

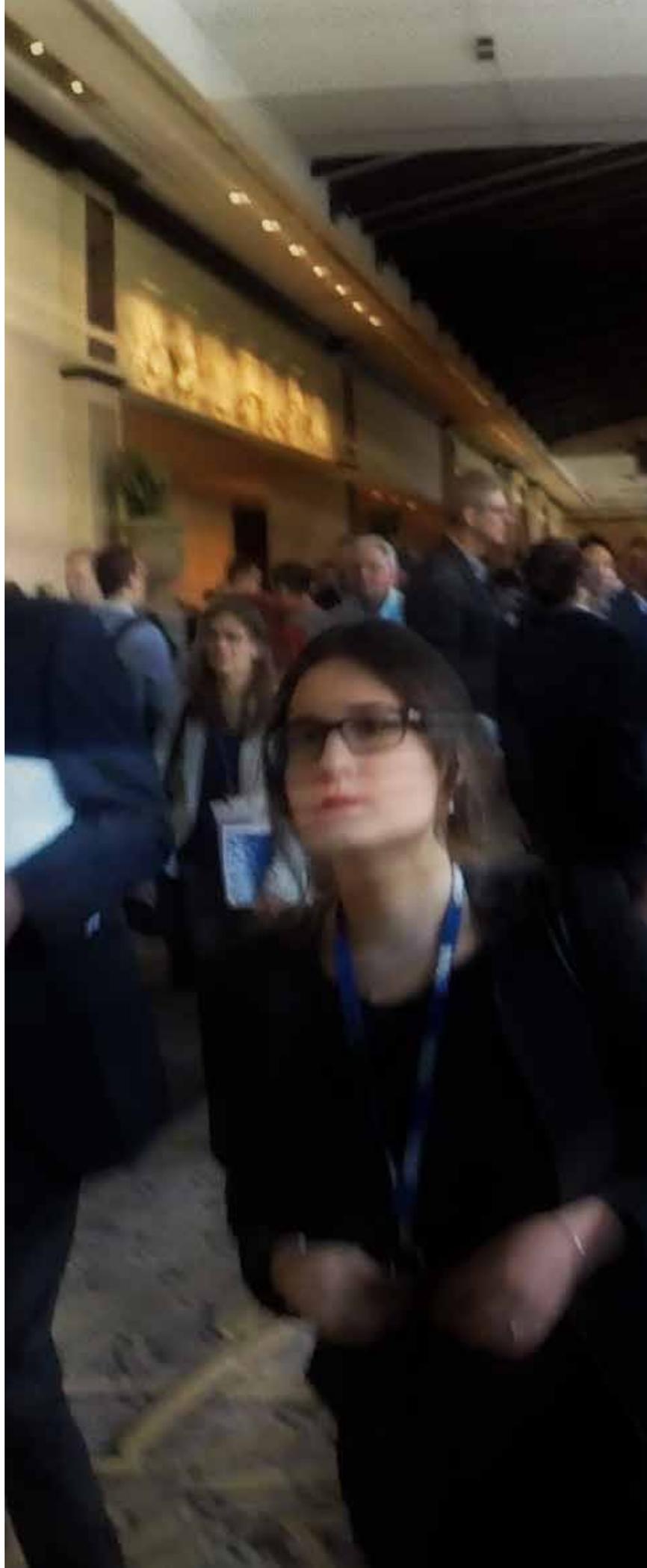
Charting a Course for Success

AIAA Annual Report
2014-2015



Charting A Course For Success

The American Institute of Aeronautics and Astronautics (AIAA) is more than 30,000 engineers and scientists from 88 countries dedicated to the global aerospace profession. AIAA convenes five yearly forums; publishes books, technical journals, and *Aerospace America*; hosts a collection of 140,000 technical papers; develops and maintains standards; honors and celebrates achievement; and advocates on policy issues. AIAA serves aerospace professionals around the world—who are shaping the future of aerospace—by providing the tools, insights, and collaborative exchanges to advance the state of the art in engineering and science for aviation, space, and defense.



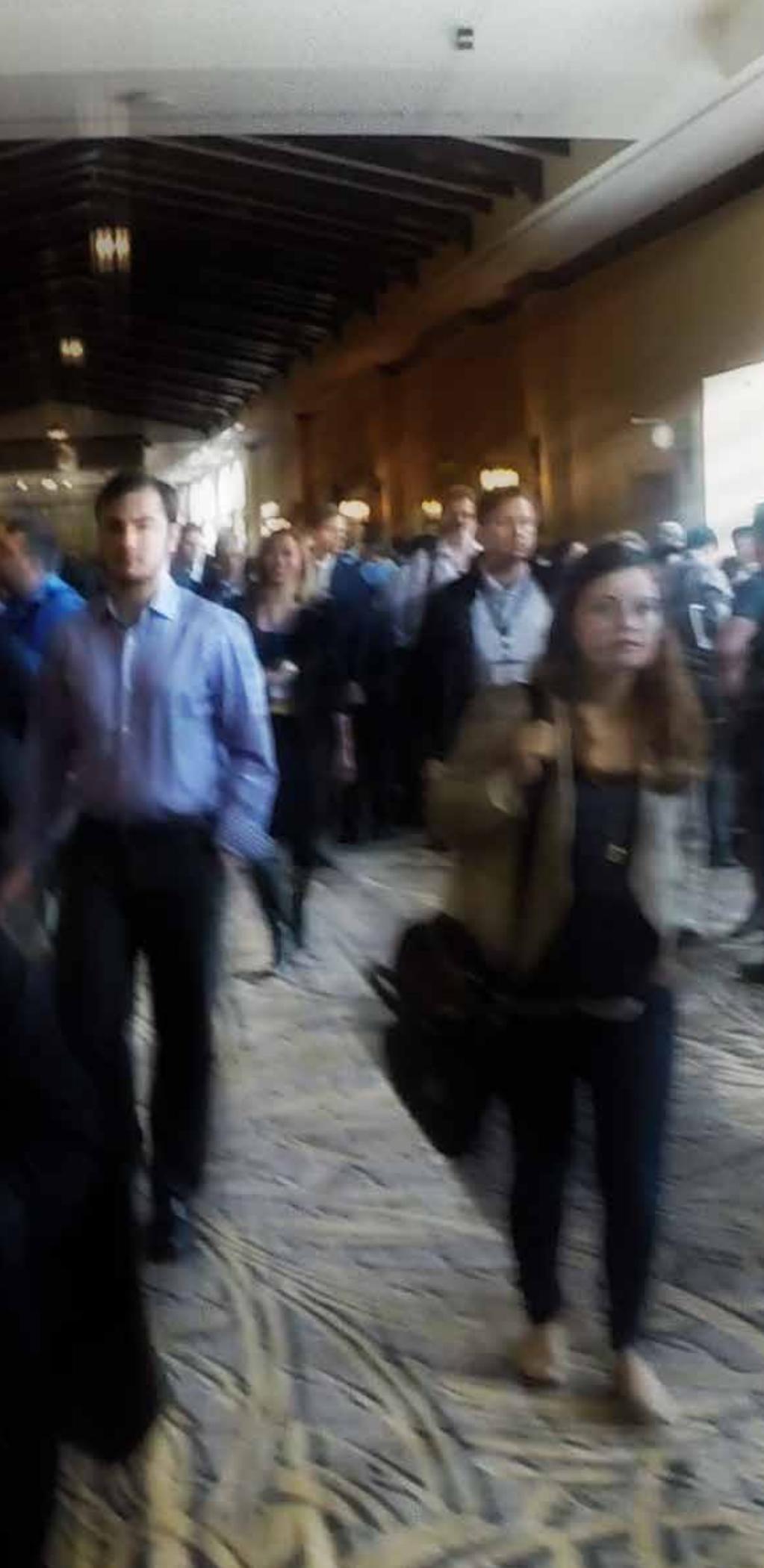
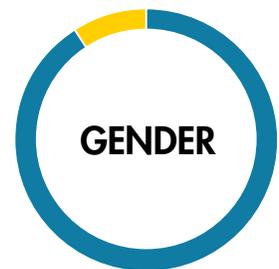
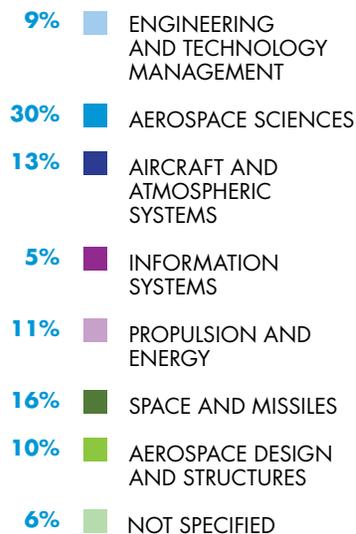
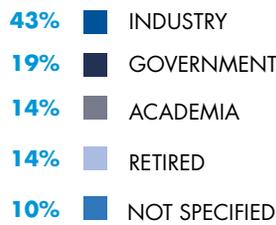
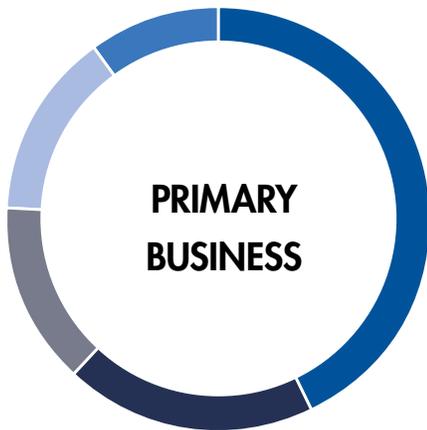
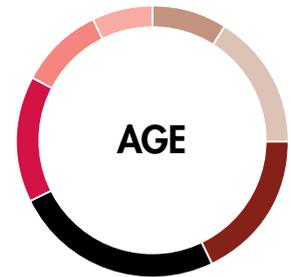
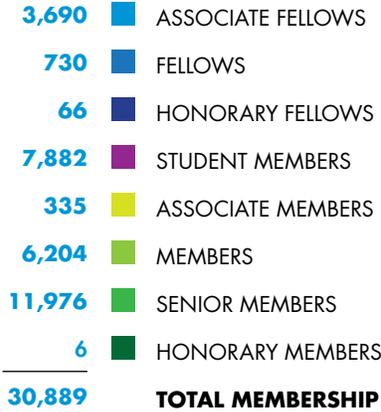
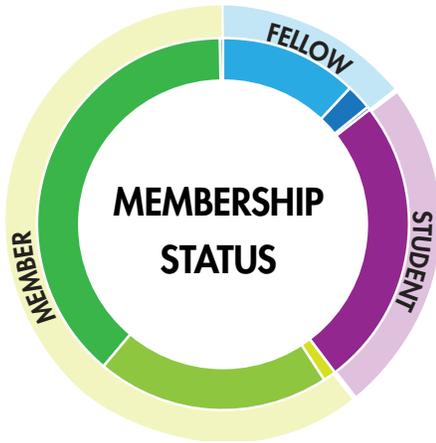


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A Snapshot of AIAA

Who We Are



Financial Information 2012–2014 (in thousands U.S. \$)

	Institute Total Assets	Institute Revenue	Institute Net Assets
2012	36,642	25,713	20,103
2013	38,151	22,116	26,789
2014	38,770	23,030	31,426

Where We Are



- 24% REGION 1 (NORTHEAST)
- 11% REGION 2 (SOUTHEAST)
- 8% REGION 3 (CENTRAL)
- 8% REGION 4 (SOUTH CENTRAL)
- 7% REGION 5 (MID WEST)
- 24% REGION 6 (WEST)
- 18% REGION 7 (OUTSIDE U.S.)



