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#AMOScon #EMERGEN2023

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**Event Date:**

AMOS Conference - Sept 19-22, 2023  
EMER-GEN Conference – Sept 17-19, 2023

**Location:**

Wailea Beach Resort  
3700 Wailea Alanui Drive, Wailea, HI 96753

**Description:** The Advanced Maui Optical and Space Surveillance Technologies (AMOS) Conference is the premier technical conference in the nation devoted to space situational awareness. The cross section of private sector, government, and academic participation helps foster important dialogue and international collaboration. The continued growth in attendance and participating countries at AMOS reflects a growing interest in space sustainability and space commerce initiatives as new actors—national governments, private sector companies, non-governmental entities, and universities—become involved in these activities.

**AMOS 2023 will be hybrid with an in-person event complemented by virtual components including livestream.**

The call for papers for the 2023 AMOS Conference closed March 1 and attracted a record number of abstracts from 22 countries. The number and content of the submissions demonstrate the continued evolution and advancements in field of space domain awareness and is reflected in the session topics to be covered this year: Astrodynamics, Cislunar SDA, Conjunction/RPO, Machine Learning for SDA Applications, Satellite Characterization, SDA Systems & Instrumentation, Space-based Assets, Space Debris, Space Domain Awareness; and Atmospherics/Space Weather.

Papers are eligible for publication in the 2023 Journal of Astronautical Sciences as well as a Best Paper and Presentation Award. There is also a Student Award for the best manuscript submitted by a student.

In addition to the Technical Sessions, the AMOS Conference features Keynote Speakers, Policy Forums and Technical Short Courses. The on-site Exhibit Venue is at capacity, providing opportunities for sponsors to showcase new technologies and services as well as encourage networking. There will also be virtual access to posters and networking rooms.

This will be the sixth year for the **EMER-GEN program**, designed especially for young professionals and students (35 and under) enthusiastic about careers in space. The program will be in-person with three webinars pre-event to prepare the cohort.

**Presenter:** This event is presented by the **Maui Economic Development Board**, a 501(c)(3) not-for-profit corporation established in 1982 with a mission to diversify Maui County's economy, building pathways to innovation, jobs and opportunity for our residents. Through partnerships with the public and private sector, MEDB undertakes projects that assists growth industries with navigating and thriving in our county, educates and trains residents for new careers, and engages our community in forums that determine future economic directions.

# AMOS CONFERENCE FAST FACTS – continued

## **Technical Chairs**

Paul Kervin, AFRL/RDSM retired

Daron Nishimoto, Consultant, E.O. Solutions

## 2023 Session Topics and Chairs

### **Astrodynamics**

Aaron Rosengren, University of California San Diego

Paul Schumacher, AFRL/RDSM (Ret.)

### **Cislunar SDA**

Mark Bolden, Trusted Space

Channing Chow, Cloudstone Innovations LLC

### **Conjunction/RPO**

Matt Hejduk, The Aerospace Corporation

Lauri Newman, NASA

### **Machine Learning for SDA Applications**

Weston Faber, L3Harris

Justin Fletcher, Odyssey

### **Satellite Characterization**

Jeff Houchard, EO Solutions

Mara Payne, Altamira Technologies Corp.

### **SDA Systems & Instrumentation**

Michael Hart, University of Arizona

Michael Nayak, DARPA

### **Space-Based Assets**

Melrose Brown, UNSW Canberra

Andrew Nicholas, Naval Research Laboratory

### **Space Debris**

James Blake, University of Warwick

Heather Cowardin, NASA

### **Space Domain Awareness**

Jerry Krassner, OSD/R&E

Brian Young, KBR

### **Atmospherics/Space Weather**

Mary Ellen Craddock, Northrop Grumman Corporation

Shaylah Mutschler, Space Environment Technologies

### **Poster Chairs**

Darren McKnight, LeoLabs

Matthew Stevenson, LeoLabs

## TECHNICAL SHORT COURSES

Short courses provide opportunities for working professionals to upgrade their technical job skills and remain abreast of recent developments in their respective fields of interest. The small size of each class gives you an excellent opportunity for personalized instruction.

Taught by highly regarded industry experts on a variety of subjects, courses have been scheduled to be presented either in-person on Maui on September 19; or online on September 18, 2023.

