NASA'S HUMAN LANDER CHALLENGE

2026 FORUM

JUNE 23–25, 2026 | HUNTSVILLE, ALABAMA

HuLC
HUMAN LANDER CHALLENGE

NASA'S 2026 HULC FORUM

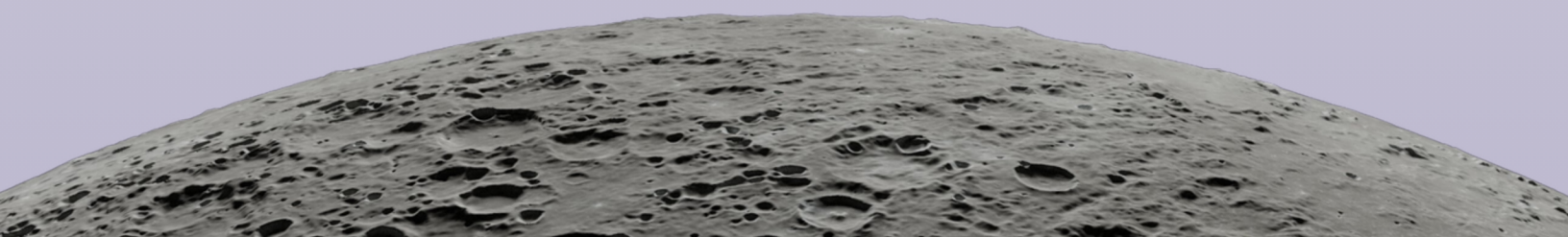
WELCOME MESSAGE

It's our great pleasure, on behalf of NASA's Human Landing Systems Program Office, to welcome you to Huntsville, Alabama for the third annual HuLC Forum. This event marks an exciting moment where bright minds from across the country come together to explore, collaborate, and shape the future of space exploration. This year, we're turning our focus to an ambitious and critical challenge: Long Duration Spaceflight Environmental Control and Life Support System (ECLSS).

Your participation in HuLC reflects not only your technical skills but also your dedication, imagination, and passion for pushing the boundaries of what's possible. We are truly inspired by the energy and talent each of you brings to this Forum. Over the next few days, you'll engage with some of the most experienced minds in aerospace – NASA engineers, industry leaders, and fellow innovators – all eager to hear your ideas and support your growth. Whether you're presenting your concept, participating in the poster session, or simply connecting with others, this is your chance to make meaningful contributions and lasting connections.

More than a competition, HuLC is a celebration of bold thinking and collaboration. It's an opportunity to grow, to challenge yourself, and to have fun along the way. So, take it all in – the presentations, the networking, the learning, and the camaraderie too.

Thank you for being part of this inspiring community and for helping us take the next giant leap. We're excited to see where your ideas will lead – not just during this event, but in the years to come.



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2026 FORUM GUIDELINES

Participation: Please review the Forum Agenda and be on time for all sessions. Participation in all HuLC Competition Forum events is mandatory and part of your evaluation.

Personal Responsibility: You are responsible for your actions, and accountable to your school policies. During your free time, please be respectful of the hotel property and guests (i.e., no loud parties in your rooms). Any complaints may result in disqualification of the team and immediate dismissal from the competition. While there is plenty of opportunity to have fun at the Forum, we just need to be mindful of NIA and NASA's reputation.

Group Photo: We will be taking a group photo during the Awards Ceremony Luncheon.

Emergencies: For medical emergencies, call 911.

- Nearest Hospital: Huntsville Hospital at 101 Sivley Road SW, Huntsville, AL 35801
- Nearest Urgent Care: Huntsville Hospital Urgent Care - Huntsville at 900 Bob Wallace Avenue SW, Unit #104, Huntsville, AL 35801

NIA HULC PROGRAM TEAM

If you need assistance during the Forum, please contact a member of the Program Team:

SHELLEY SPEARS
240-472-4788

STACY DEES
757-218-8313

VICTORIA "TORI" O'LEARY
757-325-6926

GENEVIEVE "GEN" EBARLE
805-225-7185

2026 FORUM AGENDA

Presentations will take place in Salon ABC.
All times are listed in Central Time (CT).

