Saturday, April 12, 2014, Kuiper Space Sciences Building, The University of Arizona

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

Timothy D. Swindle, Director Arizona Space Grant Consortium
Barron Orr, Associate Director UA/NASA Space Grant Program

	Room 308	Room 309	Room 312	Room 330
TIME	**Session B** **Exploration Systems** **Engineering Moderators:** **Timothy Swindle, UA** (17 Speakers: 8:30-11:40 AM) **---** **Session F** **Aeronautics** **Moderators:** **Stephen Rayleigh, ERAU** (11 Speakers: 11:40-12:20, 2:00-3:00 PM)	**Session H** **Aerospace Technology** **Moderator:** **Gary Yale, ERAU** (16 Speakers: 8:30-11:30 AM) **---** **Session G** **Planetary Science** **Moderator: Nadine Barlow,** **Astronomy & Physics, NAU** (10 Speakers: 11:30-12:20; 2:00-2:50 PM) **---** **Session I** **Topics in Math, Physics & Chemistry** **Moderator:** **David Trilling, NAU** **(**6 Speakers-2:50-3-50 PM)	**Session A** **ASCEND** **Moderator: Jack Crabtree,** **ANSR and ERAU** (12 Speakers: 8:30-10:50 AM) **---** **Session E:** **Education and Public Outreach** **Moderator:** **Barron Orr, UA** (16 Speakers: 10:50-12:20 PM; 2:00-3:10 PM)	**Session C** **Astronomy & Space Physics** **Moderator: Hilairy Hartnett** **SESE, Arizona State University** 8 Speakers: 8:30-9:50 AM) **---** **Session D** **Earth & Environmental Science/Engineering** **Moderators:** **Thomas Sharp, ASU** (1-13) **&** **Chandra Holifield-Collins,** **USDA SWRC** (14-23) (22 Speakers: 9:50-12:20 PM; 2:00-3:40 PM)
8:30-8:40	[B-1] *Alexa Brooks* Effects of Hyper-hydration on Orthostatic Tolerance in Men and Women	[H-1] *Clayton Jacobs* EagleSat: Continuing Embry-Riddle's CubeSat Satellite Development Program	[A-1] *Francesca Johnson* *Matthew Hobden* *Mike Davis* SMCC ASCEND GPS Project	[C-1] *Michael Busch* Epoch of Reionization: Unbiased Human Calibration of Metrics and Magic Planet Imaging
8:40-8:50	[B-2] *Santhi Priya Challa* Focal Plane Actuation to Achieve Ultra-High Resolution on Suborbital Balloon Payloads	[H-2] *Marcus Bever* Systems Fundamentals As Facilitating CubeSat Development	[A-2], [A-3] *Matthew Hobden* *Mike Davis* SMCC ASCEND GPS Project	[C-2] *Rita Ezeugwu* Telescope Calibration Using Point Source Detection
8:50-9:00	[B-3] *Eric Chang* Digit Control During Object Hand-Over	[H-3] *Mo Sabliny* EagleSat Flight Operations	[A-4], [A-5] *Mark Blei* *Brian Hegarty* **S**MCC ASCEND Sensor Data Project	[C-3] *Elizabeth Gehret* Debris Disk Detection Around Nearby Stars Within 25 Parsecs

