Alaska Space Grant and NASA EPSCoR Education and Research Symposium

Friday, April 8, 2022

9:20 – 9:30 A.M.  Welcome from Alaska Space Grant/NASA EPSCoR Director, Denise Thorsen

9:30 – 9:50 A.M.  Erin Hicks, UAA  SMD (Higher-Ed Awardee)  
URISE: Building a Community of Undergraduate Research in Natural Sciences

9:50 – 10:10 A.M.  Jason Amundson, UAS  SMD (Higher-Ed Awardee)  
Undergraduate field studies across the icefield-to-ocean environment of Southeast Alaska

10:10 – 10:30 A.M.  Jason Geck, APU  SMD (Higher-Ed Awardee)  
Undergraduate Student Field Experiences: Long-term Monitoring of Eklutna Glacier/River

10:30 – 10:50 A.M.  Denise Thorsen, UAF  STMD (Higher-Ed Awardee)  
Space Systems Engineering Program

10:50 – 11:00 A.M.  Break

11:00 – 11:20 A.M.  Dee Barker, APU  SMD (Higher-Ed Awardee)  
Engagement and Innovation in Online Guided Inquiry Projects in Chemistry

11:20 – 11:40 A.M.  Sanjay Pyare, UAS  SMD (Pre-College Awardee)  
An Earth-Observation Course in Community-Based, Environmental Problem Solving as a Pre-College STEM Springboard

11:40 A.M.-12:00 P.M.  Steve Johnson  SMD (Pre-College Awardee)  
Robots, Rockets, and Drones ‘for Teachers’

12:00 – 12:30 P.M.  Lunch

12:30 – 12:50 P.M.  Raghu Srinivasan, UAA  STMD (CAN Awardee)  
Development of Test Sites across Alaska to Study Atmospheric Corrosion of Metal Alloys Exposed to Cold Arctic/Sub-Arctic Climate

12:50 – 1:10 P.M.  Roman Dial, APU  SMD (RID Awardee)  
Pixel Walking: Ground-truth validation of NASA’s MODIS greening estimates in northwest Alaska

1:10 – 1:30 P.M.  Chuan Hu, UAF  STMD (RID Awardee)  
Data-Driven Motion Planning and Control of Planetary Exploration Rovers on Deformable Terrains
1:30 – 1:50 P.M. **Maher Al-Badri, UAF ARMD (RID Awardee)**
*Development of Research Station for Novel Electric Machines Design for Electrified Transportations and Renewable Energy Applications*

1:50 – 2:10 P.M. **Kelly Drew, UAF HEOMD (RID Awardee)**
*Space Emergency Medicine: Drug Development at an Inflection Point*

2:10 – 2:20 P.M. **Break**

2:20 – 2:40 P.M. **Mitchell Hay, UAF STMD (Graduate Student Research Awardee)**
*Improving Communication Throughput on Nanosatellites*

2:40 – 3:00 P.M. **Tyler Fox, UAA SMD (Graduate Student Research Awardee)**
*Functional Metabolic Adaptations in Glacial Microbial Communities as an Analogue for Extraterrestrial Life*

3:00 – 3:20 P.M. **Sonia Kumar, UAF SMD (Graduate Student Research Awardee)**
*Acoustics of Cook Inlet Beluga Whales (Delphinapterus leucas) and Anthropogenic Noise in Lower Cook Inlet Rivers*

3:20 – 3:30 P.M. **Closing**

3:30 – 4:30 P.M. **Afternoon Undergraduate Poster Session**

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**Alaska Space Grant Program supported project**

- [Higher Education Program](#)
- [Pre-College Education Program](#)
- [Graduate Student Research](#)
- [Undergraduate Research Apprenticeships](#)

**Alaska NASA EPSCoR supported project**

- [RID Seed Grants](#)
- [CAN Grants](#)

**Abbreviations**

- SMD – Science Mission Directorate
- STMD – Space Technology Mission Directorate
- HEOMD – Human Exploration and Operations Mission Directorate
- ARMD – Aeronautics Research Mission Directorate
Undergraduate Poster Session

Science Category

**Cassidy Berger, UAA**
A Step Closer to Understanding Black Hole and Galaxy Co-Evolution: Determining Circumnuclear Disk Geometries

**Gabriella Camera-Faurot, APU**
Comparison of a Water Level Measurement Performance for two Different Sensors (Pressure Transducer Versus Acoustic) at the East and West Forks of the Eklutna River

**Daniel Fabrizio, UAF**
Zirconocene Catalyzed Construction and Deconstruction of Peptide Bonds

**Autumn Fox, UAA**
Investigation of the interactions of solar wind and Earth’s magnetosphere during polar reversals via computational plasma modeling and Plantexxella experiments

**Cora Lyon, UAA**
Proteomic analysis of Deinococcus radioduran after exposure to radiation

**Michael Martinez, UAA**
Industrial Simulation of Rare Earth Element Extractions from Mine Ore using Shewanella oneidensis in Bioreactor Conditions

**Kaitlan McLallen, APU**
Using High Frequency Sensors to Analyze Water Quality and Macroinvertebrate Community Composition in the Anchorage Cook Inlet Region

**Zoe Munson, APU**
Self-Recognition as an Aspect of Cognition in Pacific Red Octopuses, Octopus rubescens

Engineering Category

**Tyree' Brown, APU**
Graphing a Dose-Response Relationship: How Dose Melatonin Affects the Activity Patterns and Health of Octopus rubescens

**Katherine Sakeagak, UAA**
Experiments and PIC Simulations of Atmospheric Pressure Plasma Corona Discharge

**Mya Schroder, UAA**
Atmospheric Pressure Plasma Computational and Experimental Spectroscopic Study

**Joren Bowling, UAF**
Ball Milling Techniques for Use with Lunar Regolith

**Corey Giddings, UAA**
Studying the Efficacy of Using Resistive Circuits to Maintain Optimal Temperatures for Peak Battery Performance in Cold Ambient Conditions

**Cody Hedberg, UAA**
“Ball Pit” Rocket Recovery System with Precision Guided Parachute Delivery System