MONDAY, JUNE 22

4:30 - 6:30 PM — **Team Check-In, Poster Set-Up, and Networking Event**
Grand Ballroom Pre-Function

5:45 - 6:30 PM — **Networking Event**

TUESDAY, JUNE 23

7:45 - 8:55 AM — **Breakfast**
Salon DEF

7:45 - 8:55 AM — **Late Team Check-In & Poster Set-Up**
Grand Ballroom Pre-Function

8:00 - 8:45 AM — **Judges' Meeting**
Satellite

9:00 - 9:15 AM — **Welcome Remarks**

9:15 - 9:45 AM — **NASA Keynote Speaker**

9:50 - 10:35 AM — **Embry-Riddle Aeronautical University, Daytona Beach**
Advanced Quality Orbital Rehydration Assembly (AQUORA)
Advisor: Dr. Erik Seedhouse

10:35 - 10:50 AM — **Morning Break**
Salon DEF

10:50 - 11:35 AM — **Purdue University**
Microgravity Blood Infusion Pump
Advisor: Curtis Marshall

11:40 AM - 12:25 PM — **New Mexico Institute of Mining and Technology**
Sensor Package for Internal Detection in Extraterrestrial Regions (SPIDER)
Advisor: Dr. Mostafa Hassanalian

12:25 - 1:30 PM — **Lunch**
Salon DEF

1:30 - 2:15 PM — **Embry-Riddle Aeronautical University, Prescott**
AETHER: Atmospheric Electrochemical Transformation for Habitat and Environmental Regeneration
Advisors: Dr. Siwei Fan, Dr. Ron Madler

2:20 - 3:05 PM — **The University of Texas Rio Grande Valley**
STREAM: Space Temperature Regulated Efficient Aqua Module
Advisors: Jose Jesus Sanchez, Marcos Villareal, Dr. Noe Vargas, Gregory Potter

3:05 - 3:20 PM — **Afternoon Break**
Salon DEF

3:20 - 4:05 PM — **Texas Tech University**
Acoustic Metamaterial Composite Panel (AMP) for Spacecraft Noise Suppression
Advisor: Dr. Jingfei Liu

4:05 - 4:10 PM — **Wrap-Up & Announcements**

4:10 PM — **Adjourn & Free Evening**

WEDNESDAY, JUNE 24

7:30 - 8:25 AM — **Breakfast**
Salon DEF

8:30 - 8:35 AM — **Welcome & Announcements**

8:35 - 9:20 AM — **Purdue University**
Enhanced Potable Water Dispenser (EPWD)
Advisor: Dr. Thomas Cunningham

9:25 - 10:10 AM — **University of California, Davis**
Evaporator-Based Potable Water Dispenser for Long-Duration Environmental Control and Life Support Systems
Advisors: Dr. Stephen Robinson, Janine Moses (Intuitive Machines)

10:10 - 10:25 AM — **Morning Break**
Salon DEF

10:25 - 11:10 AM — **California Polytechnic State University, San Luis Obispo**
MASS: Modular Acoustic Suppression System
Advisor: Dr. John Chen

11:15 AM - 12:00 PM — **California Polytechnic State University, San Luis Obispo**
CQC: Cryogenic Quick Connection
Advisor: Dr. John Chen

12:00 - 1:10 PM — **Lunch**
Salon DEF

1:10 - 1:55 PM — **California Polytechnic State University, San Luis Obispo**
PHAT: Peltier-based Hydration Accumulation Terminal
Advisor: Dr. John Chen

