



The 10th Annual
**Wernher von Braun
Memorial Symposium**

*Gateways in Space:
Exploration, Security, and Commerce*

October 24-26, 2017
Charger Union Theater
The University of Alabama in Huntsville

An American Astronautical Society Symposium

in conjunction with

**The University of Alabama in Huntsville,
NASA Marshall Space Flight Center, and the
National Space Club – Huntsville**



Sponsored by



EDUCATION SPONSOR



WEBCAST SPONSOR



TRANSPORTATION SPONSOR



IN CONJUNCTION WITH



NASA Marshall Space Flight Center

Student Poster Competition Entrants

PROJECT TITLE	PRIMARY STUDENT	COLLEGE
An Investigation of Zinc Whisker Detachment in Microgravity	Kayla Capitan	Engineering
Analytical Modeling of Radiation Attenuation and Heat Deposition in Propellant for Nuclear Thermal Rockets	Alexander Aueron	Engineering
Angle-Scanning Spectropolarimetry: From the Ultraviolet to the Infrared	Sahar Ansar Nouri	Science
Apollo 17 Lunar Surface Gravimeter: A New Moonquake Catalog and Implications of Expanding the Passive Seismic Array	Deanna Phillips	Science
Applications of NASA Earth Observations for Monitoring Surface Water Availability for Pastoralists and Small-Scale Agric	Kelsey Herndon	Science
Assessing Time-Weighted Dynamic Time Warping as a Method for Land Cover Classification Utilizing NASA Satellite Imagery	Ronan Lucey	Science
Autonomous Solid-State Radiation Detector for Safety of Aerospace Systems	Levi Davies	Engineering
Bridging the Gap Between Systems and Domain Engineers in Model-Based Engineering: Where MBSE Fits in the Digital Thread	Zach Thomas	Engineering
Building Miniature-Sized Ion Thruster Using Split Ring Resonator (SRR)	Toyofumi Yamauchi	Engineering
Characterization of a Microplasma-Based Heaterless, Insertless, Cathode	Ryan Gott	Engineering
Complexity Measures for SysML models	Victor Lopez	Engineering
Cylindrical Hall Effect Thruster with 3D Printed Components for Small Satellite Propulsion	Ryota Nakano	Engineering
Design and Construction of a Bi-Propellant Liquid Rocket	Kaitlin Russell	Engineering
Developing an Anti-Coincidence Shielding System for Hard X-Ray Detection in a Balloon-Borne Telescope	Chloe McFadden	Engineering
Developing the Terrestrial RaYs Analysis and Detection (TRYAD) Science Instrument	Lucas Capps	Science
Development of 3-axis control system for 3U CubeSat	Tyler Sholes	Engineering
Development of a Gamma-Ray Scattering Polarimetry Detector for CubeSats	Jared Fuchs	Science
Development of a Multistage High-Power Rocket	James Biaglow	Engineering
Development of a User-friendly System Model and Simulation for an Amateur Liquid-Fueled Rocket	Daniel Corey	Engineering
Diagnosing Failures in Complex Engineered Systems	Jalyn Garipey	Engineering
Electric Charge Capacity and Breakdown Voltage of Martian Simulant by Using Electro Dynamic Balance	Sakurako Kuba	Engineering
Electric Sail Tether Deployment Testbed	Davis Hunter	Engineering
Evaluating Benefits of SysML in Creating Value Models Using NASA's NEA Scout Project	Garima Bhatia	Engineering
Expendable RS-25 Affordability Study	Adam Bower	Engineering
Experimentation of Warm Gas Generator Emerging Technologies	Amit Patel	Engineering
Identifying Sources of Low-Spatial Frequency Figure Errors in Full-shell X-Ray Optics	Samantha Johnson	Science
Improving the High-Voltage Dielectric Breakdown Strength for Aerospace Applications	Sijay Huang	Engineering
Marshall Enriched Storable Oxidizer	Robert Hicks	Engineering
Motivations for Mars	Mark Potter	Humanities and Social Sciences
NASA Habitat: Framework for an Analysis of Preference Communication	Giulia Palma	Engineering
Overview of the SABER Mission and Launch Vehicle Design	Benjamin Thompson	Science
Physoon - Radiation Detection in Various High-Altitude Environments	Christopher Helmerich	Science
Power Distance in International Aerospace Endeavors	Alexander Marbut	Humanities and Social Sciences
Predicting Mechanical Properties of Lattice Structures	Behzad Bahramibabamiri	Engineering
Rapid Atmospheric Boundary Layer Evolution During the Great American Solar Eclipse of 2017	Preston Pangle	Science
Risk Assessment and Use of Water Rockets for Educating Students in K-12 Classrooms Using a LIFTOFF Case Study	Alex Christley	Engineering
Sally Ride EarthKAM: Using ArcGIS to Assess Popularity of Geographic Locations for Picture Requests Among K-12 Students	Jeremy Frost	Science
UAH Propulsion Research Center Rocket Test Capability Upgrade	Daniel Jones	Engineering
Upgrade of PRC Spray Facility for Evaluation of Liquid Injector Technology	Ronak Pereira	Engineering
Verification and Enhancement of VIIRS Day-Night Band Power Outage Detection Product	Angela Burke	Science

Program

AIAA Young Professionals Symposium - Student Services Building

A technical symposium for aerospace young professionals.

