

PROGRAM GUIDE

**LIVE IN LAS VEGAS**  
24-26 OCTOBER 2022

# ASCEND™

CORNERSTONE INDUSTRY PARTNER

**LOCKHEED MARTIN**

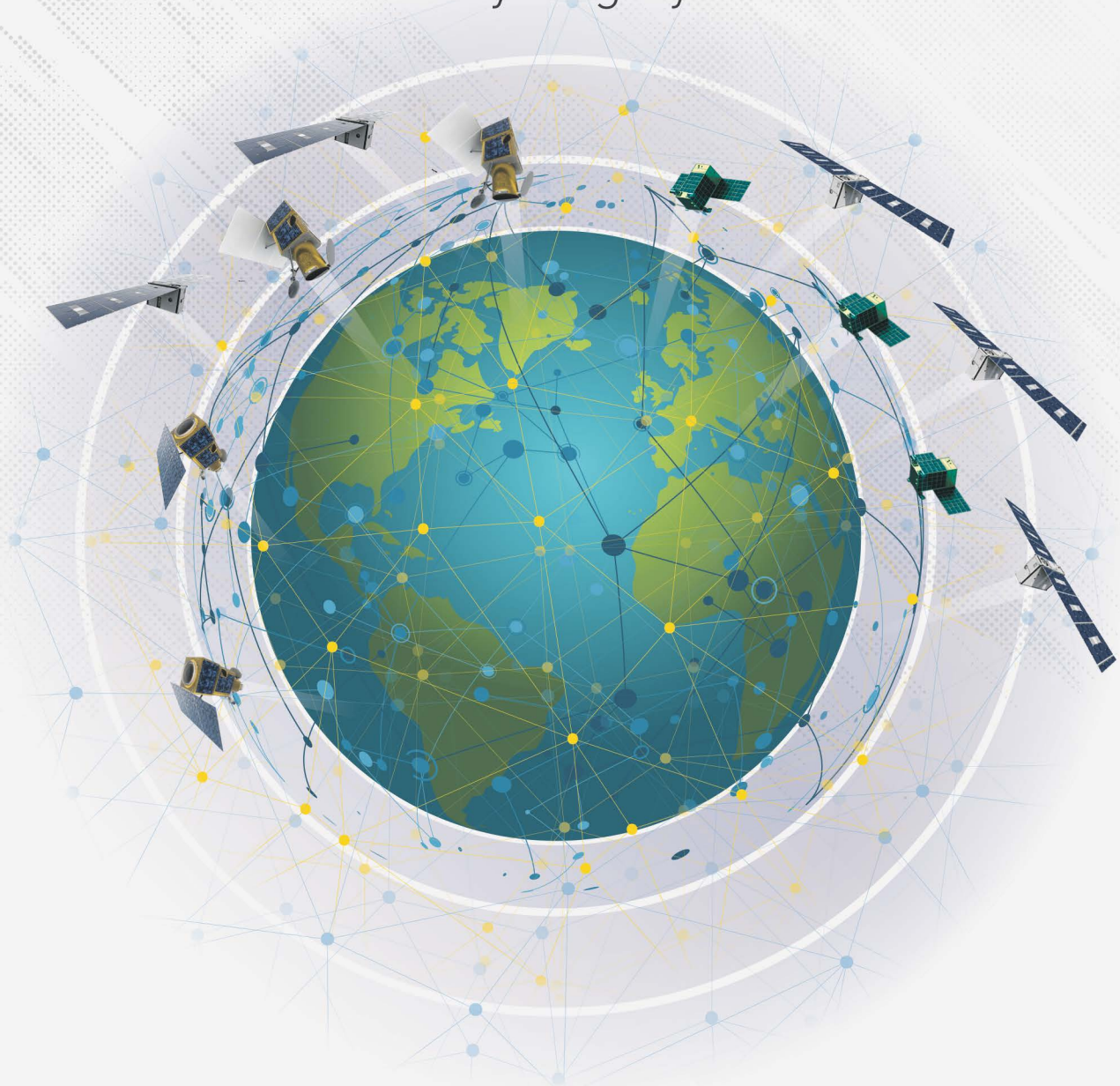


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We're building a mesh network, allowing warfighters across all domains to have valuable data from space assets at any orbit — at the speed of battle.

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## CONNECT TO THE WI-FI

**Network:** ASCEND2022  
**Password:** GO4TLI

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## Welcome

We are delighted you are joining us for this 3rd annual apex ASCEND event. This is your time to connect with the interdisciplinary community of professionals and students who come from the civil, commercial, and national security space sectors, thought leaders from academia, along with leaders from adjacent industries, and space enthusiasts from around the world.

ASCEND's unique program promotes outcomes-focused collaboration. As you experience the program, the theme of collaboration will be evident. You will see collaboration between various government sectors, between companies, and among diverse organizations and demographics. To achieve our off-world future, this is foundational. We highly encourage you to actively engage with the speakers and your fellow attendees to further fuel this collaboration. Your participation will enrich your experience and contribute greatly to the discussions and insights that will be shared. We are confident that the more you put into the experience, the more you will get out of it. And the more those around you will get out of it too!

We'd like to extend a special greeting and sincere thanks to our exhibitors, sponsors, supporting partners, esteemed speakers, Guiding Coalition members, and collaborative and technical program chairs. Without these industry leaders, this event would not be possible.

And most importantly, we thank YOU for your attendance. We sincerely hope your experience at 2022 ASCEND will be insightful and rewarding.

We welcome your thoughts, feedback, and any recommendations as we work together to accelerate our off-world future—faster!

### JULIE VAN KLEECK

ASCEND Executive Producer  
AIAA Space Domain Lead

### HELEN S. KANG

ASCEND Program Executive



# Building an Off-World Future Together

Thank you to the key volunteers and partners who have made ASCEND possible.

