

# Aerospace Sciences Group 2024 SciTech

**ASG Director: Martiqua Post**  
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**ASG Deputy Directors:**

**Joao Azevedo** ([joaoluiz.azevedo@gmail.com](mailto:joaoluiz.azevedo@gmail.com))

**Steve Beresh** ([sjberes@sandia.gov](mailto:sjberes@sandia.gov))

**Crystal Pasiliao** ([crystal.pasiliao@us.af.mil](mailto:crystal.pasiliao@us.af.mil))

January 2024

# Technical Activities Division (2023-2024)

## Lesley Weitz – Chief, Technical Activities Division

Staff Liaison: Angie Lander

### AEROSPACE DESIGN AND STRUCTURES GROUP

**Jeanette Domber, Director**

Vladimir Balabanov – Deputy Director for Cross-Institute Coordination  
Dawn Phillips Price – Deputy Director for Forum Coordination  
TBD – Deputy Director At Large  
Walt Silva – Deputy Director for TC Coordination

Adaptive Structures – Roeland de Breuker  
Design Engineering – Clifton Davies  
Materials – Ray Fertig  
Multidisciplinary Design Optimization – Alicia Kim  
Non-Deterministic Approaches – Andrew Ollikainen  
Spacecraft Structures – Samuel Bradford  
Structural Dynamics – William “Bill” Welsh  
Structures – Stephen Clay  
Survivability – Steven Broussard  
Systems Engineering – Mat French

### AEROSPACE SCIENCES GROUP

**Martiqua Post, Interim Director**

Joao Luiz Azevedo – Deputy Director for Forum Coordination  
Steve Beresh – Deputy Director for Disruptive Engagement  
Crystal Pasilliao – Deputy Director for TC Engagement  
TBD – Deputy Director for Strategic Planning and Initiatives

Aeroacoustics – Dimitri Papamoschou  
Aerodynamic Measurement Technology – Sean Kearney  
Applied Aerodynamics – Jim Coder  
Astrodynamics – Kyle DeMars  
Atmospheric and Space Environments – Nelson Green  
Atmospheric Flight Mechanics – Craig Woolsey  
Fluid Dynamics – Nathan Tichenor  
Ground Testing – Ryan Kew  
Guidance, Navigation and Control – Julie Parish  
Meshing, Visualization & Computational Environments – Carolyn Woeber  
Modeling and Simulation – Peter Zaal  
Plasmadynamics and Lasers – **Sally Bane**  
Thermophysics – Jason Rabinovitch

### INFORMATION SYSTEMS GROUP

**Michel D. Ingham, Director**

Misty Davies – Deputy Director  
John Valasek – Deputy Director  
Daniel “Dani” Selva – Deputy Director for Forums

Communications Systems – **Rob Singh**  
Computer Systems – Jim Paunicka  
Digital Avionics – Arthur Tank  
Human-Machine Teaming – Karen Feigh  
Information and Command and Control Systems – Jimmie McEver  
Intelligent Systems – Natasha Neogi  
Sensor Systems and Information Fusion – Jason Wadley  
Software – Christoph Torens

### PROPULSION AND ENERGY GROUP

**Rusty Powell, Director**

Stephanie Sawhill – Deputy Director for Forum Coordination  
Wayne Hurwitz – Deputy Director at Large and Operations

Stephen Lynch, Deputy Director for Air Breathing Propulsion  
Gas Turbine Engines - Eric Ruggiero  
High Speed Air Breathing Propulsion – Joel Malo-Molina  
Inlets, Nozzles, and Propulsion Systems Integration – Melissa Carter  
Pressure Gain Combustion – Mirko Gamba

*Mitchell Walker – Deputy Director for Rocket, Space & Advanced Propulsion*

Electric Propulsion – Richard Hofer  
Hybrid Rockets – Trevor Elliott  
Liquid Propulsion – Vineet Ahuja  
Nuclear and Future Flight Propulsion – Jim Cavera  
Propellants and Combustion – Venke Sankaran  
Solid Rockets – Agostino Neri

