Saturday, April 13, 2019, Doubletree by Hilton Tempe

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

Timothy D. Swindle, Director Arizona Space Grant Consortium
Thomas G. Sharp, Associate Director, ASU/NASA Space Grant Program

	Room: Fiesta Ballroom	Room: Coronado	Room: Tempe	Room: Redrock
TIME	**Session A** **ASCEND** Moderators: Clayton Jacobs, ANSR & Elliott Bryner, ERAU, Mechanical Engineering (8:30 AM – 10:10 AM) --- Tom Sharp ASU, Earth & Space Exploration (10:30 AM-12:00 PM) **Session H** **EXPLORATION SYSTEMS ENGINEERING: BIOLOGICAL, MATERIALS, OPTICAL AND ELECTRICAL** Moderators: Ernest Villicana Phoenix College, Engineering & Daniel La Rosa ASU, SEMTE (1:30 PM – 3:10 PM)	**Session B** **TOPICS IN MATH, PHYSICS & CHEMISTRY** Moderators: Anna Zaniewski, ASU Physics (8:30 AM – 9:30 AM) **Session E** **ASTRONOMY & SPACE PHYSICS** Donald Kavanagh, Pima CC Chemistry (9:30 AM-10:10 AM) --- Ines Montaño, NAU Physics/Astronomy & Rolf Jansen, ASU Earth & Space Exploration (10:30 AM-12:00 PM) --- Moderators: Lisa Chien, NAU Physics/Astronomy & Maitrayee Bose, ASU Earth & Space Exploration (1:30 PM – 3:10 PM)	**Session C:** **PLANETARY SCIENCE** Moderators: Paul Scowen, ASU Earth & Space Exploration & Rhonda Holton, ASU Astrophysics (8:30 AM-10:10 AM) --- Shigeo Hayashibara, ERAU Aerospace Engineering (10:30 AM-11:00 PM) **Session I** **AEROSPACE TECHNOLOGY: SPACEFLIGHT/ENGINEERING PROGRAMS** Moderators: Elliott Bryner, ERAU, Mechanical Engineering (11:00 AM-12:00 PM) --- Wallace Morris, ERAU Aerospace Engineering & Ron Madler, ERAU Engineering (1:30 PM – 3:20 PM)	**Session D** **EDUCATION & PUBLIC OUTREACH** Wallace Morris, ERAU Aerospace Engineering (8:30 AM-9:10 AM) --- **Session F** **AERONAUTICS** Wahyu Lestari, ERAU Aerospace Engineering 9:10 AM – 9:50 AM --- **Session G** **EARTH & ENVIRONMENTAL SCIENCE/ENGINEERING** Anita Antoninka, NAU Forestry 9:50 AM-12:00 PM --- Matt Goode, UA Natural Resources and Environment & Hilairy Hartnett, ASU Earth & Space Exploration 1:30 PM-3:30 PM

8:30-8:40	[A-1] *Edwin Hajric* ASU ASCEND: Light Spectrum Intensity and Optical Sun Tracking on a High-Altitude Balloon Payload	[B-1] *Madison Driskill* Nanofabrication Using Self-Assembled Monolayers	[C-1] *Gabriel Carrillo* Creating Topographic Maps of Mars using a Software Pipeline	[D-1] *Marissa Heffernan* Science and Journalism: Divides and Solutions
8:40-8:50	[A-2] *Eunice Lopez* *Jessica Frantz* *Modesta Juarez* PHOENIX COLLEGE, Project: ASCEND Ground Station and Live Video	[B-2] *Holly Johnson* PIN Diamond Diodes for Alpha Particle Detection	[C-2] *Solvay Blomquist* Analysis of Meteors and their Light Curves	[D-2] *Maciek Czyz* Houston, We Don't Have a Problem: Designing Tools to Develop Intuition Regarding Orbital Mechanics
8:50-9:00	[A-3] *Isai Uriarte* *Ivan Martinez* *Brian Moreno* *Chris Yurgel* *Jackie Salazar* PHOENIX COLLEGE, Project: Base Station, Housing and Atmospheric Data	[B-3] *Lily Wayne* Calcium Isotope Fractionation in Hip Bone and Serum	[C-3] *Bradley Patterson* Recurring Slope Lineae in Valles Marineris, Mars	[D-3] *Timothy Johnson* Science Writing at the Arizona Daily Sun
