Saturday, April 21, 2012, Kuiper Space Sciences Building, The University of Arizona

8:00-8:20 a.m. WELCOME AND INTRODUCTION: Room 308

Barron J. Orr, Associate Director, UA/NASA Space Grant Program

	Room 308	Room 309	Room 312	Room 330
TIME	**Session F:** **Education & Public Outreach** **Moderator: B. Orr, UA** **---** **Session H:** **Planetary Science** **Moderators: N. Barlow, NAU** **T. Jull, UA**	**Session C:** **ASCEND!** **Moderators: J. Crabtree, ERAU** **D. Meeks, PCC** **---** **Session G: Exploration Systems Engineering: Biological, Materials, Optical and Electrical** **Moderator: R. Madler, ERAU**	**Session E: Earth and Environmental Science/Engineering** **Moderator: C. Holifield Collins, USDA-ARS-SWRC**	**Session A:** **Aeronautics** **Moderator: R. Bedard, ERAU** **---** **Session D:** **Astronomy & Space Physics** **Moderator: D. Trilling, NAU**
8:30-8:40	[F-1] *Irene Liang* Maximizing Problem-Based Learning and Tools for Collaborative Mapping to Empower Youth for Civic and Environmental Engagement	[C-1] *Christina Findley* ASU Computer-Aided Motion of ASCEND Payloads	[E-1] *Daniel Galvan* The Global Warming Potential Definition Expanded: The Cumulative Global Warming Potential of R-134a	[A-1] *Keith Sangston* Airflow Control Over an Airfoil with Nanosecond Pulse Driven DBD Plasma Actuators
8:40-8:50	[F-2] *James Vancel* The Wiring Underneath: Developing an Interactive "Economy" in Youth Environmental Education Software	[C-2] *Pye Pye Zaw* ASU Balloon Stereographic Imaging System for High Altitudes	[E-2] *Quinn Shollenberger* Examining Uranium Geochemistry in the 1.64 Ga Barney Creek Formation	[A-2] *Marianna Yanes* Fabrication Methods and Materials for Dielectric Barrier Discharge Plasma Actuators
8:50-9:00	[F-3] *Shelley Littin* A Tale of Two Truths: Improving Communication Between Scientists and Science Reporters	[C-3] *Clayton Jacobs* ERAU Examining the Feasibility Of 33-centimeter Radio Band Communications for High Altitude Balloons	[E-3] *Andrew Wickhorst* Remote Sensing of Woody Vegetation in the West African Sahel	[A-3] *Ruben Gameros* Novel Method for Helicopter Rotor Noise Reduction

9:00-9:10	[F-4] *Michelle Monroe* Science Writing for a Broad Audience	[C-4] *Kevin Jordan* ERAU ASCEND as a Step Towards a CubeSat	[E-4] *Marie Nahlik* Quantifying Black Carbon in Phoenix Soils	[A-4] *Matthew Lyon* Building an Unmanned Aerial Vehicle for the Operator
9:10-9:20	[F-5] *Chelsea Page* Promoting Physical Activity and Nutrition Awareness in Middle School Youth through the Design of Activities Using Geospatial Technologies	[C-5] *Thomas Goss [C-5]* *Alfred Dugi [C-6]* PCC A Beginner's ASCEND Experience	[E-5] E*ric Kortenhoeven* Ecological Snapshot of Beetle Distribution on an Elevation Gradient to be Used as Preliminary Dataset for Species Distribution Modeling	[A-5] *Devin Jensen* UAV Wing Design for Efficiency at Low Reynolds Numbers
9:20-9:30	[F-6] *Celeste Barajas* Informing the Public About Science	[C-6] *Jimmy VanWormer [C-7]* PCC A Beginner's ASCEND Experience	[E-6] *Nicole Williams* Chlorophyll Fluorescence as an Indicator of Crop Growth Efficiency	[A-6] *Stephen Rayleigh* Project Management for a Multi-Disciplinary UAS Team
9:30-9:40	[F-7] *Dimuth Kulasinghe* SMS Group Messaging Applications	[C-7] *Jared Guglielmo [C-8]* PCC Minimizing Payload Rotation During Flight	[E-7] *Zureyma Martinez* Transcriptional Responses of a Hot Spring Microbial Mat to Nutrient Additions	[A-7] *Raul Lugo* Effects of Swirl Injector Design on Hybrid Rocket Fuel Regression Rate
9:40-9:50	[F-8] *William Ferguson* The Dissemination of Scientific Research in Mainstream Media	[C-8] *Stephen Yanez [C-9]* PCC Minimizing Payload Rotation During Flight	[E-8] *Kimberly Mohabir* Aggregation in Phosphate Limited Versus Replete Cultures of Marine Synechococcus	[A-8] *Kyle Bowerman* Small Scale Hybrid Motor and the Effects Of Swirl Injectors
9:50-10:00	[F-9] *Leticia Delgado* STEM Education and Outreach: Indoor Air Quality in Schools	[C-9] *Rochella Robinson [C-10]* *Kristen Shriner [C-11]* SMCC ASCEND: The Class and Payload Enclosures and Cameras	[E-9] *Courtney Pulido* The Process of Cinder Cone Construction and Dismantling, Strawberry Crater, Arizona	[A-9] *Gaines Gibson* Development of Heavily Aluminized Solid Rocket Propellant
10:00-10:10	[F-10] *Kelsey Morales* Wind for Schools	[C10] *Shawnna Pinkney [C-12]* *Christopher Diaz [C-13]* SMCC ASCEND: Circuit Board Fabrication and Micro-processors and Computer Programs	[E-10] *Von Pursley* Control and Integration of Renewable Resources into the Microgrid	[A-10] *Ruby Gomez* Development of a Heavily Aluminized Rocket Propellant

