

Aerospace Sciences Group 2024 SciTech

ASG Director: Martiqua Post
(martiqua.post@afacademy.af.edu)

ASG Deputy Directors:
Joao Azevedo (joaoluiz.azevedo@gmail.com)
Steve Beresh (sjberes@sandia.gov)
Crystal Pasiliao (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 Pasillao – 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 Connors

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



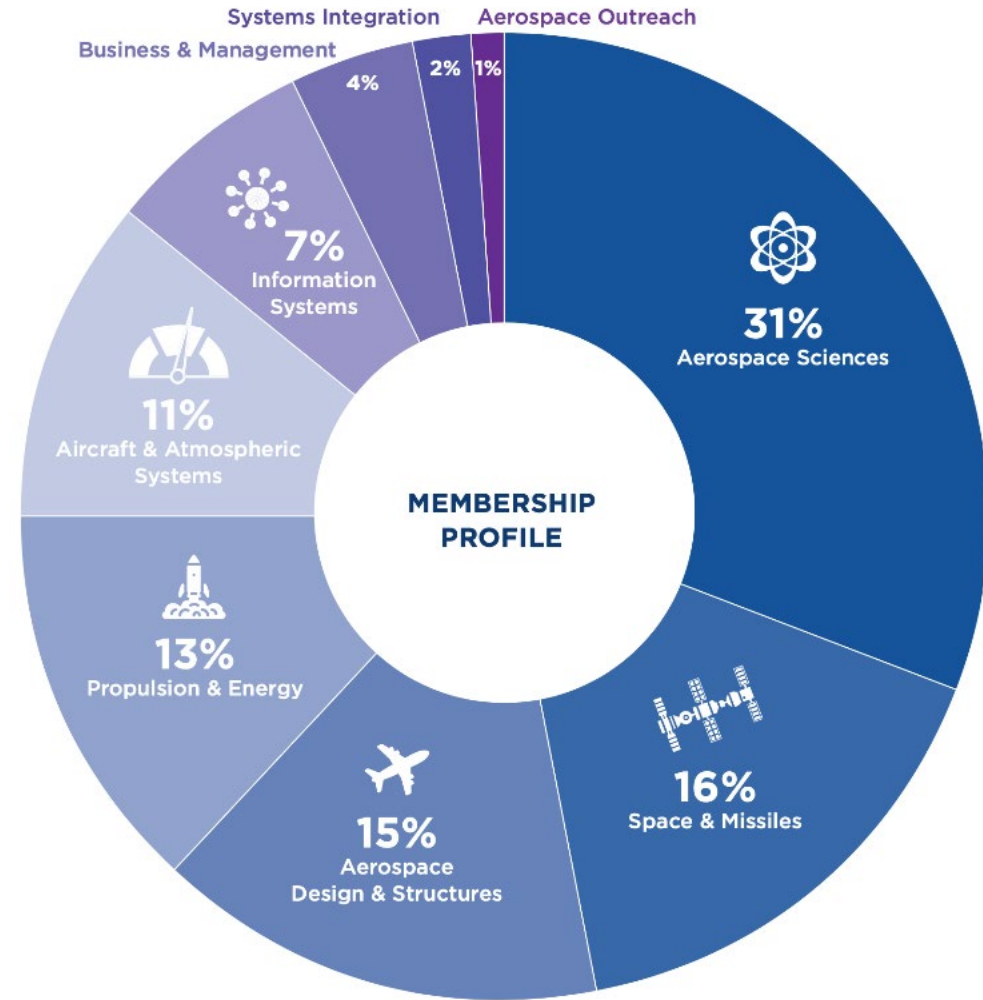
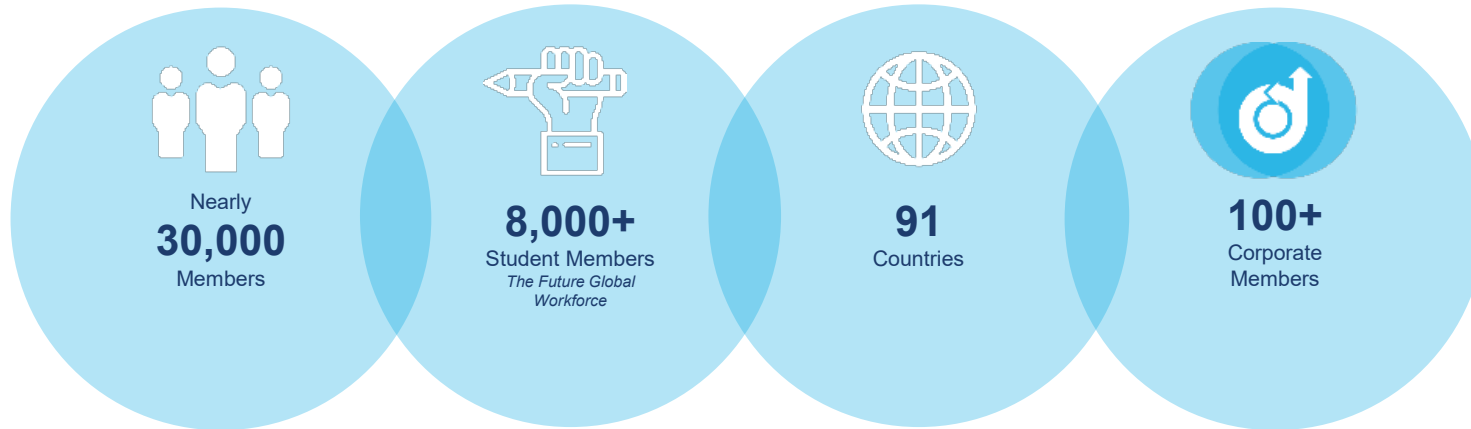
THOUGHT LEADER Be the thought leader in technology and capability advancement