*Ashwani Gupta – Deputy Director for Energy*  
Aerospace Power Systems – Jeremiah McNatt  
Energetic Components and Systems – Jim Baglini, Jr.  
Terrestrial Energy Systems – Tarek Abdel-Salam

### AIRCRAFT TECHNOLOGY, INTEGRATION, AND OPERATIONS GROUP

**David Maroney, Director**

Megan Scheidt – Deputy Director for Cross-Institute Coordination  
David Levy – Deputy Director for Forums

TBD – Deputy Director for Aircraft Operations  
Aerospace Lifecycle Management – James Chou  
Aircraft Operations – Gabriele Enea  
Air Transportation Systems – Peng Wei  
Flight Testing – William “James” Childress

*Luca Maddalena – Deputy Director for Aircraft Technologies*  
Aerodynamic Decelerator Systems – Michael Petersen  
Aircraft Design – Jason Merret  
Balloon Systems – Sarah Roth  
Electrified Aircraft Technology – Gökçin Çınar\* following EATS  
General Aviation – Nicoletta Fala  
HyTASP – Dan Marren  
Lighter-Than-Air Systems – Michael Conners  
V/STOL Aircraft Systems – Geoffrey Jeram

### SPACE AND MISSILES GROUP

**Stephen Blanchette, Director**

Karen D. Barker – Deputy Director  
Ron Kohl – Deputy Director  
Dustin Otten – Deputy Director  
Tim Wadhams – Deputy Director

Life Sciences and Systems – Ryan Kobrick  
Microgravity and Space Processes – Sunil Chintalapati  
Missile Systems – Marc Bernstein  
Reusable Launch Vehicles – Amrutur Anilkumar  
Small Satellite – Kerrie Cahoy  
Space Architecture – Sandra Haeuplik-Meusburger  
Space Automation and Robotics – **Samantha Glassner**  
Space Settlement – Bryce Meyer (Acting)  
Space Logistics – Koki Ho  
Space Operations and Support – Sweetie Pate  
Space Resources – Christopher Dryer  
Space Systems – John Carsten  
Space Tethers – Matthew Cartmell  
Space Transportation – Israel Salvador  
Weapon System Effectiveness – Angela Diggs

### TAD Liaisons

Ethics Committee – Jeff Hamstra  
Honors & Awards – Jim Guglielmo  
Publications – Wayne Hurwitz  
Standards – Ron Kohl

### Technical Integration Subcommittee (TIS)

Megan Scheidt, Chair  
Vladimir Balabanov  
Steve Beresh  
Misty Davies  
Ron Kohl  
David Maroney  
Tom Smith

### Forums Integration Subcommittee (FIS)

Joao Luiz Azevedo, Chair  
Dawn Phillips Price, AD SG Rep  
David Levy, ATIO Rep  
Dani Selva, ISG Rep  
Stephanie Sawhill, PEG Rep  
Dustin Otten, SMG Rep

