



To ignite and celebrate...



# ...aerospace ingenuity and collaboration

**The American Institute of Aeronautics and Astronautics** is the largest aerospace professional society in the world, serving a diverse range of more than 35,000 individual and corporate members from 80 countries, who are all part of an innovative, high-value profession that helps make the world safer, more connected, more accessible, and more prosperous. AIAA serves as the high-energy voice for this vital profession, and provides our members the kind of lifelong community, connections, and development opportunities that lead to a thriving profession and enduring contributions to society.

Through AIAA's wide variety of programs, our members stay at the cutting edge of new thinking, best practices, and stimulating idea exchanges. We convene the profession's most original thinkers and curate the essential research information that our members rely on to inform and inspire their work. Maybe that's why AIAA members have been involved in nearly every advancement in modern U.S. aerospace. Our expertise and ingenuity has shaped everything from major space missions to the modernization of our aviation system, to the many inventive uses of aerospace technology that improve everyday life. From the cell phone in your hand to the GPS in your car, it couldn't happen without aerospace.

Right now, our members are exploring how the commercialization of space can contribute to a growing economy; how next-generation aviation can become even safer and more efficient; and how aerospace professionals can enhance environmental sustainability through responsible stewardship.

At AIAA, all of us are dedicated to igniting and celebrating aerospace ingenuity and collaboration. Our work fuels the collective human drive to explore, create, and be part of something bigger than ourselves. It's all part of our shared commitment to inspire innovation and drive technological progress in the U.S. and throughout the world.





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# A Snapshot of AIAA

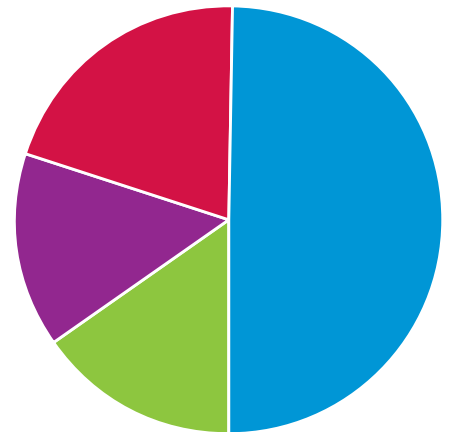
## MEMBERSHIP STATUS

3,616	■	ASSOCIATE FELLOWS
736	■	FELLOWS
64	■	HONORARY FELLOWS
4,052	■	EDUCATOR ASSOCIATES
6,163	■	STUDENT MEMBERS
418	■	ASSOCIATE MEMBERS
7,275	■	MEMBERS
14,484	■	SENIOR MEMBERS
6	■	HONORARY MEMBERS
<b>36,814</b>		<b>TOTAL MEMBERSHIP</b>



## PRIMARY BUSINESS

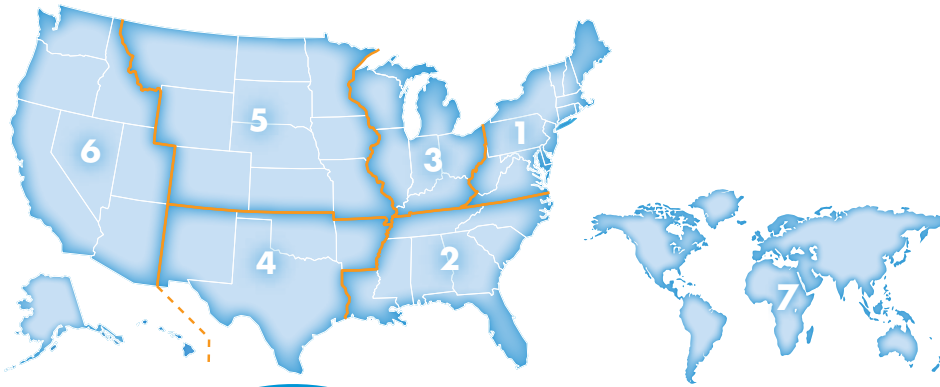
50%	■	INDUSTRY
20%	■	GOVERNMENT
15%	■	ACADEMIA
15%	■	RETIRED



## PROFESSIONAL INTEREST

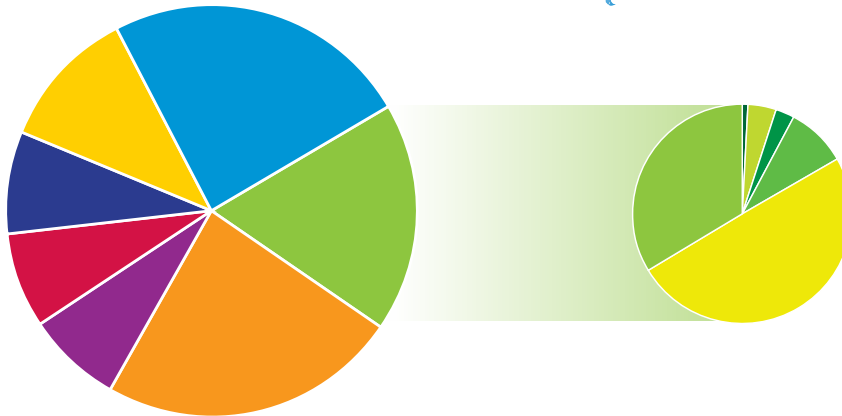
10%	■	ENGINEERING AND TECHNOLOGY MANAGEMENT
30%	■	AEROSPACE SCIENCES
14%	■	AIRCRAFT AND ATMOSPHERIC SYSTEMS
6%	■	INFORMATION SYSTEMS
12%	■	PROPULSION AND ENERGY
17%	■	SPACE AND MISSILES
11%	■	AEROSPACE DESIGN AND STRUCTURES





### AGE

- 10% 20-29
- 15% 30-39
- 20% 40-49
- 24% 50-59
- 15% 60-69
- 10% 70-79
- 6% 80+

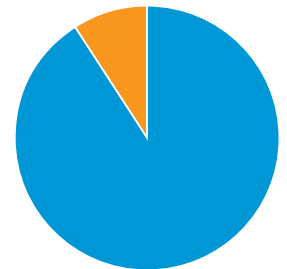


### AIAA REGION

- 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.)