- ## 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:

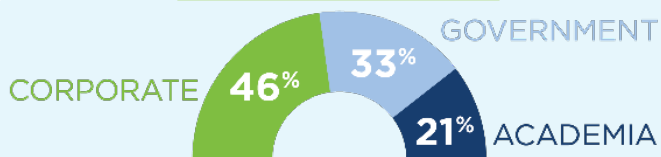
To help aerospace professionals and their organizations succeed



AIAA Member Engagement & Resources

EVENTS

In-person and Virtual



10,000

FORUM PARTICIPANTS

5,200

TECHNICAL
PRESENTATIONS

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

ASCEND

SCI+TECH FORUM

DEFENSE FORUM

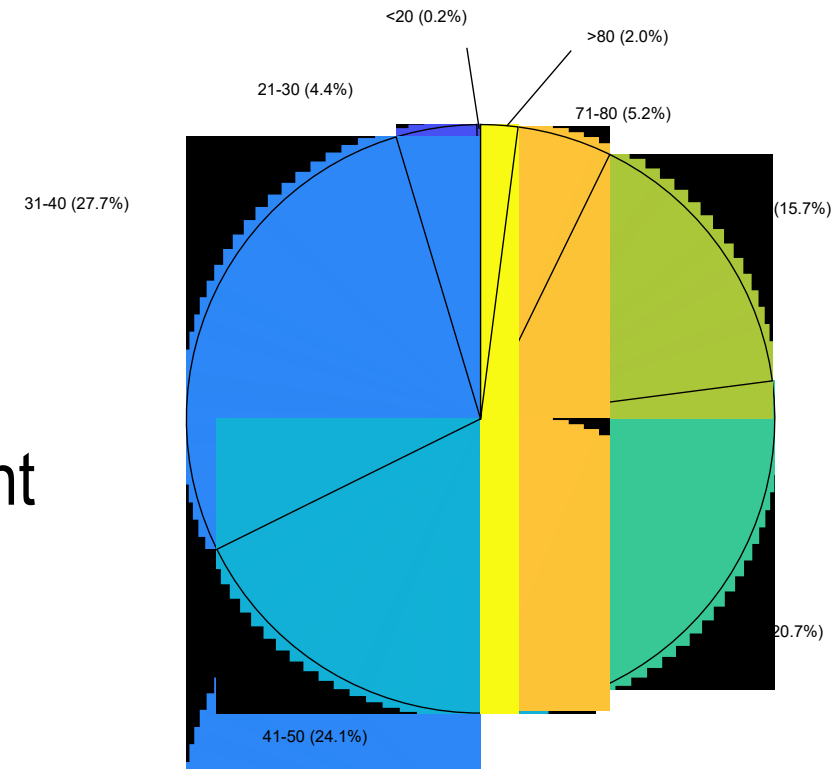
AVIATION FORUM

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.

