

Summer 2023 PRC Mentoring Lunch

July 7, 2023



We are excited to welcome Ambrosia Patterson as our featured speaker. Ambrosia is passionate about coaching individuals through difficult circumstances and building well-functioning organizations. Students, faculty, and staff of the Propulsion Research Center as well as our stakeholders and friends will appreciate hearing about her inspiring professional journey. Remember that our most important PRC community value is to “Keep our relationships more important than tasks or problems.”

Robert A. Anderson

*Director, UAH Propulsion Research Center
Professor of Mechanical and Aerospace Engineering
Huntsville AL, April 27, 2023*

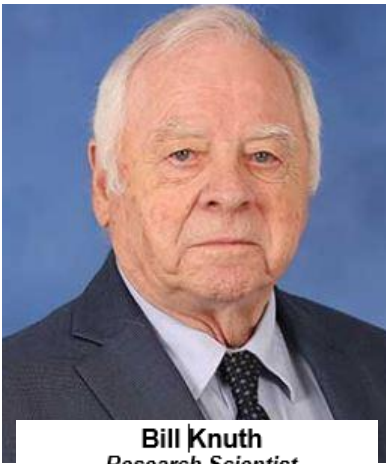


Ambrosia Patterson
*Change and Transition Program Manager
FBI Huntsville*

Ambrosia Patterson is the FBI's Huntsville Change and Transition Program Manager. In this capacity, she is responsible for helping the FBI successfully execute the relocation of critical functions out of the National Capital Region, helping to facilitate their reconstitution at Redstone Arsenal. A career FBI budget professional, Ambrosia recently pivoted from being the executive in charge of budgeting for and reporting on the FBI's over \$10 billion resource footprint, *taking her dream job focusing on the FBI's change and transition journey at Redstone Arsenal.*

She enjoys spending time with her husband Justin (also an FBI employee), son Pax (9), and daughter Esthero (5). She also loves to write.

She holds a Master of Accountancy degree from The George Washington University and a Bachelor of Science in business management, concentration in labor relations and human resources with a special focus on organizational behavior, from Case Western Reserve University.



Bill Knuth
Research Scientist
UAH Propulsion Research Center

AIAA HOLGER TOFTOY AWARD.

On behalf of the American Institute of Aeronautics and Astronautics, the Propulsion Research Center recognizes William (Bill) H. Knuth with the AIAA HOLGER TOFTOY AWARD. This award is presented for 65 years of management and leadership of groundbreaking propulsion systems for Saturn-V, SSME, ORBITEC, SNC, and KEI including cyclonically-driven liquid and hybrid vortex engines. This award is presented to an AIAA Section member in recognition of outstanding technical management in the fields of aeronautics and astronautics. In a span of 65+ years, Bill worked for 14 Aerospace/Marine/ Nuclear Engineering Companies, plus founded 5 Companies of his own. He made notable contributions to state-of-the-art in

Rocket Turbomachinery, Propellant Feed Systems, Combustion Devices, Rocket Engine Cycles, Nuclear Thermal Propulsion, Hybrid Rocket Engines, Marine Systems, and Rocket Test operations. He was recently awarded the “Professional of The Year” award by the Huntsville, AL Section of AIAA. and is the author of several patents.

In the Rocket field, he worked on Redstone, Jupiter, Thor, Atlas, Apollo (F-1, J-2), Titan-II, -III and -IV, Agena, RL-10, KIWI-B, KIWI-C, NERVA, SSME, Shuttle Solid Booster, and SEALAR. Rocket-focused contributions include The Full-Flow Staged Combustion engine cycle. He was Chief Engineer at Orbital Technologies Corporation (ORBITEC) in Madison WI for 15 years. He originated the coaxial, co-swirling, counter-flowing, combustive vortex flow field. The Vortex Combustion Cold Wall (VCCW) combustion chamber. The Vortex-Fired Hybrid Rocket. The Frozen Cryogen Hybrid Rocket. The Universal Space Launch Vehicle (USLV) family, and The Autonomous Tank Pressurant Generator (ATPG).