9:00-9:10	[B-4] *Taylor Dolberg* Optimization of the Production of Functional Antibodies To Discover Diagnostics and Therapeutics for Alzheimer's Disease	[H-4] *Darin Baker* EagleSat Solar Power Optimization	[A-6], [A-7] *Jeffery Spradley* *Eric Mensen* **S**MCC ASCEND Sensor Data Project	[C-4] *Charles Griffin* Physical Properties of Spectroscopically-Confirmed Z>6 Galaxies
9:10-9:20	[B-5] *Nicholas Garcia* High Strain Fatigue Life of Magnetic Shape Memory Alloys	[H-5] *Lisa Ferguson* Designing A Communications System For EagleSat	[A-8] *Mason Denney* ASU ASCEND	[C-5] *Ali Khan* Characterizing Star Formation Rates in Z~0 Galaxy Clusters
9:20-9:30	[B-6] *Dallas Hodge* High Altitude Balloon Data Logger for Scientific Payloads	[H-6] *Dadija Bliudzius* Designing A Circularly Polarized Antenna For An EagleSat Satellite	[A-9] *Amanda Urquiza* UA ASCEND: Solar Power in Near Space	[C-6] *Matthew Lichtenberger* A Systematic Study of High-Mass Infall Candidates
9:30-9:40	[B-7] *Jonathon Houda* Deployment System Development for MSLED	[H-7] *Aaron Taylor* Designing EagleSat's Structure	[A-10], [A-11] *Ryan Stelzer* *Andrew Siemens* UA ASCEND: Solar Power in Near Space	[C-7] *Jacob McLane* Searching For The Youngest Exoplanets
9:40-9:50	[B-8] *Tyrene Hubbard* The Effects of Microgravity on Stem Cells	[H-8] *Zach Henney* High Altitude Ballooning As An EagleSat Testing Opportunity	[A12], [A-13] *Eric Moser* *Alexander Yudkovitz* UA ASCEND: Solar Power in Near Space	[C-8] *Alexander Rodack* Wavefront Control For High Performance Coronagraphy on Segmented and Centrally Obscured Telescopes
9:50-10:00	[B-9] *Ajay Karpur* Electrophysiological Biomarkers of Gene Modulation in the Alzheimer's Disease Pathway	[H-9] *Michael Du Breuil* ERAU Awesome: Using Inertial Navigation Systems (INS) To Navigate Small Unmanned Aerial System (sUAS) When GPS Is Lost Or Inaccurate	[A-14], [A-15], [A-16], [A-17] *Sean Holloway* *Andrew Perez* *Zakkery Diaz* *Ruben Aguayo* GCC Ace of Space: Initial Design with 2nd Semester Refinements	[D-1] *Angelica Alvarez* The Seasonality of Coccidioidomycosis: Predicting Valley Fever Outbreaks in Arizona
10:00-10:10	[B-10] *Yiran (Kate) Li* Characterization of Diffusion from Mesoporous Silica Nanoparticles for Potential Drug-Delivery Applications	[H-10] *Alex Goodan* ERAU Awesome: Using Inertial Navigation Systems (INS) To Navigate Small Unmanned Aerial System (sUAS) When GPS Is Lost Or Inaccurate	[A-18], [A-19] *Nicholas Patzke* *Gustavo Guerrero* The Design and Fabrication of a Quadcopter Drone for Remote Filming	[D-2] *Michael Bierwagen* Geomorphology, Neotectonics, and Hazards in The Sierra Nombre De Dios Region of Honduras
10:10-10:30	**Morning Break**			

10:30-10:40	[B-11] *Stephanie Maxwell* The Detection of Pregnancy and Fertility Hormones via Antibody Immobilization and Electrochemical Impedance Spectroscopy	[H-11] *Carolyn Taconi* Solid Oxidizer-Enhanced Hybrid Fuel Grains	[A-20] *Nicholas Morris* Flight Dynamics Modeling of a Quadcopter	[D-3] *Austin Dougless* Nitrogen Removal in Anaerobic Ammonium Oxidation Bioreactors
10:40-10:50	[B-12] *Carmelo Moraila* Human Adipose Derived Stem Cells' Response to Changes in Gravitational Force and its Effects on Musculoskeletal Tissue Growth and Development	[H-12] *Joel Mueting* Model-based Systems Engineering of The OSIRIS-REx Mission's Science Processing and Operations Center	[A-21] *Ankit Jain* ERAU ASCEND Spring 2014	[D-4] *Leah Edwards* The Environmental Impact of Mega Events: A Life Cycle Assessment of The Environmental Impact of Homecoming At The University of Arizona
10:50-11:00	[B-13] *Thomas Osborn Popp* Characterization of Lysine On the Surface of SiO2 Nanoparticles	[H-13] *Aaron Pigott* Analysis of CFD Methods in High Lift Configurations	[E-1], [E-2] *Bezakulu Gebru* *Yvette-Marie Margaillan* The Arizona Space Grant Consortium Peer Engagement Study	[D-5] *Sara Gallagher* Inhibition of Anaerobic Digestion of Glucose and Propionate By Cu0-NPs
11:00-11:10	[B-14] *Matthew Plank* RAVEN (Remote Assist Vehicle For Extraterrestrial Navigation)	[H-14] *Kevin Vicencio* Multi-Goal Path Planning Based On The Generalized Traveling Salesman Problem With Neighborhoods	[E-3], [E4] *Daniel Diaz-Brown* *Stephanie Wogan* The Arizona Space Grant Consortium Peer Engagement Study	[D-6] *Dane Henderson* Studying Thermal Activity in Yellowstone Using Satellite-based Thermal Infrared Remote Sensing
11:10-11:20	[B-15] *Max Ruiz* Underwater Optical Sensor Network	[H-15] *Alex Kuehn* Aerial Aquatics: Unmanned Submersible Deployment Solution	[E-5], [E-6], [E-7] *Dana Lerch* *Leila Shevins* *Ariel Fry* The Arizona Space Grant Consortium Peer Engagement Study	[D-7] *John Hottenstein* Impact of Prolonged Soil Moisture Deficit On Grassland Biomass Production
11:20-11:30	[B-16] *Shantel Shaver* Continuous Glucose Monitoring Device for the Assessment of Stress	[H-16] *Lin Chun-Han* Aerial Aquatics: Unmanned Deployment of Submersibles	[E-8] *Alexandrea Cooney-Uribe* Project Pangaea	[D-8] *Safatul Islam* Increasing Light Absorption in Concentrating Photovoltaic System Through Use of Anti-Reflective Sol-gel Coated Ball Lens