**Ten short courses will be presented on-site** at the AMOS Conference venue at the Wailea Beach Resort over two sessions. All participation will be in-person with no live streaming available. The courses, and the presenters are:

1. **Satellite Photometry for Non-resolved Object Characterization** – Presented by Tamara Payne, Principal Scientist, Altamira Technologies Corp.
2. **Introduction to Event-Based Sensors for SDA: A Hands-On Tutorial** – Presented by Brian McReynolds, PhD Student, U.S. Air Force; Gregory Cohen, Associate Professor, Western Sydney University; Rachel Oliver, Doctoral Student, U.S. Space Force; Zachry Theis, Chemist, AFRL Space Vehicles; Michael Dexter, Director, Air Force Institute of Technology.
3. **Astrodynamics for xGEO Space Domain Awareness** – Presented by Aaron J. Rosengren, Assistant Professor, Jacobs School of Engineering, University of California San Diego; Shane D. Ross, Professor, Virginia Tech
4. **Joint Task Force Space Defense Commercial Operations (JCO) – Course 100** – Presented by Joseph Gerber, JCO Lead Integrator, KBR.
5. **Telescopes and Optics: An Introduction to Ground-based Optical SDA** – Presented by Peter Zimmer, Astronomer; J.T. McGraw and Associates, LLC; and Mark Ackermann, Systems Analyst, Sandia National Labs.
6. **CA Risk Assessment** – Presented by Francois Laporte, CAESAR Team senior expert, CNES; Lauri Newman, Conjunction Assessment Program Officer, NASA Headquarters; and Matthew Hejduk, Chief Engineer, NASA Robotic CARA, Aerospace Corporation
7. **CyberRoll Space** – A Space Cybersecurity Tabletop Exercise – Presented by Molly Cooper, Associate Professor, Ferris State University.
8. **Deep Learning Methods for Space Domain Awareness** – Presented by Roberto Furfaro, Professor, University of Arizona; Richard Linares, Associate Professor, Massachusetts Institute of Technology.
9. **Observing and Characterizing Space Debris** – Presented by Thomas Schildknecht, Vice Director, Head Optical Astronomie, Director Zimmerwald Observatory, Astronomisches Institut Universität Bern
10. **Hands-on, Interactive Astrodynamics Education in the Metaverse** – Presented by Daniel Stouch, Director, Space & Airborne Systems and Rob Hyland, Director of Program Transition, both of Charles River Analytics

## AMOS CONFERENCE FAST FACTS – continued

**Three technical short courses will be presented virtually** on Monday September 18. The presentations are “live” and participants will have the ability to interact with the instructor and attendees in real-time.

**A. ‘The Agile Regulator’ – Regulation, On-Orbit Tracking, and the Law** – Presented by Ralph Dinsley, NORSS Senior Advisor, Space Sustainability Solutions Northumbria (3S Northumbria); Christopher Newman, Professor of Space Law and Policy, Northumbria University

**B. Space Domain Awareness (SDA) Workshop**– Presented by Pamela Magee, Editor, Space Technology Series; Wiley Larson, Managing Editor, CEI.

**C. Optical Modeling and Simulation for SSA/SDA**– Presented by Patrick North, Chief Remote Sensing Engineer, Image and Computer Scientist; and Alexander Lam, Application Engineer II; both of AGI, Ansys Government Initiatives

# AMOS CONFERENCE FAST FACTS – continued

## 2023 Sponsors

### Po'okela (*working together*)

Boeing

### Kokua (*to help and support*)

Comspoc  
KBR  
L3 Harris

Lockheed Martin  
Northrop Grumman  
SAIC

### Laulima (*working together*)

Anduril  
ExoAnalytic Solutions  
Kratos

LeoLabs  
Linqest  
Northstar Earth & Space

RTX  
SpaceNav

### Lokahi (*collaboration and unity*)

Ball Aerospace  
EO Solutions  
General Atomics Electromagnetic  
Systems  
Johns Hopkins Applied Physics Laboratory

LSAS Tec  
Peraton  
Secure World Foundation  
Slingshot Aerospace  
Space Foundation

### Kupa'a (*loyal and committed*)

Astroscale  
Deloitte

SpaceMap  
Spideroak

### Malama (*to care for*)

Advanced Scientific Concepts  
Advanced Space  
Aerospace Corporation  
Astro Haven Enterprises  
Celestron  
Charles River Analytics  
Cloudstone Innovations  
Digantara

Frontgrade Technologies  
GEOST  
GMV  
Hart Scientific Consulting  
Kayhan Space  
Lipoa  
NEC Aerospace Systems  
Orbital Composites

Planewave Instruments  
Rocket Communications  
SEAKR Engineering  
Terran Orbital  
Toptica Photonic  
Transastra  
SpaceX  
USRA

## Exhibitors

Advanced Scientific Concepts | AFRL | Astro Haven Enterprises | Ball Aerospace | Celestron  
Charles River Analytics | COMSPOC | Deloitte | Digantara | General Atomics Electromagnetic Systems  
GEOST | Hart Scientific Consulting | JHU Applied Physics Laboratory | Kayhan Space  
KBR | Kratos | LeoLabs | Lipoa | Lockheed Martin | LSAS Tec | Northstar Earth & Space  
Planewave Instruments | Rocket Communications | SAIC | SEAKR | Slingshot Aerospace | SpaceMap  
SpaceNav | Spideroak | Terran Orbital | TOPTICA Photonics | Transastra

## FAQs

### **How did the conference come to be on Maui?**

Maui has some of the most diverse and highly capable optical telescopes (AEOS), instrumentation (adaptive optics, spectrometers, photometers, radiometers, etc.) and processing capabilities (MHPCC) centralized into one location on the planet earth.