9:00-9:10	[A-4] *Lynshell Begay* *Dennison John Jr.* Diné College ASCEND: Monitoring/Measuring Radiation, Nitrogen Dioxide and Ozone Across the Navajo Nation	[B-4] *Curtis Peterson* Numerical Simulations of Heavy Quark Exotica	[C-4] *Claire Cook* Radar Constraints on the Thickness of Subsurface Ice Near Hellas Planitia, Mars	[D-4] *Emily Walla* Science Journalism with UANews
9:10-9:20	[A-5] *Peyton Nez* *Allyssa Joe* *Jamie Begay* Diné College ASCEND: Collection of Carbio Dioxide Data and Analysis of Methane Across the Navajo Nation	[B-5] *Alyssa Smith* Synthesis of Copper(I) Oxide Nanoparticles	[C-5] *Alexa Drew* Predicting the Probability of Earth-like Life on Enceladus Through Chemical Networks and Metabolic Pathways	[F-1] *Cory Coffman* Effect of Leading and Trailing Edge Flaps on Flat Plates at Low Reynold's Number
9:20-9:30	[A-6] *Cathy McIntosh* *Kenrick Encinas* *Isela Burruel* *Josh Smith* *Amin Sennour* UA ASCEND: Analyzing the Viability of Renewable Energy and Diagnosing Crop Health Using a General Data-logger	[B-6] *Adrian Luna* Quantum Engineering following Nature's Lead: Using Genetic Algorithms to Develop Nitride Optoelectronic Nanodevices	[C-6] *Wes Johnson* Quasi Biennial Oscillation Modulates Madden Jullian Event Amplitudes Exciting a Rossby Wave-Train	[F-2] *Kirk Davis* Flow Characterization of the University of Arizona Low Speed Wind Tunnel

9:30-9:40	[A-7] *Dash Katz* *Arsh Nadkarni* *Daniel McConville* *Ian Singco* *Arjun Muralidaran* UA ASCEND: Analyzing the Viability of Renewable Energy and Diagnosing Crop Health Using a General Data-logger	[E-1] *Shane Bechtel* Commissioning Lowband HERA Data to Measure Instrument Sensitivity	[C-7] *Mitchell Magnuson* Space Weathering Experiments as they Relate to Carbonaceous Asteroids	[F-3] *Victor Padilla* Schlieren Optical Visualization of Boundary Layer Flow Development and Characterization for Mach 4 Ludwieg Tube
9:40-9:50	[A-8] *Alexis Haas* *Cerah Schaffer* *Antonio Varela* EMCC ASCEND: Sun Protection Factor Test	[E-2] *Tyler Cox* Receiver Temperature Estimates for H1C Observations	[C-8] *Madeline Marquardt* Shock Effects and Mineral Assemblages in the Genomict Eucrite Northwest Africa 8677	[F-4] *Nathaniel Van Evera* Computational Flow Control and Analysis
9:50-10:00	[A-9] *Julian Houghton* *Braedon Hansen* *Gregory Frank* *Gustavo Sodari* PCC ASCEND: Investigation of Radiation and Atmospheric Gases at High Altitude	[E-3] *Lily Whitler* Instrumental Systematics and the Impact on 21-cm Measurements of the Epoch of Reionization	[C-9] *Paras Angell* Comparison of Seasonal Surface Temperatures for CO2 Ice and H2O Ice Near the Martian South Pole	[G-1] *Nathaniel Bochenek* A Tale of a Flash Flood: WRF Modeling of Record Rainfall and Flooding in Arizona