Last modified: Dec 1, 2023



# AIAA Strategic Plan

## MISSION

**AIAA EXISTS TO HELP AEROSPACE PROFESSIONALS AND THEIR ORGANIZATIONS SUCCEED**

## CORE STRATEGIES



**DATA DRIVEN** Use the appropriate data in the analysis of decisions



**CURATE CONTENT** Be the leader in curated aerospace content



**THOUGHT LEADER** Be the thought leader in technology and capability advancement

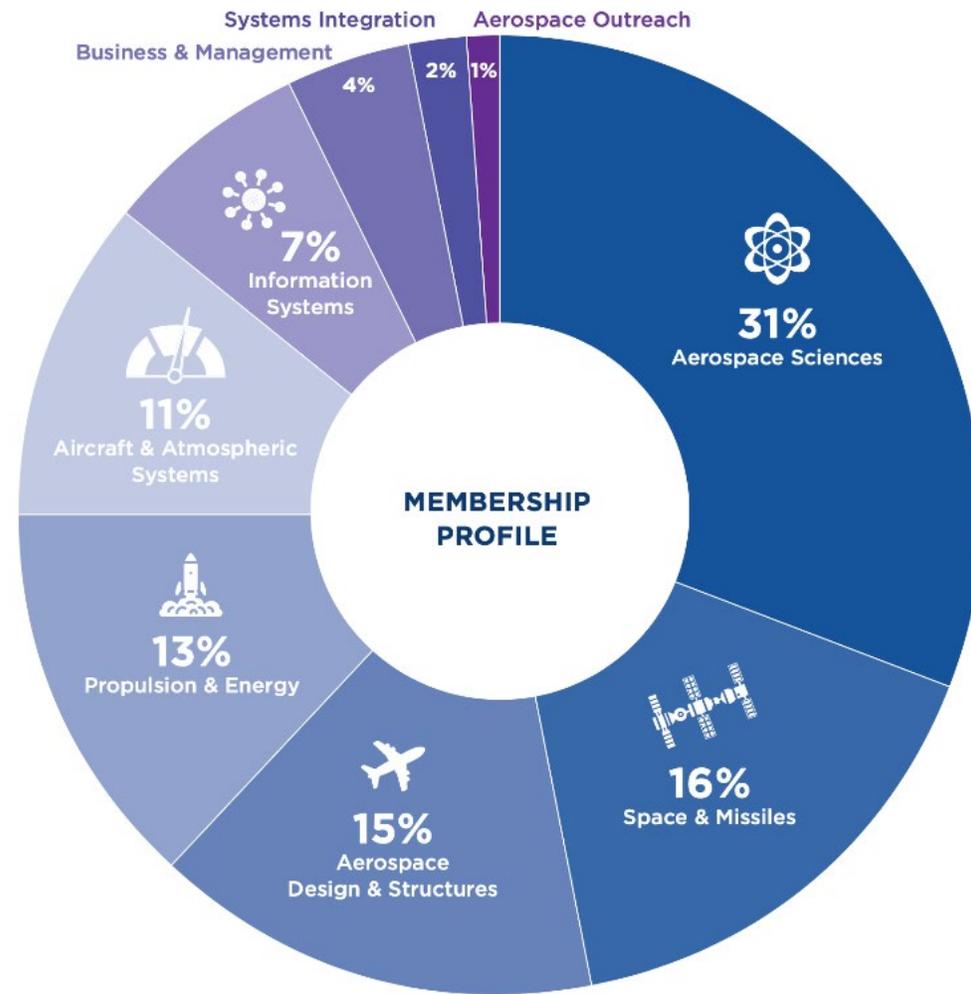
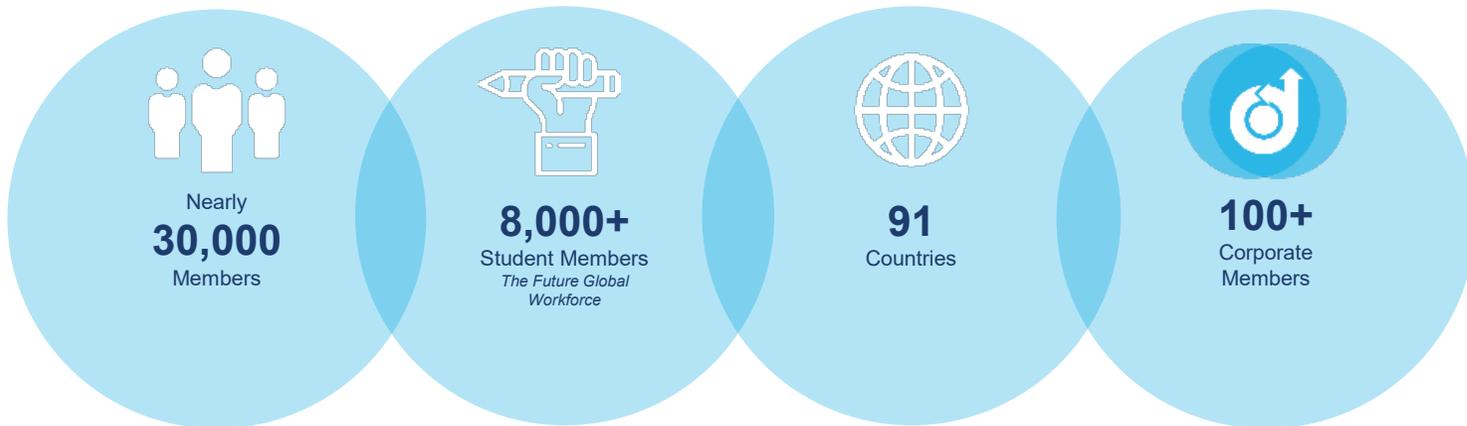
## GOALS