## 2022 ASCEND GUIDING COALITION

**LT. GEN. NINA M. ARMAGNO**, U.S. Space Force  
**SIRISHA BANDLA**, Virgin Galactic  
**BILL BECKMAN**, The Boeing Company  
**TEJPAUL BHATIA**, Axiom Space  
**ROBERT D. BRAUN**, Johns Hopkins University Applied Physics Laboratory  
**TORY BRUNO**, United Launch Alliance  
**JOHNATHON CALDWELL**, Lockheed Martin  
**AHSAN CHOUDHURI**, University of Texas at El Paso  
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**LAURA CRABTREE**, Epsilon3  
**KARA CUNZEMAN**, The Aerospace Corporation  
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**DAN DUMBACHER**, AIAA  
**ARIEL EKBLAW**, MIT Media Lab  
**DEBRA FACKTOR**, Airbus U.S. Space & Defense, Inc.  
**JAMES FREE**, NASA  
**ALEC GALLIMORE**, University of Michigan  
**MICHAEL GAZARIK**, Ball Aerospace  
**BILL GERSTENMAIER**, SpaceX  
**PHIL INGLE**, Morgan Stanley  
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**SANDRA MAGNUS**, AstroPlanetview  
**JIM MASER**, Aerojet Rocketdyne  
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**WANDA SIGUR**, Lambent Engineering LLC  
**LAUREN SMITH**, Northrop Grumman  
**ELLEN STOFAN**, Smithsonian Institution  
**MELANIE STRICKLAN**, Slingshot Aerospace  
**RUSSELL TEEHAN**, Amazon  
**DEREK TOURNEAR**, Space Development Agency

**JULIE VAN KLEECK**, AIAA

**VANESSA WYCHE**, NASA Johnson Space Center

**THOMAS ZURBUCHEN**, NASA

## PROGRAM CHAIRS

### COLLABORATIVE PROGRAM COMMITTEE

**LAWRENCE (ROBBIE) ROBERTSON**, Air Force Research Laboratory (Chair)

**KARL GARMAN**, Office of Commercial Space Transportation, FAA (Deputy)

**JOHN REED**, United Launch Alliance (Deputy)

### TECHNICAL PROGRAM COMMITTEE

**VINCE SCHULTZ**, NASA (Chair)

**JOHN CARSTEN**, AIAA Space System Technical Committee (Deputy)

**KEN DAVIDIAN**, Office of Commercial Space Transportation, FAA (Deputy)

**DEREK DOYLE**, Air Force Research Laboratory (Deputy)

**DANIEL (DANI) SELVA**, Texas A&M University (Deputy)

**LAURENT SIBILLE**, Southeastern Universities Research Association / KSC Swamp Works (Deputy)

**ED STANTON**, AIAA Aerospace Traffic Management Integration and Outreach Committee (Deputy)

## ASCEND HOSTS

Ascending young professionals who will host various sessions throughout the ASCEND program.

**TONY CASTILLEJA**, The Boeing Company

**CONNER GREY**, Slingshot Aerospace

**BRISTOL GUNDERSON**, Astranis Space Technologies Corporation

**MEGAN JORDAN**, University of Alabama in Huntsville (UAH)

**MICHAEL KARRIC**, Slingshot Aerospace

**ALICIA MACDONALD**, Lockheed Martin

**BERNADETTE MAISEL**, Space Foundation

**CHRIS NIE**, Sierra Space

**ROWAN PALMER**, Lockheed Martin

**AMBER ROSE PORTEOUS**, University of Alabama in Huntsville (UAH)

**KATHRYN ROBISON HASANI**, Flinders University

**KATLYNN VICUNA**, Hawaii Space Flight Laboratory

# Partner and Sponsors

## CORNERSTONE INDUSTRY PARTNER



## TOP SPONSORS



## SPONSORS



## ON-RAMP PARTNERS



# Agenda Overview



The schedule is set  
in Pacific Time USA.

MONDAY  
24 OCT

TUESDAY  
25 OCT

WEDNESDAY  
26 OCT

0800 hrs

Macro

Macro

0900 hrs

Macro

1000 hrs

Meta

Meta

Meta

1100 hrs

Meta

Meta

Meta

1200 hrs

Lunch/Special  
Programming

Lunch/Special  
Programming

1300 hrs

Lunch/Special  
Programming

1400 hrs

Tech

Micro

Micro

Tech

Special Program-  
ing

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1500 hrs

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1600 hrs

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1700 hrs

Tech

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1800 hrs

Closing Ceremony

1900 hrs

Evening Activities  
(Live in Las Vegas)

Evening Activities  
(Live in Las Vegas)

**ASCEND's program allows you to experience the content in five formats.  
Make the most of your time at ASCEND by understanding what each format offers.**



## **MACRO KEYNOTE SESSIONS**

Macro Keynote Sessions include some of the world's most inspired thinkers and speakers, providing broad and bold perspectives on a wide range of topics around building our off-world future. These are visionary conversations from the brightest minds across our growing global community.



View all Macro Sessions by scanning this QR code.



## **META FEATURED SESSIONS**

Meta Featured Sessions offer mind-expanding knowledge from industry leaders and doers. These strategic sessions focus on spurring large-scale discussions of the trends, economic forces, technical challenges, and policymaking hurdles facing every member of the space ecosystem. With an outcomes-focused approach, our META Featured Sessions encourage developing deep insights, solutions, and/or recommendations to identified challenges in these sessions.



View all Meta Sessions by scanning this QR code.



## **MICRO SESSIONS**

Micro Sessions include presentations, discussions, and interactive roundtables/workshops featuring different perspectives and opinions across one of our 16 targeted session topics. Whether that topic is Space Traffic Management, Space Exploration, or Space Access and Propulsion, Micro Sessions provide tactical knowledge, practical examples, proven best practices, and interactive and lively conversations.



View all Micro Sessions by scanning this QR code.



## **TECHNICAL SESSIONS**

Technical Sessions explore the wide array of research and developments focused on interdisciplinary approaches to the art and science of space technology, exploration, economics, and more via one of our six paper topic themes. Sessions provide technical perspectives from multiple disciplines focused on mission impacts, potential challenges, and possible outcomes.