- 46% EUROPE
- 38% ASIA AND PACIFIC
- 8% CANADA AND MEXICO
- 3% CENTRAL AND SOUTH AMERICA
- 4% MIDDLE EAST AND NORTH AFRICA
- 1% AFRICA

President's Report



James F. Albaugh

A handwritten signature in black ink, appearing to read "Jim Albaugh".

The difficult decisions that we've made, and changes we have implemented, have positioned us well for growth and we are optimistic about our future.

A year ago in the Annual Report my predecessor Mike Griffin described some of the tough choices that had been made to confront and address the challenges affecting the Institute. The difficult decisions that we've made, and changes we have implemented, have positioned us well for growth and we are optimistic about our future. One favorable indicator of our efforts is that the Institute ended the fiscal year 2014 with positive financial results (see page 34 for the consolidated financial report). While the current fiscal year is nowhere near complete, the early successes of AIAA SciTech 2015 and a few other endeavors are signs of a positive trend. As Mike predicted, AIAA has emerged "stronger and better suited for tomorrow." And though the challenges of the last several years have been largely overcome, in the current dynamic environment there are always new and different challenges to face.

In that same Annual Report, I described the Strategic Plan that is to chart the course for continued success. At this juncture I want to focus on one of the plan's objectives that is critical to prepare AIAA to meet new challenges: to "develop and implement a responsive and collaborative Governance Structure and Volunteer-Staff Partnership." This objective has been a primary focus for the Institute Development Committee, the Board of Directors, and me for the past 15 months.

An overall governance evaluation began with the establishment of a Blue Ribbon Panel (BRP) in January 2014 that was tasked with

- Examining the efficacy of the AIAA governance structure
- Benchmarking it against our peers in the not-for-profit sector
- Recommending appropriate improvements to the Board of Directors

The motivation for the BRP and its task, given that the AIAA of the future needs to be a more forward-leaning, flexible, and relevant organization, was to study our current status and how to create the desired outcome. Consequently, the panel reviewed various aspects of the Institute including financial health, volunteer and staff responsibilities for governance, and management of the programs and services for which AIAA is known. Additionally, the panel assessed the current governance structure's ability to navigate an increasingly dynamic and complex environment especially in light of the fact that traditional models for professional societies are under pressure to change.

The BRP's findings highlighted that fundamental change is not only necessary but critical to the long-term health of AIAA. The BRP notably observed that the governance structure created an environment that impeded an integrated approach to establishing Institute goals, lacked a strong strategic focus, and operated more like a managerial structure. In addition, although the organization desired international representation, the Institute's governance lacked true international engagement. It was also determined that the governance structure itself obstructed the Board's ability to govern nimbly and act quickly in the pursuit of new opportunities. Against this backdrop, the need to right our course is undeniable.

The BRP also studied the changing external environment in which AIAA, and indeed all professional, nonprofit societies, must operate. When AIAA's antecedents and peers were established, professional societies served as THE technical and professional information sources and networking venues for the industries that they represented. Today, the Internet and its rapid free flow of information, the sheer amount of material available at one's fingertips, and the ability to connect virtually to almost anyone in the world fundamentally challenges the traditional role of the professional society. None of these external forces facing AIAA today could have been foreseen at AIAA's founding over 50 years ago. To thrive and remain relevant, the BRP concluded that AIAA must keep pace with and quickly react to these changes. Concurrently, as the Institute evolves to stay relevant and important for members, likewise, governance structures, policies, and procedures established 50 years ago also need to evolve to meet the demands of operating in a dynamically changing environment. Our call to action is clear: we must collectively roll up our sleeves and to do what we do best—problem-solve—using the facts and circumstances presented to us.

When the BRP reported its findings to the Board at the August 2014 meeting, the AIAA leadership committed to addressing the symptoms and their root causes. We sought and engaged outside expertise in guiding governance reform for professional societies. The Board established a Governance Working Group (GWG) composed of a subset of the Board and other invited stakeholders to identify the tangible steps toward change. The GWG's first task was to establish specific Performance Requirements that would be necessary to support a more strategic and visionary organization. The Performance Requirements were derived from a projection of what the organization's attributes should be to function effectively in the current and future environment.

In January 2015, the GWG, working with the Board at a focused retreat, established a list of approximately 21 such Performance Requirements to improve upon our existing governance model. These items laid the foundation for the work that followed. Immediately, the members of the GWG met to conduct a Gap Analysis on each of those 21 requirements, which was further refined over the next several weeks. The Gap Analysis identified where current performance did not meet the desired Performance Requirements. In early February, the completed Gap Analysis was presented to the Board for consideration, input, and further discussion in two detailed working sessions. These sessions provided feedback to the GWG, both refining and strengthening the document.

The creation of the Performance Specifications and the Gap Analysis, coupled with the support of the Board, represents a recognition of, and commitment to, the need for change both in how we are governed and, ultimately, the actions we take to become that more nimble, strategic, and relevant organization our founders envisioned. While the work of the GWG is not finished, it has made remarkable strides toward those ends that we seek. The work is important and will continue.

None of these external forces facing AIAA today could have been foreseen at AIAA's founding over 50 years ago.



■ Founding of AIAA: Allan Emil, Martin Summerfield, Robert R. Dexter, Harold Luskin, and James Harford sign the documents merging the IAS and the ARS.

*Charting the course
is the easy part; it's
staying the course
that can be hard.*

The imperative to meet the challenges outlined by the BRP requires bold leadership and reinforces the Strategic Plan goal that I mentioned previously. Our governance structure must evolve. A focus on strategy, vision, and policy at the highest level is imperative. The question of “where” the organization is going and “why” needs to be constantly asked and discussed. The definition of “what” should be implemented, along with related metrics, to reach “where” we should be going is also very important. Tactical implementation and operations, which are both the domain of the members and staff, will continue to be vital. However, identifying and creating an effective, efficient operations structure with clear procedures—able to take advantage of today’s technology—is also very important.

The bottom line is that without governance reform the Institute risks future stagnation and decline into irrelevance. The GWG and Board have thoughtfully and methodically identified the challenges we face organizationally. The next step is to address those challenges head-on, which will require the time, attention, and action of the Board, volunteer leaders, and the general membership—because the fixes being proposed necessitate changes to our Constitution. Why? When AIAA was founded, much of our governance structure was hardwired into the Constitution. Thus any reform or evolution of the AIAA governance structure requires changes to our Constitution. To change the Constitution a vote of the membership is required; 15 percent of the membership must participate, and of those voting, two-thirds must approve the changes.

We anticipate bringing the constitutional changes to a vote during the 2016 AIAA election cycle. Over the coming months you will hear more about the process and timeline for it. When you do receive communications from Sandy, Bill Seymore, or me regarding this, please read them and take action if it is required! It is very important that everyone engages on this important issue. This is our Institute and we are at a crossroads. The title of this Annual Report is “Charting a Course for Success” and our Strategic Plan serves as our map. Charting the course is the easy part; it’s staying the course that can be hard. The vote on governance reform will be a defining moment for the Institute and we should all want to participate in shaping not only the future of aerospace, but of AIAA.

Executive Director's Report

In 2014, AIAA adopted its Strategic Plan predicated on three strategic imperatives: develop and expand our community; strengthen our existing community; and deliver exceptional results—those three imperatives have contributed greatly to a year of positive growth and change at AIAA. In a relatively short amount of time, we've come a long way in realigning the AIAA staff and organizational structure to serve the evolving needs of our members—both individual and corporate—and the aerospace industry writ large. This type of evolution is necessary if the Institute is to grow and remain relevant and responsive. Shaping the Future of Aerospace isn't just our tagline; it's what we at AIAA are doing every day through our forums, publications, committees, honors and awards, member services, advocacy, and outreach. We have more work to do to refine and implement our Strategic Plan fully—it will take all of us working together to ensure our long-term success. It also will involve a continued culture of change. As Jim Albaugh's President's Report makes clear, we need to take steps to ensure our governance structure allows us to be nimble, proactive, and quickly able to recognize and react to new trends in our industry to be relevant to our members.

I am delighted to report that the changes we've made during the past two years have borne fruit. In the Financials section "Positive Changes—Encouraging Results" of this Annual Report, our secretary/treasurer shares that our budget returned to the black in fiscal year 2014. This promising financial news was due, in large part, to prudent stewardship of the Institute's endowment portfolio, which allowed for continued investments in AIAA's growth and sustainability. The news, along with improved revenues and economies of scale provided by our forums, reduced and realigned staff, and other factors, have us optimistic about our financial stability. We are emerging from the turbulence of the past few years, and are hoping for smoother sailing ahead for AIAA.