- 1: INCREASE ENGAGEMENT** and overall customer growth.
- 2: IMPROVE VOLUNTEER & LEADERSHIP DEVELOPMENT** for AIAA's future.
- 3: ALIGN VOLUNTEER ACTIVITIES** to the strategic plan in partnership with AIAA staff.
- 4: ACHIEVE POSITIVE** net revenue.
- 5: REFLECT SOCIETY'S DEMOGRAPHICS** in AIAA membership & leadership.

# AIAA Today

## AIAA MISSION:

To help aerospace professionals and their organizations succeed



# AIAA Member Engagement & Resources

## EVENTS

*In-person and Virtual*



**10,000**

FORUM PARTICIPANTS

**5,200**

TECHNICAL PRESENTATIONS

SCITECH FORUM

ASCEND

DEFENSE FORUM

AVIATION FORUM

## MEMBER PARTICIPATION

**71** TECHNICAL COMMITTEES

**21** INTEGRATION & OUTREACH COMMITTEES

**56** LOCAL SECTIONS ACROSS 7 GEOGRAPHIC REGIONS

**20** COMMITTEES ON STANDARDS

## TECHNICAL RESOURCES

**8** PEER-REVIEWED JOURNALS

Meeting Papers/Proceedings

*Aerospace America* – the flagship publication of AIAA

Technical, business courses, and online learning

Aerospace Perspectives Webinars

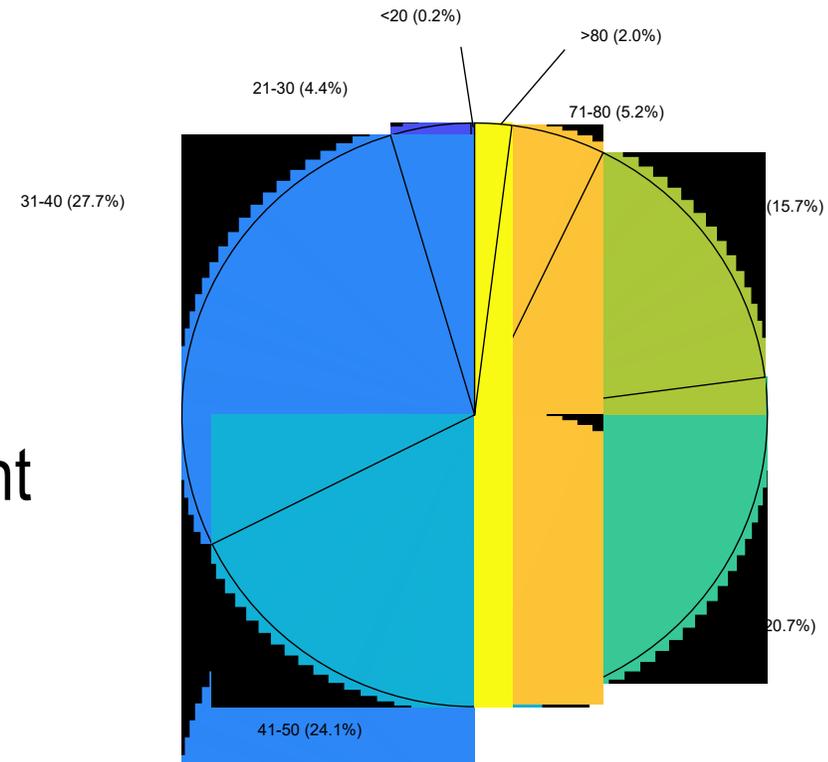
Career Center

# TAD Goal: Increase Students in TAD

- **Goal:** Each TC should add at least one (1) new student member to their 2024-2025 roster.