The AMOS Conference began in 1999 as an AFRL initiative, executed by the Maui Economic Development Board (MEDB). At that time, the focus of the conference was as a users' conference and to promote the Air Force Maui Optical and Supercomputing Site (AMOS) which has provided the U.S. Department of Defense (DoD) with space situational awareness (SSA) capabilities for over 65 years (since 1951).

In 2006, MEDB assumed ownership of the AMOS Conference from the Air Force, and proceeded to build upon early success by evaluating and adding elements to the conference that bring value to the SSA/SDA (Space Domain Awareness) Community. In the 16 years since, MEDB's intent in presenting the AMOS Conference is still to support the Air Force's mission on Maui which, in turn, supports MEDB's mission of economic diversification.

### **What are the various activities of the AMOS Conference?**

In order for the AMOS Conference to continue to be of benefit to the Air Force, it must also be of benefit to the SSA/SDA Community at large. The conference has expanded from solely Technical Sessions to include exhibition and sponsorship opportunities; SSA Policy sessions that explore international issues; keynotes by international SSA thought leaders; invited workshops that promote international collaboration and cooperation on SSA/SDA topics; and technical short courses. Evening receptions provide informal opportunities to network and build connections.

### **How are presenters selected for the Technical Sessions?**

A Call for Papers is announced at the beginning of the year with submissions closing March 1. Papers are reviewed and selected by Technical Chairs that have been selected to moderate the specific sessions noted to be in high demand by the submissions.

Papers that are not accepted for an oral presentation may be invited to present a Poster. To expand the number of opportunities to present at AMOS, virtual posters are offered with select presenters invited to present in-person. All presenters, oral or poster, are required to submit a final paper by August 31 in order to present at the AMOS Conference.

### **Where are the Technical Papers published?**

Final papers are collated into the Proceedings for the year and available for purchase 8-10 weeks post-Conference. The Conference also maintains an archive of individual technical

## AMOS CONFERENCE FAQ – continued

papers presented at the AMOS Conference since 2006 which is searchable online as a resource to the SSA technical community <https://amostech.com/archives/>.

In 2023, relevant papers will be considered for publication in the 2023 Journal of Astronautical Sciences, an archival publication devoted to the sciences and technology of astronautics. Articles are published which present significant new results, important insights, or state of the art surveys in all areas of astrodynamics, celestial mechanics, atmospheric flight mechanics, navigation and guidance, and space related sciences.

### **What awards are associated with the AMOS Conference?**

For the sixth year, the Space Surveillance Technical Committee of the American Astronautical Society (AAS) and AMOS Conference will present a Student Award for the best manuscript submitted and presented by a student. The winner receives a stipend, as well as free registration for both the AMOS Conference and EMER-GEN.

All presentations are eligible for an overall Best Paper that will be presented end of the Conference. Poster presenters are also in the running for awards – Best Poster, Most Creative, Best Newcomer and Best Poster Pitch Presentation.

### **What is the SSA Policy Forum?**

The SSA Policy Forum, coordinated in collaboration with Secure World Foundation, explores international issues related to Space Situational Awareness in a panel format. Held at the start of each day of the 3-day AMOS Conference, Wednesday to Friday, the sessions are preceded by a relevant keynote presented by an invited SSA thought leader. Bringing together the developers and implementers of SSA capabilities and the architects of SSA policy provides a forum to interact at a time when the landscape is rapidly changing. This year's topics are:

1. Evolution of the Commercial SSA Data Market
2. U.S. Progress on Civil SSA and STM
3. Moving From Industry Best Practices to Space Traffic Management Rules

### **How will the virtual conference experience be for attendees?**

A robust virtual platform provided by X-CD technologies will allow attendees to attend the live plenary sessions and participate in Q & A via a chat function. The platform will include virtual networking rooms, a poster venue and the opportunity to network with fellow attendees. Technical sessions will be on-demand and all presentations will be recorded for later access by those registered unable to attend the live streaming.

A digital swag bag will have a collection of resources (links and downloads) provided by exhibitors. In the poster venue, attendees can view pre-recorded 3 minutes presentations of the posters and post questions to the presenters via the discussion board.