That said, adherence to the strategic imperatives; making hard, but necessary choices, about staff and the organizational chart; and having successful events and publications will not sustain our growth unless you, our members, continue to invest your time and energy in AIAA as fully as possible. While your professional obligations often limit the time you can spend on AIAA activities, the hours you volunteer are valuable ones. If you are active, involved, and engaged, thank you. If you are seeking new and different engagement opportunities, you may be interested in our Diversity Working Group, our STEM Working Group, or the renewed AIAA Foundation. If your inner advocate needs to speak out, the Public Policy Committee continues to be our voice on Capitol Hill and in the states. You can help make lawmakers and policymakers aware of the pressures facing the aerospace community and work with them to better ensure our industry's present and future success. Be it diversity, advocacy, or working with the next generation of aerospace professionals—AIAA needs your time and talent, which I hope you will invest liberally.



Sandy Magnus

A handwritten signature in black ink that reads "Sandy Magnus". The signature is fluid and cursive, written over a white background.

We have more work to do to refine and implement our Strategic Plan fully—it will take all of us working together to ensure our long-term success.

I look forward to continuing our work together toward our common goals of growth, success, and prosperity—for our industry, our profession, and our Institute.

As I mentioned earlier, the past year saw the successful transition to—and completion of—our first full cycle of forums. While the switch from our old format to the new was not always an easy path, it is proving to be a successful one. The five forums in the past 12 months buzzed with collaboration, energy, and excitement. Combining multiple technical conferences and tracks under one roof has allowed us to bring together a much wider array of professionals, ensuring maximum exposure for attendees to new concepts, ideas, research, and subject areas. Additionally, the new forums allow us to maximize content delivery and draw even better speakers and panelists—making them more relevant not only to attendees, but also to the media and the public at large. The transition, of course, has not been without its challenges and lessons learned. But we have solicited and studied your feedback, implementing the necessary changes to make 2015 and beyond even more relevant, and an even better return on your investment. The forums have injected new energy into the Institute, the membership, and the aerospace community, and have allowed us to help you shape the future of aerospace more readily than we could have even two short years ago.

AIAA also continues to be a champion for aerospace, both on Capitol Hill and in a growing number of states. As the Public Policy section of this report details, our members are actively engaged with federal and state lawmakers on a wide variety of issues, including the ongoing threats posed by both “Open Access” legislation and the continued government travel regulations, which hinder attendance at our forums. To address those and other problems, our members continue to recommend sensible policies and stronger support for the aerospace industry and research and development enterprise in the United States.

I am excited about AIAA finishing strong in 2015. This year began with a bang at AIAA SciTech and every indication is that the rest of the year will be just as solid. Two things are certain: First, the Institute will continue to identify and implement the changes and improvements necessary to make your AIAA membership valuable and relevant to both you and to the entire aerospace profession. Second, as you, our members, continue to become more fully involved in the Institute’s activities—regions and sections, committees, student branches, honors and awards—we will keep moving forward. I look forward to continuing our work together toward our common goals of growth, success, and prosperity—for our industry, our profession, and our Institute.

Serving the Profession: Our Members



Honors and Awards

For over 80 years, AIAA has been committed to ensuring that aerospace professionals are recognized and celebrated for their achievements, innovations, and discoveries that make the world safer, more connected, more accessible, and more prosperous. From the major missions that reimagine how our nation utilizes air and space to the inventive new applications that enhance everyday living, aerospace professionals leverage their knowledge for the benefit of society. AIAA is proud to honor that pioneering spirit.

Honors and Awards had another successful year celebrating innovation and technical achievements:

- Recognized over 270 awardees for their accomplishments at AIAA forums.
- Honored over 190 members with member advancement.
- Improved the honors and awards nomination processes for efficiency and ease of use.
- Restructured the Recognition Luncheons at AIAA forums so that peers and colleagues could acknowledge awardees on a community level, which also created expanded networking opportunities.
- Created mobile recognition stations at forums to allow peers and colleagues to acknowledge awardees and honorees on an individual level.
- Added a Recognition Breakfast to honor and celebrate winners of the International Student Conference and other AIAA Foundation award recipients, who will become the next generation of aerospace professionals.
- Conducted a survey of AIAA members to assess the value of the honors and awards program. Survey respondents noted that AIAA recognition was key to achieving one's career goal and suggested reaching out to an awardee/honoree's supervisor or CEO for targeted announcement of their accomplishments.

Moving forward, AIAA will continue to identify opportunities and creative new ways of recognizing and celebrating aerospace professionals and their accomplishments.



■ Dr. Satya Atluri (middle) of the University of California-Irvine is the 2015 recipient of the Walter J. and Angeline H. Crichlow Trust Prize. He was honored at SciTech 2015 "For lasting contributions to airframe structural integrity and durability analysis using novel computational methods (MLPG meshless methods) and micromechanics of materials genome."



■ Susan Ying, Hsiao-Hua Burke, and Deborah Levin





Public Policy

Addressing Strategic Imperatives

The past year has been a year of continued transition for our public policy efforts. One of the most notable changes was the departure of AIAA’s Director of Public Policy, Steve Howell, after more than a decade of leading our outreach efforts. His contributions helped enhance the Institute’s profile as an integral partner with government and industry policymakers.

In November, Steve Sidorek joined the team as our new Manager of Public Policy and Government Relations. Steve came to us from the National Coordination Office for Space-Based Positioning, Navigation, and Timing—the central resource in the federal government for Global Positioning System policy matters—where he spearheaded all legislative and STEM education outreach activities on behalf of the interagency office. Before that, Steve worked for several members of Congress as a staff member on Capitol Hill.

Approaching Our Key Issues Differently

Another recognizable change came as our Public Policy Committee (PPC) implemented a new approach to the development and promotion of our key issues. We now have a narrowed focus and an amplified message, which will help the Institute establish a “roadmap” for policy development and advocacy in the years ahead. This change of strategy is based on feedback from congressional staff who recommended fewer, more focused issues that include a clear, concise “ask” of policymakers during Congressional Visits Days.

At their October 2014 meeting, the PPC identified four significant issue areas, which are both timely and of major concern to our members, where the Institute will help shape public policy in 2015. These key issue areas are 1) Aerospace & Defense (A&D) Budget Funding and Procurement, 2) A&D Competitiveness, 3) Aerospace Cybersecurity and Safety, and 4) A&D Workforce Enhancement.

Continued Interaction with Elected Officials

This year’s four key issues formed the supporting pillars of AIAA’s 18th Annual Congressional Visits Day (CVD), held on 4 March 2015. The morning began with a breakfast gathering where AIAA Executive Director Sandy Magnus welcomed participants and then introduced freshman Congressman Steve Knight (R-Calif.). The congressman, whose district includes the Antelope Valley near Los Angeles, has been a strong advocate for aerospace over the years and a longtime supporter of the Institute through California Aerospace Week when he served in the California State Senate. Nearly 80 AIAA members from 18 different states, including dozens of student members, visited representatives from their state’s congressional delegation to help raise awareness of the long-term value that science, engineering, and technology bring to the nation. A majority of the participants had positive discussions about maintaining a vibrant workforce, promoting STEM education, and achieving budget stability. “Overall the new format was very clean and our meetings were some of the best

AIAA’s 2015 Key Issues

Aerospace & Defense Budget Funding and Procurement

Aerospace & Defense Competitiveness

Aerospace Cybersecurity and Safety

Aerospace & Defense Workforce Enhancement



■ Rep. John Culberson (R-Texas) took time to meet with several AIAA representatives. From left to right: Steve Sidorek, AIAA; Rep. John Culberson; Mark Bowman, AIAA; Greg Johnson, AIAA; Hannah Thoreson, AIAA

we'd had in years. I found that the use of four major policy efforts versus ten streamlined our conversations," AIAA member and Florida State Captain Kevin Simmons said. That evening, many CVD participants attended a reception at a restaurant near the Capitol to share their stories and discuss ways to make next year's event even better.

Unfortunately, this is the second year in a row that CVD participant numbers have declined. Last year, 119 members from 22 different states attended the event. In 2013, 170 members from 36 states attended. We do not see this as a trend, though, but a result of an unanticipated adjustment to the congressional calendar that necessitated a date change for this year's event.

Everyday Advocates

While this year's CVD was a success, it is imperative for members to remember that the importance of aerospace to our nation, and the threats that the industry faces, are too great to limit to one day of advocacy each year. Our involvement in public policy must carry on beyond CVD, and our members must always be active and vocal aerospace advocates and champions. From an organizational standpoint, we will continue to advocate within the halls of Congress, with the administration and its relevant agencies, and in state capitals around the country. Moreover, our key issues will form the basis of a number of smaller focused events and roundtables throughout the year, and will be threaded through panel discussions and Forum 360 sessions at our annual forums.

A Presence in State Capitals

For the fourth straight year, AIAA has led the charge in planning California Aerospace Week, held in Sacramento on 23–24 March, and co-hosted by the Aerospace States Association, California Chapter. A luncheon roundtable, education forum, and two receptions brought together state lawmakers, staff, and key stakeholders from the California aerospace community to learn more about the importance of the aerospace industry to the state's economy, education system, manufacturing base, and workforce. The State Assembly and the State Senate passed a joint resolution recognizing the week of 23–27 March as California Aerospace Week.

Elections in November 2014 brought a new wave of legislators to Sacramento and also triggered the formation of two new select committees on aerospace. These developments created an opportunity for our members and other industry stakeholders to help the decision makers learn and survey the landscape of aerospace activities in the state. After two days of successful meetings and interactions with lawmakers on both sides of the aisle, there is a general sense of optimism for California aerospace going forward. AIAA looks forward to hosting a much larger event in 2016, when the select committees will have had more time to become engaged and invested in these important matters.

Florida held its annual Space Day on 3 March 2015. Former space shuttle pilot Mike McCulley led industry representatives and other aerospace supporters for a day of meetings with members of the State Legislature and Governor Rick Scott to discuss the state's \$9 billion space industry. Participants also called on lawmakers to develop strategies for leveraging economic development policies to attract private sector investment and jobs and effectively meet competitive challenges from other states in the years ahead. AIAA continues to be a bronze-level supporter of this event.



■ Senator Jean Fuller provides AIAA with the Senate resolution proclaiming the week of 23–27 March 2015, as California Aerospace Week. Left to right: Assemblyman Richard Bloom; John Rose, AIAA; Assemblyman Katcho Achadjian; AIAA Executive Director Sandy Magnus; Senator Jean Fuller; Steve Sidorek, AIAA; Assemblyman Bill Quirk; Senator Patricia Bates.