## Aligns with AIAA Strategic Goals

1. Increase Engagement
2. Improve Volunteer and Leadership Development
3. Align Volunteer Activities
5. Reflect Society's Demographics



2023-2024 TC Members by Age

# TAD Goal: Increase Diversity in TAD

1. Increase the percent of women engaged in TAD each year.

2020 Ref: 11%    **2023: 13.1%**    **2024 Goal: 16%**

2. Increase the percent of TAD members reporting ethnicity each year.

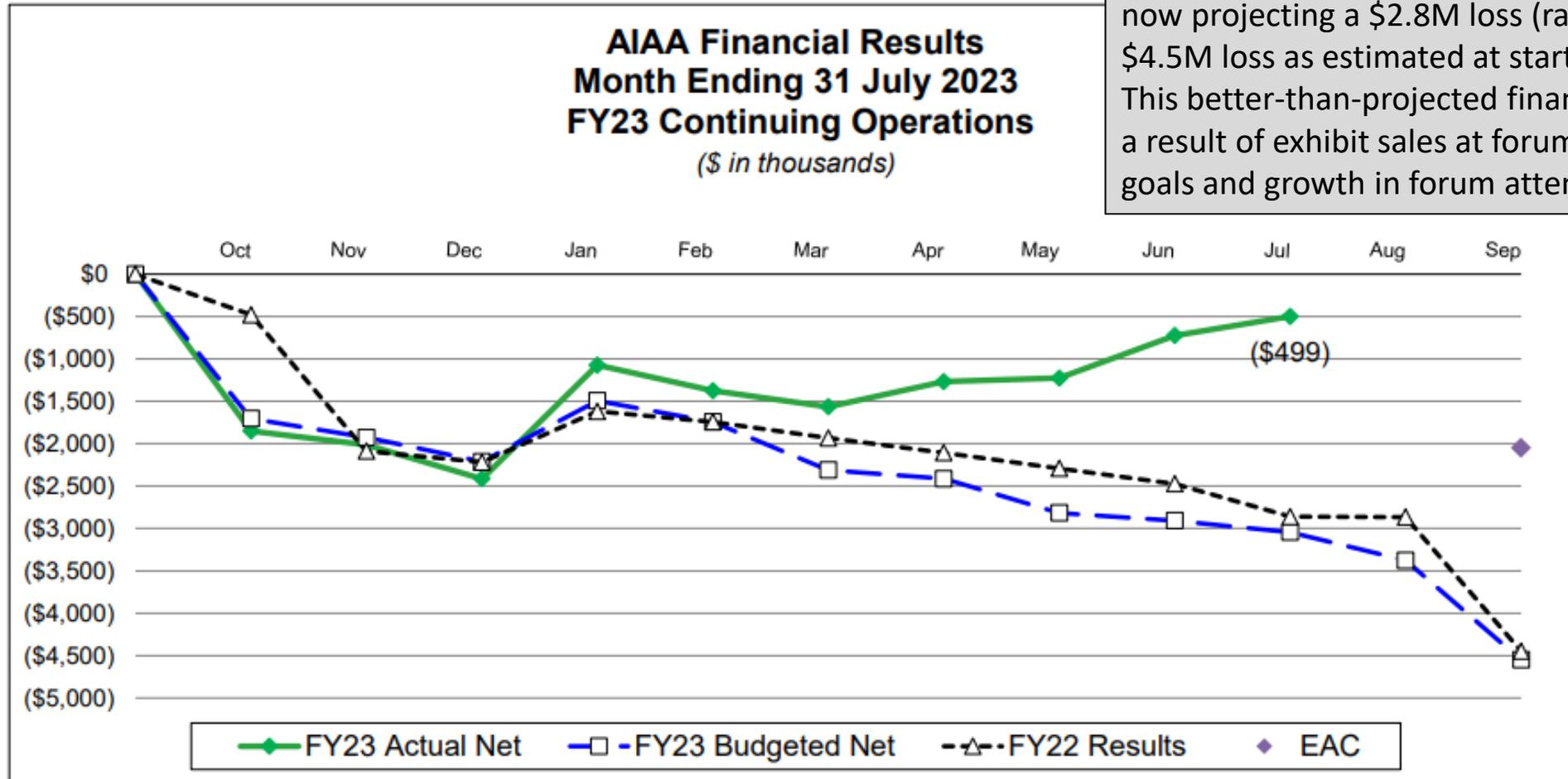
2020 Ref: 28%    **2023: 84%**    **2024 Goal: 100%**

