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<tr>
<td>8:00</td>
<td>Welcome and Opening Remarks: Lori Graham-Brady – Regatta Ballroom</td>
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<td>10:00</td>
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<tr>
<td>10:30</td>
<td>Plenary Lecture: Naresh Thadnani, Time-Resolved Optomechanical Sensing of Pressure Distributions During Shock-Compression of Heterogeneous Materials – Regatta Ballroom</td>
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<tr>
<td>11:30</td>
<td>Panel Discussion: June Wicks and Ryan Hurley (session chairs) – Regatta Ballroom</td>
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<td>12:00</td>
<td>Lunch – Annapolis Atrium</td>
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### Regatta A: Architectured Materials: Design, Fabrication, Characterization

- Jamie Guest, Jordan Raney, Lorenzo Valdevit

### Regatta B: Experimental and Computational Advances in Dynamic Behavior of Ceramics

- Ghatu Subhash

### Regatta C: Thermal vs athermal plasticity (Robert Hoy, Stefanos Papanikolaou)

### Windjammer: Grain-scale behavior of heterogeneous energetic solids (Ryan Austin, DJ Luscher, Laurence Fried)

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<td>1:00-1:20</td>
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<td>“Interactions of static and dynamic properties of 3D printed architected metastructures” (K. Matlack, L. Arretche)</td>
<td>“Superstrength through Icosahedral Bonding” (C. Kunka, G. Subhash)</td>
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<td>1:40-2:00</td>
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<td>“Spinodal structures with supreme scaling laws” (M-T. Hsieh)</td>
<td>“Capturing dynamic crack growth and localization effects in ceramics resulting from impact events” (A. Tonge)</td>
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<td>2:00-2:20</td>
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<td>“Fracture toughness of 3D lattice materials” (M. O’Masta, V. Deshpande, H. Cui, X. Zheng)</td>
<td>“The Effect of Numerical Treatments of Surfaces and Interfaces on the Ballistic Response of Ceramics” (T. Holmquist, A. Tonge)</td>
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<td>2:40-3:00</td>
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<td>“Elastic wave propagation in 3D lattices and open-cell foams” (A. Bayat, S. Gaitanaros)</td>
<td>“Modeling the formation and constitutive behavior of granular fragments in highly damaged ceramics” (M. Cil, A. Bhattacharjee, L. Graham-Brady)</td>
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<td>“Onset of mechanical nonlinearities for amorphous polymers in their glass transition regime: experimental results and model” (H. Montes, F. LeQueux, S. Cantournet, R. Masurel, P. Gelineau)</td>
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<td>“Mechanical properties of energetic materials under impact at the single crystal and mesoscales” (M. Cawkwell)</td>
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### Welcome and Opening Remarks: Lori Graham-Brady – Regatta Ballroom

- Lori Graham-Brady


- Thomas Duffy

### Coffee Break – Annapolis Atrium

### Plenary Lecture: Naresh Thadnani, Time-Resolved Optomechanical Sensing of Pressure Distributions During Shock-Compression of Heterogeneous Materials – Regatta Ballroom