In the Marine Engineering field: As CEO at Truax Engineering, he directed Programs developing Sea Launched and Recovered Rockets (SEALAR). At Aerojet-Sacramento he originated the LACV-150 design, a 150-ton Air Cushion Amphibious Assault Landing Craft (AALC), eventually successfully tested in sea trials by the US Navy as the JEFF-A. He was Program Manager for the Waterjet Main Propulsion Systems for the Boeing PHM Hydrofoil family, as well as for the Rohr 2K Surface Effect Ship.

In the Nuclear Field: as Division Manager of the EG&G LMFBR Safety Test Division at Idaho National Laboratory (INL) he directed the 160-employee staff for the unique and successful Fuel Element Failure Propagation Testing, a simulated Loss of Coolant Accident (LOCA) in a liquid metal- cooled Fast Breeder Reactor fuel pin bundle. He was also assigned for a time to DOE, where he initiated and implemented the Low Head Hydroelectric Program in the USA.

Among his own companies: He established an Engineering Consulting Company, serving six aerospace clients. He founded an ACV Company that carried out seismic exploration and transportation operations for oil Companies on the Alaska North Slope using British Air Cushion Vehicles to cross the tundra. He opened an automotive powertrain fabrication company in California. He owned and skippered a commercial fishing boat carrying out salmon fishing off the Pacific Northwest coast. He and his wife opened and operated a Farmers Market Store in Hampton Cove, Alabama for two years. He also served for four years as the President of the Wisconsin Section of the AIAA.

UAH Wins the 2023 NASA Artemis Student Launch Challenge

<https://256today.com/uah-overall-winner-of-nasa-student-launch-challenge/>

The University of Alabama in Huntsville has claimed the **top prize for two NASA Artemis Student Challenges**. The 2023 Human Exploration Rover Challenge and the **2023 Student Launch Challenge**, led by the Marshall Space Flight Center, mark a historic achievement, as no other university has ever won two NASA Marshall-led Artemis Challenges in the same year.

The UAH Charger Rocket Works team competed against 51 university-level teams from 20 states and Puerto Rico to win the Student Launch challenge. The Student Launch event is a NASA-conducted engineering design challenge that involves the design, documentation, fabrication and testing of a rocket and payload in support of a particular NASA mission. In addition to the overall victory, the UAH Student Launch team placed first in the American Institute of Aeronautics and Astronautics Reusable Launch Vehicle Innovative Payload Award; took second place in the Safety Award; and placed third three times: in the Altitude Award; The American Institute of Aeronautics and Astronautics Reusable Launch Vehicle Award; and the STEM Engagement Award.



UAH Student Launch Initiative Team 2023. Andrew W Adams, Quinn R. Booker, Matthew L. Byers, Tristan H. Carter, Spencer Christian, TC Craig, Manav C Dave, Garrett M Ellis, Krista L. Fenton, Bryson Frank, Peyton L. Hall, Chase Herrin, Benjamin A. Lambert, Caleb R. Lohr, Matthew A. Maybee, Jayashree Paudel, Lambert J. Petrof, Christopher J. Puchner, Nathan A. Schmitz, Michael D. Sorrell, Michaela L. Tarpley, Victoria R. Tarpley, Caroline V. Ursprung, and Ethan Walker-Jones. **Instructor: Dr. David Lineberry.** NAR/TRA Mentor: Jason Winningham. Alumni/Mentor: Dr. Amit Patel. Supported by Women in Defense - Tennessee Valley Chapter, Jacobs Space Exploration Group, National Space Club, Alabama Space Grant Consortium, Mission Driven Research, UAH COE, and The UAH Propulsion Research Center.

Two PRC Ph.D. Students Named “Women in Defense Scholars”

Women in Defense recognized **Paige Berg** and **Michaela Hemming** in their National WID Scholars Program. Paige and Michaela were among nine women selected from across the nation to receive this honor which included a \$10,000 award and a two-day Celebration Event in Washington D.C. featuring Scholar Presentations and Professional Development Workshops.



Paige Berg, UAH PRC Ph.D. Student, and Michaela Hemming, UAH PRC Ph.D. Student

Through the WID scholars program, Women in Defense encourages women to pursue careers supporting U.S. National Security with a focus on defense or foreign policy. Awards are based on academic achievement, participation in defense and national security activities, field of study, work experience, statements of interest, recommendations, and financial need.

Spring 2023 Recognition of Graduates Luncheon