Metric	2020	2021	2022	2023	2023 Goal	Net Change (2020 to 2023)
Total TAD Members	2,472	2,515	2,571	2,727	Increase over 2020	+255 Members (+10.3%)
% Female Members	10.6%	11.9%	12.3%	13.0%	16%	+2.4%
% Reporting Ethnicity	26.7%	56.4%	82.1%	84.7%	100%	+56%

# Goal 4: Net Positive Revenue – FY23 YTD

From Dan Dumbacher, Volunteer Town Hall, Oct 2023

At the November Council of Directors meeting, verbal update on AIAA's financial state: now projecting a \$2.8M loss (rather than \$4.5M loss as estimated at start FY23). This better-than-projected financial outcome is a result of exhibit sales at forums exceeding goals and growth in forum attendance.



# Domain Task Forces

## Aeronautics

- Advanced Air Mobility
  - Phase 2 to be assessed by new Aero DL
- Carbon Emissions & Sustainability
  - Phase 2 to be assessed by new Aero DL
- Certification
  - Mike Borfitz and Nick Lappos
  - Report out at SciTech 2024
- High-Speed Flight
  - Todd Magee, Rodney Bowersox
  - Formal Launch at SciTech 2024

## Aerospace R&D

- Transformative Systems Engineering
  - Jim Faist
  - Focus on procurement, system modeling
- Autonomy/AI/ML
  - John Valasek
  - Current focus: challenge / competition development
- Advanced Materials/Advanced Manufacturing
  - In formation

## Space

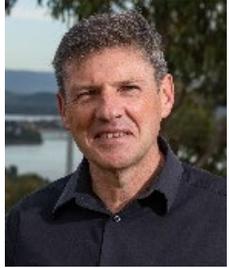
- Space Traffic Coordination
  - Roger McNamara
  - Phase 2 in development
- Cislunar Ecosystem
  - Dennis Paul
  - Focus on economic, policy impacts
  - Partnerships with counterpart associations

<https://www.aiaa.org/domains/aeronautics>

<https://www.aiaa.org/domains/aerospaceRandD>

<https://www.aiaa.org/domains/space>

# New Domain Leads



## **Aeronautics: Russell R. Boyce, Mission Assurance Pty Ltd (AIAA Fellow)**

Russell previously served as Director of UNSW Canberra Space and was Professor and Chair of Hypersonics at the University of Queensland. Additionally, he has advised the MILO Space Science Institute and Australian Space Agency and chaired the Australian Academy of Science's National Committee for Space and Radio Science.



## **Aerospace R&D: Greg Zacharias, Pasteur Labs (AIAA Senior Member)**

Greg previously served as Chief Scientist for the Director of Operational Test and Evaluation, Office of the Secretary of Defense (2018–2021) and Chief Scientist of the United States Air Force (2015–2018). He was cofounder and later president of Charles River Analytics. He has served on the National Research Council and the USAF SAB.



