

# Virginia Space Grant Consortium Student Research Conference Agenda - April 13, 2023

|                |   |                      |   |                      |   |                      |
|----------------|---|----------------------|---|----------------------|---|----------------------|
| 8:00 -<br>8:30 | <b>Registration in Lobby</b>  |                      |   |                      |   |                      |
| 8:30 -<br>8:45 | <b>Mary Sandy, VSGC Director, Chris Carter, Deputy Director - Ballroom A<br/>Welcome</b>  |                      |   |                      |   |                      |
| <b>Where</b>   | <b>Newport Room</b>   | <b>Newport Room</b>  | <b>Ballroom D</b>   | <b>Ballroom D</b>    | <b>Amphitheater</b>   | <b>Amphitheater</b>  |
|                | <b>Presenter</b>  | <b>Session Chair</b> | <b>Presenter</b>  | <b>Session Chair</b> | <b>Presenter</b>  | <b>Session Chair</b> |
| 8:50           | <b>Wayne Dawson III<br/>University of Virginia<br/>Applied Science</b><br>A Fluorescence Based Approach for<br>Quantifying Phenology and Physiology<br>in Changing Boreal Ecosystems          | <b>TBD</b>           | <b>William Miyahira<br/>William &amp; Mary<br/>Applied Science</b><br>Microwave Atom Chip for Spin-Specific<br>Atom Interferometry  | <b>TDB</b>           | <b>Jarrod Banks<br/>Virginia Tech<br/>Aerospace</b><br>Transient Aeroacoustic Turbulence<br>Ingestion into a Rotor  | <b>TBD</b>           |
| 9:05           | <b>Nathan Folta<br/>Virginia Tech<br/>Applied Science</b><br>Design of Novel Lower Body<br>Exoskeleton  |                      | <b>Elizabeth Zengel<br/>Old Dominion University<br/>Applied Science</b><br>Analyzing High Energy Density<br>Materials (HEDMs) with Density<br>Functional Theory (DFT) and Molecular<br>Dynamics to Determine Trigger Bonds<br>and Sensitivities |                      | <b>Joseph Cunningham<br/>Virginia Tech<br/>Aerospace</b><br>Development of UV-Resistant<br>Polymer-Regolith Composite<br>Shielding Material for Long-Term<br>Lunar Habitats Incorporating Carbon<br>Nanotubes |                      |
| 9:20           | <b>Megan Hept<br/>Old Dominion University<br/>Applied Science</b><br>Exploring the Impact of Climate<br>Change and Increased Carbon Levels<br>on the Cyanobacteria, Microcystis<br>Aeruginosa |                      | <b>Edward Barron<br/>Virginia Tech<br/>Structures and Materials</b><br>Liquid Metal Elastomer Composite<br>Filaments for Material Extrusion<br>Additive Manufacturing   |                      | <b>Joshua Fitzgerald<br/>Virginia Tech<br/>Aerospace</b><br>Dynamical Geometry Associated with<br>the Collision Manifold in the Circular<br>Restricted Three-Body Problem.                                    |                      |
| 9:35           | <b>Ken Koltermann<br/>William &amp; Mary<br/>Applied Science</b><br>Apollo: Non-intrusive Vital Sign<br>Monitoring Using Wearable<br>Technology   |                      | <b>Andrianna Daniels<br/>University of Virginia<br/>Structures and Materials</b><br>Creating a Detailed Model for Boron<br>Nitride Deposition Mechanics   |                      | <b>Jeremy Hopwood<br/>Virginia Tech<br/>Aerospace</b><br>Energy-Based Wind Estimation Using<br>Aircraft   |                      |

