Saturday, April 14, 2018, Tucson Sheraton

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

Timothy D. Swindle, Director Arizona Space Grant Consortium
Chandra Holifield Collins, Associate Director UA/NASA Space Grant Program
Eugene H. Levy, Founding Director, Arizona Space Grant Consortium

	Room: Catalina AB	Room: Canyon Theater	Room: Catalina C	Room: Pima
TIME	**Session A** **ASCEND** Moderators: Clayton Jacobs, Orbital ATK & ANSR & Ernest Villicana PCC, Physical Science/Engineering (8:30-12:00 PM) --- **Session H** **EDUCATION & PUBLIC OUTREACH** Moderator: Timothy D. Swindle UA, Lunar and Planetary Lab (1:30 PM-2:00 PM) --- **Session I:** **MATH, PHYSICS & CHEMISTRY** Moderator: Timothy D. Swindle UA, Lunar and Planetary Lab (2:00 PM-3:30 PM)	**Session B** **EARTH & ENVIRONMENTAL SCIENCE/ENGINEERING** Moderators: Chandra Holifield Collins USDA-ARS SWRC & Peter Fule NAU, School of Forestry 8:30 AM-12:00 PM --- Ching Huang NAU, School of Forestry & Jeff Lovich USGS Flagstaff 1:30 PM-2:20 PM --- **Session D** **AERONAUTICS** Moderators: Dorothea Ivanova ERAU, Applied Aviation Science and Meteorology & Shigeo Hayashibara ERAU, Aeronautics (2:20 PM-3:20 PM)	**Session C:** **AEROSPACE TECHNOLOGY** Moderators: Wallace Morris ERAU, AE & Wahyu Lestari ERAU, AE (8:30 AM-12:00 PM) --- **Session F** **EXPLORATION SYSTEMS** Moderators: Gary Yale ERAU, AE (1:30 PM-3:30 PM) & Doug Isenberg ERAU, ME (1:30 PM-3:30 PM)	**Session E** **ASTRONOMY & SPACE PHYSICS** Moderators: Yancy Shirley UA Steward Observatory (8:30 AM-11:50 AM) & Nadine Barlow NAU Physics & Astronomy --- **Session G** **PLANETARY SCIENCE** Tom Sharp ASU, SESE & Paul Scowen ASU, SESE & Jennifer Hanley Lowell Observatory (1:30 PM-3:30 PM)