Also on 3 March 2015, the 5th Annual Georgia Aerospace Legislative Breakfast at the Georgia Capitol brought together state legislators, legislative staff, and aerospace industry representatives to discuss the importance of aerospace to Georgia. The event, organized by the Center of Innovation for Aerospace and the Aerospace Policy Working Group, provided legislators with a chance to talk to industry leaders about the current state of the industry, new opportunities for growth in Georgia, and how the state can continue to foster that growth. Georgia is the fourth largest aerospace exporter in the United States. This was AIAA's third year as the primary sponsor.

This past February in Virginia, AIAA members joined other aerospace principals for two days of advocacy with elected officials to discuss the many benefits the aerospace industry is bringing to the Commonwealth and nation. Leaders from NASA, the National Institute for Aerospace, the Virginia Space Grant Consortium, and the Virginia Aerospace Business Roundtable took part in an Aerospace Executive Roundtable session, sponsored by Virginia Secretary of Technology Karen Jackson.

While AIAA has a known presence in these few states, our State Activities Subcommittee continues to develop a strategic approach to grow our footprint in other key states. Colorado, for instance, is number one in the nation for per capita aerospace employment and the sector continues to grow. This past March, industry representatives and other stakeholders held an aerospace day event at the Colorado State Capitol in an effort to bolster the state's aerospace reputation. We hope to support this event in the future and also become more engaged in other states.

A Team Effort

At the national level, AIAA continues to be engaged in important matters that have a great impact on our community and affect the Institute as a business. Public access to federally funded research, particularly research that results in peer-reviewed journal articles, is an issue we have been following for several years now. As we are already a member of the Association of American Publishers, Professional and Scholarly Publishing Division, (AAP/PSP), we have become active participants in AAP/PSP's Government Affairs Task Force (GATF). The members of GATF, both commercial and other society scientific and technical publishers, continue to seek a sustainable compromise between providing wider access to government-funded research while preserving flexible, evidence-based business models. This entails advocacy to the government agencies that have begun issuing agency-level public access guidelines to the researchers they fund, as well as voicing our concerns to congressional committee staff and directly to legislators. There is still work to be done and we will continue to play an active role in advocating for approaches that do not harm the peer-review process and undermine a fundamental role of AIAA and its fellow technical societies in publishing, preserving, and disseminating cutting-edge technical content.

In addition, we are presently part of a large coalition composed of other scientific and engineering societies actively advocating for the easing of travel restrictions for federal employees attending science and technology conferences. Coalition members have held several meetings with congressional staff in an attempt to incorporate language into germane legislation that will define an exemption for the sciences. AIAA has also been engaged in formal conversations with federal agencies to find ways to ease the restrictions at the department level. Government stakeholders currently are working this issue on their end while our coalition continues to work the legislative angle.

It is imperative for members to remember that the importance of aerospace to our nation, and the threats that the industry faces, are too great to limit to one day of advocacy each year.



Strategic Relationship Management

Attendees network with exhibitors and colleagues in the AIAA SciTech 2015 Exposition Hall.



Exhibitors meet with Jeff Babione, vice president and general manager, Joint Strike Fighter Program, Lockheed Martin, during the AIAA SciTech 2015 Coffee and Conversations program.



AIAA forums offer exhibitors the chance to promote their brand, network with industry peers, and enhance relationships with business partners.

2015 has brought significant changes to the team that works with our corporate partners. AIAA has restructured the existing staff and, for the first time, has established a strategic relationship department. This new department has four staff members and is organized by tiers that are defined by market segment/demographics. Staff members manage all corporate membership, exhibit, and sponsorship business with the companies in his or her tier.

Corporate Membership

- Currently 95 corporate members (for a current list of members, go to <http://www.aiaa.org/CorpMemberRoster/>)
- Members represent a “who’s who” of the aerospace industry, including large primes, FFRDCs, mid-tier suppliers, and small business
- The Corporate Membership Committee continues to advance industry’s interests within the Institute, and the Corporate Member Advisory Committees provide corporate member insight to the forum planning committees
- Corporate members will see enhanced benefits and value in FY16 as the team updates the corporate membership program

Expositions

- Forum expositions continue to increase, as exhibitors meet with their customers and derive value from AIAA forums
- AIAA SciTech 2015 had 57 exhibitors, making it AIAA’s largest exposition in recent history
- Exhibitors continue to benefit from value-added programs, including Coffee and Conversations and the exhibitor and corporate member receptions

Sponsorship

- Sponsorship continues to increase as companies value the branding and awareness opportunities that AIAA forums offer
- The new Strategic Relationship Management approach increases AIAA’s flexibility in bundling and customizing sponsorship and exhibition opportunities

The Strategic Relationship Management department ensures that AIAA is serving the needs of our corporate members and supporters more effectively, building mutually beneficial relationships and delivering an enhanced return on investment.

Serving the Profession: The Future



Student Engagement

AIAA continues to engage university student members in meaningful and rewarding ways. Through scholarships, design competitions, student conferences, and forum activities, AIAA provides opportunities for students, either at a local branch or as students at large, to work together as teams, have fun while learning, and network with future colleagues. These opportunities allow students to build relationships that will last throughout their careers.

- Nine undergraduate students received a total of \$18,750 from the AIAA Foundation Undergraduate Scholarship Program. The inaugural Vicki and George Mueller Scholarship for Aerospace Engineering was one of the nine scholarships awarded.
- The Graduate Awards Selection Committee reviewed many applications and selected two graduate students to receive \$5,000 each, and two students to receive \$2,500 and \$1,250, respectively.
- The 2014 Cessna Aircraft Company/Raytheon Missile Systems/AIAA Design/Build/Fly (DBF) Competition was held at Cessna East Field in Wichita, KS, 11–13 April 2014. There were 100 entries with 80 teams submitting a final report to be judged. Seventy-one teams participated in the flyoff (19 international). Approximately 700 students, faculty, and guests were present.
- The International Student Conference was held in January 2015, in conjunction with AIAA SciTech 2015, and prizes were awarded from the Foundation to the top students in the categories of Masters, Team, Community Outreach, and Undergraduate.

■ DBF 2014 — 1st place: University of California—\$2,500



■ DBF 2014 — 2nd place: University of California, Irvine—\$1,500



■ DBF 2014 — 3rd place: San Jose State University—\$1,000



■ DBF 2014 — Best paper: Cal Poly San Luis Obispo—\$100. This award is sponsored by the Design Engineering Technical Committee.



■ AIAA delegation members on the steps of the Indian Institute of Technology with the chairman of the AeSI Chennai Branch, Professor V. Kanagarajan.



■ AIAA Executive Director Sandy Magnus and AeSI Chairman V.K. Saraswat.

International

As part of its international strategy, AIAA strives to increase international participation, in particular through bilateral partnering with societies in other countries. AIAA collaboration with India dates back more than 10 years, but has recently come to the forefront.

In 2013, AIAA signed a collaborative memorandum of understanding (MOU) with the Aeronautical Society of India (AeSI). On the occasion of the MOU signing, AIAA Vice President, International Susan Ying noted, "As India has become a major player in the world aerospace community, and is one of the world's largest economies, it is fitting for our organizations to have reached this agreement. As many great advancements in aerospace have been the result of international partnerships, we look forward to the future with anticipation and excitement as AIAA and AeSI members begin to work together."

As a direct result of the MOU between AIAA and AeSI, in December 2014 an AIAA delegation of U.S. aerospace industry executives visited India, stopping in Bangalore, Hyderabad, and Chennai. The trip, part of AIAA's Corporate Member program, was aimed at:

- Determining current and future interests of AIAA membership toward engagement with the Indian aerospace community, within the framework of the MOU between AIAA and AeSI
- Gaining an understanding of the operational aspects of defense and aerospace laboratories and industries in India
- Providing an opportunity for AIAA Corporate Members to understand the Indian business environment and to explore opportunities

Given the discussions that occurred during the delegation visit, AIAA anticipates that its collaboration with India will grow to the benefit of the societies in both countries and to the global aerospace community. Based on the various meetings they had while in India, the group identified some opportunities for AIAA in continued collaboration both from a business perspective and a society perspective. In addition, there was support for organizing other Corporate Member delegation trips to other countries where AIAA wants to grow its presence such as Brazil.



AIAA Membership in India

80 Professional Members (19 Associate Fellows, 28 Senior Members)

121 Student Members

15 Educator Associates

3 Student Branches

MLR Institute of Technology, Hyderabad
 Indian Institute of Technology, Kanpur
 Hindustan University, Tamil Nadu

Facilities Visited by the AIAA Delegation

① Bangalore

- U.S. Consulate and Chamber of Commerce
- Jack F. Welch Technology Centre and GE Global Research Center
- Altair
- Aeronautical Development Establishment
- Hindustan Aeronautics Limited
- National Aerospace Laboratories
- Alpha Design Technologies

② Hyderabad

- Hindustan Aeronautics Limited, Avionics Division
- MTAR Technologies
- SEC Industries
- MAS GMAR Aero Technic
- Astra Microwave Products
- VEM Technologies
- Research Centre Imarat, Defence Research and Development Organization, Government of India, Ministry of Defence

③ Chennai

- Data Patterns Corporation
- Indian Institute of Technology

AIAA Delegation Members

Supriya Banerjee, The Finehas Group

Mark and Jennifer Cherry, Aurora Flight Sciences

Sivaram Gogineni, Spectral Energies, LLC

Anjaney Kottapalli, Lockheed Martin

John and Barbara Langford, Aurora Flight Sciences

Sandy Magnus, AIAA

Paul Nielsen, Software Engineering Institute

Merrie Scott, AIAA

Robert Yancey, Altair Engineering

Susan Ying and Rob Armstrong, COMAC



Mission: To recognize aerospace industry accomplishments and support educational efforts at all levels.

Vision: To introduce students to the creativity of science and engineering for the aerospace industry.

AIAA Foundation

It was a transformational year for the AIAA Foundation and we are very excited about the positive changes.

A new mission and vision that more accurately reflect who we are and what we aspire to accomplish was developed by the trustees.

The Foundation Board of Trustees (BoT) was restructured. In prior years the BoT was mainly composed of AIAA Past Presidents. Now the BoT includes representation from our corporate partners as well.