- Monday, October 23 – All day
- Tuesday, October 24 – All day; AIAA YPS Mentor Ship Event at 4:00 PM

This is an optional program. For details and registration (required) visit aiaayps.org

Tuesday, October 24

6:00 pm **Von Braun Symposium Welcome Reception**
Student Services Building – ***Sponsored by UAH***

Wednesday, October 25

7:00 am AAS Corporate Members Breakfast (Invitation Only)

7:00 am Registration Opens / Networking / Continental Breakfast – Charger Union
Sponsored by Orbital ATK

8:00 am **Welcome Remarks** – *Charger Union Theater*

- Robert Altenkirch, President, The University of Alabama in Huntsville
- Alan DeLuna, Executive Vice President, American Astronautical Society
- Todd May, Director, NASA Marshall Space Flight Center

8:30 am **Exploration Update**
Moderator: Dale Thomas, Professor/Eminent Scholar, I & S Engineering, UAH
Panelists:

- Mike Bolger, Manager, Ground Systems Development and Operations Program (GSDO), NASA Kennedy Space Center
- Bill Hill, Deputy Associate Administrator, Exploration Systems Development, Human Exploration and Operations Mission Directorate, NASA Headquarters
- John Honeycutt, Space Launch System (SLS) Program Manager, NASA Marshall Space Flight Center
- Mark Kirasich, Orion Program Manager, NASA Johnson Space Center

10:00 am Break – ***Sponsored by Orbital ATK***

- 10:15 am **Space Policy Discussion**
Moderator: Frank Moring, Senior Space Technology Editor (retired),
Aviation Week & Space Technology
Panelists:
- Kate Kronmiller, Vice President, Government Relations, Jacobs
 - Scott Pace, Executive Secretary, National Space Council (invited)
 - James Vedda, Senior Policy Analyst, The Aerospace Corporation
 - Ann Zulkosky, Director of NASA Programs, Lockheed Martin
- 11:45 am **Spotlight - Next Generation Conversations**
Moderator: Erin Koshut, Cummings Research Park Director
- Mark Becnel, President, RadioBro Corporation
 - Lyndsay Ferguson, President and CEO, Leadership Huntsville/Madison County
- 12:30 pm **Luncheon** – Student Services Building – *sponsored by Boeing*
Guest Speaker: William Gerstenmaier, Associate Administrator, Human Exploration and Operations, NASA Headquarters
- 2:00 pm **Commercial Space Flight in Today’s Environment**
Moderator: Eric Stallmer, President, Commercial Spaceflight Federation
Panelists:
- Richard Dalbello, Vice President, Government Operations, Virgin Galactic
 - Sam Gunderson, Manager, Business Development, Blue Origin
 - Travis Langster, Vice President, SSA Programs, AGI
 - Vern Thorp, Director, Commercial Programs, United Launch Alliance
 - Julie Van Kleeck, Vice President, Advanced Space and Launch Programs and Strategy, Aerojet Rocketdyne
- 3:30 pm Break – *Sponsored by Orbital ATK*
- 3:45 pm **Spotlight** – Dennis Andrucyk, Deputy Associate Administrator, Science Mission Directorate, NASA Headquarters
- 4:15 pm **Research on the International Space Station**
Moderator: Bobby Watkins, Director, Human Exploration Development and Operations Office, NASA MSFC
Panelists:
- Marybeth Edeen, ISS Research Integration Office Manager, NASA JSC
 - Robyn Gatens, Deputy Director, ISS, NASA HQ
 - Greg Johnson, President and Executive Director, CASIS
 - Mark Mulqueen, ISS Program Manager, Boeing
- 5:45 pm Adjourn
- 6:15 pm **Reception and Student Poster Displays** – Grand Hall, Huntsville Botanical Garden – *Sponsored by United Launch Alliance*