10:00-10:10	[A-10] *Jason West* *Zach Moir* *Simeon King* PCC ASCEND: Investigation of Radiation and Atmospheric Gases at High Altitudes	[E-4] *Samantha Andrews* HCN in the Taurus Molecular Cloud	[C-10] *Vivian Morrison* OSIRIS-REx: Investigating Statistical Uncertainties in Remotely Sensed Images	[G-0] *Ryan Shiner* Sproul Crater: An Eruption History
10:10-10:30	**Morning Break—Fiesta Ballroom Lobby**			
10:30-10:40	[A-11] *Pamela Cabrera* *Angelo Navoa* *Daniel Barkley* CAC ASCEND Launch Results for Fall 2018	[E-5] *Emily Apel* Mapping Cooling of Interstellar Atomic Gas in Dwarf Galaxies with CII Emission Spectroscopy	[C-11] *Jenna Robinson* Modeling Exoplanet Lithosphere Properties Using ExoPlex	[G-2] *Reman Almusawi* Airborne Lead and Arsenic in Hayden, AZ
10:40-10:50	[A-12] *Michael Cabrera* *Aerin Fulton* *Nyagoa Chop* *Julian Madrid* CAC ASCEND Launch Results for Spring 2019	[E-6] *Adam Bauer* Characterization and Analysis of Massive Space Telescopes	[C-12] *Cathryn Sephus* Ancient Pigments: A Colorful History	[G-3] *Alexus Cazares* Effects of Urbanization on Gila Monsters

10:50-11:00	[A-13] *Thomas Montano* Design of a Wireless Communication System using Software Defined Radios	[E-7] *Devin Cameron* Using General Relativistic Magnetohydrodynamic Simulations to Probe the Parameter Space of Sgr A*	[C-13] *Madison Walder* Testing Atmospheric Models to Correct Protoplanetary Disk Spectra	[G-4] *Priscilla Cortez* Changes in Phenotypic Variability During the Evolution of Multicellularity
11:00-11:10	[A-14] *Samuel Gonzalez* *Samantha Barr* *Adilene Chavez* GCC's ASCEND Team 1: Capturing Flight Video, Design of Payload Housing, and Buzzer Locating System	[E-8] *Martin Flores* Understanding the Relationship Between the Circumgalactic Medium and the Interstellar Medium	[I-1] *Julia Mihaylov* Julia Language 1.0 Ephemeris and Physical Constants Reader for Solar System Bodies: Asteroid Shape Modeling	[G-5] *Bethany Davis* The Future of Biodiversity Assessment: Using Environmental DNA and Next Generation Sequencing to Characterize Biological Communities in the Central Highlands of Arizona
11:10-11:20	[A-15] *James Shaffer* *Derrick Lenhardt* GCC's ASCEND Team 1: Data Filtering, Analysis and GPS Tracking with HAM Radio Equipment	[E-9] *Gabriela Huckabee* The Effect of Nonequilibrium Chemistry and Nonuniform Metallicity on Ion Abundances in Galaxy Outflow Hydrodynamic Simulations	[I-2] *Renee Spear* Julia Language 1.0 Ephemeris and Physical Constants Reader for Solar System Bodies: Gravitational Modeling	[G-6] *Mildred Diaz* The Effects of Forest Management Practices and Feedbacks Between Plants and Soil Organisms
11:20-11:30	[A-16] *Jose Inzunza* *Juanpablo Garcia* GCC's ASCEND Team 2: GPS and Data Transmission with RockBLOCK Modems	[E-10] *Andres Jaramillo* The Search for Intergalactic Globular Clusters	[I-3] *James Haner* Design and Construction of Static and Dynamic Calibration Cells	[G-7] *Trae Doty* Quantifying Coastal Erosion Along the Lost Coast, California