- Michael Griffin (Chair), Schafer Corporation
- James Albaugh (Trustee), Boeing Commercial Airplanes (Retired)
- Steve Gorrell (Trustee), Brigham Young University
- Dana "Keoki" Jackson (Trustee), Lockheed Martin
- Ray Johnson (Trustee)
- Mark Lewis (Trustee), Science & Technology Policy Institute
- Sandy Magnus (President), AIAA
- John Tracy (Trustee), The Boeing Company
- Bill Seymore (Secretary/Treasurer), AIAA
- Robert Winn (Trustee), Engineering Systems, Inc.

A Director of Development was hired to create and implement a strategic approach to fundraising that will include annual fund drives, corporate donor programs, legacy and memorial giving, as well as other outreach to members and supporters.

The Foundation website was refreshed to highlight the new and exciting changes that have taken place. The donation pages were redesigned to make it easier for individuals to support the Foundation's educational and professional development programs such as our classroom grants, undergraduate scholarships and



graduate awards, student paper conferences, design competitions, and new programs that are coming on board.

A new STEM K–12 Committee has been chartered under the auspices of the Foundation. This committee will coordinate, propose, and implement STEM K–12 outreach programs that inspire the next generation of aerospace professionals. One of the committee’s newest efforts is to once again bring STEM outreach programming to each of the AIAA forums. Members and volunteers are working toward creating a STEM Experience @ AIAA Forums. The pilot program will take place at AIAA SPACE 2015 and will consist of hands-on experiences and demonstrations to engage middle school students, teachers, and aerospace professionals in an interactive way and stimulate excitement about aerospace.

A university-level internship program, in honor of Alexander R. Norris, aircraft design engineer, was established by his daughter Laurie Norris and her late husband Clarence Pearson. Ms. Norris pledged funds to the Foundation to support two AIAA Alexander Norris Space View Interns for five years. The intent of the internship is to demonstrate the relevance of professional contributions to a society like AIAA and what a professional society contributes to the profession. The interns have worked on a variety of projects throughout the year with the goal of interacting with each of AIAA’s major divisions.

Lastly, Lockheed Martin made a transformative, multi-year corporate commitment to the Foundation. This generous donation will help reignite the AIAA Foundation programs and activities that our students and professionals enjoy.

The BoT is excited about the changes that have taken place over the past year and looks forward to continuing to stimulate innovation and inspire the next generation of aerospace scientists and engineers.

■ The AIAA Foundation Educator Achievement award winners were recognized at the 2015 AIAA Aerospace Spotlight Awards Gala. From left to right: Frank Culbertson, Orbital ATK; Mohamad Barbarji, West Point High School, West Point, VA; Gary Garber, Boston University Academy, Boston, MA; Kaci Heins, Northland Preparatory Academy, Flagstaff, AZ; Sandy Magnus, AIAA; Paul Weidorn, Wilde Lake High School, Columbia, MD; Heather Stewart, Paxton School, Paxton, FL; and Charles Bolden, NASA.



■ The 1st place team at AIAA Design/Build/Fly 2015, the University of Ljubljana – Slovenia.

Publishing Essential Technical Information

Technical Papers 2014

Total Number of Abstracts Submitted: **5,779**

Total Number of Abstracts Rejected/Withdrawn: **1,665**

Total Number of Papers Published: **4,114**

ARC Statistics 2014

2.0 million total visits

1.03 million return visitors

1.0 million new visitors

5.8 million page views

Top 3 Countries

27% from the United States

13% from China

8% from India

Journals 2014

Total Number of Manuscripts Submitted: **3,125**

Total Number of Manuscripts Rejected: **1,731**

Total Number of Articles Published: **1,497**

Books and Journals

New Journal Editors-in-Chief Appointed in 2014

Two successful journal Editor-in-Chief searches were conducted during 2014, to replace the long-standing editors of the *Journal of Spacecraft and Rockets (JSR)* and the *Journal of Thermophysics and Heat Transfer (JTHT)*.



In August, Robert Braun was formally appointed as Editor-in-Chief of *JSR*. Braun is the David and Andrew Lewis Professor of Space Technology in the Daniel Guggenheim School of Aerospace Engineering at the Georgia Institute of Technology. He is the director of the Space Systems Design Laboratory and founding director of the Center for Space Technology and Research at Georgia Tech. Braun's research and personal interests are closely aligned with the scope of *JSR*, focusing in particular on the design of advanced flight systems and technologies for planetary exploration.

JSR was among the original journals established by AIAA in 1964, following the merger of the Institute of the Aerospace Sciences and the American Rocket Society, in an effort to ensure that significant application papers had an appropriate outlet for publication. The journal has filled a specific and continuing need in the community of aerospace-related archival journals. Braun becomes the ninth editor-in-chief of *JSR*, succeeding E. Vincent Zoby, who served from 1993 to 2014.



In September, Greg Naterer assumed the role of Editor-in-Chief of *JTHT*. Naterer is dean of the faculty of engineering and applied science and professor of mechanical engineering at Memorial University, St. John's, Newfoundland, Canada. His research interests include heat transfer, convection, conduction, multiphase flows, hydrogen production, energy conversion, and microfluidics and nanotechnology for advanced energy systems. As an Associate Editor for *JTHT* since 2007, Naterer worked rigorously to ensure that accepted manuscripts met the highest standards of

quality. He has a strong scholarly record in heat transfer, energy systems, and fluid mechanics, contributing to journals, conferences, and books.

Naterer becomes only the second Editor-in-Chief of *JTHT*, following the service of founding editor, Al Crosbie, who served from 1987 to 2014. Since its inception, *JTHT* has been devoted to research that deals with the properties and mechanisms involved in thermal energy transfer and storage in gases, liquids, and solids.

Publications Content Strategy Workshop

Members and staff met for a full-day workshop in July 2014 to brainstorm and assess potential areas for growth within Publications. The outcome of this effort was intended to increase AIAA's overall global profile, expand international institutional sales and overall readership, target communications and publications to key customer segments, and to help AIAA plan for new technology and content delivery formats.

Several projects were identified for immediate implementation. Along with the development of new, tangible products, and reviewing pricing and business models for existing products, plans included development of a clear roadmap for sourcing and delivering content, which is key to the Institute's goals of encouraging original research, fostering and disseminating new knowledge, and furthering the professional development of those engaged in scientific and engineering activities.

Books Published in 2014

Library of Flight

Advanced Six Degrees of Freedom Aerospace Simulation and Analysis in C++, Third Edition, by P. Zipfel (DVD)

Building Aerospace Simulations in C++, Third Edition, by P. Zipfel (DVD)

Fundamentals of Six Degrees of Freedom Aerospace Simulation and Analysis in C++, Second Edition, by P. Zipfel (DVD)

The Overview Effect, Third Edition, by F. White

Unmanned Aircraft Systems Innovation at the Naval Research Laboratory, by J. Gundlach and R. Foch

Progress in Astronautics and Aeronautics

Turbine Aerodynamics, Heat Transfer, Materials and Mechanics, by T. Shih and V. Yang

Computational Intelligence in Aerospace Sciences, by M. Vasile and V. Becerra

AIAA Education Series

Analytical Mechanics of Space Systems, Third Edition, by H.P. Schaub and J. Junkins

Designing Unmanned Aircraft Systems: A Comprehensive Approach, Second Edition, by J. Gundlach

Introduction to Aircraft Flight Mechanics, Second Edition, by T. Yechout

Modeling and Simulation of Aerospace Vehicle Design, Third Edition, by P. Zipfel

Numerical Computation of Compressible and Viscous Flow, by R. MacCormack

Journal Special Sections

AIAA Journal

April 2014:

"Multidisciplinary Design Optimization"

(nine papers), organized by Karen Wilcox and Raphael Haftka

Journal of Spacecraft and Rockets

May/June 2014:

"Supersonic Retropropulsion"

(seven papers), organized by Guest Editor Karl Edquist.

Journal of Aerospace Information Systems

September 2014:

"Aerospace and Mechanical Applications of Reinforcement Learning and Adaptive Learning Based Control"

(four papers), organized by Jonathan P. How, Girish Chowdhary, Thomas Walsh

October 2014:

"Software Challenges in Aerospace"

(11 papers), organized by Misty Davies and Lyle Long

Journal of Aircraft

July/August 2014:

"Drag Prediction Workshop"

(19 papers), organized by John Vassberg and Beth Lee-Rausch

Journal of Spacecraft and Rockets

July/August 2014:

"Mars Science Laboratory"

(22 papers), organized by Robert Braun

AIAA Committees on Standards

Aerodynamic Decelerator Systems

Aerospace Pressure Vessels

Aircraft and Atmospheric Systems

Astrodynamics

Atmospheric & Space Environments

Computational Fluid Dynamics

Electric Propulsion Testing

Ground Test

Hydrogen

Information Systems

ISO Technical Committee 20

Mass Properties

Materials

Mission Assurance

Modeling and Simulation

Software Systems

Solar Cells and Solar Panels

Space Data and Information

Transfer Systems

Space Internetworking

Space System Battery Safety

Space Systems and Operations

Spacecraft Plug and Play

Architecture

Structures

Systems Engineering

Standards

New Standards Supporting Space Solar Cells and Panels

To comply with federal law, standards AIAA S-111A-2014, Qualification and Quality Requirements for Space Solar Cells, and S-112A-2013, Qualification and Quality Requirements for Space Solar Panels, were developed for Department of Defense procurements based on Technical Operating Reports created to mitigate on-orbit solar array issues.

AIAA S-111A-2014 is a revision of a document developed by the AIAA Solar Cells and Solar Panels Committee on Standards. It focuses on space solar panel qualification; much effort and care has been taken to clarify requirements and resolve other issues that were present in the original version. It establishes the quality requirements and provides the methods for establishing the qualification of electrical components integrated onto spacecraft solar panels. The result is a new standard that defines the best practices for space solar panel qualification.

In 2013, AIAA published S-112A, which establishes qualification and quality requirements for the electrical components integrated onto spacecraft solar panels that carry single crystal silicon solar cells or gallium arsenide solar cells having any number of junctions, including those with metamorphic and inverted metamorphic structure. In this standard the term panel defines the assembly of electrical components to be tested. The standard also defines requirements for solar panel manufacturers' quality systems and for qualification and characterization of the electrical components on solar panels. This standard fully addresses the qualification of all panel components and the panel substrate only as they affect electrical performance.

