



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. Dean and Asso. Professor
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

Jarrold Banks
Virginia Tech
Aerospace
The Efficacy of Taylor's Hypothesis in Aeroacoustic Noise Predictions for Bodies of Revolution

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
Asst. 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

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

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	<p>Elizabeth Prior Virginia Tech Applied Science <i>Effects of Drone Lidar Digital Elevation Model Resolution and Flow Area Resolution on Hydrodynamic Modeling Results</i></p>	<p>Devin Longazel Old Dominion University Structures and Materials <i>Resorcinarene Nanocapsule Library for Metal Extractions</i></p>	<p>Siddarth Ajith University of Virginia Astrophysics <i>Probing Strong-field Gravity with Gravitational-Wave Observations through Machine Learning</i></p>
11:00	<p>Adam Masters Old Dominion University Applied Science <i>Improving Ion Traps for Quantum Computing Applications</i></p>	<p>Jennifer Mejia Old Dominion University Structures and Materials <i>Investigating the Atomic Interactions of Flexible Organic Solar Cells</i></p>	<p>Jordan Shroyer University of Virginia Astrophysics <i>Probing Cosmic Inflation: Testing Novel High-Sensitivity Detectors for Next-Generation Surveys</i></p>
11:15	<p>Anna Schmedding William & Mary Applied Science <i>Epidemic Spread Modeling for COVID-19 Using Mobility Data</i></p>	<p>Mary Cecilia Mulvaney University of Virginia Structures and Materials <i>Spin Formability of High-Strength Aluminum Alloys for Aerospace Applications</i></p>	<p>Mark Siebert University of Virginia Astrophysics <i>A Rigorous Molecular Survey of Stellar Graveyards</i></p>
11:30	<p>Zachary Steele Old Dominion University Applied Science <i>Utilizing Triple Oxygen Isotopes for Assessing Animal Metabolism and Water Intake</i></p>	<p>Connor Stephens University of Virginia Structures and Materials <i>Oxidation Mechanisms of Refractory Transition Metals and Carbides at Ultra-High Temperatures in Molecular vs. Dissociated Oxygen</i></p>	<p>Jessica Cropley William & Mary Applied Science <i>Photocatalysts for Hydrogen Generation and the Future of Energy</i></p>
11:45	Break		
12:00-2:00	Luncheon to Honor the 2022-2023 Research Scholars and Fellows Sponsored by University of Virginia Keynote Presentation: Dr. Chris Goyne, University of Virginia The Value of Student Design-Build-Fly Projects in Aerospace Engineering Education By Invitation Only		
2:00-2:25	Undergraduate Poster Presentations in Foyer		
Session Chair	<p>Joseph Aneke Hampton University Asst. Professor Computer Science</p>	<p>Carolina Tallon Virginia Tech Asst. Professor Materials Science and Engineering</p>	<p>Janett Walters-Williams Hampton University Asst. Professor of Computer Science</p>
2:25	<p>Madeline Miles University of Virginia Applied Science <i>NOx Emissions in West African Cities Inferred Using TROPOMI NO2 Observations</i></p>	<p>Elizabeth Urig University of Virginia Structures and Materials <i>Finite Element Modeling of Al-6061 Evolution during Integrally Stiffened Cylinder Formation</i></p>	<p>Randal Shoemaker William & Mary Applied Science <i>Surface Computations with Decoupled Intrinsic Geometry</i></p>
2:40	<p>Edward Barron Virginia Tech Structures and Materials <i>Liquid Metal Elastomer Composite Filaments for Material Extrusion Additive Manufacturing</i></p>	<p>Virginia Smith Virginia Tech Aerospace <i>High-Altitude Balloon Mission Optimization</i></p>	
2:55-3:10	Closing Ceremony in Ballroom A		