10:10-10:30	**Morning Break**			
10:30-10:40	[F-11] *Steven Tallas* Renewable Energy Outreach	[C-11] *Jeremy Russeau [C-14]* *Jose Pineda [C-15]* SMCC ASCEND: Data Analysis and Etching, Drilling, and Soldering Circuit Boards	[E-11] *Danielle Klaas* Climate-Fire Relationships in a Rare High Elevation Forest	[A-11] *Deyzi Ixtabalan* Testing a Large Scale Hybrid Rocket Motor
10:40-10:50	[F-12] *Kevin Bertram* Writing About Science for the *Arizona Daily Sun*	[C-12] *Mason Dennison [C-16]* *Eduardo Cervantes [C-17]* SMCC ASCEND Project: Air Quality Sensors and The Learning Experience	[E-12] *Emily Toffol* Quantifying Compost Cats Greenhouse Gas Emission Reductions	[A-12] *Ryan Stoner* Comparison of the Regression Rates for Hybrid Rocket Motors
10:50-11:00	[F-13] *Romina Fahl* Reaching Different Audiences in EarthScope's Education Outreach	[C-13] *TJ Sullivan [C-18]* *Matt Salazar [C-19]* GCC ASCEND Data, The Build	[E-13] *Marissa Raleigh* Biogeochemical and Hydrologic Processes of Tempe Town Lake	[D-1] *Alexander Corpuz* A Coherent Search for Gravitational Wave Transients from Core Collapse Supernovae
11:00-11:10	[F-14] *Victoria Miluch* Improving Scientific Writing for Broad Audiences	[C-14] *Curtis Watson [C-20]* GCC ASCEND Balloon Launch	[E-14] *Tara Llewellyn* Heritability of Pinyon Pine Stomata	[D-2] *Breana Branham* Multi-Channel Receiver Analyzer
11:10-11:20	[F-15] *Leah Pettis* Educational Exhibits in the Robert S. Dietz Museum of Geology	[C-15] *Nathan Mogk [C-21]* *Amanda Urquiza [C-22]* UA ASCEND High Altitude Cosmic Ray Detector	[E-15] *Andrew Belus* Comparing the Effects of Water Limitation on Soil Communities Across the C. Hart Merriam Elevation Gradient	[D-3] *Amanda Walker-LaFollette* AZTECAN C3PO: Arizona Three-millimeter Educational C18O and N2H+ Cold Core Census of Planck Objects
11:20-11:30	[H-1] *Michael Schaffner* Water on the Moon: Remote Sensing from the Lunar Reconnaissance Orbiter	[C-16] *Brittany Torgrude [C-23]* *Andrew McGuckin [C-24]* *Sara Meschberger [C-25]* UA ASCEND High Altitude Cosmic Ray Detector	[E-16] *Kaitlin Johnson* Maximizing the Efficiency of Forward Osmosis for Sustainable Water Filtration	[D-4] *Christine Cunningham* Gyrochronology: Aging Nearby, Debris Disk Candidate Stars