# AMOS CONFERENCE FAQ – continued

## Who attends?

Along with United States representatives from military, government, academia and commercial sectors, the number of countries that have attended over the history of AMOS Conference is 33 -- Australia, Austria, Belgium, Brazil, Canada, Chile, China, Czech Republic, Finland, France, Germany, India, Iran, Israel, Italy, Japan, Netherlands, New Zealand, Philippines, Poland, Republic of Korea, Russia, Singapore, Slovakia South Africa, Spain, Sweden, Switzerland, Thailand, Turkey, Ukraine, United Arab Emirates and the United Kingdom.

A sampling of companies, universities, and government organizations that have attended AMOS can be [viewed/downloaded](#).

## What is EMER-GEN and what do you expect to achieve?

The EMER-GEN program is a joint initiative of the AMOS Conference and the Space Generation Advisory Council (SGAC). Designed especially for young professionals and students (35 and under) enthusiastic about careers in space, the original 2+ day program has grown to include webinars before the main event with a focus on fostering innovation and entrepreneurship among the cohort. Through the whole program, participants are challenged to solve/hack a problem to create new opportunities for space-based technologies.

With the help of advisers from industry, government, academia and NGOs, the EMER-GEN experience offers the experience offers

- Mentoring with renowned space specialists from the public sector (military and civil), private sector, and nongovernmental organizations
- Networking with other young professionals
- Technical Short Course presented by a specialist in space situational awareness
- Professional Development sessions to enhance your effectiveness in a global environment

The partnership with the SGAC provides an opportunity to extend the reach of the AMOS Conference and to contribute to the professional development of the upcoming space generation.

Scholarships are available to Hawaiian residents.

# # #

# 2023 AMOS CONFERENCE PRESS RELEASES

(latest to earliest)

**Contact:** Sandy Ryan, Conference Director, Maui Economic Development Board  
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## Keynote Speakers and SSA Policy Forum Headline the AMOS Conference

*Kihei, Maui, Hawaii, August 24, 2023* – As the AMOS Community continues to send their support and prayers in the aftermath of the Maui wildfires, conference organizers are finalizing preparations for the September 19-22 AMOS Conference. With many participating organizations asking how they can help during their stay; more will be known about what support will be needed closer to the week of AMOS.

Keynote speakers and SSA Policy Forum panelists are confirmed for an impressive start to each of the three days of the 24th annual AMOS Conference. General B. Chance Saltzman, Chief of Space Operations, U.S. Space Force will give the opening Keynote on Day 1 of the AMOS Conference.

His presentation will be followed by the first of three SSA Policy Forums. A collaboration with Secure World Foundation, the SSA Policy Forum brings together the developers and implementers of SSA capabilities and the architects of SSA policy to discuss a landscape that is rapidly evolving.

On Day 1 an international panel will discuss the “*Evolution of the Commercial SSA Data Market.*” There has been significant growth over the last several years in commercial SSA providers, data products, and services, but there are still many open questions about where the market is headed. This panel will discuss how the commercial SSA sector is evolving and what the challenges are for future growth, including identifying customers and standards for data sharing as well as the balance between the role of the government and private sector in ensuring safety of spaceflight activities.

Moderator Victoria Samson, Washington Office Director for Secure World Foundation will be joined by panelists, Shreyas Mirji, Business and Strategy, CEO Office, Digitana; Mahhad Nayyer, Graduate Research Assistant, Purdue University; Kevin O’Connell, Principal, Space Economy Rising; and Melanie Stricklan, Founder & CEO, Slingshot Aerospace.

Diane Howard, Director, Commercial Space Policy, National Space Council, will kick off Day 2 with a live virtual keynote presentation followed by “*U.S. Progress on Civil SSA and STM,*” the focus of Day 2’s Policy Forum. The United States continues to make progress on implementing SPD-3, which outlined a path towards a space traffic management framework. This panel features representatives from multiple U.S. agencies involved in implementing SPD-3 to provide updates on what progress has been made so far and plans for the future.

Jamie Morin, Vice President of Defense Systems Operations and Executive Director of the Center for Space Policy and Strategy, Aerospace Corporation, will moderate this panel featuring Travis Blake, Space Traffic Coordination Program Officer, NASA; Richard DalBello, Director, Office of Space Commerce, NOAA, Department of Commerce; Barbara Golf, Strategic Advisor for Space Domain Awareness, U.S. Space Force, and Travis Langster, Principal Director, Space and Missile Defense Policy, U.S. Department of Defense, who will join the panel virtually.

On Day 3, Brian Weeden, Director of Program Planning of Secure World Foundation will moderate a panel that will explore “*Moving from Industry Best Practices to Space Traffic Management Rules.*” Much has been said about the importance of developing industry best practices as the foundation for future space traffic management rules, and multiple different best practice initiatives have been published or announced. However, there is still the open question of how to combine these various proposals into a common set of standards that can serve as the foundation for space traffic management. This session will discuss how to assess the existing best practices and standards as a baseline for STM, existing gaps that still need to be covered, and how to move forward towards a common STM regime.