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| 9:50  | <p><b>Andrew Krause</b><br/> <b>Hampton University</b><br/> <b>Applied Science</b><br/> Validation of Hadron Mass Correction Schemes in Deep Inelastic Scattering at Low Energy Transfer.</p>                                 |     | <p><b>Alexander Hatfield</b><br/> <b>Old Dominion University</b><br/> <b>Structures and Materials</b><br/> Multifunctional Boron Nitride Nanotube (BNNT) and BNNT Composites and Devices in Extreme Aerospace Environments</p> |     | <p><b>Virginia Smith</b><br/> <b>Virginia Tech</b><br/> <b>Aerospace</b><br/> High-Altitude Balloon Mission Optimization</p>  |     |
| <p><b>10:05 - 10:30 Undergraduate Poster Presentations in Foyer</b></p> |   |     |  |     |   |     |
| 10:30   | <p><b>Madeline Miles</b><br/> <b>University of Virginia</b><br/> <b>Applied Science</b><br/> NOx Emissions in West African Cities Inferred Using TROPOMI NO2 Observations</p>   | TBD | <p><b>Victor Kontopanos</b><br/> <b>University of Virginia</b><br/> <b>Structures and Materials</b><br/> Modelling Galvanic Corrosion of Aerospace Fasteners and Plates Under Thin Electrolyte Film Conditions</p>             | TBD | <p><b>Zhe-Yu Daniel Lin</b><br/> <b>University of Virginia</b><br/> <b>Astrophysics</b><br/> Making Baby Planets: Dust Settling of Protoplanetary Disks</p>   | TBD |
| 10:45   | <p><b>Elizabeth Prior</b><br/> <b>Virginia Tech</b><br/> <b>Applied Science</b><br/> Investigating Flood-Vegetation Interactions Through Remote Sensing and Modeling</p>  |     | <p><b>Devin Longazel</b><br/> <b>Old Dominion University</b><br/> <b>Structures and Materials</b><br/> Resorcinarene Nanocapsule Library for Metal Extractions</p>   |     | <p><b>Deryl Long</b><br/> <b>University of Virginia</b><br/> <b>Astrophysics</b><br/> Build a World: Predicting Planet Assembly and Composition with Atacama Large Millimeter/Submillimeter Array (ALMA) and NASA's James Webb Space Telescope (JWST)</p> |     |
| 11:00   | <p><b>Alison Ritz</b><br/> <b>Virginia Tech</b><br/> <b>Applied Science</b><br/> Identifying Individual Tree Crowns for Biomass Mapping Using 2021 National Agriculture Imagery Program's (NAIP) Imagery in Virginia, USA</p> |     | <p><b>Jennifer Mejia</b><br/> <b>Old Dominion University</b><br/> <b>Structures and Materials</b><br/> Investigating the Atomic Interactions of Flexible Organic Solar Cells</p>   |     | <p><b>Siddarth Ajith</b><br/> <b>University of Virginia</b><br/> <b>Astrophysics</b><br/> Probing Strong-field Gravity with Gravitational-Wave Observations through Machine Learning</p>  |     |
| 11:15   | <p><b>Anna Schmedding</b><br/> <b>William &amp; Mary</b><br/> <b>Applied Science</b><br/> Epidemic Spread Modeling for COVID-19 Using Mobility Data</p>   |     | <p><b>Mary Cecilia Mulvaney</b><br/> <b>University of Virginia</b><br/> <b>Structures and Materials</b><br/> Evaluating Formability of Aluminum Alloys for Flow Formed Aerospace Structures</p>                                |     | <p><b>Jordan Shroyer</b><br/> <b>University of Virginia</b><br/> <b>Astrophysics</b><br/> Probing Cosmic Inflation: Testing Novel High-Sensitivity Detectors for Next-Generation Surveys</p>  |     |

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| 11:30        | <p><b>Zachary Steele</b><br/> <b>Old Dominion University</b><br/> <b>Applied Science</b><br/> Utilizing Triple Oxygen Isotopes for Assessing Animal Metabolism and Water Intake</p>   |            | <p><b>Connor Stephens</b><br/> <b>University of Virginia</b><br/> <b>Structures and Materials</b><br/> Oxidation Mechanisms of Refractory Transition Metals and Carbides at Ultra-High Temperatures in Molecular vs. Dissociated Oxygen</p> |            | <p><b>Mark Siebert</b><br/> <b>University of Virginia</b><br/> <b>Astrophysics</b><br/> A Rigorous Molecular Survey of Stellar Graveyards</p>                 |            |
| 11:45        | <b>Break</b>  |            |   |            |   |            |
| 12:00 - 2:00 | <b>Luncheon to Honor the 2022-2023 Research Scholars and Fellows Sponsored by University of Virginia</b><br><b>Keynote Presentation: Dr. Chris Goynes, University of Virginia</b><br><i>Title Here</i><br><b>By Invitation Only</b> |            |   |            |   |            |
| 2:00 - 2:25  | <b>Undergraduate Poster Presentations in Foyer</b>  |            |   |            |   |            |
| 2:25 - 2:40  | <p><b>Adam Masters</b><br/> <b>Old Dominion University</b><br/> <b>Applied Science</b><br/> Improving Ion Traps for Quantum Computing Applications</p>  | <b>TBD</b> | <p><b>Elizabeth Urig</b><br/> <b>University of Virginia</b><br/> <b>Structures and Materials</b><br/> Modeling Al-6061 Microstructural Evolution during Integrally Stiffened Cylinder Formation</p>   | <b>TBD</b> | <p><b>Jessica Cropley</b><br/> <b>William &amp; Mary</b><br/> <b>Applied Science</b><br/> Photocatalysts for Hydrogen Generation and the Future of Energy</p> | <b>TBD</b> |
| 2:40 - 2:55  |   |            | <p><b>Rahim Zaman</b><br/> <b>University of Virginia</b><br/> <b>Structures and Materials</b><br/> Design of Ultra-High Temperature Ceramics for Oxidation Resistance</p>   |            | <p><b>Randal Shoemaker</b><br/> <b>William &amp; Mary</b><br/> <b>Applied Science</b><br/> Surface Computations with Decoupled Intrinsic Geometry</p>         |            |
| 2:55 - 3:10  | <b>Closing Ceremony</b>   |            |   |            |   |            |