View all Technical Sessions by scanning this QR code.



## **SPECIAL PROGRAMMING & NETWORKING SESSIONS**

Special Programming and Networking Sessions include the von Kármán Lecture in Astronautics, William H. Pickering Lecture, Cyber Star Wargame, daily opening and closing sessions, networking coffee breaks, and receptions.



View all Special Programming & Networking Sessions by scanning this QR code.



# Monday, 24 October Program

HRS	TYPE	SESSION	ROOM
0800–0815	W1	Welcome	Summit Ballroom
0815–0930	MACRO-01	Advancements and Partnerships for the Future	Summit Ballroom
0945–1045	META-01	Accelerating Sustainable Deep Space Exploration	Summit Ballroom
	META-02	New Drivers in Space Economy	Forum 134
	META-03	Pushing Innovation and Communication Through Space-Based R&D	Forum 135
	META-04	Asteroids: Time Capsules and Threats	Summit 204
1115–1215	META-05	Nuclear Energy and Its Future Role in Space	Forum 134
	META-06	Public-Private Partnerships: An Ongoing Evolution	Forum 135
	META-07	Satellite Orbital Safety Best Practices	Summit 204
	META-08	The U.S. Government's Use of Commercial Space Capabilities in a Crisis or Conflict	Summit Ballroom
1245–1330	SPEC-01	Overview of NASA's Strategic Technology Framework	Summit Ballroom
1400–1445	MICRO-01	The Georgia Tech Cislunar Architecture Study — Defining Stakeholders and Scenarios	Forum 134
	MICRO-02	Public Safety Perspectives on the Nuclear Space Lifecycle	Forum 135
	MICRO-03	Space Agencies Monitoring Earth's Climate for Today and Tomorrow	Summit Ballroom
	MICRO-04	Defending Earth! What Can We Do to Stop an Asteroid Threat?	Summit 204
1400–1530	MICRO-05	NASA STMD Workshop I	Forum 109
1500–1545	MICRO-06	Equitable STEM Using Phenomena-Based Classroom Experiences	Summit 204
	MICRO-07	National Security Space (NSS) — Outpacing the Threat: Evolution and Adaptability are Key	Summit Ballroom
	MICRO-08	How Space Observations Contribute to Solving Society's Grand Challenges	Forum 134
1500–1545	MICRO-09	Best Practices to Stimulate Innovation in a Hybrid Working Environment	Forum 135
1545–1715	MICRO-10	NASA STMD Workshop II	Forum 109
1600–1645	MICRO-11	AIAA Cislunar Depot Report-Out	Forum 135
	MICRO-12	Accelerating Space Nuclear Fission Initiatives	Forum 134
	MICRO-13	Progress on Commercial Lunar Payload Services	Summit Ballroom
	MICRO-14	Accelerating Intelligence of Autonomous Robotic Spacecraft	Summit 204
	MICRO-19	Sustaining the James Webb Space Telescope Revolution	Forum 103
1700–1745	MICRO-15	Designing the Space Rescue Service	Summit Ballroom
	MICRO-16	Pathways to Nuclear Propulsion	Forum 103
	MICRO-17	Accelerating Sustainable Deep Space Exploration — Roundtable Discussions	Summit 204
	MICRO-18	Commercial Space Capabilities in Peacetime, Gray-Zone, and Wartime	Forum 134
1700–1745	MICRO-20	Semper Citius — Deliver Satellites "Always Faster"	Forum 135
1745–2000	NW-02	Opening Reception — Oktoberfest	Forum Ballroom
1830–1930	SPEC-02	von Kármán Lecture in Astronautics — An Orbital Transportation Network to Support the Cislunar Space Enterprise	Summit Ballroom



# Monday, 24 October **Technical Sessions**

HRS	TYPE	SESSION	ROOM
1400–1520	TECH.COM-01	Infrastructure and LEO Topics I	Forum 130
	TECH.COM-02	Lessons of Innovation Adoption	Forum 103
	TECH.EXPL-01	Journey to the Moon	Forum 105
	TECH.EXPL-02	Launch Systems	Forum 120
	TECH.EXPL-03	Lunar Surface Operations I: Ice Mining on Planetary Surfaces	Forum 116
	TECH.EXPL-04	Human Life Support in Space	Forum 123
	TECH.SEC-01	Cybersecurity Frameworks and Architectures for Operational Systems I	Virtual
	TECH.STM-01	Space Traffic Management — Space Debris/Growth	Forum 113
1530–1650	TECH.EXPL-05	Challenges in Human Mars Missions	Forum 120
	TECH.EXPL-06	Lunar Surface Operations II: Working with Machines	Forum 116
	TECH.EXPL-07	Space Propulsion Technologies	Forum 105
	TECH.EXPL-08	Challenges in Cislunar Space	Virtual
	TECH.STM-02	Space Traffic Management — Remote Sensing/Smallsats	Forum 113
1700–1820	TECH.COM-03	Transport and Logistics	Forum 130
	TECH.EXPL-09	Human-Machine Teaming for Space Exploration	Forum 123
	TECH.EXPL-10	2021-2022 AIAA Undergraduate Space Design Competition: Martian Moons Exploration Excursion Vehicle	Forum 120
	TECH.EXPL-11	Lunar Surface Operations III: Living on the Moon	Forum 116
	TECH.SEC-02	Identification and Management of Orbital Debris in Low Earth Orbit (LEO) or Low Lunar Orbit (LLO)	Forum 113

## ■ ■ ■ TECHNICAL SESSIONS



View all Monday Technical Sessions and associated papers by scanning this QR code.