11:30-11:40	[A-17] *Marina Sliwo* *Jennifer Bartelme* GCC's ASCEND Team 2: Preparation and Analysis of Bacteria Samples	[E-11] *Victoria Jones* Analysis of Variability in the JWST North Ecliptic Pole Time-Domain Field	[I-4] *Jacklyn Higgs* Wind Tunnel Improvements for Shockwave Boundary Layer Interaction Research	[G-8] *Samantha Hershauer* Moose on the Loose: Using Ancient sedDNA to Detect Moose Arrival Time
11:40-11:50	[A-18] *Miranda Erpelding* *Stephen Bakle* GCC's UAV ASCEND Team – Autonomous Flight Research: Flight Software and Quadcopter Assembly	[E-12] *Ryan Kelly* Cloud Finder: Automated Cloud Identification for Robotic Telescopes	[I-5] *Luca Robbins* High Efficiency Aerospike Rocket Nozzle	[G-9] *Diego Huerta* Climate Drivers of Invasive Plant Phenology
11:50-12:00	[A-19] *Noel Rojas* GCC's UAV ASCEND Team – Autonomous Flight Research: OSD & LIDAR	[E-13] *Reagen Leimbach* Recalibrating Strong-Line Metallicity Diagnostics: Chemical Abundances from Composite Galaxy Spectra	[I-6] *Steven Buck* Space-based Solar Power using Parabolic Reflectors	[G-10] *Cynthia Kobold* An Investigation of Precipitation Partitioning Between Arizona and New Mexico During the North American Monsoon

12:00-1:30	**Lunch Break: Fiesta Ballroom**			
	Room: Fiesta Ballroom	**Room: Coronado**	**Room: Tempe**	**Room: Redrock**
TIME	**Session H** **EXPLORATION SYSTEMS ENGINEERING: BIOLOGICAL, MATERIALS, OPTICAL AND ELECTRICAL** Moderators: Ernest Villicana Phoenix College, Engineering & Daniel La Rosa ASU, SEMTE (1:30 PM – 3:10 PM)	**Session E (con't)** **ASTRONOMY & SPACE PHYSICS** Moderators: Lisa Chien, NAU Physics/Astronomy & Maitrayee Bose, ASU Earth & Space Exploration (1:30 PM – 3:10 PM)	**Session I (con't)** **AEROSPACE TECHNOLOGY: SPACEFLIGHT/ENGINEERING PROGRAMS** Wallace Morris, ERAU Aerospace Engineering & Ron Madler, ERAU Engineering (1:30 PM – 3:20 PM)	**Session G (con't)** **EARTH & ENVIRONMENTAL SCIENCE/ENGINEERING** Matt Goode, UA Natural Resources and Environment & Hilairy Hartnett, ASU Earth & Space Exploration 1:30 PM-3:30 PM
1:30-1:40	[H-1] *Ava Karanjia* Modification of Quorum Sensing Phenotypes and Pathways of Pseudomonas aeruginosa	[E-14] *Nathanael Mains* Star Formation Efficiency Analysis of the Galaxy NGC 4826	[I-7] *Treyton Moore* Designing a Mach 5 Wind Tunnel	[G-11] *Andrea Kraetz* Heat-Responsive Microgel Anti-Foulant Coatings for Water Purification Membranes
1:40-1:50	[H-2] *Rachael Bradshaw* Damage Monitoring in Repaired Carbon Fiber Reinforced Polymer (CFRP) Composites using Digital Image Correlation	[E-15] *David Martin* Enhancing the Contrast in Hubble Images of Post-AGB Stars	[I-8] *Andrew Gifford* Research on Shape-Based Approximation Methods for Initial Conditions for Low-Thrust Spacecraft Trajectory Optimization	[G-12] *Collin Krawczyk* Attitude Measurements based on Direct Solar Irradiance Vector
1:50-2:00	[H-3] *David Chan* Phase Noise Testing and Verification of Microwave Oscillators	[E-16] *Dominic Sanchez* Empirical Noise Distribution Models for High Contrast Direct Imaging	[I-9] *Bharath Tata* In-Situ Oxygen Production on Mars	[G-13] *Lauren Mason-Sarantopulos* Variation in Temperature Tolerances in Native and Introduced Amphipods of Northern Arizona, Hyallela Azteca and Gammarus Lacustris