The standards are now the basis for the majority of government and commercial space solar array procurements worldwide.

New AIAA Work on Multipactor Breakdown Prevention in Spacecraft Components

A new AIAA committee on standards for materials has been formed to develop industry-wide standards for component, subsystem, and system test with respect to radio frequency (RF) breakdown risk mitigation in RF/microwave components, including multipactor and ionization breakdown. Stakeholders include satellite customers and operators, satellite manufacturers, satellite component suppliers, satellite component test facilities and government space organizations.

The first in this series of standards, Multipactor Breakdown Prevention in Spacecraft Components, is intended to serve as a standard for the prevention of multipactor and ionization breakdown in spacecraft components and systems. The document provides minimum requirements for risk definition, system analysis, and component analysis and test. Supporting documentation describes proper design, analysis, and test guidelines while also providing the requirements for defining the proper system engineering to identify RF breakdown risks within susceptible components. The document framework is based on defining worst-case parameters as general inputs to analysis or test criteria for all components within the RF system. Using hardware-specific values, these worst-case parameters are defined separately from margin requirements.

Documents Developed in 2014

Published

AIAA S-111A-2014	Qualification and Quality Requirements for Space Solar Cells
ANSI/AIAA G-034A-2014	Guide to Reference and Standard Ionosphere Models

In Process

AIAA S-017B-201X	Aerodynamic Decelerator and Parachute Drawings
AIAA G-077A-201X	Guide for the Verification and Validation of CFD Simulations
ANSI/AIAA S-081B-201X	Space Systems—Composite Overwrapped Pressure Vessels (COPVs)
ANSI/AIAA S-080A-201X	Space Systems—Metallic Pressure Vessels, Pressurized Structures, Pressure Components, and Special Pressurized Equipment
AIAA R-093A-201X	Calibration of Subsonic and Transonic Wind Tunnels
AIAA G-095A-201X	Guide for the Safety of Hydrogen and Hydrogen Systems
AIAA S-120A-201X	Mass Properties Control for Space Systems
AIAA G-135-201X	Aerospace Systems Integration Guide
AIAA S-136-201X	Battery Safety Standard for Space Applications
ANSI/AIAA S-141-201X	Code Verification in Computational Fluid Dynamics
AIAA G-140-201X	Terrestrial Environment Guidelines for Use in Aerospace Vehicle Development

With properly defined worst-case conditions, the document addresses required margins for analysis and test for multiple devices categories. Subsequent sections provide minimum verification requirements to demonstrate the margin recommendations for both analysis and test.

Multiple appendices based on state-of-the-art industry best practices also are provided as guidelines to aid manufacturers and contractors. Typical approaches including examples for both design and test are provided. A reference geometry is described along with corresponding analysis and test data. This information can be used as a benchmark standard, such that component vendors and manufacturers can have a standard example for RF breakdown.

Incorporating this document and its improved process into the development and test cycles of an RF component will reduce the risks associated with RF breakdown failure. The document goal is to reduce program risk, as well as elevated cost of excessive margin requirements. This document will serve as a baseline and minimum set of criteria for low-risk development and verification of RF spacecraft components.

New ISO Subcommittees on Airport Infrastructure and Unmanned Aircraft Systems Formed

The American National Standards Institute (ANSI) recently designated AIAA as the administrator of the Secretariat for the International Organization for Standardization (ISO) subcommittee on Airport Infrastructure. This new subcommittee will be under ISO Technical Committee 20 (Aircraft and Space Vehicles). The draft scope of work of this new subcommittee includes grooving of landing and takeoff lanes; asphaltic-ecologic-paving; vertical-signaling with painting and electric-electronic boards; and constant-current-regulators. The administrator of the U.S. Technical Advisory Group (TAG) for this new ISO subcommittee was also awarded to AIAA.

In addition to the new ISO subcommittee on airport infrastructure, another subcommittee on Unmanned Aircraft Systems was established under Technical Committee 20. The draft scope of work for this new subcommittee includes design and development, manufacturing, delivery, maintenance; classification and characteristics; materials, components and equipment used during their manufacturing, as well as in the field of safety in joint usage of airspace by unmanned and piloted aviation. ANSI designated the Aerospace Industries Association as the administrator of the Secretariat for this new ISO subcommittee and AIAA as administrator of the U.S. TAG.

Creating Value – Networks and Information Exchange



Events

In this first full year of the new AIAA event model, which introduced our five forums, we saw robust attendance and participation from across the spectrum of the aerospace profession. As the format of the forums matured, all participants experienced a level of energy and excitement in and around the venues. This “buzz” is an indicator that the forum objectives are being met. These objectives include the sharing of innovative ideas and solutions; networking among colleagues, acquaintances and friends to discuss professional challenges and opportunities; and recognizing and celebrating achievements of our industry's best and brightest.

AIAA's forums provide compelling plenaries that address current technology and policy issues, Forum 360 sessions that showcase emerging technologies and trends, and technical tracks that deliver valuable research discoveries to forum attendees. We have recently supplemented these with gatherings such as Student Welcome Receptions, Speed Geek, Leadership Exchange and Speed Networking, Distinguished Lectures, Women at SciTech, networking, and recognition events. We have reached beyond our traditional AIAA constituency and are attempting to appeal to all aerospace professionals. Regardless of what point individuals may be at in their career, or what part of the industry they work in, AIAA is giving voice to aerospace professionals through innovation, technical excellence, and global leadership at its forums.



■ George Whitesides, CEO, Virgin Galactic and The Spaceship Company, speaking at AIAA SciTech 2015

AIAA 2014–2015 Forums



28–30 July, Cleveland, OH

1,256 Attendees
619 Technical Presentations
30 Countries Represented



10–12 March, Laurel, MD

260 Attendees
94 Technical Presentations
9 Keynote Speeches
SECRET/U.S.ONLY



16–20 June, Atlanta, GA

2,260 Attendees
1,427 Technical Presentations
44 Countries Represented



4–7 August, San Diego, CA

918 Attendees
370 Technical Presentations
30 Countries Represented



5–9 January, Kissimmee, FL

3,400 Attendees
2,080 Technical Presentations
42 Countries Represented

FORUM 360°



■ Members of the Astronaut panel at AIAA SPACE 2014: Col. Anthony Williams (USAFR, Ret.), Col. Gregory Johnson, (USAF, Ret.), Capt. Frank Culbertson (USN, Ret.), Capt. Robert Crippen (USN, Ret.), Capt. Daniel Brandenstein (USN, Ret.)



■ Michael Whitaker, Deputy Administrator, FAA, speaking at AIAA AVIATION 2014

Forum 360 — Where It All Comes Together

One of the primary objectives of the new event model is to build on the existing strong technical core represented by more than 70 technical communities within AIAA while introducing new topics that will attract new constituencies and address critical issues facing the aerospace industry.

Our Forum 360 sessions, first introduced at AIAA SciTech 2014, highlight conversations with experts that cover a spectrum of timely and emerging topics, including programs, systems, operations, applications, platforms, policies, and more.

At the AIAA AVIATION 2014 Forum, the directors of all six FAA unmanned aircraft systems test sites were on a stage together for the first time ever to discuss what is next for this exciting technology and business area. The future of CFD was the topic of a standing-room-only Forum 360 session and laid out a vision for CFD in the year 2030. The unveiling of a new strategy for NASA Aeronautics Research also attracted a packed house.

AIAA Propulsion and Energy 2014 saw the “official” unveiling of the “Forum 360” name. In a series of interviews and conversations, a group of propulsion and energy experts addressed technology development and how we can compress the timeline of technology adoption. Another session took a holistic view of the future of additive manufacturing, from education and research to design and production. The conversation provided an opportunity for our community to hear from experts across multiple industries that are successfully deploying these advanced manufacturing methods.

The AIAA SPACE Forum has long had a Forum 360-like component to its program and continues to build and highlight content that is important to attendees. AIAA SPACE 2014 featured a number of long-running, very popular sessions on topics such as launch vehicle trends and development as well as NASA’s planning for the next generation of human spaceflight systems. New topics at the forum included protecting space systems from cyberattacks, an inside look at emerging space business opportunities, and the current state of the expanding network of commercial spaceports. Of particular note was a panel of seasoned astronauts recounting stories from their spaceflight days in which things didn’t go quite as planned and they had to improvise to get their jobs done. Their engaging stories connected these former space operators with space system developers for a better understanding of the operational environment.

AIAA SciTech 2015 attendees had the opportunity to hear about government R&D investment trends, while another session focused on private-sector development plans. Emerging fields such as big data analytics and advanced manufacturing also were featured and both included industry leaders who shared thought-provoking ideas with our community. Of particular interest to the nearly 1,000 students in attendance was a Forum 360 session focused on improving business skills for aerospace engineers.

While AIAA forums are known to our members as the place to find technical content you can’t find anywhere else, our goal with the Forum 360 is to build programming that will attract new audiences to the Institute that will help us broaden our reach and influence. We are exploring ways to increase the impact of our Forum 360 sessions using technologies such as livestreaming and social media while at the same time making the sessions more intimate and interactive.



Technical Tracks – The Strength of Our Core

One of our goals as we transitioned to the forum model was to sustain and grow our role as the authoritative aerospace research and technology clearinghouse. Through our five forums, AIAA provides the venue for scientists, engineers, and technologists to present and disseminate their work in structured technical paper and poster sessions, learn about new technologies and developments from other presenters, further their professional development, and expand their professional networks to accelerate their work and careers. In an ever-increasing multidisciplinary world, it is important to foster communication and interaction between technical communities. While the forum format allows technical communities who have traditionally met together in discipline-focused conferences to still interact within their communities, it also provides the opportunity for distinct technical communities to meet to share information, network, and collaborate across disciplines.

By identifying the technical communities where there are natural collaborative touchpoints, and co-locating them under an overarching forum theme (Science and Technology, Aviation and Aeronautics, Space and Astronautics, Propulsion and Energy, or Defense and Security), we've expanded the conference experience to focus on the technical, as well as providing opportunities for technologists to interact with the operations, logistics, applications, supplier, and policy communities. Increased communication among the different groups involved in the typical aerospace product, or system, life cycle will benefit the entire profession and likely will increase innovative outcomes.