### REGION 7

- 50% EUROPE
- 34% ASIA AND PACIFIC
- 9% CANADA AND MEXICO
- 3% CENTRAL AND SOUTH AMERICA
- 4% MIDDLE EAST AND NORTH AFRICA
- >1% AFRICA



### GENDER

- 91% MALE
- 9% FEMALE

### FINANCIAL INFORMATION 2010-2012 (in thousands U.S. \$)

	Institute Total Assets	Institute Revenue	Institute Net Assets
<b>2010</b>	27,622	24,596	9,271
<b>2011</b>	27,862	23,216	7,416
<b>2012</b>	36,720	25,677	15,540

# President's Report



**Michael Griffin**

*Many initiatives with long-term impacts began during the year and are resulting in changes that will enable long-term sustainability.*

**A**s my two-year presidential term approaches its halfway point, I am sure that you are not surprised to hear that the past year was one of mixed results for AIAA, as it was for both the national and world economy. Despite a combative political arena continuing beyond the election with budget cuts and the threat of sequestration, the Institute's investments did very well, with the investment portfolios of both the Institute and the AIAA Foundation recovering significantly. But the factors above, and others, combined to make this the first year since the aerospace industry's restructuring of the 1990s that AIAA's continuing operations did not break even. As reflected in the theme "Winds of Change" for last year's annual report, we certainly foresaw the potential for these challenges. But the continuing uncertainties in our business base brought about by the combination of the challenging economy, the rapid changes in the nature of business opportunities within the aerospace community, and the evolution and diversification of our workforce certainly astounded the board, the staff, and me. Nevertheless, many initiatives with long-term impacts began during the year and are resulting in changes that will enable long-term sustainability.

The most noticeable immediate change is the announcement of Dr. Sandra H. Magnus as the Institute's fourth executive director. Sandy began her tenure with AIAA upon Bob Dickman's retirement, early in Fiscal Year 2013. Through Bob's tenure with AIAA, he restored and enhanced our credibility and relations with our key customers in government and industry, and initiated many of our strategic long-term initiatives: to significantly revise our "event model" by hosting and managing fewer but larger and wider-ranging events that are more inclusive of all aerospace professionals; to renew our focus on relevance across all of our activities; to adopt multiple online and social media initiatives; and to accelerate our movement into e-publishing. Sandy has inherited this foundation and is now challenged with aggressively restructuring the Institute and revising its business model to be competitive in the evolving aerospace and defense environment of the future.

The current aerospace business climate continues to be a study in contrasts. On a positive note, commercial aviation comprises two-thirds of the aviation marketplace – and with record multiyear backlogs, provides a steady base for our future. Based on that strength, and supported by the recovery of the business aviation and general aviation markets and by the growth of the unmanned systems market, the aviation segment of our industry seems to be healthy despite challenges in military aviation. However, the government aerospace sector is dealing with prioritization challenges whose resolution is not yet certain. Despite the clear need for the F-35 and projected core 21st century capabilities of the Air Force's tanker and Intelligence, Surveillance, and Reconnaissance (ISR) systems, the nation simply cannot sustain the current spending rate. Moreover, the inclusion of National Security space capabilities along with NASA and NOAA earth observation, planetary science, and exploration activities makes the prioritization that much harder. As for commercial space, whatever the future may hold, the government is still the primary customer in the near term, so the seed money NASA is providing for this initiative must also compete

with the other priorities. In light of these many competing priorities, anticipated budget reductions, and the ongoing impacts of sequestration, the overall climate for investment and for business in general is quite austere.

As somber as that may be, it's even worse for AIAA and our sister professional associations. After widely publicized abuses associated with a General Services Administration (GSA) "conference" event in a party-oriented venue, by late 2012 the overall legislative and management environment had become prohibitively restrictive for all government participation in any professional events. These restrictions have had the effect of severely stifling the normal interaction between professionals, and consequently have also stifled much of the innovation throughout our community. They have also curtailed attendance at our events, including government participation as speakers, exhibitors, sponsors, and attendees in general. The initial response to the GSA scandal diminished attendance at several events in FY2012, and the continuation of these restrictions into 2013 has already led to many events being cancelled entirely throughout the aerospace and defense sector. While this too shall pass, at this writing we cannot predict whether this phenomenon will continue for a few months or a few years. In the interim, we are pursuing multiple strategies to address these adverse impacts: changes in legislative policy, changes in implementation, and waivers from the restrictions by individual agencies. AIAA's reputation for excellence and our high regard within the aerospace community have been our biggest assets thus far in tackling these challenges.

The state of the Institute is summarized in a snapshot by metrics spanning membership, conference attendance, and publications, all of which continue the slow erosion we saw last year. Professional membership, our primary key indicator, was down by 3.6%. However, student and corporate membership are both experiencing growth. Our emphasis on broadening our scope and enhancing our appeal, combined with changes in our operations that began over the past few years, has begun to have an impact, providing the foundation for success in the years ahead. Through focus groups and exit surveys at events, we are seeing optimism for the future and a resurgence of member engagement that bodes well for the future.

The past and current years are transition years as we change to our "new event model." Thus, we are consolidating our legacy events while incorporating some new ideas to enhance our relevance to the community and to expand our constituency beyond that of the technologists who have been our base for generations. In 2012 our meeting attendance declined by 3.8% from 2011. With implementation of the new event model we are pursuing, we will strive for a broader appeal to additional constituencies, while retaining the established quality of our technical information exchange. The growth will be to strengthen the professional and business-to-business networking during these events, to infuse a systems-level focus spanning multidisciplinary topics, and to add and integrate new activities and membership growth opportunities into the platform provided by the events. The net result

*We are seeing optimism for the future and a resurgence of member engagement that bodes well for the future.*

## AIAA Welcomes a New Executive Director, Sandy Magnus

In October 2012, following the retirement of Maj. Gen. Robert S. “Bob” Dickman, U.S. Air Force (retired), AIAA welcomed a new executive director, Dr. Sandra H. Magnus. Born and raised in Belleville, Illinois, she received a bachelor’s degree in physics (1986) and a master’s degree in electrical engineering (1990) from the University of Missouri – Rolla (now known as Missouri University of Science and Technology), and a Ph.D. from the School of Material Science and Engineering at the Georgia Institute of Technology (1996).