Weeden will be joined onstage by Jerome Barbier, Head of Outer Space, Digital, and Economic Issues, Paris Peace Forum; Mariel Borowitz, Associate Professor, Sam Nunn School of International Affairs, Georgia Institute of Technology; Daniel Oltrogge, Founder and Administrator, Space Safety Coalition; and David Goldstein, Principal Engineer, SpaceX.

For more than 20 years, Maui's AMOS Conference has been the nation's leading technical conference on space situational/domain awareness. Bringing together policymakers and experts from the private sector, academia, the military, and government agencies, the AMOS conference attracts papers and presentations from the world's foremost scientists working in the near-space arena.

In addition to the keynotes and policy forums, the conference features technical sessions, exhibit and poster sessions, thirteen technical short courses plus invited talks. Presenters of the invited talks include Dr. Lindsay Millard, Principal Director for Space Technology, Office of the Under Secretary of Defense for Research and Engineering; Colonel Raj Agrawal, Commander, Space/Combat Delta 2; and Dr. Kelly Hammett, Director and Program Executive Officer for the Space Rapid Capabilities Office, Kirtland Air Force Base, New Mexico.

Colonel Jeremy Raley, Air Force Research Laboratory, and Colonel Joseph Roth, U.S. Space Force return to the AMOS stage to present "How AI/ML can Support SDA." See the full agenda at <https://amostech.com/2023-amos-program/>

Presented by Maui Economic Development Board (MEDB), the AMOS Conference will be hybrid, offering livestreaming of all presentations. In-person registration has been sold out for months with many placing value on the numerous networking opportunities provided. In anticipation of numbers and limited seating, the conference will be streamed live to an overflow room and to the virtual platform and mobile app. Virtual tickets are still available providing access to all presentations as well as online networking and digital swag provided by sponsors.

The 2023 AMOS Conference is sponsored by Advanced Scientific Concepts, Advanced Space, Aerospace Corporation, Anduril, Astro Haven Enterprises, Astroscale, Ball Aerospace, Celestron, Charles River Analytics, Cloudstone Innovations, COMSPOC, Deloitte, Digantara, EO Solutions, ExoAnalytic Solutions, Frontgrade, General Atomics Electromagnetic Systems, GEOST, GMV, HartSci, JHU Applied Physics Laboratory, Kayhan Space, KBR, Kratos, L3 Harris, LeoLabs, Linquest, Lipoa, Lockheed Martin, LSAS Tec, NEC Aerospace Systems, Northrop Grumman, Northstar, Orbital Composites, Peraton, Planewave Instruments, Raytheon, Rocket Communications, SAIC, SEAKR, Slingshot Aerospace, SpaceMap, SpaceNav, SpaceX, SpiderOak, Terran Orbital, The Boeing Company, TOPTICA Photonics, Transastra, USRA  
Learn more at <https://amostech.com/>

*The conference organizers are working with partners to create opportunities for those attending the AMOS Conference to support the recovery efforts, whether by donation or through volunteer efforts. Please visit [mauinuistrong.info/support](https://mauinuistrong.info/support) to donate or volunteer; [makai.org](https://makai.org) for donation or partnership opportunities; or view [medb.org](https://medb.org) for other resources to assist the recovery.*



Individual headshots at <https://amostech.com/keynote-speakers-and-ssa-policy-forum-headline-the-amos-conference/>

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## **Speakers Announced for the 2023 AMOS Conference**

*Kihei, Maui, Hawaii, June 20, 2023* – The program for the 24th AMOS Conference is taking shape with speakers announced for the three-day program to be held on Maui, September 19-22, 2023. Presented by Maui Economic Development Board (MEDB), the conference blends policy with technical sessions; keynotes and invited talks with poster and oral presentations; and exhibits with networking sessions.

General. B. Chance Saltzman will give the opening Keynote on Day 1 of the AMOS Conference. The Chief of Space Operations, United States Space Force is responsible for the organization, training and equipping of all organic and assigned space forces serving in the United States and overseas. As a member of the Joint Chiefs of Staff, he serves as a military adviser to the Secretary of Defense, National Security Council, and the President.

Gen. Saltzman has operational experience with missile and space systems, as a Minuteman III launch officer, and as a satellite operator for the National Reconnaissance Office. He also served as the first Chief of Combat Plans for the Joint Space Operations Center, and later, as Chief of Combat Operations. Before serving in his current assignment, Gen. Saltzman was the Deputy Chief of Space Operations for Operations, Cyber, and Nuclear, United States Space Force, the Pentagon, Arlington, Va.

**Day two of the conference** will start with a keynote presentation by Diane Howard, Director, Commercial Space Policy, National Space Council. Diane's prior public service was as Former Chief Counsel for Space Commerce at the Department of Commerce. In both roles, she was and is pivotal in the implementation of the 2018 U.S. Space Traffic Management Policy and development of a national space supervision framework.