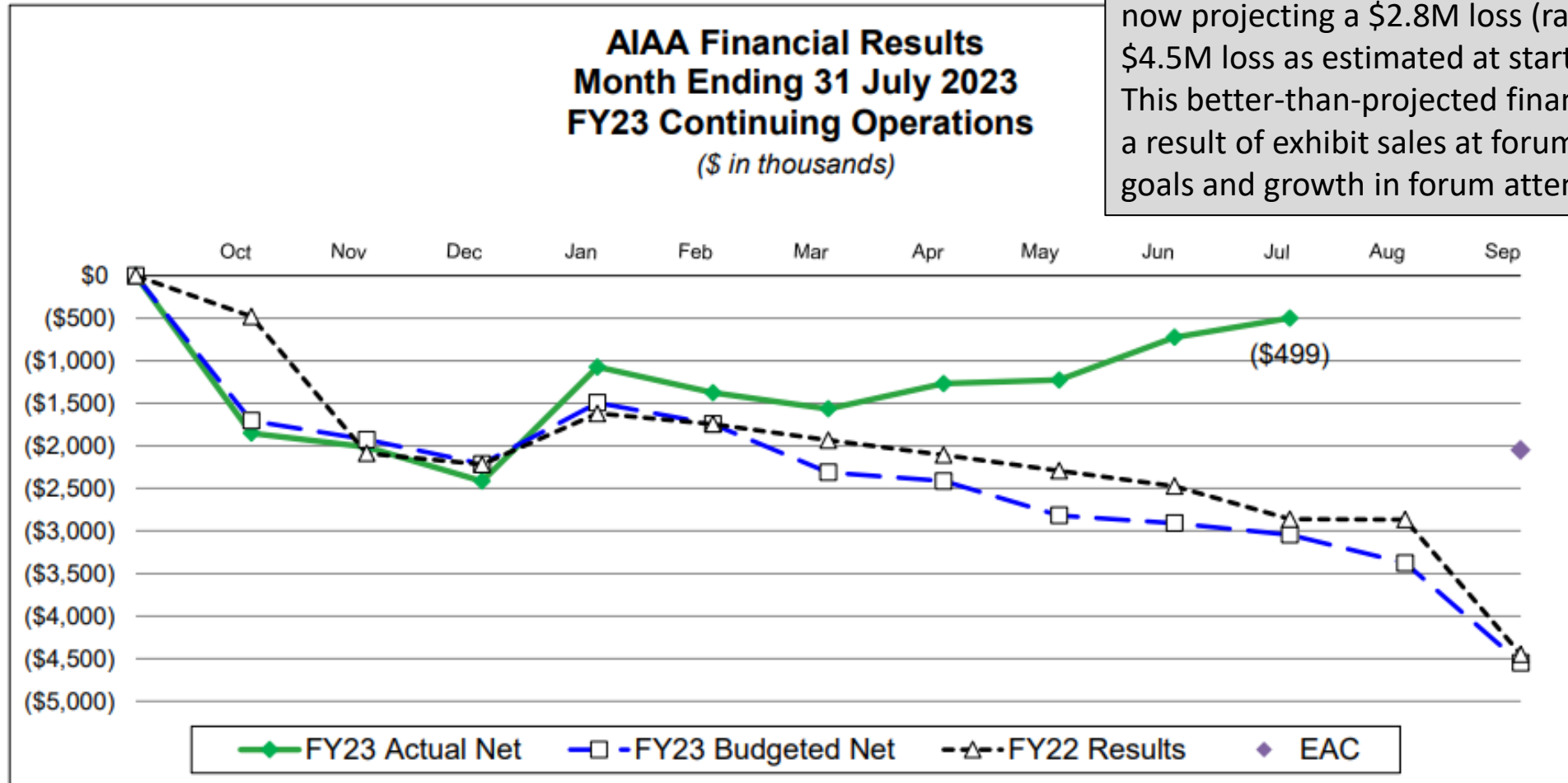
2020 Ref: 28% **2023: 84%** **2024 Goal: 100%**