1:55 - 2:00 PM — **Wrap-Up & Announcements**

2:00 - 4:45 PM — **Poster Session for All Teams**
Grand Ballroom Pre-Function

4:45 PM — **Adjourn & Free Evening**

8:00 PM — **Judges' Final Scores Due**

THURSDAY, JUNE 25

7:30 - 8:30 AM — **Breakfast**
Salon DEF

8:00 - 11:00 AM — **Judges' Deliberation Meeting**
Satellite

8:30 AM — **Board Buses for NASA MSFC Tour**

8:45 AM — **Buses Depart for NASA MSFC Tour**

9:00 AM - 12:00 PM — **NASA MSFC Tour**

1:00 - 2:45 PM — **Awards Ceremony Luncheon**
Salon ABC

2:45 PM — **Adjourn**

2026 JUDGING PANEL

CO-CHAIR

ARTHUR BROWN

is the ECLSS Architecture and Strategy Lead at NASA's Marshall Space Flight Center. In this role, he leads the development of exploration-ready ECLSS strategy at MSFC, with a focus on system architecture, subject-matter expert development, new project formulation, and strategic partnerships.

CO-CHAIR

ZACH BRYANT

is one of the Environmental Control and Life Support System (ECLSS) Assistant Chief Engineers at NASA's Marshall Space Flight Center (MSFC) in Huntsville, AL, where he helps lead the development and integration of life support systems for future human exploration missions. He began his NASA career at Johnson Space Center (JSC) in Houston, spending five years in the International Space Station (ISS) Mission Evaluation Room (MER) supporting ISS ECLSS. There, he focused on hardware sustaining and future system upgrades while providing real-time engineering support to the ISS Flight Control team.

In 2019, Zach moved to MSFC and worked in ISS Payload Operations as a PAYCOM crew communicator, acting as the link between ground teams and ISS crew members to ensure successful execution of science and technology payloads. In 2022, he transitioned to the MSFC Habitation Systems Development Office as ECLSS integration lead for future habitat development, working across disciplines to mature requirements, understand interdependencies, and advance integrated architectures for long-duration missions to the Moon and Mars. In 2025, Zach joined MSFC's Chief Engineers Office contributing to ECLSS hardware development and working with the ECLSS Integrated Product Team (IPT) on strategies for future exploration life support systems.

STEVE BALISTRERI

is an expert in the field of Environmental Controls & Life Support Systems (ECLSS). He serves as the ECLSS Architect and Technical Lead Engineer for the Boeing Space Exploration Team in Houston, TX. He has over 25 years of hands-on experience supporting in-space vehicles, including 20 years designing, building, and supporting the International Space Station (ISS). Steve leads the ECLSS hardware anomaly resolution board for the ISS Program as well as being a Hardware Material Review Board member.

Steve's current efforts include leading R&D efforts on advanced life support systems and developing architectures for future habitats. Steve was born and raised in Wisconsin, and earned his Bachelor's in Aerospace Engineering & Mechanics from the University of Minnesota.

2026 JUDGING PANEL

CHRIS BROWN

works within the ISS Exploration Development Office to assist in advancing Environmental Control and Life Support Systems (ECLSS) for exploration and demonstrating these improvements on ISS. Chris was formerly an Environmental and Thermal Operation Systems (ETHOS) officer within the Flight Operations Directorate, markedly supporting ECLSS water systems such as Water Processor Assembly, Water Storage System, Urine Transfer System development, and solving problems associated with on-board fluid systems integration.

Chris supported ISS construction and operation from ISS Increment 7 to present and was key in the commissioning of the ISS Regen ECLSS systems and proposing the need for the Water Storage System (WSS). Chris has also been an EECOM key point-of-contact for the Commercial Crew, Gateway, and Human Lander System (HLS) Programs. Chris developed and authored the majority of ISS fluid transfer techniques and procedures.