Dr. Magnus’s work experience reflects both aeronautics and astronautics: She worked for several years on aircraft stealth technology at McDonnell Douglas Aircraft Company, and in 1996 was selected by NASA to be an astronaut. Her spaceflight experience includes the STS-112 Atlantis shuttle mission in 2002, and the final shuttle flight, STS-135 Atlantis, in 2011. She also flew to the International Space Station on STS-126 Endeavour in November 2008, served as Flight Engineer and Science Officer on Expedition 18, and returned home on STS-119 Discovery after four and a half months. Her last duty at NASA before coming to AIAA was as the Deputy Chief of the Astronaut Office.

Dr. Magnus is a recipient of the NASA Space Flight Medal, the NASA Distinguished Service Medal, the NASA Exceptional Service Medal, and the 40 at 40 award (given to former collegiate women athletes to recognize the impact of Title IX).

*Aerospace Research Central  
... will enhance our flexibility  
and create additional  
member value.*

is expected to be fewer but larger annual events with a broader appeal. As our new event model matures and the economy returns to health, I anticipate that conference attendance will begin to grow again, bolstered by the strength of these new events with our legacy constituencies as well as by the infusion of our emerging new technical and entrepreneurial constituencies. We are exploring new ideas for consolidating and integrating conferences, seeking partnership opportunities with other societies, and further increasing the effectiveness of our events. The first two events moving in these directions are our AVIATION and SPACE events to be held in the latter part of 2013.

Our publications, the other mainstay of AIAA business revenues, although not impacted by travel and conference restrictions, nevertheless saw revenues reduced by 10.6% from 2011. With the initiation of operations of Aerospace Research Central (ARC) in late FY2012, we are already seeing the benefits of this multiyear investment in the future of e-publishing and digital indexing and downloading of aerospace information. ARC will enhance our flexibility and create additional member value. Revenues from the sales of our e-books were stable, representing 11.2% of book revenue, primarily from institutional customers. Online usage of journals continued to grow, reaching 58.8% of journal subscription revenue, up from 48.9% for last year. In addition to the transition to e-publications, there are other significant business challenges to deal with. Our Publications Committee continues to monitor the national debate on public access publishing championed by some Members of Congress and supported by the Office of Science and Technology Policy. This effort, to make the peer-reviewed published results of all federally-funded research available free of charge, represents a potentially serious financial threat to AIAA and all professional societies with peer-reviewed material. Our Publications Committee continues its efforts to educate policymakers of the value of the peer-review process and to position AIAA’s publications to survive and thrive in this new environment. Draft policies from each federal agency are required by law by the end of FY2013.

Our initiatives to update our website, to increase our use of social media, and to conduct business in a “greener” operational environment are bearing fruit in ways that have already been noticed by many of our members. Most of our highlighted events are now streamed live, expanding our reach to thousands of additional constituents. In addition, we have developed and implemented apps for a variety of mobile devices, which our members have found appealing as they spend increasing



amounts of time online. Our online digital version of *Aerospace America* has been well received, with an increasing number of members opting for “online only” subscriptions. Our Board of Directors elections are now predominantly conducted online, with less than 1% of the members voting with paper ballots. The popular *Daily Launch* and *Momentum* provide regular news at the national and international levels as well as AIAA updates of interest to our membership. In the near future, we expect to see additional changes in both content and distribution of information relevant to the full breadth of the Institute’s membership.

I am also pleased that our public policy efforts continue to have an increasing impact. In addition to a greater attendance each year at AIAA Congressional Visits Day and at our policy forums on Capitol Hill, AIAA has been sought out by policymakers at the state level for organizing and participating in events that address issues of immediate concern to state and local governments, which is a testimony to the quality of our brand. These efforts will also play an increasing role in our new events model, and will also help in communicating important economic and technological aspects of the nation’s role in world aerospace markets to our legislators and their senior staff.

To sum up, AIAA leadership and staff are constantly striving to enhance our brand, to demonstrate our relevance on issues of national and international importance, to provide unquestioned value in our products and services, and to adapt our business models to the times. Our financial operations, although challenged by events outside our control in 2012 and again in 2013, remain on a firm, but reduced foundation, with reserves available if necessary to weather the current and coming business challenges encountered by the entire professional association community. But we must continue to be willing to make adjustments to be more relevant and to adapt more nimbly to changing and increasingly global aerospace markets. By modifying our products and reassessing our services to the profession, we are seeking to create an environment with greater value to our member professionals and corporations. The two-year presidency definitely enables a greater long-term continuity and focus. My successor, Jim Albaugh, shares a commitment to the future health and growth of the Institute, and between us we can truly focus on the long-term success of the Institute. Our new executive director is focusing her early efforts on restructuring our Strategic Plan to define AIAA’s purpose and the promise that we offer to our members more clearly. Once developed and initiated, our Strategic Plan combined with a revised business model and the emerging new event model will provide more opportunities for all our current and future constituencies. Our increasing use of technology for publications, events, and communications will speak to the next generations of aerospace professionals. And we continuously seek to identify and establish the firm foundations needed to reach our goals for growth, for outreach into the global aerospace community, and for expanded service to the aerospace profession.

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As I enter the second year of my term as your president, I have been richly rewarded in leading the dedicated efforts of the partnership between the Institute’s volunteers and staff through some uncharted waters. This Annual Report highlights many more activities than I can address in this short summary. I encourage you to explore this report – and to share your comments and suggestions. I also encourage you to engage more fully with AIAA, to participate in activities important to your career, and to find ways in which you can make a difference. Our profession needs your support and your insights. Your enthusiastic involvement in AIAA will enhance your professional life greatly, in ways beyond what you might imagine. It will be your vital lifelong link to – and champion for – the aerospace profession. Especially at this point in time, your involvement will surely influence AIAA’s core capabilities and its perceived identity as we embrace the future.