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>

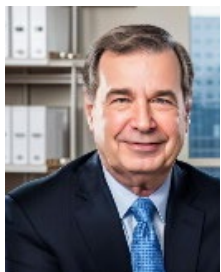
<https://www.aiaa.org/domains/space>

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

AIAA Technical Committee Guidance for Publications

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

David Arthur, AIAA Staff, 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**

	SciTech			AVIATION	
Year	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

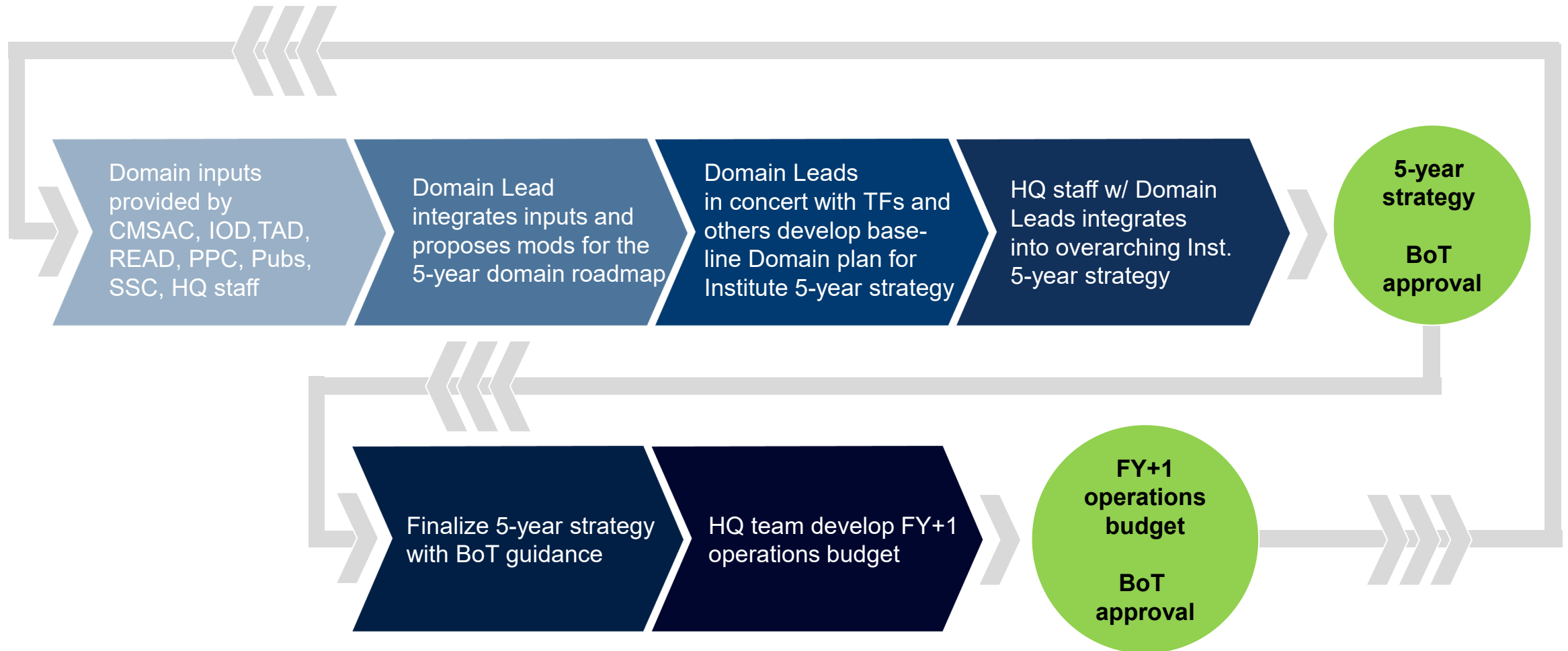


ASCEND
30 July–1 August 2024
Las Vegas, Nevada



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
- ²² ➤ **When the Opportunity Arises...**
 - Help recruit new TC members
 - Submit nominations for Awards and member grade promotions