- Naresh Thadnani

### Panel Discussion: June Wicks and Ryan Hurley (session chairs) – Regatta Ballroom

- June Wicks
- Ryan Hurley

### Lunch – Annapolis Atrium

- Annapolis Atrium
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<td>3:30</td>
<td>Regatta A Architectured Materials: Design, Fabrication, Characterization (Jamie Guest, Jordan Raney, Lorenzo Valdevit)</td>
<td>Regatta B Multiscale Approaches to modeling hierarchical materials (Raja Ganesh, Christopher Meyer)</td>
<td>Regatta C In situ and 3D characterization techniques for understanding deformation and fracture of engineering and geological materials (Todd Hufnagel, Mingwei Chen, Darren Pagan, June Wicks)</td>
<td>Windjammer Low-Dimensional Materials Under Extreme Environments (Kasra Momeni, Long-Qing Chen)</td>
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5:45 Poster Session / Reception, sponsored by Nanomechanics, Inc. – Annapolis Atrium
7:15 Dinner on your own
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<td>1000</td>
<td>Plenary Lecture: Xijie Wang, Control and Characterization of Non-Equilibrium Materials using MeV Ultrafast Electron Diffraction - Regatta Ballroom</td>
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<td>1130</td>
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<td>1300</td>
<td>Regatta A Slips, Twins, and Voids - III (Shailendra Joshi, Justin Wilkerson, Jeffery Lloyd)</td>
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<td>Regatta B Ceramics for extreme environments: processing, characterization and modeling (Rich Haber)</td>
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<td>Regatta C Multiaxial Mechanical Repsonse of Ballistic Fibers and Fiber-Based Systems (Subramani Sockalingham, Jack Gillespie, Tusiit Weerasooryya)</td>
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<td>Windjammer Fundamentals of deformation and yielding in amorphous materials (Alessio Zacco, Timothy Sirk)</td>
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<td>1430</td>
<td>“Dynamic fracture and dislocation dynamics” (B. Gurrutxaga-Lerma, D. Balint, D. Dini, A. Sutton)</td>
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<td>“Sintering and mechanical properties of boron suboxide (B60) composites” (A. U. Khan, V. Domnich, R. Haber)</td>
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<td></td>
<td>“Numerical Model for Angled Projectile Impact into Stacked Layers of UD Sheets and Fabrics” (S. L. Phoenix, A. Yavuz)</td>
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<td>“A machine learning approach to plasticity in athermal disordered solids” (A. J. Liu, S. Ridout, G. Zhang)</td>
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<td>1515</td>
<td>“Fracture, twinning, and phase changes in ceramic crystals: theory, simulations, and applications to boron carbide” (J. Clayton, J. Knap)</td>
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<td></td>
<td>“An Analysis and Interpretation of Planar Features in Boron Carbide: Part 2” (J. McCauley)</td>
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<td>Anelasticity, plasticity and energy landscape in metallic glasses” (T. Egami)</td>
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<td>1600</td>
<td>“Modeling the strength of a new, high performance Mg alloy enables the first-ever assessment of GP zone strength parallel and perpendicular to the zone” (S. Agnew, J. Bhattacharya, T. Sasaki T. Nakata, S. Kamado, K. Hono)</td>
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<td>“High Pressure Studies of Boron Carbide with Varying B/C Ratios” (M. Schaefer, V. Domnich, R. Haber)</td>
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<td>“Influence of HSR TC on the tensile strength of UHMWPE single ballistic fibers” (D. Casem, T. Weerasooryya, S. Sockalingham, J.Gillespie, Jr.)</td>
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<td>“Stiffness and Structure of Coarse-Grained Polymer Models” (K. M. Salerno, N. Bernstein)</td>
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<td>1645</td>
<td>“Mechanical properties and failure of Mg97Y2Zn1 processed by ECAE” (J. Li, X. Chen, L. Kecskes Q. Wei)</td>
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<td>“Evaluation of size of zone of effective heating near Mescal zone in ceramic at hypervelocity impact” (V. Kartuzov, B. Galanov, S. Ivanov)</td>
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<td>“Variably thermalized soft glassy rheology” (R. Hoy)</td>
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<td>1730</td>
<td>“The effect of strain rate on the plastic flow and failure of an AZ31B magnesium alloy” (V. Kannan, N. Krywopusk, L. Kecskes, T. Weih K.T. Ramesh)</td>
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<td></td>
<td>“Boride-based ceramics for extreme environments” (T. Prikhna, V. V. Kartuzov, P. P. Barvitskyi, E. V. Katruzov, R. Haber)</td>
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<td>3:30-</td>
<td>Regatta A Slips, Twins, and Voids - III (Shailendra Joshi, Justin Wilkerson, Jeffery Lloyd)</td>
<td>Regatta B Surrogate Modeling for uncertainty quantification and materials design (Xin-Cindy Wang, Kenneth Leiter, Joshua Crona, Alex Breuer, Jarek Knap)</td>
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<td>4:30-</td>