Thursday, October 26

- 7:00 am Registration Opens / Networking / Continental Breakfast – Charger Union
Sponsored by Teledyne Brown Engineering
- 8:00 am **Day Two Opening Remarks** – *Charger Union Theater*
Jan Davis, Vice President and General Manager, Bastion Technologies, Inc.
- 8:30 am **Next Space Technologies for Exploration Partnerships (NextSTEP)**
Moderator: Jason Crusan, Director, Advanced Exploration Systems Division, Human Exploration and Operations Mission Directorate, NASA HQ
Panelists:
- Jonathan Goff, Senior Ixion Program Engineer, NanoRacks
 - Steve Lindsey, Sierra Nevada Corporation (invited)
 - Mark Ortiz, NextSTEP Program Manager, Boeing
 - William Pratt, Program Manager, Lockheed Martin
 - Bob Richards, Vice President, Strategy and Business Development, Advanced Programs Division, Space Systems Group, Orbital ATK
- 10:00 am Break – *Sponsored by Teledyne Brown Engineering*
- 10:15 am **Team Redstone and Civil / DoD Space**
Moderator: David Burns, Director, Science & Technology Office, NASA MSFC
Panelists:
- Shari Feth, Director, Science and Technology, Missile Defense Agency
 - James Kirsch, Weapons Development and Integration (WDI) Directorate, U.S. Army Aviation & Missile Research, Development and Engineering Center's (AMRDEC)
 - Scott Kordella, Portfolio Director for National Space Program (Intelligence), The MITRE Corporation
 - John London III, Chief Engineer, U.S. Army SMDC Space and Strategic Systems Directorate
 - Jim Reuter, Deputy Associate Administrator, Space Technology Mission Directorate, NASA HQ
- 11:45 am **Spotlight** – Mike Griffin, President, GriffinSpace Consulting LLC
- 12:30 pm **Luncheon** – Student Services Building – *sponsored by Lockheed Martin*
Guest Speaker: Robert Lightfoot, NASA Administrator (Acting)
Announcement of Student Poster Awards
Presentation of Awards
- 2:30 pm Adjourn

29th Annual Wernher von Braun Memorial Dinner

Produced by the National Space Club – Huntsville
Davidson Center at the U.S. Space & Rocket Center

5:30 pm Reception

7:00 pm Dinner – Special Guest Speaker: Gen. John E. Hyten, USAF, Commander,
U.S. Strategic Command (USSTRATCOM)

Note: The dinner is a separate event and is not included as part of the symposium registration. For information on the dinner go to spaceclubhsv.org

Friday, October 27 (Optional)

8:30 am **Tour of the United Launch Alliance Rocket Production/RUAG Space USA Large Composite Manufacturing Facility**

- Bus will depart from (and return to) the UAH Executive Parking Lot.
- Tour is limited to 50 spots; first come, first served.
- Only U.S. Citizens/Persons are permitted on the tour.
- Required for the tour: Valid U.S. government agency picture I.D. such as a driver license, passport, or other government-issued I.D.
- Visitor Rules:
 - This will be a walking tour, so please wear comfortable shoes. Please inform ULA if you are unable to walk the tour and we will make every effort to accommodate you.
 - No open-toed or high-heeled shoes over two inches in production areas. Flat closed toe shoes preferred.
 - No cameras. (If cell phone/PDA has a camera capability, the camera function is not to be used while visiting ULA.)
 - No laptops or voice recorders.
 - No shorts in production areas.
 - Those who RSVP will be required to re-confirm prior to boarding the ULA bus. A tour representative will be located at the front check-in desk of the symposium for participants to confirm their attendance.
 - For further information, please contact Sarah Thomas at 303.391.4858 or sarah.s.thomas@ulalaunch.com.

12:30 pm Tour ends

Thank you to the 2017 Wernher von Braun Symposium Planning Committee

Terry Abel – Lockheed Martin
Mark Becnel – RadioBro Corp
Carla Bossard – Aerojet Rocketdyne
Marcia Cobun – NASA MSFC
Chris Crumbly (Chair) – Teledyne Brown
Engineering
Bob DaLee – Boeing
Alan DeLuna – American Astronautical
Society Ex-Officio
Terry Dillard – Orbital ATK
Kim Doering – Dynetics
Gene Goldman – Leidos
Becky Griffin – Rebecca Griffin Space
Jeff Irons – IronScad Solutions
Alecia Linn Lauer – ULA

Diana King – NASA MSFC
Tom Koshut – UAH
Robert LaBranche
Tracy Lamm – Space Center Houston
Kevin Miller – Consultant
Lisa Monaco – Jacobs
Bruce Morris – RUAG
Kathy Nado – NASA HQ
Charles Scales – Sierra Lobo
Dan Schumacher – Torch Technologies
Sarah Thomas – ULA
Mike Ward – Chamber of Commerce of
Huntsville and Madison County
Jim Way – American Astronautical Society
Pamela Workings – Boeing

Thank you for attending the Wernher von Braun Memorial Symposium.

Please join us at the
56th Robert H. Goddard Memorial Symposium
March 13-15, 2018
Greenbelt Marriott
Greenbelt, Maryland



Founded in 1954, The American Astronautical Society is the premier network of current and future space professionals dedicated to advancing all space activities.

AAS has long been recognized for the excellence of its national meetings, technical meetings, symposia and publications and for their impact on shaping the U.S. space program. Members have opportunities to meet with leaders in their field and in related disciplines, exchange information and ideas, discuss career aspirations and expand their knowledge and expertise.

astronautical.org