11:30-11:40	[H-2] *Nicholas Kutsop* Lobateness of Martian Ejecta Craters Using Thermal Imaging	[C-17] *Danny Pagano [C-26]* *Alison Bradbury [C-27]* UA ASCEND High Altitude Cosmic Ray Detector	[E-17] *Michael Galka* Greenhouse Gas Emissions for Refrigerant Choices in Room Air Conditioner Units	[D-5] *Jeremy Stone* Effectiveness of Phase Dispersion Minimization in Gyrochronology
11:40-11:50	[H-3] *Hannah Brower* Surface Changes on Mars	[G-1] *Nabila Huq* ZnO Deposition for the Window Layer of a Solar Cell	[E-18] *Trevor Jones* Bridging the Gap Between Local and Scientific Knowledge to Improve the Effectiveness of Evaluation of Desertification Mitigation and Restoration Actions	[D-6] *Gina Moraila* Measuring The Photometric Z With the LSST
11:50-12:00	[H-4] *Savannah Bachman* A Geomorphic Analysis of Minerals on Martian Sand Dunes	[G-2] *Jin Zhang* Sol-gel Deposition of ZnO Thin Films for Low-cost Solar Cells	[E-19] *Chris Simpson* Development of Composite Material With Structural and Power Storage Capabilities	[D-7] *Sean Gellenbeck* The Possibility of the Gravitational Lensing of Terra-Electron Volt Gamma-Ray Sources
12:00-12:10	[H-5] *Brett Courtright* Determining the Elemental Composition of the Polar Latitudes of Mars Using Gamma Ray Spectroscopy	[G-3] *Emily McBryan* NASA Space Grant Robotics	[E-20] *Stephanie Amaru* Climate Adaptation in Rural Communities: Examining the Relationship Between Institutional Intervention, Use of Science and Technology, and Democratic Government	[D-8] *John Crockett* Data Mining the Catalina Sky Survey Archive
12:10-12:20	[H-6] *Danielle Clarke* Dune Exploration on Mars	[G-4] *Jonathon Houda* SCUBa: System of the Control of Underwater Buoyancy	[E-21] *Mariela Robledo* Delaminating and Recycling of Printed Circuit Boards Using Supercritical Carbon Dioxide	[D-9] *Paula Johns* A Study of Accretion Disks Around Young Binary Star Systems

12:20-1:30	Lunch Break Arizona Hall of Champions			
TIME	**Session H:** **Planetary Science** **(continues)** **Moderators:** **N. Barlow, NAU** **T. Jull, UA** **---** **I: Topics in Math, Physics and Chemistry** **Moderator: K. Hayden, NAU**	**Session G:** **Exploration Systems Engineering: Biological, Materials, Optical and Electrical** **(continues)** **Moderator: R. Madler, ERAU**	**Session E:** **Earth and Environmental Science/Engineering** **(continues)** **Moderator:** **S. Herrmann, UA**	**Session D:** **Astronomy & Space Physics** **(continues)** **Moderator: D. Trilling, NAU** **Session B:** **Aerospace Technology** **Moderator: T. Sharp, ASU**
1:30-1:40	[H-7] *Caitlin Schnitzer* Radioactive Carbon-14 Dating of Meteorites and Lunar Materials	[G-5] *Erick Yanez* Magneto Coupling Actuators	[E-22] *Carmen Winn* Melt Source Lithology of the Zuni Bandera Volcanic Field Determined by Zn/Fe Ratios of In-situ Olivine	[D-10] *Karen Rivas* Climate Model Precipitation Trend Analysis in the 20th Century
1:40-1:50	[H-8] *Nicole Marin* Compositional and Microtextural Analysis of Basaltic Feedstock Materials used for the 2010 ISRU Field Tests, Mauna Kea, Hawaii	[G-6] *Juan Guzman* Autonomous Underwater Robotics	[E-23] *Hunter England* Chemical and Thermal Analysis of Zircons from the Cerro Toledo Rhyolite, New Mexico	[B-1] *Aaron Goldstein* Program Management and Systems Engineering Direction Decisions of a Nanosatellite Mission
1:50-2:00	[H-9] *Hallie Gengl* Mare Craters in LROC NAC Images	[G-7] *Jonathan Cox* Development of Calibrated Leakage Measurement Device for Ocular Tonometry	[E-24] *Daming Chen* Micro Subglacial Lake Exploration Device (MSLED)	[B-2] *Robert Bui* 2.4 GHz CubeSat Communications System