11:30-11:40	[B-17] *Terry Stufflebeam* Investigation of Polymer-Ceramic Nanoparticles Composite Films for use in the Capacitive Storage of Electrical Energy	[G-1] *Curtis Dankof* Investigating Central Pit Craters in The Northern Hemisphere of Mercury	[E-9] *Estelle Fortes* Managing A Team of First Year Engineers For The NASA Human Exploration Rover Challenge	[D-9] *Sara Krznarich* Comparison of The Root Topology of Andropogon Geradii and Panicum Virgatum
11:40-11:50	[F-1] *Ricky Astrain* The Sun Devil Satellite Laboratory	[G-2] *Shayne Quinn* Investigation of Central Pit Craters in The Southern Hemisphere of Mercury	[E-10] *Candice Giffin* NAU Energy Literacy Project: Assessing Student Priorities To Inform Educational Goals	[D-10] *Christopher Luna* Chaotic Mixing of Charged Particles in The Ionosphere
11:50-12:00	[F-2] *Bryan Sonneveldt* Small Satellite Attitude Control System Test Bed	[G-3] *Crystylynda Fudge* Olivine Transformation in Ordinary Chondrite SAH 293: Constraints On Shock Conditions	[E-11] *Kristen Hwang* Learning To Trust A Journalist and Why it's Important	[D-11] *Payton Meade* High-Temperature Corrosion in Concentrating Solar Power(CSP) Systems
12:00-12:10	[F-3] *Ryan Callahan* Circulation Control	[G-4] *Deborah Hamm* A Search For Kuiper Belt Objects	[E-12] *Ashley Julian* "AIMER" Outreach	[D-12] *Adair Patterson* Heritability of Ectomycorrhizal Fungal Communities in Colorado Pinyon Pine (Pinus Edulis)
12:10-12:20	[F-4] *Aaron Watson* Circulation Control	[G-5] *Alejandro Lorenzo* Development of An Easy To Use Code To Calculate The Mass-Radius Relationship of Exoplanets	[E-13] *Patina Becenti* Robotic Education	[D-13] *Alison Radei* Pan Evaporation Rates For Southeastern Arizona