# Tuesday, 25 October Program

HRS	TYPE	SESSION	ROOM
0800–0815	W2	Welcome and 2022 AIAA Space Systems Award	Summit Ballroom
0815–0915	MACRO-02	Accelerating Space Exploration Through Global Cooperation	Summit Ballroom
0945–1115	META-09	Space Traffic Management from the Diverse Dozen	Summit Ballroom
0945–1045	META-10	Exploring Universe Today and Tomorrow	Summit 204
	META-11	Near-Earth (GEO and Below) Commercialization	Forum 134
	META-12	Advancing National Security Norms in Space	Forum 135
1130–1215	META-13	An Off-World Life Designed for Everyone	Summit Ballroom
1115–1215	META-14	Aerospace Workforce of the Future	Forum 134
	META-15	Growth of Commercial LEO Markets	Forum 135
	META-16	A New Era in International and National Security	Summit 204
1230–1330	SPEC-03	Financing the Future of Space	Summit Ballroom
1400–1445	MICRO-21	Finding Balance Between Chemical and Nuclear Propulsion Options for Deep Space	Summit 204
	MICRO-22	Keeping Cislunar Space Beautiful: How We Can Address Debris Policy Gaps Before It's Too Late	Forum 134
	MICRO-23	What Happens in Space Doesn't Have to Stay in Space	Summit Ballroom
	MICRO-24	NASA Design Lab: Exploring Solutions to Expand Entrepreneurship and Space-Based Innovation	Forum 135
1400–1630	SPEC-04	New Generations in Space Leading the Global Fight Against Climate Change	Forum 109
1500–1545	MICRO-25	Landing on the Moon and What We'll Do When We Get There – NASA's Artemis Human Landing System Program and Lunar Surface Activities	Summit Ballroom
	MICRO-26	Patents, Trade Secrets, and Space Innovation	Summit 204
	MICRO-27	From College to Early Career: Challenges, Opportunities, and How to Succeed	Forum 135
	MICRO-28	The Future of Space Bioprocess Engineering: Triple Point Intersecting Academia, Industry, and NASA	Forum 134
1600–1645	MICRO-29	Past, Present, and Future Exoplanet Exploration	Summit Ballroom
	MICRO-30	Astrophysics and the Space Industry: Idea Exchanges for the Future	Forum 134
	MICRO-31	Advancing Biotechnology in Space to Enable Mission Sustainability and Benefit Earth	Forum 135
1600–1630	MICRO-32	CRSRA 101: An Introduction to NOAA Licensing for Remote Sensing Satellite Systems	Summit 204
1645–1815	MICRO-33	The Future of AIAA: Lessons Learned from the Past	Forum 109
1700–1745	MICRO-34	Legacy of Mars Pathfinder and Sojourner on Their 25th Anniversary	Summit Ballroom
	MICRO-35	Near-Earth (GEO and Below) Commercialization – Roundtable Discussions	Summit 204
	MICRO-36	Leveraging Prize Authority to Address Critical NASA Technology Needs	Forum 135
1700–1730	MICRO-37	Applying Lessons Learned in NASA's Adoption of Commercial Space Services	Forum 134
1745–2000	NW-04	Reception	Forum Ballroom
1830–1915	SPEC-05	William H. Pickering Lecture — Early Science Results from the James Webb Space Telescope	Summit Ballroom
1915–2000	SPEC-06	Founders Panel	Summit Ballroom



# Tuesday, 25 October **Technical Sessions**

HRS	TYPE	SESSION	ROOM
1400–1520	TECH.COM-04	Regulatory and Economic Infrastructure	Forum 113
	TECH.EXPL-12	Technologies for Space Robotics	Forum 130
	TECH.EXPL-13	Space Nuclear Propulsion Systems	Forum 105
	TECH.EXPL-14	Lunar Surface Operations IV: Working in Regolith and Ice	Forum 116
	TECH.EXPL-15	Living in Space Habitats	Forum 120
	TECH.SEC-03	Space Systems Command Pervasive and Game-Changing Future USSF Technologies I	Forum 123
	TECH.SEC-04	Methods and Considerations for Cyber Protection of Space Assets	Forum 103
1530–1610	TECH.SEC-06	Cybersecurity Frameworks and Architectures for Operational Systems II	Forum 103
1530–1650	TECH.EXPL-16	Sustained Earth-Moon Travel & Supporting Infrastructure I	Forum 105
	TECH.EXPL-17	Lunar Surface Operations V: The ISRU Advantage	Forum 116
	TECH.EXPL-18	Cislunar Infrastructure I: Roadmapping Cislunar Space	Forum 113
	TECH.SEC-05	Space Systems Command Pervasive and Game-Changing Future USSF Technologies II	Forum 123
1610–1650	TECH.STM-04	Space Traffic Management - OSAM	Forum 130
1700–1820	TECH.EXPL-19	Interplanetary Exploration	Forum 123
	TECH.EXPL-20	Space Technology Development	Forum 103
	TECH.EXPL-21	Lunar Surface Operations VI: Ice to Water Extraction Systems	Forum 116
	TECH.EXPL-22	In-Space Operations	Forum 130

## TECHNICAL SESSIONS



View all Tuesday Technical Sessions and associated papers by scanning this QR code.