*AIAA has been sought out by policymakers at the state level . . . which is a testimony to the quality of our brand.*

*I encourage you to engage more fully with AIAA, to participate in activities important to your career, and to find ways in which you can make a difference.*

# Serving the Profession: Our Members

## AIAA HONORS AND AWARDS

AIAA is proud to honor the very best in aerospace – individuals and teams who have pushed aerospace technology forward, who have advanced the quality and depth of the aerospace profession, and who have leveraged their aerospace knowledge for the benefit of society. The Honors and Awards program began recognizing achievements in aerospace even before the American Rocket Society and the Institute of the Aerospace Sciences merged in 1963 to become AIAA, and there are now over 80 different awards. The oldest date back to the 1930s and 1940s, and today two awards – the Reed Award for Aeronautics and the Goddard Award for Astronautics – represent our very highest honors.

For well over 75 years, thousands of the industry's best and brightest have been recognized for their outstanding achievements in and significant contributions to aerospace, in technical fields as well as in public service, publications, section participation, and sustained service to AIAA.

More than five hundred guests gathered to salute honorees from academia, government, and industry on 10 May 2012 at the AIAA Aerospace Spotlight Awards Gala – a glittering event that showcased the 2012 AIAA Honorary Fellows, the 2012 AIAA Fellows, and the recipients of AIAA's top honors.

Bringing the aerospace community together, and encouraging and recognizing outstanding achievement, are among the primary goals of AIAA, and nominating worthy candidates for awards or membership upgrade is an important task for AIAA members. We urge AIAA members to consider which of their colleagues and peers are most deserving of nomination for special recognition of their achievements.



■ From left: At the 2012 AIAA Aerospace Sciences Meeting, William C. Schneider, visiting professor, Texas A&M University, delivered the **AIAA Dryden Lectureship in Research**, "Space Hardware Design – 50 Years of Unique Lessons Learned"; John-Paul Clarke, associate professor, George Institute of Technology, delivered the **AIAA/SAE William Littlewood Memorial Lecture**, "Next/Gen? Now Gen? What Should We Be Doing Now to Achieve a Pragmatic Yet Revolutionary Next Generation Air Transportation System"; and William H. Gerstenmaier, associate administrator of NASA, delivered the **AIAA von Kármán Lectureship in Astronautics**, "Global Outpost in Space: A Platform for Discovery ... The International Space Station."

# AMONG THE STARS — SALUTING THE BEST OF AEROSPACE



■ The 2012 AIAA Fellows and AIAA Honorary Fellows at the AIAA Aerospace Spotlight Awards Gala.



■ At left: On behalf of the Boeing 787 Dreamliner Team, Boeing Commercial Airplanes Vice President of Engineering Mike Delaney (right) accepts the **2012 AIAA Foundation Award for Excellence** from AIAA President Michael Griffin (center) and AIAA Foundation Board of Trustees Chair David Thompson. At right: Scaled Composites, LLC Founder and Designer Emeritus Burt Rutan holds aloft the **2012 Daniel Guggenheim Medal**.



■ From left: **2012 AIAA Distinguished Service Award** recipient Donald Richardson, President and COO, DonRich Research Corporation; **2012 AIAA Goddard Astronautics Award** recipient David Thompson, Chairman and CEO, Orbital Sciences Corporation; **2012 AIAA International Cooperation Award** recipient Jean-Michel Contant, Secretary-General, International Academy of Astronautics; **2012 AIAA Reed Aeronautics Award** recipient Preston Henne, Senior Vice President of Programs, Engineering, and Test, Gulfstream Aerospace Corporation; **2012 AIAA National Capital Section Barry M. Goldwater Educator Award** recipient Kathryn Sullivan (center), Assistant Secretary of Commerce for Environmental Observation and Prediction, with AIAA President Michael Griffin (right) and National Capital Section Chair Bruce Milam.

## AIAA's 2012 Key Issues

Assuring the Viability of the U.S.  
Aerospace and Defense Industrial Base

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Dealing with Counterfeit and Malicious  
Hardware

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Supporting an Evolving and Adaptive  
Cybersecurity Policy

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Lessening the Impact of Export Controls  
on the Domestic Aerospace Industry

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Sharing Stewardship of the Federal  
Aeronautics RDT&E Infrastructure

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Developing a Robust Next Generation  
Air Transportation System

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Strengthening the National  
Commitment to Aerospace Research  
and Development

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Facilitating Assured, Cost-Effective  
Human Access to Space

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Recruiting, Retaining, and Developing a  
World-Class Aerospace Workforce

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Increasing Emphasis and Funding for  
Technology and Engineering in STEM

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## PUBLIC POLICY

### Addressing Strategic Imperatives

The current AIAA Strategic Plan has two Strategic Imperatives:

- 1) Sustain a Robust Aerospace Workforce and Develop Next-Generation Professionals; and
- 2) Restore AIAA's Relevance and Credibility with the Nation's Government / Industrial Leadership.

Many of AIAA's public policy activities seek to address these imperatives. However, these goals can appear abstract and ambiguous without specific definitions and milestones. Accordingly, in 2012 the Public Policy Committee set out to create a roadmap with defined goals, and identified paths to achieve these imperatives. This roadmap acknowledges existing challenges and realities and identifies achievable milestones using existing resources while reaching for growth in these areas.

Although assessing relevance is subject to individual judgments, a concise measurement with regard to national policymakers and industry leaders alike would be "Do they call us when they have a need? Do they accept our calls when we have something to say?" When the answers to those questions are consistently "yes," we will know we have reached a point of enhanced relevancy.

Internally, we can also judge success by the extent that we are establishing a meaningful dialogue on those issue areas that are important to our membership and their profession – a stated goal of the AIAA mission. Other measures include the level of speakers that AIAA is able to secure for public policy events, the level of our participation in coalitions we associate ourselves with, and the interaction we have with congressional and administration staff, such as providing expert testimony, participating in mandated studies and reports, and being invited to participate in panels or to provide insight in one-on-one or group discussions.