## **Space: Brent Sherwood, Blue Origin (retired) (AIAA Associate Fellow)**

Brent recently retired from Blue Origin as Senior Vice President, Advanced Development Programs. Before joining Blue Origin, he held various positions at NASA Jet Propulsion Laboratory and The Boeing Company. Brent is a former chair of the AIAA Space Architecture Technical Committee.

# AIAA Domain Initiative



**Russell R. Boyce**  
Aeronautics Domain Lead



**Greg Zacharias**  
Aerospace R&D Domain Lead



**Brent Sherwood**  
Space Domain Lead

## Domain Meetings at SciTech

- High Speed Task Force
  - Mon, 1/8: 1300-1500, Columbia 37
- Autonomy/AI/ML Task Force
  - Mon, 1/8: 1400-1530, Discovery 43
- Commercial Aviation Sustainability Working Group
  - Tue, 1/9: 1600-1800, Columbia 36
- Transformative Systems Engineering Task Force
  - Wed, 1/10: 1000-1130, Columbia 36
- Cislunar Ecosystem Task Force
  - Wed, 1/10: 1600-1730, Columbia 37
- Advanced Materials Task Force
  - Thu, 1/11: 1600-1700, Regency O&P
- Space Traffic Coordination Task Force
  - Fri, 1/12: 0900-1000, Winter Park 54

# Technical Integration Subcommittee: Near-Term Priorities

- Chair: Megan Scheidt
- Assess TC health and TAD group structure
  - Define Metrics for a “Healthy TC” and a Process for De-chartering a TC
- Identify from the TC Annual Reports and communicate emerging technical topics
- Develop action plan to engage students in TC activities
- Explore TC Showcase-like events at forums
- Improve coordination between forums and publications

# Forums Integration Subcommittee: Near-Term Priorities

- Chair: Joao Luiz Azevedo
- Technical plenaries and deconflicting relevant talks
- Integration domain priorities into technical content for forums
- De-conflict deadlines for the forums (general calendar for the forums)
- Technical talk lengths: 20 versus 30-minute talks
- Better understanding of AVIATION/ASCEND collocation
- Develop TC Chair Training

## Converting Conference Papers to Journal

Authors are encouraged to submit conference papers for consideration at an AIAA journal:

<https://www.aiaa.org/publications/journals>

**TCs can help!** Session chairs & technical program chairs identify high-quality papers & personally encourage authors to submit to a journal at the conference & follow up w/email.

## Publications Awards

AIAA awards two publications awards...

... **we need nominations from TCs!**

- Pendray Award: awarded to individual for excellence in aerospace publishing
- Summerfield Award: awarded to authors of an AIAA-published book

**Find out more:** <https://www.aiaa.org/get-involved/honors-awards/awards/publication-awards>

## New: AI Ethics in Publishing Policy

A committee of Publications and TAD representatives has developed a new policy regarding ethics for the use of generative AI in publishing. It has been integrated into the current publishing ethics policy: <https://www.aiaa.org/publications/Publish-with-AIAA/Ethical-Standards-for-Publication-of-Aeronautics-and-Astronautics-Research>

## Questions?

For Publications questions, contact:

Jacqueline O'Connor, Publications Chair, [jxo22@psu.edu](mailto:jxo22@psu.edu)

David Arthur, AIAA Staff, [DavidA@aiaa.org](mailto:DavidA@aiaa.org)