# Wednesday, 26 October Program

HRS	TYPE	SESSION	ROOM
0800–0815	W3	Welcome	Summit Ballroom
0915–1015	MACRO-03	Leveraging Our Allies in National Security Space	Summit Ballroom
1030–1130	META-17	Space-Based Research fo Earth-Based Priorities	Summit 204
	META-18	A Workforce for the Future of Space	Summit Ballroom
	META-19	Space Domain Awareness: Adapting the Maritime Model to Space	Forum 134
1030–1200	META-20	First to Trillion: Where are Space Investments Now, and What's Next?	Forum 135
1200–1300	META-21	Leaving Earth to Serve the Earth: Commercial and Government Assets Having Positive Impact on Earth	Forum 135
	META-22	Enabling the Space Superhighway	Summit Ballroom
	META-23	International Norms for Orbital Debris	Forum 134
1200–1245	META-24	Cybersecurity for Space Leaders: Lessons Learned from the Hera's Revenge Tabletop Exercise	Summit 204
1315–1415	SPEC-07	Growing the Space Economy: Companies Taking Bold Steps Toward Our Off-World	Summit Ballroom
1345–1515	SPEC-08	Cyber Star Wargame	Summit 207/208
1445–1545	MICRO-38	The Time to Form Your Space Strategy Is Now	Forum 109
	MICRO-39	Enabling High-Power Commercial and Government Missions	Forum 134
	MICRO-40	The Challenge of Shared Learning of Spaceflight Safety in a Rapidly Growing Space Community	Forum 135
	MICRO-41	The Value of In-Space Servicing, Assembly, and Manufacturing (ISAM) for Space Sustainability	Summit Ballroom
	MICRO-42	Space Inspires STEMists, Researchers, & Explorers	Summit 204
1545–1645	MICRO-43	Future Space Industrial Base 2022	Forum 134
	MICRO-44	Entry, Descent, and Landing Technologies for Human Missions to Mars	Forum 135
	MICRO-45	Safety First: Addressing Space Safety Priorities for a Sustainable Space Domain	Summit Ballroom
1545–1715	MICRO-47	Fostering a Culture of Belonging in the Aerospace Enterprise	Summit 204
1645–1745	MICRO-48	ISS Transition - Research Needs and User Continuity for Commercial Space Stations	Summit Ballroom
	MICRO-49	Technology at a Tipping Point: Cryogenic Fluid Management	Forum 134
	MICRO-50	Space Traffic Management Norms and Behaviors	Forum 135
	MICRO-51	Mars Together: Preparing for A Sustained Human-Robotic Future on Mars	Forum 109
1735–1815	SPEC-09	Closing Ceremony	Summit Ballroom



# Wednesday, 26 October **Technical Sessions**

HRS	TYPE	SESSION	ROOM
1445–1605	TECH.EXPL-23	Probing the Solar System’s Edge and Beyond	Forum 103
	TECH.EXPL-24	Journey to Mars	Forum 105
	TECH.EXPL-25	Lunar Surface Operations VII: In-Situ Production of Commodities from Moon to Mars	Forum 116
	TECH.EXPL-26	Cislunar Infrastructure II: Architecture and Technology Development	Forum 113
	TECH.EXPL-27	In-Space Autonomy and Reliability	Virtual
1445–1525	TECH.SEC-07	Security Implications for Future Constructs (OSAM, IOT, Cloud Computing)	Forum 130
1525–1605	TECH.ENV-01	Space Missions for Combating Climate Change	Forum 120
1615–1735	TECH.SEC-05	Lunar Infrastructure	Forum 113
	TECH.DGE-03	Digital Engineering	Forum 103
	TECH.EXPL-28	Lunar Surface Operations VIII : Traverses	Forum 116
	TECH.EXPL-29	Frontiers in Deep Space Propulsion	Virtual
	TECH.EXPL-30	Sustained Earth-Moon Travel & Supporting Infrastructure II	Forum 120

## TECHNICAL SESSIONS



View all Wednesday Technical Sessions and associated papers by scanning this QR code.

# Online Program Tour

## ASCEND.AIAA.ORG

### 1. PROGRAM

View, tag 'Interested,' and/or create 'lists' for upcoming sessions, or join live sessions straight from the Program page.

- › Be sure to adjust your time zone or filter for specific features.
- › Multiple sessions within one time slot? Click the "+" at the bottom left of the card and those sessions will expand.
- › After a livestreamed session occurs, the on-demand recordings will be available on the same session card.

### 2. CHAT

Meet and chat with your fellow attendees!

### 3. ATTENDEE LIST

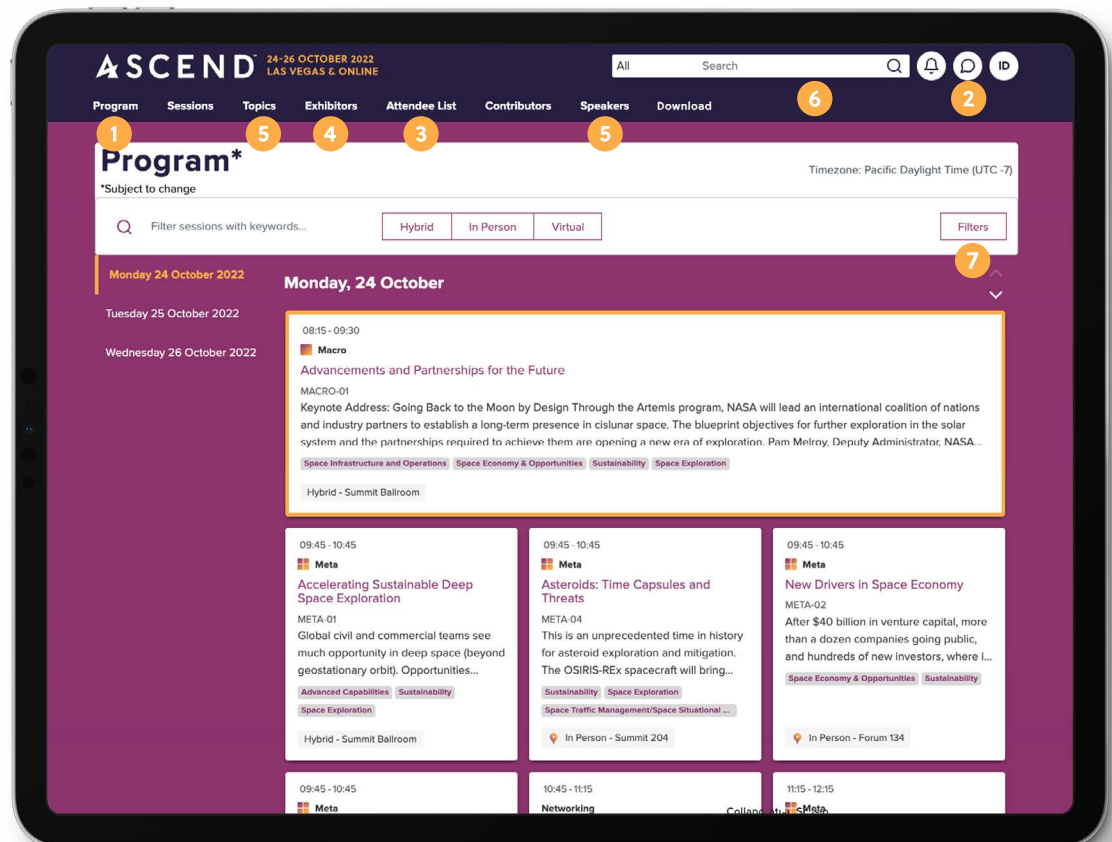
Looking for an old colleague or friend? Those who have opted in to having their profile shared will be displayed here. You'll also have the ability to send a direct message if they have that feature turned on. Click on the top right circle to update your profile or permissions on your profile page.