8:30-8:40	[A-01] *Michael Fusco* ERAU ASCEND: Results from Arizona Space Grant's Participation in the Nationwide Eclipse Ballooning Project	[B-01] *Guiatango Bonsa* Estimating Vegetation Productivity for the Conterminous United States Using Satellite Observations.	[C-01] *Andre De Simone* Phoenix CubeSat: Radiometric Work on the Payload Camera	[E-01] *Amanda Binkley* Commissioning the Flagstaff Robotic Survey Telescope (FRoST)
8:40-8:50	[A-02] *Xander Pickard* ERAU ASCEND: Development of a High-Altitude Balloon Controlled Ascent System (HABCAS)	[B-02] *Clarisa Avalos Aguilera* Can Remote Sensing Detect Fire Damage in Plants and Soil Microbial Activity	[C-02] *Daniel La Rosa* Phoenix CubeSat: Radiometric Work on the Payload Camera	[E-02] *Kyle Lindstrom* Planet Formation Around Binary and Multiple Star Systems
8:50-9:00	[A-03] *Jonathan Wulff* *Nersa Elya* GCC ASCEND Balloon Project	[B-03] *Celeste Delaune* Heterotrophic Bacteria and the Aggregation of Prochlorococcus in Proterozoic Oceans	[C-03] *Hilliard Paige* EagleSat 2: Program Overview	[E-03] *Muneeb Ahmed* Space Rocks in the Desert: Watching the Sky Over Southern Arizona for Meteorite-dropping Fireballs
9:00-9:10	[A-04] *Edwin Guerrero* *Miranda Erpelding* GCC ASCEND Balloon Project (cont.)	[B-04] *Alexa Drew* Atacama Desert as a Model for Hyper-Arid Exoplanets	[C-04] *Lauren Barthenheier* EagleSat-2: Development Testing	[E-04] *Emily Apel* Using Photometry to Determine IMF in Low-Metallicity Environments
9:10-9:20	[A-05] *Frank Islas* *Kennidi Ortega* GCC ASCEND Balloon Project (cont.)	[B-05] *Jonathan Durkin* Growth of Arctic Sea Ice Algae in an Earth Analogue of Icy Worlds	[C-05] *Jason Hamburger* EagleSat 2: Scientific Payloads' Overview and Developments	[E-05] *Brandon Bass* Frequency of Mature Planets Orbiting Neighboring Stars
9:20-9:30	[A-06] *Cordell R. Chee* *Stephanie Moses* *Byron Shorty* Diné ASCEND Investigations of Atmospheric Pollutants/Chemicals Above Navajo Nation	[B-06] *Rachel Hamilton* Effect of Terrestrial Microplastic Particles on Soil Properties	[C-06] *Steven Buck* EagleSat-2 - Implementation of Improved Communication Systems on UHF	[E-06] *Angelica Berner* Emergence of Complexity in Cellular Automata
9:30-9:40	[A-07] *Shawn Laughter* *Zachary Beaver* *Kyle Goh* Diné ASCEND Investigations of	[B-07] *Adolfo Herrera* Analysis Of NASA Global Precipitation Measurement Early Run Satellite Product	[C-07] *Chloe McClellan* EagleSat 2 : Electrical Power Subsystem	[E-07] *Travis Hansen* Exploring the Parameter Space Using a Single Interferometer for Core-Collapse Supernovae

	Atmospheric Pollutants/Chemicals Above Navajo Nation (cont.)			
9:40-9:50	[A-08] *Zoey Yazzie* *Jamie Begay* *Lynshell Begay* Diné ASCEND Investigations of Atmospheric Pollutants/Chemicals Above Navajo Nation (cont.)	[B-08] *Matthew Johnson* Fire Climates	[C-08] *David Stockhouse* EagleSat 2: Computational Needs and Challenges of the Payloads and Subsystems	[E-08] *Gabriela Huckabee* Simulating Galaxy Outflows in the Circumgalactic Medium
9:50-10:00	[A-09] *Edwin Hajric* *Adam O'Reilly* *Crystal Kubby* ASU ASCEND Project: The Full Mission Experience	[B-09] *Sam Ebright* Did Quaking Aspen (Populus Tremuloides) Recover Following The 2010 Schultz Fire, AZ?	[C-09] *Nikki Cain* Normal Stress Developing in Magnetorheological (MR) Fluids.	[E-09] *Jenny Calahan* Searching for Inflow Towards Massive Starless Clump Candidates Identified in the Bolocam Galactic Plane Survey
10:00-10:10	[A-10] *Jonathan Hernandez* *Dylan Devine* ASU ASCEND Project: Structural Design	[B-10] *Emily Grams* The Influence of Soil Depth and Grazing Practices on the Quantity and Quality of Soil Carbon in Semi-arid Regions	[C-10] *Hannah Rentschler* Design and Fabrication of a Robotic Knee Exoskeleton	[E-10] *Mackenzie James* Photoevaporating Protoplanetary Disks Near Young Massive Stars in the Orion Nebula
10:10-10:30	**Morning Break—Catalina Foyer**			
10:30-10:40	[A-11] *Pamela Cabrera* *Michael Cabrera* *Mikaela Gali Lamirande* *Peter Mwangi* *Glen Baroi* *Debora Fierz* *Tyler Osborne* *Daniel Barkley* The CAC Balloonatics v2 ASCEND Project	[B-11] *Cynthia Kobold* Investigations of Moisture Partitioning Between Arizona and New Mexico During the North American Monsoon and the Role of the Ocean and the Sea Surface Temperatures	[C-11] *Deborah Jackson* EagleSat-1 Project: Mission Synopsis	[E-11] *Charlotte Johnson* Production of Short-Lived Radionuclides in Asymmetric Supernovae
10:40-10:50	[A-12] *Jesus Chaidez* *Javier Mancilla* *Kade Leonard* *Ameyalli Santibanez* *Richard Bernal Jr* *Selena Rodriguez*	[B-12] *Abdullah Matalgah* Anaerobic Ammonium Oxidation for Nitrogen Removal (Anammox)	[C-12] *Madison Padilla* EagleSat-1 Project: Flight Operations	[E-12] *Victoria Jones* Analysis Of Astrometry in the JWST NEP Time-Domain Field