12:20-1:50	**Lunch Break Michael J. Drake Building (6th St. and Drachman—Enter Rear of Building)**			
TIME	**Session F:** **Aeronautics** **(continues)** **Moderators:** **Stephen Rayleigh** **Aviation, ERAU**	**Session G:** **Planetary Science** **(continues)** **Moderator: Nadine Barlow, NAU** **Session I:** **Topics in Math, Physics & Chemistry** **Moderator: David Trilling, NAU**	**Session E:** **Education and Public Outreach** **(continues)** **Moderator: Barron Orr, UA**	**Session D:** **Earth & Environmental Science/Engineering** **(continues)** **Moderator: Chandra Holifield-Collins, USDA SWRC**
2:00-2:10	[F-5] *Baltazar Chavez-Diaz* Steps To Multicellularity	[G-6] *Alexander Prescott* Identifying Ancient Glacial Features in The Circum-Argyre Region, Mars, Using HiRISE, CTX, and MOC Imagery	[E-14] *Emily Litvack* Accurately and Effectively Communicating Science News To The Arizona Daily Sun Readership	[D-14] *Marissa Raleigh* Dissolved Organic Carbon Concentration and Fluorescence Characterization of Tempe Town Lake
2:10-2:20	[F-6] *Lucio Cota* Separation Control With Nanosecond Pulse Driven Dielectric Barrier Discharge Plasma Actuators	[G-7] *Shane DePinto* Mapping Apparent Porosity of Surficial Rocks Discovered By The Mars Exploration Rovers	[E-15] *Kenneth Magana* ASU Science Is Fun	[D-15] *Jessica Rudd* Impact of Wind and Ice Biases On Southern Ocean Carbon and Heat Uptake
2:20-2:30	[F-7] *Gaines Gibson* Daedalus Astronautics	[G-8] *Ben Stinnett* ASU Lunabotics	[E-16] *Andrew McCullough* Science Journalism At The Arizona Daily Star	[D-16] *Quinn Shollenberger* Separating Protein From Human Serum For Calcium Isotopic Analysis: Insights Into Using 44Ca/42Ca As A Biomarker For Bone Metabolism

2:30-2:40	[F-8] *Clark Pederson* Characterization of Laser Energy Deposition For Active Flow Control	[G-9] *Drew Wasikoski* Using MGS-TES-EPF Data To Derive Mars South Polar Ice Properties Such As Grain-Size	[E-17] *Ashley Powell* Readable Jargon	[D-17] *Christina Turpin* Paleomagnetic Analysis of Bimodal Magmatism Associated With Tule Tank Crater, San Francisco Volcanic Field, Northeastern Arizona
2:40-2:50	[F-9] *Ciara Thompson* Understanding The Shortcomings of CFD in Predicting High Lift Configurations	[G-10] *Brittany Meucci* Searching For Columnar Jointing On Mars	[E-18] *Mariela Resendez* STEM Class and Science Club For Middle School Students	[D-18] *Victoria Walker* Ice Crystal Parameterizations in Arctic Cirrus – Towards A Better Representation in Global Climate Models and Aircraft Icing Potential Studies
2:50-3:00	[F-10] *Nicolas Urias* Modification of A High-Speed Jet Facility For Studies of Active Flow Control	[I-1] *Michael Bull* Bio-Cementation of Soils Using Plant Enzyme	[E-19] *Matthew Warren* NAU/NASA Space Grant Survey of Arizona STEM Best Practices Part 1	[D-19] *Austin Wardall* Causes of Repetitive Convective Triggering in The Southern Swiss Alps
3:00-3:10		[I-2] *James Greenberg* Atom Interferometer Gyroscope	[E-20] *Brooke Knighton* NAU/NASA Space Grant Survey of Arizona STEM Best Practices Part 2	[D-20] *Daniel Wilcox* Understory Growth Dynamics Following High Severity Burn in A Mixed-Conifer Forest
3:10-3:20		[I-3] *Benjamin Künzler* Particle Size Distribution Optimization For Improved Fluid Flow of Thermoplastic-Silicon Nitride Slurries		[D-21] *Jeannie Wilkening* Toxicity Potential of Thin-film Solar Panels in Municipal Waste Landfills

3:20-3:30		[I-4] *Elaine Rhoades* Measuring Mechanical Properties of Thin Optical Coatings		[D-22] *Jon Zaloumis* Microbial Biosignature Preservation in Crystal Geyser, Utah
3:30-3:40		[I-5] *Marcus Rosales* Nanofabrication of Magnetic Random Access Memory (MRAM)		[D-23] *Sarah Moore* Bioremediation of Arsenic Contaminated Water
3:40-3:50		[I-6] *Clelia Tommi* Medical Geology and Antibacterial Clays ~ Move Over Penicillin ~		
3:50-4:20	**Refreshments in the Atrium**			