VIRGINIA SPACE GRANT CONSORTIUM

Student Research Conference Agenda
April 13, 2023

8:00-8:30	**Registration in Lobby**		
8:30-8:45	**Welcome in Ballroom A: Chris Carter, VSGC Director, Mary Sandy VSGC Director Emeritus**		
	Newport Room	**Ballroom D**	**Amphitheater**
Session Chair	Lesley Greene Old Dominion University Asso. Professor and Asso. Dean Chemistry and Biochemistry	Tian-Bing Xu Old Dominion University Asso. Professor and Director of Smart Materials Lab	Janett Walters-Williams Hampton University Asst. Professor of Computer Science
8:50	Wayne Dawson III University of Virginia Applied Science *A Fluorescence Based Approach for Quantifying Phenology and Physiology in Changing Boreal Ecosystems*	William Miyahira William & Mary Applied Science *Microwave Atom Chip for Spin-Specific Atom Interferometry*	Jarrod Banks Virginia Tech Aerospace *Transient Aeroacoustic Turbulence Ingestion into a Rotor*
9:05	Nathan Folta Virginia Tech Applied Science *Design of Novel Lower Body Exoskeleton*	Elizabeth Zengel Old Dominion University Applied Science *Analyzing High Energy Density Materials (HEDMs) with Density Functional Theory (DFT) and Molecular Dynamics to Determine Trigger Bonds and Sensitivities*	Joseph Cunningham Virginia Tech Aerospace *Damage Sensing Enhancement in Polymer-Regolith-CNT Composites via Exposure to UV Radiation--Foundational Work*
9:20	Megan Hept Old Dominion University Applied Science *Exploring the Impact of Climate Change and Increased Carbon Levels on the Cyanobacteria, Microcystis Aeruginosa*	Rahim Zaman University of Virginia Structures and Materials *Design of Ultra-High Temperature Ceramics for Oxidation Resistance*	Joshua Fitzgerald Virginia Tech Aerospace *Dynamical Geometry Associated with the Collision Manifold in the Circular Restricted Three-Body Problem*
9:35	Ken Koltermann William & Mary Applied Science *Apollo: Non-intrusive Vital Sign Monitoring Using Wearable Technology*	Andrianna Daniels University of Virginia Structures and Materials *Creating a Detailed Model for Boron Nitride Deposition Mechanics*	Jeremy Hopwood Virginia Tech Aerospace *Passivity-Based Wind Estimation Using Aircraft*
9:50	Andrew Krause Hampton University Applied Science *Validation of Hadron Mass Correction Schemes in Deep Inelastic Scattering at Low Energy Transfer*	Alexander Hatfield Old Dominion University Structures and Materials *Multifunctional Boron Nitride Nanotube (BNNT) and BNNT Composites and Devices in Extreme Aerospace Environments*	Zhe-Yu Daniel Lin University of Virginia Astrophysics *Making Baby Planets: Dust Settling of Protoplanetary Disks*
10:05-10:30	**Undergraduate Poster Presentations in Foyer**		
Session Chair	Joseph Aneke Hampton University Asso. Professor Computer Science	Carolina Tallon Virginia Tech Asst. Professor Materials Science and Engineering	Venkat Maruthamuthu Old Dominion University Asso. Professor Mechanical and Aerospace Engineering
10:30	Madeline Miles University of Virginia Applied Science *NOx Emissions in West African Cities Inferred Using TROPOMI NO2 Observations*	Victor Kontopanos University of Virginia Structures and Materials *Modelling Galvanic Corrosion of Aerospace Fasteners and Plates Under Thin Electrolyte Film Conditions*	Deryl Long University of Virginia Astrophysics *Build a World: Predicting Planet Assembly and Composition with Atacama Large Millimeter/Submillimeter Array and NASA's James Webb Space Telescope*

10:45	**Elizabeth Prior** **Virginia Tech** **Applied Science** ***Effects of Drone Lidar Digital Elevation Model Resolution and Flow Area Resolution on Hydrodynamic Modeling Results***	**Devin Longazel** **Old Dominion University** **Structures and Materials** ***Resorcinarene Nanocapsule Library for Metal Extractions***	**Siddarth Ajith** **University of Virginia** **Astrophysics** ***Probing Strong-field Gravity with Gravitational-Wave Observations through Machine Learning***
11:00	**Adam Masters** **Old Dominion University** **Applied Science** ***Improving Ion Traps for Quantum Computing Applications***	**Jennifer Mejia** **Old Dominion University** **Structures and Materials** ***Investigating the Atomic Interactions of Flexible Organic Solar Cells***	**Jordan Shroyer** **University of Virginia** **Astrophysics** ***Probing Cosmic Inflation: Testing Novel High-Sensitivity Detectors for Next-Generation Surveys***
11:15	**Anna Schmedding** **William & Mary** **Applied Science** ***Epidemic Spread Modeling for COVID-19 Using Mobility Data***	**Mary Cecilia Mulvaney** **University of Virginia** **Structures and Materials** ***Spin Formability of High-Strength Aluminum Alloys for Aerospace Applications***	**Mark Siebert** **University of Virginia** **Astrophysics** ***A Rigorous Molecular Survey of Stellar Graveyards***
11:30	**Zachary Steele** **Old Dominion University** **Applied Science** ***Utilizing Triple Oxygen Isotopes for Assessing Animal Metabolism and Water Intake***	**Connor Stephens** **University of Virginia** **Structures and Materials** ***Oxidation Mechanisms of Refractory Transition Metals and Carbides at Ultra-High Temperatures in Molecular vs. Dissociated Oxygen***	**Jessica Cropley** **William & Mary** **Applied Science** ***Photocatalysts for Hydrogen Generation and the Future of Energy***
11:45 - 2:00	**Break**		
2:00-2:25	**Undergraduate Poster Presentations in Foyer**		
Session Chair	**Joseph Aneke** **Hampton University** **Asso. Professor Computer Science**	**Carolina Tallon** **Virginia Tech** **Asst. Professor Materials Science and Engineering**	**Janett Walters-Williams** **Hampton University** **Asst. Professor of Computer Science**
2:25	**Alison Ritz** **Virginia Tech** **Applied Science** ***Identifying Individual Tree Crowns for Biomass Mapping Using 2021 National Agriculture Imagery Program's (NAIP) Imagery in Virginia, USA***	**Elizabeth Urig** **University of Virginia** **Structures and Materials** ***Finite Element Modeling of Al-6061 Evolution during Integrally Stiffened Cylinder Formation***	**Randal Shoemaker** **William & Mary** **Applied Science** ***Surface Computations with Decoupled Intrinsic Geometry***
2:40		**Edward Barron** **Virginia Tech** **Structures and Materials** ***Liquid Metal Elastomer Composite Filaments for Material Extrusion Additive Manufacturing***	**Virginia Smith** **Virginia Tech** **Aerospace** ***High-Altitude Balloon Mission Optimization***
2:55-3:10	**Closing Ceremony in Ballroom A**		