■ Al Romig, Vice President, Engineering and Advanced Systems, Lockheed Martin Aeronautics, speaking at AIAA Propulsion and Energy 2014

Upcoming Forums

AIAA Aviation and Aeronautics Forum and Exposition
 22–26 June 2015
 Dallas, TX
www.aiaa-aviation.org
 #aiaaAviation

AIAA Propulsion and Energy Forum and Exposition
 27–29 July 2015
 Orlando, FL
www.aiaa-propulsionenergy.org
 #aiaaPropEnergy

AIAA Space and Astronautics Forum and Exposition
 31 August–2 September 2015
 Pasadena, CA
www.aiaa-space.org
 #aiaaSpace

AIAA Science and Technology Forum and Exposition
 4–8 January 2016
 San Diego, CA
www.aiaa-scitech.org
 #aiaaSciTech



Technical Activities

With 71 Technical Committees (TCs) and 13 Program Committees (PCs) the amount of work put forth by each committee is pretty amazing. Although the primary focus of most of these committees is organizing technical forums for engineers, researchers, and scientists in their discipline areas, these committees do so much more. Below are some firsts, some publication highlights, and one committee's milestone celebration.

Non-Deterministic Approaches TC – 1st Southwest Research Institute Student Paper Award in Non-Deterministic Approaches was presented at AIAA SciTech 2015.

V/STOL Aircraft Systems TC and Transformational Flight PC – The V/STOL Aircraft Systems TC and the Transformational Flight PC cosponsored a highly successful inaugural Transformational Vertical Flight Workshop with NASA and AHS.

Intelligent Systems TC – The Intelligent Systems TC hosted the first AIAA Intelligent Systems Workshop in Dayton, OH, on 7–8 August 2014. The purpose of the workshop was to gather attendees' knowledge and expertise for incorporation into a roadmap for intelligent systems in aerospace.

Space Operations and Support TC – The Space Operations and Support TC volunteered as a judge at the FIRST Lego league held at the Universities at Shady Grove, Rockville, MD.

Spacecraft Structures TC – The Spacecraft Structures TC attained approval to publish an AIAA Progress Series volume, "Handbook of Testing Large Ultra-Lightweight Spacecraft Structures." The table of contents has been drafted and they have secured commitments from 50% of the chapter authors.

Aerodynamic Decelerator Systems (ADS) TC – The ADSTC has continued to seek parachute document collections from around the world and send them to the Linda Hall Library (LHL)—a technical collection archival library in Kansas City, MO, for archiving and distribution. Income earned from the Heinrich Parachute Short Courses and ADS Seminars has enabled the TC to fund the Linda Hall Library to make these collections available online and free of charge. This effort has been managed by Mo Gionfriddo for almost 10 years. In 2014, over 20,000 pages from hundreds of parachute reports were scanned and readied for online distribution by LHL.

Survivability TC – The Survivability TC celebrated the 25th anniversary of the Survivability Technical Committee, including archiving the history of the TC. An anniversary coin was sent to each of the TC members and an article was published in the Summer 2014 issue of the *Aircraft Survivability Journal*.

Regions and Sections

Each month, dozens of activities take place across the United States and around the world in AIAA's 60 sections. These events help members exchange information, build professional relationships, mentor young professionals, reach out to local students and support their local community. A small sampling of events from the seven regions exemplifies the scope and diversity of the many events and hard work of members in the field.

Region I

In November, the **Mid-Atlantic** section hosted the annual Region I Young Professional, Student, and Educator Conference. The 15 sessions comprised 56 papers from young professionals, graduates and undergraduates, and even 10 papers from middle and high school students. The Space Automation and Robotics and the Space Operations and Support Technical Committees also participated in the conference. The conference keynote speaker was Michael Toscano, president and CEO of the Association for Unmanned Vehicle Systems International (AUVSI), speaking on "Innovation Breakthroughs: UAS the Next Frontier."

Region II

Members, families, and guests of the **Greater Huntsville** section council rolled up their sleeves to give old St. Nick a hand on 4 December. The group donned elf hats to fabricate, assemble, and paint toys for disadvantaged children as part of Santa's Lab. Started in 2013 by AIAA member and Mindgear Labs owner Rob Adams, Santa's Lab is a charitable program to design, produce, assemble, and distribute toys to disadvantaged children throughout greater Huntsville, AL. Mindgear and other donors provide the materials while volunteers design and fabricate the toys. The volunteers use Mindgear's design and fabrication tools free of charge to make toys.

Region III

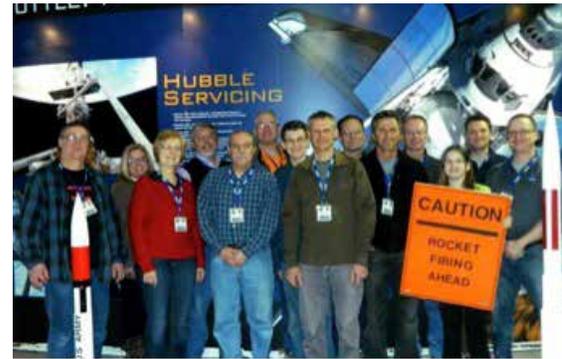
The **Wisconsin** section conducts Rocket Science for Educators workshops. The goal of these workshops is to assist schools in implementing rocket science into respective math or science curriculums and empower rocket club leaders with skills to design high-powered rockets successfully and compete in the Rockets for Schools Competition held each May at Spaceport Sheboygan. These are free workshops where teachers and rocket club leaders receive a software license, rocket design workbook, hands-on demonstrations, visual aids, and real-life space flight examples. Learning starts with a teacher, a curious student, and fun with aerospace.

Region IV

At the **Houston** section's December dinner meeting, Dr. Glynn Lunney, one of many excellent speakers that Houston hosts, spoke about his experience as an Apollo flight director, configurations, the feasibility of wind farms, and other pertinent topics.



■ AIAA Region I Deputy Director-Public Policy Tim Dominick reported on Public Policy events at the Region I Young Professional, Student, and Educator Conference at the Johns Hopkins University Applied Physics Laboratory in November.



■ AIAA Wisconsin Section Rocket Science for Educators group photo taken at Spaceport Sheboygan in Wisconsin.



■ Wisconsin section K-12 educators perform rocket design simulations.



■ Members of the AIAA Twin Cities section at the Northwest EMC facility in Brooklyn Park, MN.



■ Programs Co-Chair Greg Larson, Membership Chair Rick Garcia, AIAA Director Region VI Jane Hansen, LA-LV Section Chair Nicola Sarzi-Amade, Mr. and Mrs. Eugene Haberman, and former astronaut Carl Meade.



■ AIAA Adelaide Section Deputy Chair Mark Ramsey with Astronaut Jean-François Clervoy.

Region V

The AIAA **Twin Cities** section, its members, and guests were treated to a presentation and tour at Northwest EMC in Brooklyn Park, MN. Northwest EMC is a testing facility that specializes in various types of EMI and other electromagnetic testing for the aerospace, industrial, and medical industries. Event attendees were given an overview of Northwest EMC and their testing capabilities. The tour of Northwest EMC included their large-scale anechoic test chambers.

Region VI

In November, the **Los Angeles-Las Vegas** section held a dinner featuring former shuttle astronaut Carl Meade, now a program manager at Northrop Grumman Corporation in El Segundo, CA. The formal portion of the evening began with the presentation of an award to long-time AIAA member Eugene Haberman, in recognition of his 60 years of membership.

Region VII

The Adelaide section, along with the Australian Institute of Physics, invited ESA/French Astronaut Jean-François Clervoy to give a talk in late September. The talk was attended by over 100 people, including members of the South Australia Space School.

In addition to all these activities, two sections established chapters this year. Chapters are subsets of sections set up to support section members who are located far from the main activity center of the section. The Los Angeles-Las Vegas section established the Las Vegas chapter, and the Greater Huntsville section established the Mobile chapter. Chapters also exist in the AIAA National Capital Section (Southern Maryland Chapter) and the AIAA Hampton Roads Section (Blue Ridge Chapter).

Financials

FY14: Positive Changes, Encouraging Results

Fiscal Year 2014 (FY14) was another transitional year for Institute operations and financial results. In FY14, the new Strategic Plan was completed. The new plan will help us to operate in challenging economic environments and will provide us with direction to create solid footing for growth in the Institute's relevance to the aerospace community and in our resulting financial bottom line. In FY14, continuing operations realized positive results for the first time in three years.

A favorable investment climate and prudent stewardship of the Institute's Endowment Portfolio allowed for continued investments in AIAA's growth and sustainability. In FY14, the institute used funds set aside in the endowment in FY13 to settle all of the AIAA Employee Pension Plan's current and future obligations and thus completed the plan termination process started in FY13. Due to this action, going forward, the Institute will save in excess of three quarters of a million dollars each year.

At year end, the Institute Endowment Portfolio balance was \$24,317,000 (after settlement of the AIAA Employee Pension Plan obligations).

As a result of the pension plan termination, the Pension Fund Portfolio decreased from \$11,547,000 in FY13 to \$0 (zero) in FY14. The decrease represents the closeout and settlement of all AIAA Employee Pension Plan obligations. Obligations to existing pensioners and vested employees in the plan required the purchase of annuities and distributions of lump sum payments as part of the plan termination process.

FY14 continued the Institute transition to a new conference business model, transitioning from our legacy conference events to five new forums: Science and Technology Forum and Exposition (SciTech); Defense and Security Forum; Aviation and Aeronautics Forum and Exposition (AVIATION);

Propulsion and Energy Forum and Exposition; and Space and Astronautics Forum and Exposition (SPACE). In FY14, lessons learned from the forums in FY13 led to new forum elements and integration levels that will appeal to a wider range of aerospace applications and system professionals and will help attract a broader audience to AIAA events than our legacy conference offerings. Forums also created improved economies of scale.

In FY14, AIAA continued its commitment to enhancing levels of service, creating and supporting world-class products and programs, and integrating technology that drives innovation in value delivery to our members, institutional and corporate partners around the world.

The net financial result of FY14 was positive, as indicated by the attached audited Consolidated Statements of Financial Position. There was an increase in the Institute's total assets to \$38,770,000 at the end of FY14, up from FY13's total of \$38,151,000, as well as an increase in the Institute's net assets to \$31,426,000 from FY13's \$26,789,000.