There is no precise metric for assessing relevancy and credibility just as there is no exact process for attaining them. What we do know is that we cannot be content with the status quo, and to meet this goal, we must continue to have commitment, investment, and persistence.

### Making Public Policy Part of Our Technical Conferences

To be effective communicators in the public policy arena, AIAA members must be informed about the issues impacting aerospace, and must have opportunities to interact on these issues. To facilitate this process, we have increased the number of dedicated public policy events at major AIAA technical conferences, scheduling many of the events so as to maximize the opportunities for AIAA member participation. Such events, including policy panels, luncheon presentations by national aerospace policy leaders, and interactive briefings by government agencies regarding aerospace policy planning, were held at the 2012 Aerospace Sciences Meeting, the 2012 Joint Propulsion Conference, and SPACE 2012. This year also saw the return of the Durand Lecture Series, which was combined with the Annual Public Policy Luncheon, with great success.

As AIAA moves into a new era with its new event model, our goal is to build on and fully incorporate these policy events at major AIAA conferences, both to better inform AIAA members on the issues, and to expose local and national media to substantive discussion of the major policy issues impacting our profession. This model provides for an increased role for public policy, recognizing the degree

to which national policy affects the aerospace industry and aerospace research. It will also increase the credibility of the Institute by offering more and better coordinated opportunities to interact with policymakers, and to showcase the expertise of our members.

## Expanding Grassroots Activities

### Congressional Visits Day Increases Our Impact

The Institute's grassroots public policy programming continued to grow in 2012. On 20–21 March, 170 members from 36 states attended the annual AIAA Congressional Visits Day (CVD), making it one of the largest such events in the program's history. Members engaged congressional staffers in vibrant policy discussions on the topics presented by the 2012 Key Issues.

The Public Policy Committee and the Technical Activities Committee worked very closely together in formulating the 2012 Key Issues. Their collaboration produced a diverse set of issues, encompassing traditional concerns such as strengthening the aerospace workforce and supporting a more robust space program, as well as relatively new concerns like strengthening cybersecurity and expanding unmanned systems. Last December, we saw the impact that our advocacy can have, as Congress addressed the export control issue in the National Defense Authorization Act, moving commercial satellite components from the United States Munitions List to the U.S. Department of Commerce review process, which allows more flexibility in commercial exports. As we move forward, our processes will incorporate input from our newly formed Corporate Member Advisory Committees, and we also continue to look to our local regions and sections for public policy input from our membership.

AIAA continues to enjoy a high level of support for this program from student members across the country, who are



■ At top: Team Virginia at the Capitol for CVD 2012. Above: the CVD Congressional Reception.

enthusiastic and well prepared as they present these issues to their contemporaries in many cases, speaking with and educating young legislative staffers about the incredible research they are able to work on as a part of these national issues. Combined with the experience and insight of more seasoned aerospace professionals, they are able to bring a new level of effective advocacy to our congressional visits.

### August is for Aerospace Brings Local Focus to Big Issues

The AIAA August is for Aerospace (A4A) program continued the discussions begun at CVD. During the summer and early fall, 27 sections staged 49 local A4A events. The A4A program encourages sections to invite their representatives to events, to hold roundtable discussions on the importance of aerospace, or simply to give the representative a tour of a local aerospace facility – anything that facilitates interaction and immerses the representative in the local aerospace scene. Events in 2012 ranged from formal presentations, to section dinners with congressional decision makers and other prominent government officials, to visits with elected officials or their staff in their local offices. A4A continues to grow, and the goal is to involve every AIAA section.

### AIAA Holds Its First California Aerospace Day

AIAA undertook a new grassroots effort in 2012, by holding its first State Aerospace Day. With the closing of the California Space Authority, a very active membership looked to continue an activity that had been held in Sacramento annually to make elected officials more aware of the impacts of the aerospace enterprise in California. AIAA picked up the mantle and held its first California Aerospace Day on 7–8 August. The success of this event has spurred activities in other states, as AIAA looks to expand its influence and relevance to statehouses across the country.

### Expanding Our Access to and Impact upon Our Nation's Leaders

A primary goal of AIAA public policy activities is to assure that national policies affecting aerospace are formulated with wisdom and knowledge of the facts. While CVD and August is for Aerospace help serve this purpose, AIAA is proactive in addressing this challenge at additional venues, in particular by presenting panel discussions on Capitol Hill to provide perspective on important aerospace issues.

In 2012, AIAA presented panel discussions on a broad range of issues. In February, a panel focused on the emerging commercial space industry, and the job-creating potential of these new endeavors. Also in the space arena, a panel held in July focused on how U.S. deep space exploration programs will help redefine American exceptionalism in science and technology. In May, AIAA presented an examination of current export control policies, including their systemic flaws, recent updates from the administration, and what the future may hold for the current export control regime. And in June, an AIAA panel discussed current STEM visa restrictions, and looked at new proposals intended to increase the number of visa available for STEM professionals, as well as the impact that these increased levels could have on the economy.

AIAA members are seeing increased access and visibility within national policy discourse. In September, AIAA was asked to provide several perspectives on the current state of NASA's flight research programs, and to discuss modernized approaches to conceptualizing and developing research programs that better serve and transition technologies and capabilities to end users within both the civil and commercial sectors. AIAA members continue to be relied upon as technical resources in various ways, such as by participating in National Research Council studies, providing technical background to national and state policymakers, and providing content to media outlets.

■ Panel member Dr. Annalisa Weigel of MIT addressing the issue of STEM visa restrictions.



# PROFESSIONAL DEVELOPMENT

## AIAA Offers Cutting-Edge Courses

In 2012, AIAA offered almost thirty courses at our technical conferences, through our home study program, webinars, and customized courses at companies and government agencies. Well over 300 professionals attended AIAA's educational courses.

AIAA seeks to develop and offer the professional courses our membership wants, in convenient formats and at reasonable prices. Our success in that is directly attributable to our instructors – subject matter experts who develop and present cutting-edge courses across a range of aerospace disciplines.

The involvement of AIAA's Technical Committees (TCs) has been instrumental in both expanding the breadth and preserving the quality of our professional development offerings. The TCs continue to assist the Professional Member Education Committee (PMEC), led by Dr. David Mitchell, in the process of with course evaluations and approvals. The program now has over 90 approved courses to choose from.