DR. LEON CHEN

is a systems engineer, NASA-certified console operator, and internationally recognized leader in Environmental Control and Life Support Systems (ECLSS) for human spaceflight. He currently serves as the NASA ISS and Commercial Low Earth Orbit Development Program (CLDP) ECLSS Subsystem Manager, where he is responsible for sustaining life-support capability aboard the International Space Station (ISS) while leading the transition to next-generation commercial space stations.

Leon leads multi-disciplinary engineering teams that oversee the design, development, testing, certification, and delivery of critical ECLSS subsystems, with a particular focus on water processing and oxygen recovery. He directs technical integration, verification, and validation across NASA, commercial partners, and international contributors, evaluating flight-readiness evidence to ensure every system meets stringent human-rating requirements. He also actively manages cost, schedule, and technical risk across ISS and CLDP programs, ensuring long-term sustainability without compromising crew safety or operational reliability.

A core element of Leon's portfolio is advancing exploration-class life-support technologies, including exploration water dispenser, Sabatier reactors, and associated CO_2 Management Systems, which enable high loop-closure. He leads system-level integration of these technologies to support future space architectures. Leon also serves as Section Chair for ICES Session 301 (Advanced Life Support Systems Control) and Session 506 (Human Exploration Beyond Low Earth Orbit), shaping the global ECLSS technical agenda and fostering collaboration across NASA, industry, and academia. Recognized through multiple NASA awards and national honors, Leon is also deeply committed to STEM outreach and mentorship, inspiring the next generation of engineers who will carry human exploration beyond Earth.

2026 JUDGING PANEL

BETTYLYNN MASON

has proven her passion for advancing human spaceflight through her nearly 18 years as an ECLS (Environmental Control and Life) Engineer. After graduating from Washington University in St. Louis with her BSME (Bachelor of Science in Mechanical Engineering), BettyLynn worked at Johnson Space Center as a contractor in various roles including ETHOS (Environmental and THermal Operating Systems) Flight Control Instructor, ISS (International Space Station) ECLS (Environmental Control and Life Support) Sustaining Engineer, and ISS ECLS Sustaining Air Revitalization Subsystem Manager.

BettyLynn transitioned to Northrop Grumman (NG) as the Commercial Low Earth Orbit (LEO) Destination (CLD) ECLS Engineering Lead where she led the effort to design the ECLS architecture for the NG space station and where she matured designs of various regenerative systems including a trace contaminant removal system, carbon dioxide removal system, etc. While working at NG, BettyLynn began pursuing her MSEM (Master of Science in Engineering Management) at Arkansas State University. In 2024, BettyLynn accepted a civil servant position at Marshall Space Flight Center (MSFC) in the ECLS Design and Development branch where she began working with Four Bed CO2 Scrubber sustaining engineering personnel as a SME (Subject Matter Expert). BettyLynn completed her MSEM in 2025 and transitioned to the HLS CrewCo (Human Landing System Crew Compartment) Office where she currently provides her unique insights as the Deputy Technical Integration Manager – SpaceX.

KAITLYN OLIVER-BUTLER

is an ECLSS technology development engineer working for the Environmental Control and Life Support Systems Development Branch at Marshall Space Flight Center. She specializes in air revitalization, making sure that astronauts have a breathable and safe cabin atmosphere. She currently works sustaining engineering for the ISS Oxygen Generation Assembly (OGA), which involves analyzing flight data, working with the OGA team to track status and issues, and running the ground testbed OGA to provide additional data to support the ISS.

She also leads development projects aiming to recover oxygen from metabolic carbon dioxide, with a focus on Bosch technologies. She has worked on projects across the full span of technology maturity, from sustaining engineering and flight hardware testing all the way down to creating project proposals for next-generation ECLSS technologies

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NATIONAL INSTITUTE OF AEROSPACE

NASA's Human Lander Challenge (HuLC) is administered by the National Institute of Aerospace on behalf of the National Aeronautics and Space Administration (NASA). HuLC is sponsored by the Exploration Systems Development Mission Directorate's (ESDMD's) Human Landing System (HLS) Program Office.