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**

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**

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 Planeterrella experiments

Cora Lyon, UAA
Proteomic analysis of Deinococcus radiodurans 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

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

Engineering Category

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 Parafoil Delivery System