## AIAA Debuts Webinar Format for Courses

Webinars became the newest product in the Professional Development Program. Typically 90 minutes in length, webinars make the discussion of relevant topics available to anyone with Internet access, in a live and interactive form that allows direct questions to be posed to the instructors. Webinars are also recorded and can be viewed on demand at any time.

## AIAA Education Partner Program a Continuing Success

The AIAA Education Partner Program continues to be a success. Auburn University, NAFEMS, Practical Aeronautics, Stevens Institute of Technology, University of Colorado at Boulder, University of Illinois, and University of Tennessee Space Institute are members of this program, through which AIAA members may receive up to a 10% discount off their tuition rates.

## On-Site Courses Offer Flexibility, Cost Savings

Though many of our courses are held at AIAA's technical conferences, many companies and government agencies opt to train their employees on site, which saves time and money. Many NASA Centers, Northrop Grumman Corporation, The Boeing Company, Lockheed Martin Corporation, and Raytheon Corporation are among those who have brought AIAA short courses to their facilities, to train their employees in a closed, secure training session.



■ The AIAA Education Partner Program continues to be a success, offering members discounted tuition at a wide range of institutions.



## WORKFORCE DEVELOPMENT, CAREER DEVELOPMENT

### Inaugural Rising Leaders in Aerospace Forum Gets Rave Reviews

AIAA held a new event, the Rising Leaders in Aerospace Forum, in conjunction with its 51st Aerospace Sciences Meeting, in Grapevine, Texas in January 2013. The forum offered the next generation of young aerospace leaders, age 35 and under, access to top aerospace leaders and their perspectives, and multiple opportunities for networking with those leaders and their peers.

In her keynote speech, AIAA Executive Director Sandy Magnus described how everything you need to be a good leader you learned in kindergarten, and reminded the forum participants that while they should never lose sight of why they went into aerospace, their work/life balance is also of crucial importance.

The second day of the forum featured a Leadership Exchange and Networking Reception, hosted by the AIAA Young Professional Committee. This “speed networking” event gave attendees a chance to interact with leaders from government, industry, and academia, asking questions in a relaxed and personal environment. One participant, Joshua Locke from Spirit AeroSystems, commented: “This was my favorite part of the entire AIAA conference. It was great to be put in an atmosphere where the mentors/experienced professionals were outside of their normal environment, so that as young professionals we were not attempting to meet and talk to them while they were catching up with old friends at the conference.”

The third day featured an address by Daryl Pelc, Vice President of Engineering and Technology, Boeing Phantom Works, who discussed professional development in a changing aerospace environment. He advised participants to set goals in four areas: professional, financial, physical, and family, and to keep a victory list of achieved goals. He also urged them to get involved in both professional and personal communities to enhance their career and professional network.

The fourth day of the forum concluded with a luncheon, with a keynote address from Laura McGill, Deputy Vice President of Engineering, Raytheon Missile Systems, who described the numerous lessons she has learned throughout her career, including dealing with failures and successes, to taking different opportunities that came her way even if they were in a different discipline. She reminded forum participants to “make every day count!”

The president of the AIAA student branch at the University of Michigan, Prithvi Lopez, summed up the Rising Leaders in Aerospace Forum by saying: “I personally gained more in those few hours at the events than I have over the past couple of years while trying to figure out what direction I would like my career to take. I have also heard much the same from the other Michigan students who were fortunate enough to attend. We have all made some lasting contacts that will serve us well for many years for career choices and career advice and are grateful for the opportunity.”

The co-chairs of the Rising Leaders in Aerospace Forum were Darin Haudrich, from The Boeing Company, and Matt Cannella, from the University of Colorado at Boulder. The forum was sponsored by The Boeing Company.



■ At top: participants in the Rising Leaders in Aerospace Forum “speed networking” event. Above: Rising Leaders in Aerospace Forum speaker Laura McGill with the co-chairs of the event, Darin Haudrich (left) and Matt Cannella.





## MEMBER SERVICES

In 2012, our 60 local sections and 195 student branches held more than 8,000 events to help members connect and engage at the local level.

At the Institute level, we've continued to listen to member's requests and have implemented changes to improve and enhance member service.

- Members can now print out their own AIAA membership identification card. It's quick, easy, and convenient. Even better, your membership card now includes a QR code to improve the conference check-in experience.
- MyAIAA, a personalized web portal that helps members manage their membership, subscriptions, and engagements, was updated. Members can now easily see when their membership expires, update their profile and can now easily renew their journal subscriptions.
- The Fellows and Associate Fellows nomination processes were streamlined, making it easier to nominate and provide references for deserving candidates.
- A reduced dues program was implemented for individuals residing in countries that are classified as low-income by the World Bank.
- Educational and training courses began to be offered online to support members who are unable to secure funding for travel.
- An email component was added to member renewal campaigns, which allows members to quickly view and renew their membership – and it saves the Institute money.

### Regional Leadership Conference Enhances Skills and Connections

The 2012 AIAA Regional Leadership Conference introduced new Section Officers and Deputy Directors to the resources and programs of the Institute, and gave them a chance to share ideas with their peers. Held 2–3 August in Atlanta, Georgia, immediately following the Joint Propulsion Conference, the meeting was also attended by members of the AIAA Board of Directors. Highlights included an address by AIAA President Mike Griffin, who spoke of how aerospace had changed, and the current challenges and opportunities at hand for AIAA and its leaders. Over the next day more than 50 attendees networked and brainstormed, and heard presentations on meeting and event organization, volunteer recruitment, effective public policy advocacy, and more.

■ A discussion at the 2012 AIAA Regional Leadership Conference in Atlanta.





## **CORPORATE MEMBERS**

### **AIAA Corporate Membership Exceeds 100**

Over the past year the number of corporate members of AIAA has increased to over 100. All of our corporate partners enjoy an increasing number of opportunities to interact with government and academic leaders at special networking events held in coordination with our conference and events.