Diane participated in the UN COPUOS Long Term Sustainability work as a private sector advisor to the U.S. Department of State. She served as Executive Secretary and then Vice President of the International Institute of Space Law for multiple terms.

"The AMOS Conference continues to attract participation of the highest caliber with the increasing focus in space domain awareness," said Sandy Ryan, Conference Director, MEDB. "The keynotes provide different perspectives and set the stage for the discussions that follow on and off the stage."

### **SSA Policy Forum**

Each of the day's keynotes will be followed by the SSA Policy Forum that explores international issues related to Space Situational/Domain Awareness. Coordinated in collaboration with Secure World Foundation, the forum brings together the developers and implementers of SSA capabilities and the architects of SSA policy to engage in a panel format.

On Day 1 the topic is "*Evolution of the Commercial SSA Data Market.*" There has been significant growth over the last several years in commercial SSA providers, data products, and services, but there are still many open questions about where the market is headed. This panel will discuss how the commercial SSA sector is evolving and what the challenges are for future growth, including identifying customers and standards for data sharing as well as the balance between the role of the government and private sector in ensuring the safety of spaceflight activities.

On Day 2, the Policy Forum explores "*U.S. Progress on Civil SSA and STM.*" The United States continues to make progress on implementing SPD3, which outlined a path towards a space traffic management framework. This panel features representatives from multiple U.S. agencies involved in implementing SPD-3 to provide updates on what progress has been made so far and plans for the future.

On Day 3 panelists will discuss “*Moving from Industry Best Practices to Space Traffic Management Rules.*” Much has been said about the importance of developing industry best practices as the foundation for future space traffic management rules, and multiple different best practice initiatives have been published or announced. However, there is still the open question of how to combine these various proposals into a common set of standards that can serve as the foundation for space traffic management. This session will discuss how to assess the existing best practices and standards as a baseline for STM, existing gaps that still need to be covered, and how to move forward toward a common STM regime.

For more than 20 years, Maui’s AMOS Conference has been the nation’s leading technical conference on space domain awareness. Bringing together policymakers and experts from the private sector, academia, the military, and government agencies, the AMOS conference attracts papers and presentations from the world’s foremost scientists working in the near-space arena. The conference is hybrid with livestreaming of all oral presentations for those unable to travel to Maui. Virtual attendees have access to all presentations as well as online networking.

The AMOS Conference is preceded by the 6<sup>th</sup> Annual EMER-GEN® program, a professional development opportunity for students and young professionals enthusiastic about careers in space. The program features mentoring sessions with renowned space specialists, along with professional development sessions designed to enhance the young professionals’ effectiveness in a global environment.

Registration is open for both events. Learn more at <https://amostech.com/>

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#### PHOTOS:



Caption: General. B. Chance Saltzman, Chief of Space Operations, United States Space Force, is the opening Keynote for the 2023 AMOS Conference



Caption: Diane Howard, Director, Commercial Space Policy, National Space Council will speak on Day 2 of the AMOS Conference.

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## Young Professionals invited to join 6th EMER-GEN Program

*Kihei, Maui, Hawaii, June 13, 2023* - Young professionals and students enthusiastic about a career in space are invited to register for the 6th Annual EMER-GEN® program. The program kicks off August 30 with a series of three pre-event webinars followed by the main event when the cohort comes together on Maui, Hawaii September 17-19.

Recognizing the need for fostering innovation and collaboration among young professionals in the space industry, the EMER-GEN program was initiated by the Maui Economic Development Board (MEDB) in affiliation with the Space Generation Advisory Council (SGAC.)

Participants engage in workshops, panel discussions, and mentorship sessions conducted by industry experts, gaining valuable insights into cutting-edge technologies, policy frameworks, and entrepreneurship in the space sector. These interactions not only nurture their technical skills but also equip them with the leadership and teamwork abilities required to thrive in their careers.

“At the core of the EMER-GEN program lies the belief that collaboration is the catalyst for innovation,” said Annette Lynch, Program Manager with MEDB. “Through various activities and events, participants are encouraged to brainstorm ideas and work together to tackle some of the most pressing challenges in the space sector.”

Recognizing that diverse minds drive breakthrough innovations, participants will work in teams to solve/hack a problem to create new opportunities for space-based technologies. In another exercise they will discuss policy and be challenged to build consensus with diverse, and often competing, agendas and interests.

Three young professionals on the planning committee are helping to shape the program along with the host organizers, MEDB. Two representatives nominated by SGAC, Kristin Shahady, Astroscale; and José Ferreira, a Ph.D. Student at Department of Astronautical Engineering, University of Southern California; are joined by EMER-GEN Alum and Maui resident, Yosef Ben Gershom, of Hawaii Space Flight Laboratory, University of Hawaii.