### 4. EXHIBITORS & SPONSORS

Sharpen your skills and see the latest and greatest products and offerings from cutting-edge companies and organizations. Be sure to check out all our supporting sponsors and partners!

### 5. TOPICS/SPEAKERS

Explore all that the ASCEND program has to offer through session topics, formats, and descriptions; participating speakers; areas of interest; and more.





## 6. SEARCH BOX

Use the search box to quickly find sessions on specific topics, session type, and speaker bios.

## 7. FILTERS

You'll find easy to use filters to narrow sessions listings by location, day, session type, technical paper topic (only provides technical paper results), and areas of interest (only filters all non-technical paper sessions). Sessions have been categorized into areas of interest and can be filtered.

Advanced  
Capabilities



National  
Security Space



Space Economy  
& Opportunities



Space  
Exploration



Space  
Infrastructure  
& Operations



Space Traffic  
Management/  
Space Situational  
Awareness



Sustainability



Workforce



A large image of a Vulcan rocket launching, with a large plume of fire and smoke at the base. The rocket is white with a red and white American flag on the side. The text 'VULCAN' is prominently displayed in white, with a red horizontal bar above it. Below it, the text 'One Rocket // All Missions' is written in white, with a red double slash. The background is a dark, starry space.

**VULCAN**  
One Rocket // All Missions

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# Onsite and General Information

## AIAA HEALTH & SAFETY POLICY

The health and safety of our attendees is very important to us as we return to in-person events. While masks are not required, we do highly encourage you to wear one. Health and safety requirements to attend this event are subject to change at any time.

By registering for this event, you have agreed to adhere to any health and safety requirements in place now or adjusted between now and during the event imposed by a governmental authority, the event facility, or AIAA.

You understand that travel and gathering involves risk of sickness, including sickness from COVID-19, and you voluntarily assume that risk. On behalf of yourself and your family, you waive and release AIAA and its directors, officers, partners, employees, and agents from and against claims, liabilities, and expenses arising from injury, sickness, or death from contraction or spread of COVID-19 or other communicable disease due to travel to or attendance at an event hosted by AIAA. You also understand that currently there is no vaccination or proof of vaccination requirement for attendees.

You agree to not attend this or any AIAA event, and to promptly depart any AIAA event at which you are already in attendance, if you feel ill or have had recent exposure to a COVID-19 case.

Failure to comply with all safety protocols and requirements as listed or related directions from AIAA or facility representatives on-site may result in the loss of the right to attend or participate in AIAA events, including forfeiting any registration fees paid.

Contact an AIAA staff member or email [cathyc@aiaa.org](mailto:cathyc@aiaa.org) with any questions or issues.

## FIRST AID

ASCEND will have a medic offering basic first aid services throughout the event located in the Caucus Boardroom.

## HOTEL RESORT FEE

For those who booked their hotel reservations in the ASCEND room blocks at Harrahs and the LINQ, please note that the resort fee is optional and you should have been notified of that during the check-in process. You have the option to pay the resort fee, or pay for any of the services you wish to use individually. Please check your folios carefully so you do not overpay.

## LUGGAGE STORAGE

There will be an unattended designated area in the Engagement Zone on Wednesday where you are welcome to leave your bags.

## MONORAIL DISCOUNT

Let the Las Vegas Monorail be your Transportation Solution! The Las Vegas Monorail provides a quick and reliable transportation alternative for leisure and business travelers on the Las Vegas Strip. Directly connected to several Strip resort hotels as well as the Las Vegas Convention Center, the Monorail is the easiest, fastest and most convenient way to get from one end of the Strip to the other in just minutes. Trains arrive every few minutes at each of our seven stations: MGM Grand Station, Bally's/Paris Las Vegas Station, Flamingo/Caesars Palace Station, Harrah's/TheLINQ Station, Las Vegas Convention Center Station, Westgate Las Vegas Station and SAHARA Las Vegas Station. The system is open 7 a.m. to Midnight Monday, 7 a.m. to 2 a.m. Tuesday through Thursday and 7 a.m. to 3 a.m. Friday through Sunday.

Discount shopping link: <https://tix.lvmonorail.com/ASCEND2022>. This discount is active through 29 October 2022.



## RECYCLING AND SUSTAINABILITY EFFORTS

ASCEND and our host facility are proud to do our parts toward making events green. Please help us continue to reduce our carbon footprint:

- › All leftover conference materials and supplies are donated to local schools in need. This includes all office supplies, sign boards, leftover giveaways, etc. Please look for the box near registration where you can put any items you are not taking home with you.
- › All waste and recycling is collected together and sorted off-site in Las Vegas to ensure maximum recycling and composting.

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To connect to the event wireless internet please select:

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## MEALS & SNACKS

Breakfast will be served daily beginning 1 hour prior to the start of the MACRO session. Lunch and coffee breaks will be provided throughout the day in the Engagement Zone Room 118. Join us each evening for a fun-filled networking reception both in the Engagement Zone and outside on the Forum Plaza. Look for the Daily Re-Fueling Board to find the offerings.

# IGNITING THE FUTURE.

The next big thing is out there. At Boeing, we believe that visionaries are the ones who will find it. We are proud to partner with those who aren't afraid to chase the impossible and make it reality.