In addition, as AIAA's new event model is being put in place, AIAA corporate member companies are playing an increasing role in developing invited sessions and securing plenary speakers for our five major forums. This new focus will assure that all our events are addressing critical issues in policy, systems, acquisition, operations, and international affairs in addition to our continuing emphasis on technology.

From participation in Forum Executive Steering Committees to providing guidance via our corporate member involvement, this process will add substantive value to AIAA's events as well as to participants from government, academia, and the companies themselves.

### **Aerospace Today ... and Tomorrow Provides Unique Networking Opportunity**

A special annual "corporate member, invitation only" event, "Aerospace Today...and Tomorrow ... An Executive Symposium" continues to provide our corporate partners with a unique networking opportunity, by bringing together aerospace and defense executives in a casual, non-attribution environment (with no media) for candid discussions on industry progress, issues, and lessons learned, from the perspectives of corporate and government executives.

**AEROSPACE**  
TODAY... AND TOMORROW



**BUILDING A BUSINESS CASE**

## AIAA Corporate Members – a Who’s Who of the Aerospace Industry

AIAA’s Corporate Membership roster represents companies that lead the world in the advancement of flight. AIAA corporate membership gives them a further edge.

ACENT Laboratories	Edge Space Systems, Inc.	Planetary Resources, Inc.
Aerial Delivery Research and Development Establishment	Engineering Systems, Inc.	PM&AM Research
Aernnova Engineering, US	Ephemeris Technology Solutions	Pointwise, Inc.
Aerojet	Frontier Wind	Practical Aeronautics, Inc.
The Aerospace Corporation	GE Aviation	Raytheon Company
Airborne Systems, Inc.	Georgia Center of Innovation for Aerospace	Red Canyon Engineering & Software
Airbus Americas	Gulfstream Aerospace Corporation	Rincon Research Corporation
Alenia Aeronautica, S.p.A.	Harris Corporation	Rockwell Collins, Inc.
Altair Engineering	Honeywell International	Rolls-Royce
Analytical Graphics, Inc.	HRP Systems, Inc.	Royal Aeronautical Society
Applied University Research	IBM	Saab Sensis Corporation
ARES Corporation	Intelligent Light	SAFRAN
Arianespace	Jacobs Technology	SG-Space & Ground Engineering Solutions
Assured Space Access Technologies	JHU/Applied Physics Laboratory	Sierra Lobo, Inc.
Astrium Americas	Lockheed Martin Corporation	Sierra Nevada Corporation
Astrox Corporation	Masten Space Systems	Software Engineering Institute
Aurora Flight Sciences	McKinney Associates	Space Environment Technologies
Ball Aerospace & Technologies Corporation	The MITRE Corporation	Space Systems/Loral
Bastion Technologies	MSC Software Corporation	SpaceX
Battelle Memorial Institute	National Aerospace Laboratory/NLR	Spectral Energies, LLC
The Boeing Company	National Institute of Aerospace	Spincraft, Inc.
Booz Allen Hamilton	National Technical Systems	Stellar Solutions
BRAHE Corporation	NextGen AeroSciences, LLC	Systems Technology, Inc.
Bron Aerotech, Inc.	Nielsen Engineering & Research, Inc.	TASC, Inc.
Carol Cash & Associates LLC	Northrop Grumman Corporation	The Tauri Group
CENTRA Technology, Inc.	Ohio Aerospace Institute	Teaching Science and Technology, Inc.
Cessna Aircraft Company	ONERA	U.S. Space LLC
CSC	Orbital Sciences Corporation	United Launch Alliance
CSSI, Inc.	ORBITEC	United Technologies Corporation
Cummings Aerospace, Inc.	Paragon Space Development Corporation	VanRSpace
DARcorporation	Parametric Solutions, Inc.	Virgin Galactic
DataCon, Inc.	Parametric Technology Corporation	Virginia Tech Applied Research Corporation
DLR		Wolverine Ventures
Draper Laboratory		XCOR Aerospace
dSPACE		
Dunmore Corporation		
Dynetics, Inc.		



■ From top: Mark Valerio, Vice President and General Manager of Military Space, Lockheed Martin Corporation, discusses the latest technologies with Lt Gen Ellen Pawlikowski, Commander, Space and Missile Systems Center, Air Force Space Command; representatives from Pratt & Whitney Rocketdyne share their technologies with Lori Garver, Deputy Administrator of NASA; AIAA Corporate Membership Committee Chair Jim Maser addresses corporate representatives at a networking event in Grapevine, Texas.

# Serving the Profession: The Future



■ A student experiments with pulleys. AIAA classroom grants fund many hands-on science and engineering activities for K–12 students.

## **STEM K–12 OUTREACH PROGRAMS**

### **AIAA Educator Academy Launches in July 2012**

In July 2012, the AIAA Educator Academy began its first series of teacher workshops. In sessions held in Colorado Springs, Colo., in Valparaiso, Fla., and in Dayton, Ohio, teachers focused on two of the curriculum modules developed by AIAA, learning how to work with their students to create Mars rovers, and how to hold a competition to see which teams of students can build the most effective electric cargo airplanes. A third curriculum module has also been developed, that focuses on designing scientific research payloads for high-altitude weather balloons that are then launched by the students.

The Educator Academy program, funded by AIAA's Institute Development Committee, seeks to relate hands-on activities to real-world applications of the "STEM" subjects of science, technology, engineering, and mathematics. As the program spreads to local AIAA sections, it is envisioned that there will be a host of local competitions, connecting local schools to their local AIAA sections to spread the excitement of aerospace engineering.

### **"Leading the STEM Charge: Illuminating the Potential of Aerospace" Debuts at the AIAA SPACE 2012 Conference**

At the AIAA SPACE 2012 Conference in Pasadena, Calif., AIAA brought together over 80 Pasadena-area high school students and their teachers, along with local AIAA members, for an inspiring look at the aerospace profession and how students might play a role in its future. Students were given an opportunity to present their scientific work to their peers, have an informative lunch with AIAA members from the local section, and hear a panel of experts describe the path from student to aerospace professional. The panel members stressed that while there is no one path and no one career, there are a wide variety of opportunities available in aerospace. The program, sponsored by Northrop Grumman Corporation, sparked considerable interest: from the students, who had the opportunity to ask many questions about college, careers, and opportunities in the aerospace industry, as well as from the conference attendees, who wanted to hear what the students were interested in.