	Anthony Rietz *Daniel Picasso* EMCC Magneto			
10:50-11:00	[A-13] *Alfredo Gonzalez* *Daniel Elias* *Jacob DAmour* PCC ASCEND	[B-13] *Nikita Kowal* Solar Evaporation for Urine Separation	[C-13] *Sarah Martin* Beyond Deep Learning: Synthesizing Navigation Programs Using Neural Turing Machines	[E-13] *Scott McKinley* Recalibrating Strong-line Metallicity Diagnostics for Z~1 Chemical Enrichment Studies
11:00-11:10	[A-14] *Alexis Range* *Dreah Gray* PCC ASCEND (cont.)	[B-14] *Andrea Kraetz* Heat-Responsive Microgel Anti-Foulant Coatings for Water Purification Membranes	[C-14] *Sarah Rogers* Phoenix: A 3U CubeSat to Study Urban Heat Islands	[E-14] *Corey Miner* The Challenge: Data Saturation in VLBA Radio Telescopes
11:10-11:20	[A-15] *Adam Jimenez* *Chris Barclay* *Yadira Estrada* *Samuel Humpherys* PC ASCEND Atmospheric Profile and Live Stream	[B-15] *Bray Moll* Uncertainty Quantification Using Computational Fluid Dynamics in Prediction of Residential-scale Wind Power Production	[C-15] *Daniel Rust* The Effects of Core Geometry Manipulation of 3D Printed Rocket Fuel	[E-15] *Cameron White* A Lyman Continuum-Bright Quasar at Redshift Z=2.59
11:20-11:30	[A-16] *Joel Thibault* *Andrew Okonya* *Kenrick Encinas* *Joshua Smith* *Arjun Muralidaran* *Cathy McIntosh* *Claudio Cerrillo* *Marton Szep* *Andras Szep* UA ASCEND: Reusable Data Logging Payload for Multiple Research Platforms	[B-16] *Jenna Norris* How Long Can Desert Tortoises, Gopherus Agassizii, Hide in Their Burrows from Climate Change?	[C-16] *Joseph Vlastos* Variable Reflectivity Coatings for Optical Propulsion Applications	[E-16] *Kevin White* Particle Trapping in M Dwarf Disks
11:30-11:40	[A-17] *Shobitha Jillella* *Duffy Elmer* UA ASCEND: Using the Ames Test to Measure the Viability and Mutagenicity of Spacefaring Salmonella Enterica and Establish the Efficacy of a Flight Platform	[B-17] *Jessica Peebles* Coupling Carbon Dioxide Capture and Waste Water Treatment from a Power Plant for Algae Biofuel Production	[C-17] *Luke Peterson* Computational Fluid Dynamics Research Project	[E-17] *Massimo Pascale* A Hubble Space Telescope Census of Sub-Millimeter Giant Arcs Selected Using PLANCK/HERSCHEL