## CERTIFICATE OF ATTENDANCE

All attendees will receive a Certificate of Attendance on the last day of the event via email. AIAA offers this service to better serve the needs of the professional community. Claims of hours or applicability toward professional education requirements are the responsibility of the participant.

## EMPLOYMENT OPPORTUNITIES

AIAA members can post and browse resumes, browse job listings, and access other online employment resources by visiting the AIAA Career Center at [careercenter.aiaa.org](https://careercenter.aiaa.org).

## CONTINUE THE CONVERSATION ON ENGAGE

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## MEMBERSHIP

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## NONDISCRIMINATORY PRACTICES

AIAA accepts registrations irrespective of race, color, creed, gender, physical handicap, and national or ethnic origin.

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## CONFERENCE PROCEEDINGS

Proceedings for the event are now available. The cost is included in the registration fee where indicated.

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All manuscript files submitted by four days prior to the conference event are currently in the proceedings. For questions concerning access to proceedings or ARC, email [arcsupport@aiaa.org](mailto:arcsupport@aiaa.org).

#### Manuscript Corrections

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#### AUTHOR AND SESSION CHAIR INFORMATION

##### "No Paper, No Podium" and "No Podium, No Paper" Policy

If a written paper is not submitted by the final manuscript deadline, authors will not be permitted to present the paper at the conference. It is also the responsibility of those authors whose papers or presentations are accepted to ensure that an author attends the conference to present the paper. If a paper is not presented at the conference, it will be withdrawn from the conference proceedings.

For virtual sessions, an author of the paper is required to attend the entire session, to be available to answer questions both during the live screening and Zoom meeting portions of the session. Lack of such attendance will be considered a no-show and will result in withdrawal of the paper from the proceedings.

These policies are intended to eliminate no-shows, to improve the quality of the conference for all participants, and to ensure that the published proceedings accurately represent the presentations made at a conference.

#### Journal Publication

Authors of appropriate papers are encouraged to submit them for possible publication in one of the Institute's archival journals: *AIAA Journal*; *Journal of Aerospace Information Systems*; *Journal of Air Transportation*; *Journal of Aircraft*; *Journal of Guidance, Control, and Dynamics*; *Journal of Propulsion and Power*; *Journal of Spacecraft and Rockets*; or *Journal of Thermophysics and Heat Transfer*. You may now submit your paper online at <http://mc.manuscriptcentral.com/aiaa>.

A promotional graphic for the AIAA ASCEND Conference 2022. The background is a dark blue gradient with a large, glowing blue circle on the right side. The text is white and blue. At the top right, the 'beyond gravity' logo is displayed. The main title 'Welcome to the AIAA ASCEND Conference 2022.' is in large white font. Below it, 'Stop by and see us at Booth A-1.' is in blue font. Contact information for Nicholas West is provided in white. The 'beyondgravity.com' website and tagline 'Realizing what's next.' are at the bottom in blue.

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[nicholas.west@beyondgravity.com](mailto:nicholas.west@beyondgravity.com)

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# Exhibitors



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ai-solutions.com

A3



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555 Discovery Drive NW, Huntsville, AL 35806  
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A1



### DEPARTMENT OF AEROSPACE ENGINEERING AND ENGINEERING MECHANICS AT THE UNIVERSITY OF TEXAS AT AUSTIN

2617 Wichita St, Austin, TX 78712  
ae.utexas.edu

T5



### JOHNS HOPKINS UNIVERSITY

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engineering.jhu.edu

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### LOCKHEED MARTIN

12257 S Wadsworth Blvd, Littleton, CO 80125  
lockheedmartin.com/space

A4 + CABANA



### MAGNETO SPACE

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magneto.space

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### MOTIV SPACE SYSTEMS

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motivss.com

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### NASA LOFTID MODEL

300 Hidden Figures Way SW, Washington DC 20546  
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N1



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### TERRAN ORBITAL

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### UNLV AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS

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involvementcenter.unlv.edu/organization/unlvaiaa