<td>“Inertial effects on spall stress inferred from free surface velocity” (R. Becker)</td>
<td>“Universal fragment descriptors for predicting properties of inorganic crystals” (C. Oses, O. Isayev, C. Toher, E. Gossett, S. Curtarolo, A. Tropsha)</td>
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<td>5:10-</td>
<td>“Incorporation of Microinertia into a Cocks-Ashby-kinetics-based Porosity Model” (J. Moore, N. Barton)</td>
<td>“Free energy reconstruction using mean force surrogate models” (A. Bhaduri, L. Graham-Brady, C. Abrams)</td>
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<td>6:00</td>
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<td>Student Breakfast sponsored by Intel – Mainsail Room</td>
<td>Breakfast – Annapolis Atrium</td>
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<td>Fabrication of Dense B4C-Preceramic Polymer Derived SiC Composite</td>
<td>Chawon Hwang, Rutgers University</td>
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<td>Atomic modeling of high-speed compression of defective samples of boron carbide</td>
<td>Iegor Kartuzov, IPMS NAS of Ukraine</td>
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<td>Failure of Advanced Ceramics: From Intact Materials to Granular Powder</td>
<td>James Hogan, University of Alberta</td>
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<td>Time-resolved x-ray imaging of void collapse in silicone and TNT</td>
<td>Michael Armstrong, Lawrence Livermore National Laboratory</td>
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<td>Lattice Heat Conductivity Revisited</td>
<td>Tommy Sewell, University of Missouri-Columbia</td>
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<td>Projectile penetration into synthetic clay</td>
<td>Stephan Bless, New York University</td>
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<td>Damage characterisation for cement and concrete using microwave induced damage</td>
<td>Gareth Tear, Imperial College London</td>
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<td>Penetration and Perforation Mechanics of Dyneema HB26</td>
<td>Bazle Haque, University of Delaware - Composite Center</td>
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<td>A Novel Damage Detection Technique of Nanocomposite Carbon Fiber Reinforce Polymer</td>
<td>Michael Coatney, US Army Research Laboratory (VTD)</td>
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<td>MEDE Data Science Cloud Version 2: Workgroup Based Data Science for Materials Scientists and Engineers</td>
<td>David Elbert, Johns Hopkins University</td>
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<td>Developing a Hypervelocity Impact Facility at Johns Hopkins University</td>
<td>Matt Shaeffer, JHU</td>
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<td>Mesoscale Informed Simulations of Shock-to-Detonation Transitions in Porous Energetic Materials</td>
<td>Nirmal Kumar Rai, The University of Iowa</td>
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<td>Multiscale Modeling of Shocks Interacting with a Cloud of Particles</td>
<td>Oishik Sen, The University of Iowa</td>
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<td>Dynamic Properties of 3D Woven Metallic Materials</td>
<td>Hak Yong Lee, Johns Hopkins University</td>
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<td>Analytical model for granular phase transition of highly damaged ceramics</td>
<td>Amartya Bhattacharjee, Johns Hopkins University</td>
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<td>Optimization of Consolidation Parameters and Characterization of Bulk Silicon Doped Boron Carbidides</td>
<td>Michael Gagnepain, Rutgers University</td>
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<td>High Temperature Stability of Stress-Induced Amorphous Phase in Boron Carbine of Varying Stoichiometry</td>
<td>Mark Schaefer, Rutgers University</td>
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<td>Dynamic Spherical Indentation of Single Crystal Quartz to Study Amorphization</td>
<td>Kimberly Andes, Johns Hopkins University</td>
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<td>Simulations of compressive and tensile response of HMX grains in HTPB and Sylgard binders</td>
<td>Akshay Dandekar, Purdue University</td>
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<td>Hot-spot formation in β-HMX based polymer-bonded explosives due to friction at crack surfaces</td>
<td>Camilo A. Duarte, Purdue University</td>
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<td>23.</td>
<td>1D FEM-DEM and MPM-DEM Hierarchical Multiscale Modeling of a Split Hopkinson Pressure Bar Experiment on Dry Colorado Mason Sand</td>
<td>Erik Jensen, University of Colorado Boulder</td>
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<td>Analysis of powdered SiO2 under dynamic shock compression</td>
<td>Dorothy Miller, Lawrence Livermore National Laboratory (LLNL)</td>
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<td>Three-dimensional microstructural characterization of magnesium and magnesium alloys</td>
<td>Hao Sheng, Johns Hopkins University</td>
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<td>In situ visualization of the dynamic failure of geomaterials using X-ray phase contrast imaging</td>
