations for Wildland Fire Atmospheric Chemistry: Radical-Driven Pathways to Understand the Emissions from Biomass Pyrolysis
Saeed Pezeshki and Youhan Sohn	Exploring and Harnessing the Mechanics of Entangled Matter for Assembly, Disassembly and High Strength
Kelsea Souders	Evaluation of the Cross-Scale Turbulent Kinetic Energy Flux in a Bluff Body Stabilized Premixed Flame
Kellen Waters	Distinguishing K2 and K3 Mobility Designations Using Sagittal-Plane Gait Biomechanics in Individuals with Transfemoral Amputation
Ben Wilkinson	Evaluating the Effect of Strain Rate on Mechanical and Material Properties of Arterial Tissue During Peel Testing
Kurt Winkler	Full-Field Elastography Reveals Strain-Dependent and Structure-Associated Subnuclear Stiffness
Armin Yousefi	Fully dense granular crystals as strong and recyclable materials
Jie Zeng	Understanding Metal Ion-Polymer Affinity for Predictive Thermodynamic Control of Multi-Component Metal Fabrication via the Infusion-Reaction Method