2:00-2:10	[H-4] *Ethan Cruz* Phoenix CubeSat Project	[E-17] *Benjamin Pieczynski* The Formation of Spiral Structures in the Flocculent Galaxy M83	[I-10] *Jason Hamburger* Cosmic Ray Payload Overview and Developments	[G-14] *Alec Nienhauser* Removal of Trace Organics for Water Reuse
2:10-2:20	[H-5] *Ryan Fagan* Handheld IR Spectrometer	[E-18] *Jack Schulte* Constraints on Stardust Origins by 3D Supernova Models	[I-11] *Becca Laub* EagleSat 2: Systems Engineering	[G-15] *Sarah Nolt-Caraway* Mapping Crustal Deformation Using Seismic Anisotropy in Ruby Mountains, Nevada

2:20-2:30	[H-6] *Collin Ganser* Investigating Geopolymer-Mediated Adsorption of MRSA Cells and Secreted Proteins	[E-19] *Thomas Tyburczy* Searching for Brown Dwarfs in the JWST North Ecliptic Pole Time-Domain Field	[I-12] *Brennan Gray* EagleSat 2: Memory Bit-Flip Experiment Overview and Development	[G-16] *Ruby O'Brien-Metzger* Portable Dust Generator
2:30-2:40	[H-7] *Garrett Rand* Non-Contact AFM Metrology for Optical Force Measurements	[E-20] *Cameron White* Color-Selected AGN in the JWST North Ecliptic Pole Time-Domain Field	[I-13] *David Stockhouse* EagleSat 2: On-Board Computer Systems	[G-17] *Briana Palmiero* Evaluation of Plant Moisture Stress and Overall Drought Tolerance in Relationship to Climate Change in Southwestern White Pine (Pinus Strobiformis)
2:40-2:50	[H-8] *Connor Moreno* A Novel Method to Study Heat Transfer Enhancement and Cooling	[E-21] *Kadin Worthen* Investigating Three Newly Resolved Debris Disks in Scorpius-Centaurus	[I-14] *Austin Macosky* EagleSat 2: Communications System Overview and Developments	[G-18] *Elinor Sauer* Using Analytical Tools in the Field and in the Lab to Understand Tempe Town Lake's Fluctuating Biogeochemical Cycles
2:50-3:00	[H-9] *Gavin Steeber* Enhancing Inorganic Carbon Uptake in Synechococcus sp. PCC 7002	[E-22] *Brittany Wright* Detecting Pulsars with the Dipole Array Telescope	[I-15] *Reece Krantz* EagleSat 2: Electrical Power System	[G-19] *Paige Swenson* Synoptic and Orographic Influences on the 2010 Northern Arizona Tornado Outbreak
3:00-3:10	[H-10] *Ciara Sypherd* Ants and AI: Machine Learning for the Characterization of Alarm Response in California Harvester Ants	[E-23] *Steven Zhou-Wright* Looking for Pre-Supernova Outbursts in the DLT40 Survey	[I-16] *Alexander Hoppe* EagleSat 2: Structures and Thermal Control	[G-20] *Taylor Walton* Habitability of Serpentinization-Hosted Ecosystems
3:10-3:20			[I-17] *Hilliard Paige* EagleSat: Program Direction	[G-21] *Sinera Williams* Assessment of Collaborative Workforce Training in Geoscience and Social Science for Natural-Hazards Preparedness and Mitigation (HazPM)
3:20-3:30				[G-22] *Antonio Acuna* *Kathryn Chamberlin* Arctic Ice Management
3:30-3:40	**Refreshments** **Fiesta Ballroom Lobby**			