Yosef, who attended the EMER-GEN Program in 2019 and 2022, reflected, “EMER-GEN has broadened my perspective and understanding of the many inter-related aspects of SDA and increased my international network of young professionals and experts from academia, government, and the private sector. I enjoy meeting other like-minded people with diverse backgrounds, all working towards the common goal of making outer space more accessible and sustainable for our future.”

A key aspect of EMER-GEN is the mentorship it provides to participants. Esteemed professionals and experts from the space industry guide and inspire the participants throughout the program. These mentors offer valuable advice, share their experiences, and provide insights into career development opportunities. Such mentorship fosters personal and professional growth, encouraging participants to pursue their aspirations in the space sector with confidence.

Through its structured approach and hands-on experiences, EMER-GEN paves the way for a new generation of space leaders who will shape the future of sustainable use of space.

A small number of scholarships are available for Hawaii-based residents to help build and support Hawaii’s aerospace sector. Learn more about the program and schedule and how to apply at <http://www.emer-gen.com>.

The Space Generation Advisory Council is a global non-governmental, non-profit (US 501(c)3) organization and network which aims to represent university students and young space professionals ages 18 to 35 to the United Nations, space agencies, industry, and academia. Headquartered in Vienna, Austria, the SGAC network of members, volunteers and alumni has grown to more than 13,000 members representing more than 150 countries.

The annual Advanced Maui Optical and Space Surveillance Technologies (AMOS) Conference, a program of the Maui Economic Development Board, is the premier technical conference in the nation devoted to space domain awareness. The cross section of military, contractor, and academic participation fuels important dialogue and collaboration on a national and international scale.

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## PHOTO



**Doug Loverro, Loverro Consulting mentors young professionals at the 2022 EMER-GEN Program**



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## Short Courses launched for the 2023 AMOS Conference

*Kihei, Maui, Hawaii, June 6, 2023* - Technical Short Courses have been announced for the 2023 AMOS Conference offering attendees a rich array of unique opportunities to deepen their understanding of cutting-edge technologies and trends. Courses are to be presented either in-person on Maui on September 19; or online on September 18, 2023.

The annual AMOS Conference, now in its 24th year, is renowned for bringing together leading experts, researchers, and practitioners from the fields of space domain awareness serving as a hub for exchanging knowledge and fostering collaboration.

*“With the growth of the AMOS Conference and the space industry, we are seeing increasing numbers of short course proposals with the call for papers that is launched annually in January.”* said Sandy Ryan, Conference Director. *“While it’s tough to say no to a number of high caliber presenters and courses that apply, we are excited about the courses offered this year with a mix of familiar presenters and new.”*

The short courses cover diverse topics, from space situational awareness and machine learning to high-speed imaging and space object characterization. By attending these courses, conference participants gain practical insights and skills that contribute to advancements in optical and space surveillance technologies.

### In-person courses

**Ten short courses will be presented on-site** Tuesday, September 19 at the AMOS Conference venue at the Wailea Beach Resort over two sessions. All participation will be in-person with no live streaming available. The interactive courses, and the presenters are:

1. **Satellite Photometry for Non-resolved Object Characterization** – Presented by Tamara Payne, Principal Scientist, Altamira Technologies Corporation
2. **Joint Task Force Space Defense Commercial Operations (JCO) – Course 100** – Presented by Joseph Gerber, JCO Lead Integrator, KBR
3. **Telescopes and Optics: An Introduction to Ground-based Optical SDA** – Presented by Peter Zimmer, Astronomer; J.T. McGraw and Associates, LLC; and Mark Ackermann, Systems Analyst, Sandia National Labs
4. **Introduction to Event-Based Sensors for SDA: A Hands-On Tutorial** – Presented by Brian McReynolds, PhD Student, U.S. Air Force; Gregory Cohen, Associate Professor, Western Sydney University; Rachel Oliver, Doctoral Student, U.S. Space Force; Zachry Theis, Chemist, AFRL Space Vehicles; Michael Dexter, Director, Air Force Institute of Technology
5. **Astrodynamics for xGEO Space Domain Awareness** – Presented by Aaron J. Rosengren, Assistant Professor, Jacobs School of Engineering, University of California San Diego; Shane D. Ross, Professor, Virginia Tech
6. **CA Risk Assessment** – Presented by Francois Laporte, CAESAR Team senior expert, CNES; Lauri Newman, Conjunction Assessment Program Officer, NASA Headquarters; and Matthew Hejduk, Chief Engineer, NASA Robotic CARA, Aerospace Corporation
7. **CyberRoll Space – A Space Cybersecurity Tabletop Exercise** – Presented by Molly Cooper, Associate Professor, Ferris State University
8. **Deep Learning Methods for Space Domain Awareness** – Presented by Roberto Furfaro, Professor, University of Arizona; Richard Linares, Associate Professor, Massachusetts Institute of Technology
9. **Observing and Characterizing Space Debris** – Presented by Thomas Schildknecht, Vice Director, Head Optical Astronomie, Director Zimmerwald Observatory, Astronomisches Institut Universität Bern



**10. Hands-on, Interactive Astrodynamics Education in the Metaverse** – Presented by Daniel Stouch, Director, Space & Airborne Systems and Rob Hyland, Director of Program Transition, both of Charles River Analytics

### **Virtual Courses**

**Three technical short courses will be presented virtually** on Monday September 18. The presentations are “live,” (no recording) and participants will have the ability to interact with the instructor and attendees in real-time.