2:10-2:20	[H-10] *Gladys Amaya* Utilizing Model-Based Systems Engineering to Model Data Processing in NASA Space Missions	[G-8] *Mark Gregory* Utilization of Mine Tailings to Produce Eco-friendly Bricks Through Geopolymerization	[E-25] *Kiley Yeakel* Seasonal Anomalies in the Sea Ice Concentration and Thickness in the Ross Sea and Their Correlation to the Southern Annular Mode	[B-3] *Andrew Menicosy* Electronic Power Subsystem Lead - Sun Devil Satellite Laboratory
2:20-2:30	[I-1] *Michael Christiansen* Optical Characterization of Silver Nanocrystals on Silicon (100)	[G-9] *Derek Wibben* Development and Test of a Fresnel-Based Solar Concentrator for Lunar Greenhouse Applications	[E-26] *Sonia Sen* Dynamic Model of Mosquito Vectors of Malaria	[B-4] *Jimmy Nguyen* SDS-1 EPS
2:30-2:40	[I-2] *Stefen Hillman* Synthesis of Environmentally-Responsive Composite Core-Shell Nanoparticles Via One-Step Pickering Emulsion Polymerization	[G-10] *Melanie Chatham* Corrosion Fatigue Testing of High-strength Aluminum Alloys	[E-27] *Brance Hudzietz* Large-scale, High Accuracy, 3D Terrain Mapping Using an Autonomous Helicopter	[B-5] *Michelle Smith* Attitude Optimization with Kalman Filtering for Sun Devil Satellite 1
2:40-2:50	[I-3] *Simon Kelow* Particular Solutions to the Time-Fractional Heat Equation	[G-11] *Abhishek Dharan* Development of Parylene C Microstructures for Biological Applications	[E-28] *Geoffrey Kie* Indigenous Environmental Justice	[B-6] *Ina Kundu* OSIRIS-REx Asteriod Sample Return (NASA New Frontiers Program)
2:50-3:00	[I-4] *Brian Perea* Novel Molecular Dynamics Simulations of Ionic Liquid-Based Interfaces	[G-12] *Taylor Brownlee* Antibody-Based Therapeutics for Treating Alzheimer's and Parkinson's Diseases	[E-29] *Alisa Glukhova* Genetic Profiling of Oncoid Stromatolites from the Phosphorus-Limited Rio Mesquites in Cuatro Cienegas, MX	[B-7] *Amanda Duron* Asteroid Return Sample Mission and its Impact on Science and Technology

3:00-3:10	[I-5] *Elizabeth Walker* Understanding Droplet Bridging in Ionic Liquid-Based Pickering Emulsions	[G-13] *Michael Wiehn* In-Situ Butanol Recovery from Fermentations Via Expanded-Bed Adsorption	[E-30] *Eric Hinkson* Optimization of Platinum Nanoparticle Synthesis on Carbon Nano-fiber for Fuel Cell Application	[B-8] *Caitlin Grace* Lunar All-terrain Regolith Excavator
3:10-3:20	[I-6] *Alexandria Stanton* Slow Motion Kinetics: A Robust Technique for Acid-Base Kinetics	[G-14] *Brittney Haselwood* Continuous Sensing for Stress and Traumatic Brain Injury	[E-31] *Marc Collins* Dynamics of Pre-Frontal Convective Rainfall in the Southern Alps	[B-9] *Stephanie Frederick* LAR-E Collecting and Dumping System
3:20-3:30	[I-7] *Joseph Ronan* Matter Wave Deflection Through a Light Prism	[G-15] *Charles Cardinell* Microfabrication and Testing of Super Conductive MRAM		[B-10] *Steven Ishida* Lunabotics Drivetrain System
3:30-3:40	[I-8] *Eleisha Jackson* Numerical Simulation of Convections	[G-16] *Christie Sabin* Hot Spring Microbial Community Composition Changes in Response to Nutrient Limitation		[B-11] *Brandon Wagner* ERAU Cubesat
3:40-3:50	[I-9] *Meghan Moloney* Computational Study of The Reduction of Carbon Dioxide by Iron Modified TiO2			
3:40-4:00	**Refreshments in the Atrium**			