# Forum Technical Chairs

## ➤ 2024 SciTech -- Thank you!!

- FTC: Mrinal Kumar, GNC
- Deputy FTC: Atila Dogan, AFM

## ➤ 2024 AVIATION

- FTC: Andrew Magstadt, FD
- Deputy FTC: Jim Coder, APA

## ➤ 2025 SciTech

- FTC: Atila Dogan, AFM
- Deputy FTC: **MS**

## ➤ 2025 AVIATION

- FTC: Jim Coder, APA
- Deputy FTC: **AMT**

Year	SciTech			AVIATION	
	ASG Forum Technical Chair (FTC)	ASG Deputy FTC	ASG On-Deck Deputy FTC	ASG FTC	ASG Deputy FTC
2022	AMT/GT	AA	GNC	ASE	TP
2023	AA	GNC	AFM	TP	FD
2024	GNC	AFM	MS	FD	APA
2025	AFM	MS	PDL	APA	AMT/GT
2026	MS	PDL	TP	AMT/GT	AA
2027	PDL	TP	FD	AA	AFM

# Upcoming Conference Events & TC Deadlines

- SciTech Committee Lounge –Tower 2, Room 22512 (25th Floor)
  - 8am-6pm, Open drop-in space in the parlor of a hotel suite
- ASG Meeting – Tues 9 Jan, 11am, Columbia 37
- Associate Fellows Reception – Wed 10 Jan, 6pm, Plaza F&G
  
- Update Awards description on AIAA website – due 26 Jan
- Official TC Rosters for 2024-2025 - due 31 Jan
- Annual Reports – due 31 Jan

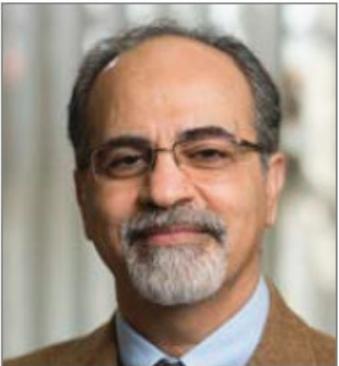
# Upcoming Election Candidates

The Election will be open **29 January – 23 February 2024**

## Aerospace Design and Structures Group Director



**Dawn Phillips**  
NASA Marshall Space Flight Center



**Masoud Rais-Rohani**  
University of Maine

## Aerospace Sciences Group Director



**Chris Cotting**  
EpiSci



**Martiqua Post**  
Air Force Academy

# Important Dates to Remember

## ➤ **January**

- READ/IOD/TAD and Council Meetings

## ➤ **January 31**

- Annual Report online submission
- Committee Rosters to Director & AIAA

## ➤ **April 15**

- Associate Fellow Nominations

## ➤ **Spring Business Meetings**

- READ/IOD/TAD/Council/Board Meetings

## ➤ **May 15**

- Associate Fellow References

## ➤ **June 15**

- Fellow/Honorary Fellow Nominations

## ➤ **July**

- Nominations for AIAA Board of Trustees

## ➤ **July 15**

- Fellow/Honorary Fellow References

## ➤ **August**

- READ/IOD/TAD/Council/Board Meetings

## ➤ **September 1**

- Aerospace America YIR Article (YIR) to AIAA Headquarters

## **As Appropriate**

- AIAA Award Recipient Recommendations
- Senior Member Applications (anytime)

# AIAA Upcoming Events



**AIAA SciTech Forum**  
8–12 January 2024  
Orlando, Florida



**AIAA DEFENSE Forum**  
16–18 April 2024  
Laurel, Maryland



**AIAA Awards Gala**  
15 May 2024  
Washington, DC



**AIAA AVIATION Forum**  
29 July–2 August 2024  
Las Vegas, Nevada



**ASCEND**  
30 July–1 August 2024  
Las Vegas, Nevada



**AMERICAN INSTITUTE OF  
AERONAUTICS AND ASTRONAUTICS**

# Domain Vision Development Logic Flow



# TC Member Responsibilities

- **TC Members must be AIAA Members**
- **Stay in Communication**
  - Attend TC and Subcommittee/Working Group meetings
  - Notify TC and Subcommittee Chairs if you are unable to attend
- **Participate Actively...**
  - In any combination of two Subcommittees/Working Groups or conference support roles
  - Be a major contributor/leader of at least one of these activities
- <sup>22</sup>➤ **When the Opportunity Arises...**
  - Help recruit new TC members
  - Submit nominations for Awards and member grade promotions