**A. ‘The Agile Regulator’ – Regulation, On-Orbit Tracking, and the Law** – Presented by Ralph Dinsley, NORSS Senior Advisor, Space Sustainability Solutions Northumbria (3S Northumbria); Christopher Newman, Professor of Space Law and Policy, Northumbria University

**B. Space Domain Awareness (SDA) Workshop**– Presented by Pamela Magee, Editor, Space Technology Series; Wiley Larson, Managing Editor, CEI

**C. Optical Modeling and Simulation for SSA/SDA**– Presented by Patrick North, Chief Remote Sensing Engineer, Image and Computer Scientist; and Alexander Lam, Application Engineer II; both of AGI, Ansys Government Initiatives

Full descriptions of all the short courses are available at <https://amostech.com/short-courses>. A separate registration fee is required for each course and courses can be added to new and existing registrations. Places will be limited due to space and to ensure an interactive experience for all.

The AMOS Conference continues to be a beacon of innovation, providing valuable opportunities for professionals to stay at the forefront of the field’s latest developments. Learn more about the program at <https://amostech.com/agenda/>

### **PHOTO**



### **CAPTION:**

Thomas Schildknecht leads a short course on Observing and Characterizing Space Debris

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## **AMOS Conference continues to grow with record abstract submissions**

*Kihei, Maui, Hawaii, May 10, 2023* – A record-breaking number of exceptional abstracts from 22 countries were received for the 24<sup>th</sup> Annual AMOS Conference. The premier technical conference in the nation devoted to space domain awareness (SDA) will be held September 19-22, 2023 at the Wailea Beach Resort.

The number and content of the submissions demonstrate the continued evolution and advancements in field of space domain awareness and is reflected in the session topics to be covered this year: Astrodynamics, Cislunar SDA, Conjunction/RPO, Machine Learning for SDA Applications, Satellite Characterization, SDA Systems & Instrumentation, Space-based Assets, Space Debris, Space Domain Awareness and Space Weather.

The event will be hybrid with both in-person and livestream components. In response to the resounding number of submissions, and in an effort to showcase a greater body of technical work, the Conference Organizers are including a virtual poster category in addition to traditional in-person poster and oral presentations.

Thirty-one students have submitted abstracts and are eligible for the 6th annual AMOS Student Award, presented in collaboration with the American Astronautical Society. Students are required to submit their research paper by June 23 to vie for the award which includes a small honorarium, complimentary registration to the AMOS Conference and to EMER-GEN® (September 17-19), the program for young professionals enthusiastic about careers in space.

The call for papers also attracted proposals to conduct short courses at AMOS. The short courses provide an opportunity to upgrade technical job skills and remain abreast of recent developments in fields of interest within SDA. To accommodate more courses, short courses are offered both virtually on Monday September 18 and in-person on Tuesday September 19.

AMOS provides the opportunity to stay on the cutting edge of industry trends while networking and cross-sharing knowledge within the SDA community. In addition to the technical sessions and short courses, the AMOS program features keynote speakers, policy forums, special interest topics, networking receptions and an exhibit venue. Both in-person and livestream attendees will have access to a virtual platform to enable networking and collaboration.

"We expect another sold-out conference with the exhibit venue already at capacity," said Sandy Ryan, Conference Director of Maui Economic Development Board (MEDB), the host of the AMOS Conference. "We hear all the time how companies attending get more work done during the week of AMOS than they do the rest of the year with the connections to be made in the intimate venue."

The 6th Annual EMER-GEN program will feature mentoring sessions with renowned space specialists, along with professional development sessions designed to enhance the young professionals' effectiveness in a global environment. Scheduled pre-event webinars will help the cohort prepare for the on-site program.

The AMOS Conference and EMER-GEN are presented by the Maui Economic Development Board, Inc. (MEDB), a nonprofit corporation established in 1982 to focus on diversifying Maui's economy. MEDB's mission involves taking innovative actions that strengthen existing industry as well as diversifying through new opportunities.

Learn more at <https://amostech.com/> and EMER-GEN at <http://www.emer-gen.com> .



A poster presenter shares their research at the 2022 AMOS Conference