11:40-11:50	[A-18] *Nicholas Blum* *Noel Rojas* GCC Special Projects Team – Autonomous Flight Research	[B-18] *Sierra Ramirez* Asteroid Mobility Using Screw-Powered Vehicles	[C-18] *Hunter McCraw* Investigations in Electric Propulsion Systems at ERAU Prescott	[E-18] *Joel Berkson* Deflectometry-based Measurement and Correction of Mirror Misalignment
11:50-12:00	[A-19] *Stephen Bakle* GCC Special Projects Team – Autonomous Flight Research (cont.)	[B-19] *Georgia Ross* Comparison of Space and Terrestrial Gravity Data for Geologic Modeling	[C-19] *Victor Estrada* Diffusion of Bio-species in Lung-on-a-chip Model	[E-19] *Hannah Ambrose* Estimating Eta-Earth: The Fraction of Stars with Earth-sized Planets in the Habitable Zone
12:00-1:30	**Lunch Break: Sabino Ballroom**			
	Room: Catalina AB	**Room: Canyon Theater**	**Room: Catalina C**	**Room: Pima**
TIME	**Session H** **EDUCATION & PUBLIC OUTREACH** Moderator: Timothy D. Swindle UA, Lunar and Planetary Lab (1:30 PM-2:00 PM) **---** **Session I:** **MATH, PHYSICS & CHEMISTRY** Moderator: Timothy D. Swindle UA, Lunar and Planetary Lab (2:00 PM-3:30 PM)	**Session B** **EARTH & ENVIRONMENTAL SCIENCE/ENGINEERING (CONT)** Moderators: Ching Huang NAU, School of Forestry & Jeff Lovich USGS Flagstaff (1:30 PM-2:20 PM) **---** **Session D** **AERONAUTICS** Moderators: Dorothea Ivanova ERAU, Applied Aviation Sci & Meteorology & Shigeo Hayashibara ERAU, Aeronautics **(**2:20 PM-3:20 PM)	**Session F** **EXPLORATION SYSTEMS** Moderators: Gary Yale ERAU, AE **(**1:30 PM-3:30 PM) & Doug Isenberg ERAU, ME **(**1:30 PM-3:30 PM)	**Session G** **PLANETARY SCIENCE** Moderators: Tom Sharp ASU, SESE & Paul Scowen ASU, SESE & Jennifer Hanley Lowell Observatory (1:30 PM-3:30 PM)

