

15th Annual Fellowship Symposium

Rocky Mountain NASA Space Grant Consortium




May 4, 2009 Salt Lake Community College Student Center
4600 South Redwood Road
(801) 957 4076, (435) 760 5985

WELCOME

9:00 a.m.

Dr. Clifton Sanders, Dean of the School of Science, Mathematics, & Engineering
Salt Lake Community College

SESSION I Session Chair: Dr. Joseph Orr, *University of Utah*

9:15 a.m.

Evan Zaugg (Dr. David Long), *Brigham Young University*
Generalized Processing for Pulsed Synthetic Aperture Radar

9:30 a.m.

Troy Wynn (Dr. Vincent Wickwar), *Utah State University*
The Effects of Model Misspecification on Linear Regression Coefficients as Applicable to Solar and Linear Terms

9:45 a.m.

Lara Brewer (Dr. Joseph Orr), *University of Utah*
FRC Measurements in Healthy Volunteers

10:00 a.m.

Daniel Manwill (Dr. Jon Blotter), *Brigham Young University*
Nearfield Acoustic Holography Experiments on Various Correlated Compound Sources

UNDERGRADUATE POSTERS

Phillip Anderson, *Utah State University*
Aerospike Nozzle

Nathan Erni, *Utah State University*
Aerospike Nozzle; Aggie Observatory

Get-Away Special Team, *Utah State University*
Student Developed Space Research for the International Space Station; Photoelectric Charging by Ultraviolet Light of a Lunar Dust Simulant in a Microgravity Environment; Development of a CubeSat Pico-Satellite; Microgravity Experiments for the International Space Station

Trace Griffiths, *Utah State University*
MSI Change Detection Analysis

HARBOR TEAM, *Weber State University*
High Altitude Ballooning as a Platform for Student Research Experiences in Science and Engineering

Cory Larsen, *Utah State University*
Distributed Clustering: a Modified Fuzzy-C Means; K-D Trees: a Faster Method of Determining Lacunarity

Joseph Muhlestein, *Brigham Young University*
The Index of Refraction of Y2O3 in the Extreme Ultraviolet

Andrew Pound, *Utah State University*
Statistical Analysis of SABER Mesospheric OH Emission Data Trends Over a Half Solar Cycle

Team Armotica, *Utah State University*

Team RoboBeetle, *Utah State University*

Christopher Welsh, *Brigham Young University*
Lever Arms in nuSAR Motion Compensation

Jessica Willis, *Utah State University*
SABER Mesospheric OH Emission Data Trends Over a Half Solar Cycle

SESSION II Session Chair: **Dr. John Armstrong, Weber State University**

- 10:45 a.m. Douglas Hunsaker (Dr. Warren Phillips), *Utah State University*
Application of Coordinate Transformation and Discretization Method for Computational Fluid Dynamics
- 11:00 a.m. Tyler Blackhurst (Dr. Julie Vanderhoff), *Brigham Young University*
Numerical Investigation of Internal Wave-Vortex Interactions
- 11:15 a.m. Carl Tams (Noah Syroid), *University of Utah*
Minimizing Post-Surgery Wake-Up Time While Providing Adequate Analgesia
- 11:30 a.m. Jacob Munger (Dr. Scott Thomson), *Brigham Young University*
Frequency Response of the Neck During Production of Selected Speech Sounds
- 11:45 a.m. Bryce Ensign Hill (Dr. Douglas Christensen), *University of Utah*
Histogram Classification of Acoustic Breath Sounds

LUNCH 12:00 p.m. Provided by the Consortium

SESSION III Session Chair: **Dr. J.R. Dennison, Utah State University**

- 1:00 p.m. Alexa Hart (Dr. Robert Stencel), *University of Denver*
Stellar Geometries with Spectro-Interferometry
- 1:15 p.m. Andrea Lundrigan-Thomas (Dr. William Christensen), *Brigham Young University*
Characterizing the Statistical Properties and Global Distribution of Dansgaard-Oeschger Events
- 1:30 p.m. Shane Robinson (Dr. David Geller), *Utah State University*
A Simple Trans-Earth Injection Targeting Procedure for Lunar Missions
- 1:45 p.m. Tammy Anderson (Dr. Dwayne Westenskow), *University of Utah*
Evaluation of a System to Measure Resting Oxygen Uptake
- 2:00 p.m. Brett Hansen (Dr. Aaron Hawkins), *Brigham Young University*
A Paul Trap Mass Analyzer Consisting of Two Microfabricated Electrode Plates

SESSION IV Session Chair: **Dr. Gene Ware, Consortium Advisory Council**

- 2:15 p.m. Shannon D. Eilers (Dr. Stephen Whitmore), *Utah State University*
Development and Flight Testing of Energy Management Algorithms for Small-Scale Sounding Rockets
- 2:30 p.m. Jonathan Johnson (Dr. Michael Wirthlin), *Brigham Young University*
Voter Insertion Techniques for Fault Tolerant FPGA Design
- 2:45 p.m. Cris LaPierre (Dr. Ken Johnson), *University of Utah*
Selection of Patient Specific Dosing Schemes for Procedures of Short Duration and Moderate Stimulation Utilizing Multiobjective Optimization Techniques
- 3:00 p.m. Michael Gardner (Dr. Kent Gee), *Brigham Young University*
Scan-based Near-field Acoustical Holography on Rocket Noise
- 3:15 p.m. Cameron Jacobson (Dr. Joseph Orr), *University of Utah*
A Reemergence Device for the Postanesthesia Care Unit
- 3:30 p.m. Jeffrey Boulware (Dr. Heng Ban), *Utah State University*
Cryogenic Experimentation on the Magnetohydrodynamics of Liquid Oxygen