<td>Andrew Leong, Johns Hopkins University</td>
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<td>Direct comparison between experiments and simulations of jetting in additively manufactured lattices</td>
<td>A.K. Robinson, LLNL</td>
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<td>Investigation of Structural and Magnetic Properties of FePt Thin Films Grown on Si (100).</td>
<td>Atiyya Davis, Morgan State University</td>
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<td>Identification of Defect Formation and Propagation Mechanisms in the Piezoelectric Crystals with Fluorescent Nanoparticles</td>
<td>Joshua Samba, Morgan State University</td>
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<td>Boron carbide high-temperature thermoelectric nanocomposites</td>
<td>Mobolaji Zondode, Morgan State University</td>
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<td>Micromechanical Finite Element modeling of dynamic localization and clustering of multiple fiber breaks that lead to tensile failure of unidirectional composites</td>
<td>Raja Ganesh, University of Delaware</td>
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<td>Effect of Microstructure on the Transverse Compressive Strength of UHMWPE Composites at High Strain-rates</td>
<td>Jason Parker, Johns Hopkins University/U.S. Army Natick Soldier Research, Development and Engineering Center</td>
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<td>Modeling fatigue crack initiation and propagation in Ti64 alloys using coupled crystal plasticity-phase field method</td>
<td>Jiahao Cheng, Johns Hopkins University</td>
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<td>Space Time Based Boundary Condition for Microscopic model and Explicit Homogenization</td>
<td>Zhiye Li, Johns Hopkins</td>
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<td>Dynamic Fracture of epoxide polymers</td>
<td>Amanda Bellafatto, Drexel University</td>
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<td>Microstructure characterization and compressive response of two dilatant polymeric foams</td>
<td>Kapil Bharadwaj Bhagavathula, The University of Alberta, Edmonton</td>
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<td>Development of an automated method for macro-scale damage characterization of a plain-weave S-2 glass epoxy composite laminate</td>
<td>Enock Bonyi, Morgan State University</td>
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<td>High Resolution Scanning Electrochemical Microscope with Aptamer Based Nanoscale Electrodes</td>
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<td>MAGNETIC CHARACTERIZATION OF GRAPHENE/Fe/SiO2</td>
<td>Moses A. Kayondo, Morgan State University</td>
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<td>A novel approach for single UHMWPE fibre modelling and experimental validation</td>
<td>Dimitrios Kempesis, Imperial College</td>
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<td>Effect of confined rolling on microstructure and mechanical properties of Magnesium Alloys</td>
<td>Pavitra Krishnan, UNC Charlotte</td>
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<td>Compressive Behavior of Woven Fiberglass Polymer Matrix Composites under Multi-axial and Environmental Loading Conditions</td>
<td>Ariana Paradiso, Drexel University</td>
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<td>Impact Pre-damage on Basalt Under Catastrophic Uniaxial Compression</td>
<td>Jacqueline Tawney, Drexel University</td>
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<td>Fracture Properties of Group V Transition Metal Carbides</td>
<td>Xingyuan Zhao, Drexel University</td>
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<td>Kinetics of microstructure evolution and spall of Mg with supersaturated vacancies</td>
<td>Sara Adibi, Texas A&amp;M University</td>
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<td>High frequency in situ fatigue testing of FCC microcrystals</td>
<td>Steven Lavenstein, Johns Hopkins University</td>
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<td>Effect of temperature on the suppression of twinning in a-axis textured magnesium and magnesium alloys</td>
<td>Roshan Plamthottam, Johns Hopkins University</td>
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<td>Stochastic modelling of discontinuous dynamic recrystallization in magnesium alloys</td>
<td>Abbas Tutcuoglu, California Institute of Technology</td>
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<td>Rate Dependence of Plastic flow and Failure in Rolled AZ31B</td>
<td>Meng Zhao, Johns Hopkins University</td>
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<td>Uncertainty propagation of a composite model using sensitivity information from NIGFEM method</td>
<td>Anindya Bhaduri, Johns Hopkins University</td>
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<td>A piecewise polynomial approximation scheme based on the Hashin-Shtrikman variational principle of polycrystals</td>
<td>Nicolas Venkovic, Johns Hopkins University</td>
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<td>Uncertainty Quantification of Data Collection and Data Processing in Materials Characterization</td>
<td>Noah Wade, JHU</td>
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