1:30-1:40	[H-01] *Darrien Benally* Climate Change Education and Outreach to Students from the Navajo and Hopi Nations	[B-20] *Joseph Sweet* Auto-classification of Surface Water in Northern Arizona Using Sentinel-2 Imagery	[F-01] *Lexi Bounds* Utilizing CRISPR/Cas9 to Artificially Induce Aging in 3-D HiPSC-based Models of Neurodegenerative Disease	[G-1] *Max von Hippel* Ice Mass Loss of Iceland Glaciers Using Slepian Functions and GRACE Gravimetry Data Since 2002
1:40-1:50	[H-02] *Eric Duong* Communicating Science	[B-21] *Logan Tegler* More Clear Than Mud: Dating Deep-Sea Pelagic Sediments with Osmium Isotopes to Unravel Seawater Iron (Fe) Cycling Through the Cenozoic	[F-02] *Rachael Bradshaw* Strain Damage Monitoring in CFRP Composites Using Digital Image Correlation	[G-02] *Paras Angell* Seasonal Temperature Variations and CO2 Sublimation Activity Near the Martian South Pole
1:50-2:00	[H-03] *Emily Walla* Science Journalism with UANews	[B-22] *Colin Towne* Energy, Water, & Emissions	[F-03] *Alexander Brooks* Hierarchical Behavioral Design for Lidar-based Navigation of Autonomous Robotic Agents	[G-03] *Brendan Bogar* Monitoring for Recent Tectonic Activity on Mars
2:00-2:10	[I-01] *Jonathon Barkl* Photochemistry with Diamond	[B-23] *Taylor Walton* Methane Oxidation in Serpentinization-Hosted Ecosystems	[F-04] *Fernando Coronado* Designing Assembly for MET	[G-04] *Claire Cook* Searching for Subsurface Ice in Hellas Planitia, Mars Using Radar
2:10-2:20	[I-02] *Gisselle Gonzalez* Molecular Electronics: Octadecyltrichlorosilane Self-Assembled Monolayers on Silicon Dioxide	[B-24] *Gage Driscoll* Integrating ASTER Satellite Image Data of Earth Lakes into ArcGIS to Make Inferences of Mineral Compositions on Earth and on Mars	[F-05] *Olivia Cote* Maintaining Microwave Spectrometer	[G-05] *Rachel Huchmala* Understanding Chlorine Salt Spectra Through Computational Methods with Implications for Martian Geochemistry
2:20-2:30	[I-03] *Holly Johnson* Diamond Detectors for Uses in a Proton Therapy Beam	[D-01] *Marcos De Rose* Flow Features of Shockwave and Boundary Layer Interactions	[F-06] *Brandon Dorr* Tools to Program Yeast: Translational Regulation Using Artificial Introns	[G-06] *Wes Johnson* Quasi-Biennial-Oscillation Influence on the Madden-Julian-Oscillation
2:30-2:40	[I-04] *Dustin Nguyen* Neutrinos from Primordial Black Holes	[D-02] *Michael Horn* External Calibrator for Hydrogen Observatories	[F-07] *Harrison Hanzlick* Stability of the Human Ankle with Respect to Environmental Mechanics	[G-07] *Janus Kozdon* Determining Potential Localized Dust Sources and Sinks from Differential Temperatures in Elysium Planitia, Mars

2:40-2:50	[I-05] *Curtis Peterson* Numerical Simulations of Fermi Bubbles	[D-03] *Forrest Mobley* UAS Paradrogue Research and Development	[F-08] *Melissa Jacquez* Cadmium Removal from Water with a Corn Cob Biosorbent	[G-08] *Collin Lewin* Spectral Analysis of Solar-type Stars
2:50-3:00	[I-06] *ViAnn Pham* Deposition of Alkanethiolate Self-Assembled Monolayers on Germanium	[D-04] *Michael Nathanson* Effects of Unsteady Motion on Separation and Separation Control	[F-09] *Meghna Jayaraman* Degradation of Polymeric Materials for Multi-use and Re-use	[G-09] *Katherina Marchese* Evolved Gas Analysis of Carbonaceous Chondrites in Application to NASA's OSIRIS-REx
3:00-3:10	[I-07] *Alex Stoken* Machine Learning Applications in High Energy Physics: The Search for Vector-Like Quarks	[D-05] *Pamela Ward* Hypoxia Statistics and Training for Pilots	[F-10] *Michael Lay* Investigating Batch Granulation Physical Phenomena	[G-10] *Adriana Mitchell* Issues with the Dunn Calibration of Spectrally Derived Asteroid Compositions
3:10-3:20	[I-08] *Jacqueline Tappan* Wadsleyite Synthesis for Laser Driven Shock Experiments	[D-06] *Jonathan Buchholz* SUAS Detection and Avoidance Uses for LWIR and LiDAR Sensor Fusion	[F-11] *Miguel Pena* Genetically Engineered ELP-AMP Protein Polymers for Antimicrobial Materials	[G-11] *Coral Ruiz* Network Topology of Earth's Atmosphere and Biosphere
3:20-3:30	[I-09] *Lily Wayne* Pioneering a Diagnostic Tool for Bone Diseases		[F-12] *Michael Pineda* AAV-Delivered CRISPR-Mediated Cellular Regeneration	
3:30-3:40	**Refreshments Catalina Foyer**	**Refreshments Catalina Foyer**	**Refreshments Catalina Foyer**	**Refreshments Catalina Foyer**