Accounting guidelines require the consolidation of financial results for AIAA and the AIAA Foundation. The complete financial results for AIAA and its related Foundation are provided in the following pages. Both AIAA and the AIAA Foundation are tax exempt under Section 501(c) (3) of the Internal Revenue Code. For FY14, AIAA received an unmodified clean audit opinion from our independent auditors, Johnson-Lambert & Co. LLP, concerning our consolidated financial statements. Key elements of our combined audited financial statements are found on the following pages.



William C. Seymore
AIAA Secretary/Treasurer

A copy of the Institute's complete audited financial statements may be obtained by writing to:

William C. Seymore
AIAA Secretary/Treasurer
1801 Alexander Bell Drive,
Suite 500
Reston, VA 20191

Consolidated Statements of Financial Position

Year ended September 30, 2014 (in thousands)

Year ended September 30, 2013 (in thousands)

	Institute	Foundation	Eliminations	Consolidated	Institute	Foundation	Eliminations	Consolidated
Assets:								
Cash and cash equivalents	\$ 3,358	\$ 13	\$ —	3,371	\$ 1,478	\$ 61	\$ —	\$ 1,539
Investments	24,317	6,241	—	30,558	26,186	5,364	—	31,550
Accounts receivable, net	371	6	—	377	491	4	—	495
Pledges receivable, net	—	4	—	4	—	74	—	74
Due from Foundation	99	—	(99)	—	50	—	(50)	—
Prepaid expenses and other current assets	372	3	—	375	386	1	—	387
Inventory	55	—	—	55	28	—	—	28
Beneficial interest in trusts	8,798	—	—	8,798	7,615	—	—	7,615
Fixed assets, net	1,400	—	—	1,400	1,917	—	—	1,917
Total assets	\$ 38,770	\$ 6,267	\$ (99)	\$ 44,938	\$ 38,151	\$ 5,504	\$ (50)	\$ 43,605
Liabilities:								
Accounts payable and accrued expenses	\$ 1,972	\$ 85	\$ —	\$ 2,057	\$ 2,443	\$ 58	\$ —	\$ 2,501
Due to Institute	—	99	(99)	—	—	50	(50)	—
Deferred member dues	2,844	—	—	2,844	3,021	—	—	3,021
Deferred subscriptions	1,721	—	—	1,721	1,462	—	—	1,462
Deferred other	730	10	—	740	721	—	—	721
Other liabilities	77	—	—	77	37	—	—	37
Capital lease obligation	—	—	—	0	12	—	—	12
Defined benefit pension liability	0	—	0	0	3,666	—	—	3,666
Total liabilities	7,344	194	(99)	7,439	11,362	108	(50)	11,420
Net assets:								
Unrestricted net assets	22,302	3,345	—	25,647	19,174	2,775	—	21,949
Temporarily restricted net assets	9,124	1,124	—	10,248	7,615	1,042	—	8,657
Permanently restricted net assets	—	1,604	—	1,604	—	1,579	—	1,579
Total net assets	31,426	6,073	—	37,499	26,789	5,396	—	32,185
Total liabilities and net assets	\$ 38,770	\$ 6,267	\$ (99)	\$ 44,938	\$ 38,151	\$ 5,504	\$ (50)	\$ 43,605

Consolidated Statement of Activities

Year ended September 30, 2014 (in thousands)

	Institute	Foundation	Eliminations	Consolidated
Revenue				
Member services	\$ 4,046	\$ —	\$ —	\$ 4,046
Education	—	26	—	26
Technical publications	9,504	—	—	9,504
Outreach	158	—	—	158
Technical activities	6,955	—	—	6,955
Revenues before investment return, contributions and net assets released from restriction	20,663	26	—	20,689
Investment return	2,296	347	—	2,643
Contributions	45	267	—	312
Change in discount and allowance	—	(24)	—	(24)
Net assets released from restriction	26	249	—	275
Total revenue	23,030	865	—	23,895
Expenses				
Program services:				
Member services	3,538	44	—	3,582
Education	—	228	—	228
Technical publications	4,693	—	—	4,693
Outreach	1,170	—	—	1,170
Technical activities	4,864	—	—	4,864
Strategic plan initiatives and business development	406	—	—	406
Other program services	647	2	—	649
Custodial program	26	—	—	26
Fundraising	—	1	—	1
General and administrative	5,218	—	—	5,218
Total expenses before investment expenses	20,562	275	—	20,837
Investment expenses	24	—	—	24
Total expenses	20,586	275	—	20,861
Reclassification based on revision of donor intentions	—	(20)	—	(20)
Change in unrestricted net assets	2,444	570	—	3,014
Change in temporarily restricted net assets:				
Investment return	—	287	—	287
Contributions	1,183	44	—	1,227
Custodial program contributions	352	—	—	352
Net assets released from restriction	(26)	(249)	—	(275)
Change in temporarily restricted net assets:	1,509	82	—	1,591
Change in permanently restricted net assets:				
Contributions	—	5	—	5
Reclassification based on revision of donor intentions	—	20	—	20
Change in permanently restricted net assets	—	25	—	25
Change in net assets from operations	3,953	677	—	4,630
Pension related changes other than net periodic pension cost	684	—	—	684
Net change in net assets	4,637	677	—	5,314
Net assets, beginning of year	26,789	5,396	—	32,185
Net assets, end of year	\$ 31,426	\$ 6,073	\$ —	\$ 37,499

Consolidated Statement of Activities

Year ended September 30, 2013 (in thousands)

	Institute	Foundation	Eliminations	Consolidated
Revenue				
Member services	\$ 3,991	\$ —	\$ —	\$ 3,991
Education	—	20	—	20
Technical publications	8,617	—	—	8,617
Outreach	316	—	—	316
Technical activities	5,621	—	—	5,621
Revenues before investment return, contributions and net assets released from restrictions	18,545	20	—	18,565
Investment return	3,517	423	—	3,940
Contributions	54	104	(75)	83
Change in discount and allowance	—	(108)	—	(108)
Net assets released from restriction	—	185	—	185
Total revenue	22,116	624	(75)	22,665
Expenses				
Program services:				
Member services	4,220	44	—	4,264
Education	—	247	—	247
Technical publications	4,747	—	—	4,747
Outreach	1,797	—	—	1,797
Technical activities	4,752	—	—	4,752
Strategic plan initiatives and business development	415	—	—	415
Other program services	512	—	—	512
Fundraising	75	28	(75)	28
General and administrative	5,634	—	—	5,634
Total expenses before investment expenses	22,152	319	(75)	22,396
Investment expenses	28	6	—	34
Total expenses	22,180	325	(75)	22,430
Reclassification based on revision of donor intentions	—	(1,055)	—	(1,055)
Change in unrestricted net assets	(64)	(756)	—	(820)
Change in temporarily restricted net assets:				
Investment return	—	334	—	334
Contributions	559	37	—	596
Net assets released from restriction	—	(185)	—	(185)
Reclassification based on revision of donor intentions	—	384	—	384
Change in temporarily restricted net assets	559	570	—	1,129
Change in permanently restricted net assets:				
Contributions	—	52	—	52
Reclassification based on revision of donor intentions	—	671	—	671
Change in permanently restricted net assets	—	723	—	723
Change in net assets from operations	495	537	—	1,032
Pension related changes other than net periodic pension cost	6,191	—	—	6,191
Net change in net assets	6,686	537	—	7,223
Net assets, beginning of year	20,103	4,859	—	24,962
Net assets, end of year	\$ 26,789	\$ 5,396	\$ —	\$ 32,185

Consolidated Statements of Cash Flows

Years ended September 30,

2014 (in thousands) 2013

Cash flows from operating activities

Net change in net assets	\$ 5,314	\$ 7,223
Adjustments to reconcile change in net assets to net cash used in operating activities:		
Depreciation and amortization	563	591
Contributions restricted for long-term investment	(5)	(52)
Net realized and unrealized gains on investments	(2,064)	(3,502)
Changes in operating assets and liabilities:		
Accounts receivable, net	118	30
Pledges receivable, net	70	173
Beneficial interest in trusts	(1,183)	(559)
Prepaid expenses and other current assets	12	(7)
Inventory	(27)	5
Accounts payable and accrued expenses	(444)	(426)
Defined benefit pension liability	(3,666)	(5,408)
Other liabilities	40	(47)
Deferred revenue	101	725
Net cash used in operating activities	(1,171)	(1,254)

Cash flows from investing activities

Proceeds from the sale of investments	4,649	10,759
Purchases of investments	(1,593)	(8,720)
Purchases of fixed assets	(46)	(157)
Net cash provided by investing activities	3,010	1,882

Cash flows from financing activities

Contributions to be held permanently	5	52
Capital lease obligation	(12)	(36)
	(7)	16

Net change in cash and cash equivalents	1,832	644
Cash and cash equivalents, beginning of year	1,539	895
Cash and cash equivalents, end of year	\$ 3,371	\$ 1,539

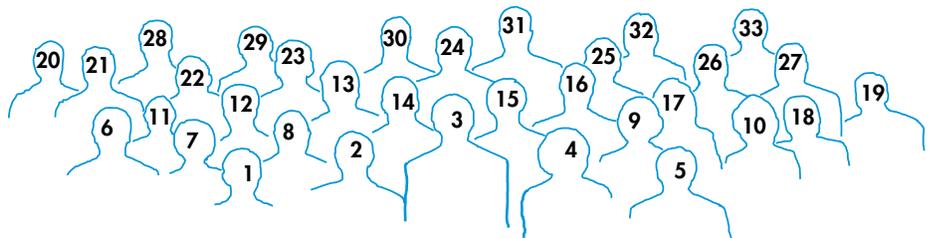
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2014–2015 AIAA Board Of Directors

The heart of the American Institute of Aeronautics and Astronautics is its volunteer leadership – AIAA members elected by their peers to serve on the Board of Directors. The Board is responsible for guiding the activities of the Institute and for stewarding its resources. Pursuant to the AIAA Constitution, most members of the Board of Directors serve three-year terms. Elections are held annually to fill normally expiring terms as well as any vacancies created by resignation or other causes. The voting period ends in early spring, and newly-elected members of the Board begin their service at the regularly scheduled May meeting of the Board. The volunteer leadership shown on these pages reflects the composition of the Board from May 2014 through May 2015.



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