T3



### UTEP AEROSPACE CENTER

500 W. University Ave,  
Engineering Bldg. Room M305, El Paso, TX 79968  
utep.edu/aerospace

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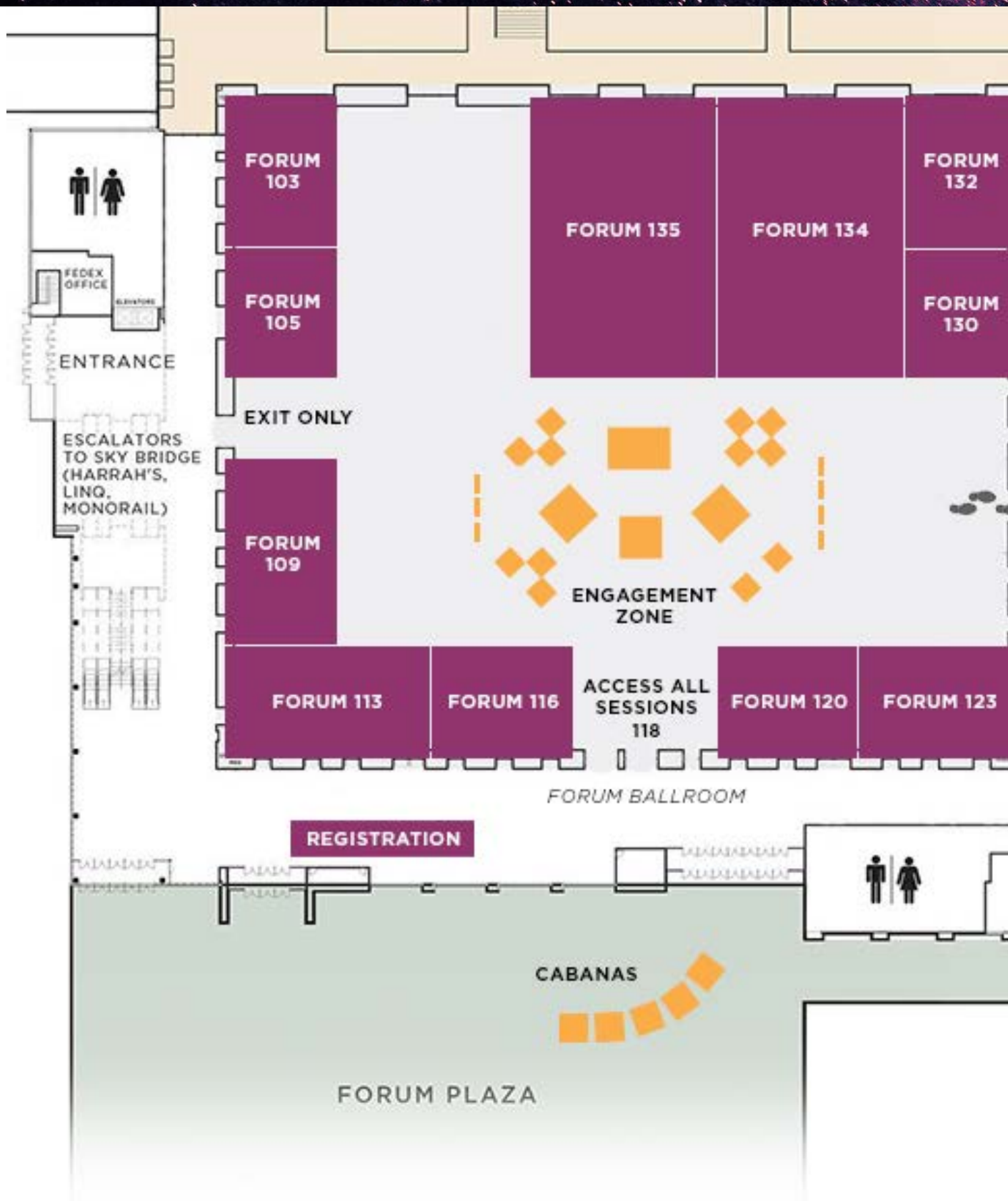


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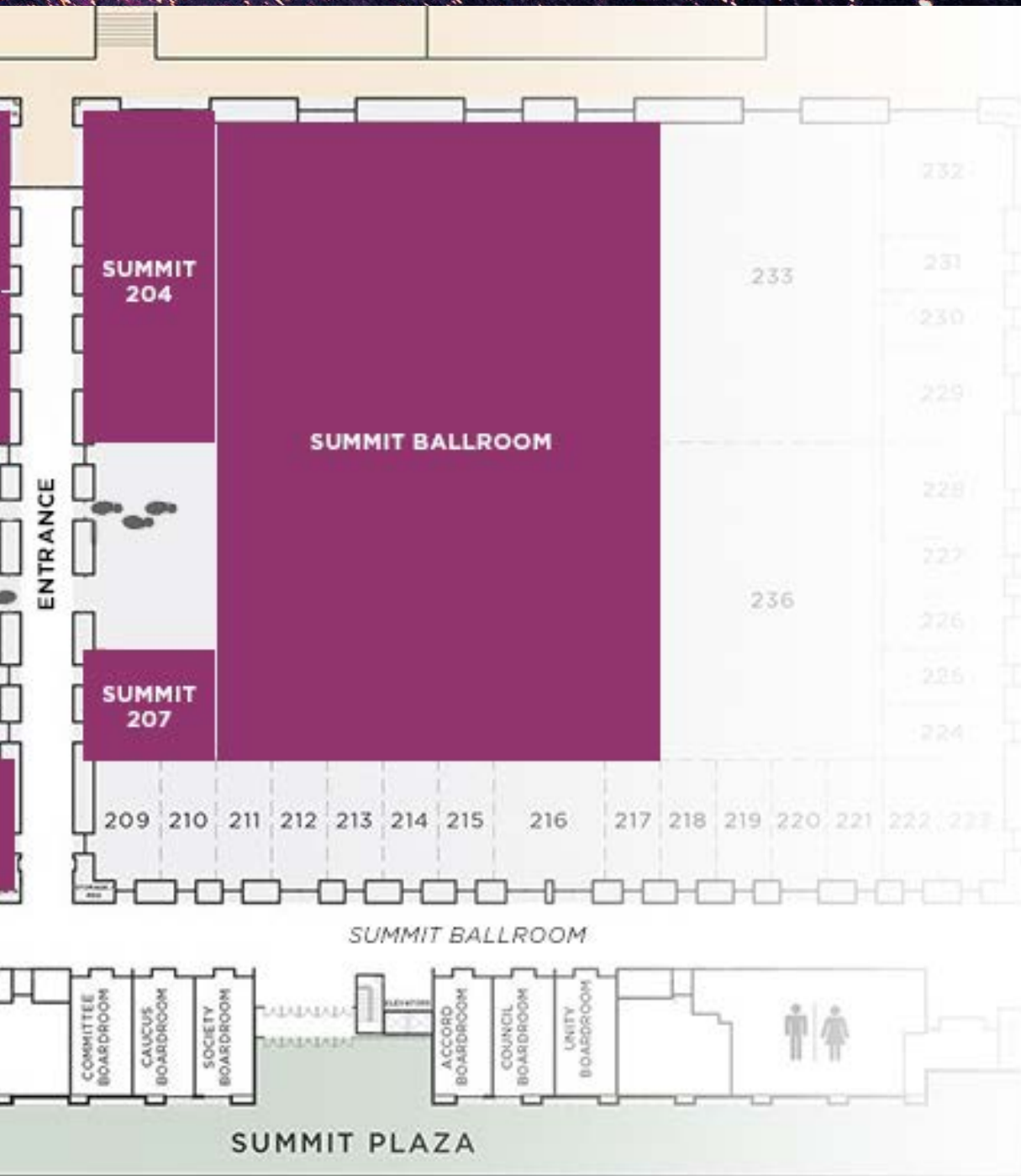
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# Floorplan









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