### **AIAA Student Branch from Virginia Tech Welcomes the Space Shuttle Discovery to Her New Home at the Udvar-Hazy Center**

The Virginia Tech Student AIAA Branch sent a full contingent of student members to staff an AIAA outreach booth for the over 5,000 students attending the welcome ceremony for the Space Shuttle Discovery as it arrived at its new home, the National Air and Space Museum's Steven F. Udvar-Hazy Center. The Virginia Tech students also led a space shuttle docking activity to the delight of the K–12 kids in attendance, making sure that their "astronaut" safely docked with the International Space Station.

# UNIVERSITY

## Student Membership Shows Strong Growth

Student membership in AIAA increased substantially in 2012. By the end of the 2012 calendar year, student membership exceeded eight thousand, a 9% increase that more than made up for a small decline in the number of student members at the end of the previous year.

## Design/Build/Fly Competition Survives a Tornado

The Cessna Aircraft Company / Raytheon Missile Systems / AIAA Foundation Student Design/Build/Fly Competition – in which students build and fly a small electric-powered, remote-controlled airplane over a predefined course in a limited time – continues to be a tremendous success story for the Technical Activities Committee and the Student Activities Committee. In addition, the 2012 event, held 13–15 April 2012 at Cessna Airfield in Wichita, Kans., featured some unexpected excitement. Friday’s flights went well, but due to high winds on Saturday, flying was suspended around noon. That evening a tornado came through, directly affecting the contest site, which led to the cancellation of Sunday’s activities.

Despite the shortened weekend, each team had two opportunities to fly, which was enough to allow winners to be determined. First place went to “Team PhalanX” from San Jose State University. In second place was “Angel of Attack” from the University of California at Irvine, and in third place was “H2Buffalo” from the University of Colorado. In fourth place was “ATA” from Istanbul Technical University, one of several international teams competing. More information on the Design/Build/Fly Competition is available at [www.aiaadbf.org](http://www.aiaadbf.org).

## AIAA Hosts Nine Student Conferences

The AIAA Regions hosted seven U.S. Regional Student Conferences and two International Student Conferences in April of last year. The Australian Student Conference featured 17 students from around the Asia Basin presenting their work in person and via videoconferencing, which allowed student participation from a larger geographic area. The European Region Conference, held in Poitiers, France in partnership with PEGASUS (Partnership of a European Group of Aeronautics and Space Universities), continued its success with the presentation of over 27 graduate papers. Overall, 268 presentations were made, and almost 800 students participated in the conferences.

Winners from the regional conferences met at the 2013 AIAA Aerospace Sciences Meeting in the Dallas–Fort Worth area to present their papers at the AIAA International Student Conference.



■ At top: “Team PhalanX” from San Jose State University, shown with their winning airplane. Above: The path of the 14 April 2012 tornado, shown in purple, passed very close to the Design/Build/Fly Competition site, marked by a star.

**Global Space Exploration Conference**  
 22–24 May 2012, L'Enfant Plaza Hotel  
 Washington, DC, United States

**Highlights:**

- High-Level Plenary Events
- Networking Opportunities
- Technical Tours
- Exciting Off-Site Events
- Technical Sessions

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[www.aiaa.org/GLEX2012](http://www.aiaa.org/GLEX2012)



## INTERNATIONAL

### Engaging in Global Discussions about Space Exploration

In May, AIAA partnered with the International Astronautical Federation (IAF) to host the very successful Global Space Exploration Conference (GLEX) in Washington, DC. GLEX was the first forum to bring together stakeholders from space agencies, industry, academia, and the R&D community from every corner of the world, interested in putting together a sustainable international exploration effort. Highlights of the event included:

- The heads of the Canadian, European, and Russian space agencies were among the many participants. High-level representatives from the Indian Space Research Organisation, the Japan Aerospace Exploration Agency, and NASA also attended.
- The program included five plenary sessions, 35 technical sessions, and six panel discussions, and considered every aspect of exploration architecture, including possible exploration destinations for future missions, the technology needed to ensure mission success, and the crucial need for continued international cooperation throughout the exploration enterprise. Plenary topics included:
  - Heads of Space Agencies – Global Space Exploration Dialogue
  - Perspectives on Exploration
  - Keynote Lecture: Mars Exploration
  - Capabilities for human exploration
  - Human and Robotic Exploration: a COSPAR perspective
  - Keynote Lecture: Exploring the Moon and Asteroids: A Synergistic Approach
  - Enabling a Political Consensus
- The conference gave the International Space Exploration Coordination Group an opportunity to update the Global Exploration Roadmap and to discuss possible mission scenarios.

The event also set the stage for further partnered activities between AIAA and IAF, an organization established in 1951 to foster the dialogue between scientists around the world and support international cooperation in all space-related activities. AIAA is a founding member of IAF.





## Recognizing German/U.S. Science and Technology Collaboration

As part of AIAA's ongoing collaboration with our German sister society (Deutsche Gesellschaft für Luft- und Raumfahrt, DGLR), a special session on German/U.S. Cooperation in Science and Technology was organized at the Deutscher Luft- und Raumfahrtkongress 2012, held in September in Berlin, Germany. Session organizers included the following members of the AIAA International Activities Committee: Mark Maurice (former AIAA Vice President, International), Juergen Drescher, and Florian Holzapfel. Session topics included SOFIA Airborne Telescope and UAV Flight Paths. This session was AIAA's contribution to the DGLR 100th anniversary celebration during the conference opening ceremony and the latest activity in the ongoing collaboration between AIAA and DGLR.

## Using Partnerships to Hold Conferences Abroad

While most AIAA events are held within the United States, some long-standing AIAA events meet outside of the United States periodically to better serve a global constituency for the topic area and to feature the event in different countries. As an example, the 18th AIAA International Space Planes and Hypersonic Systems and Technologies Conference was held in Tours, France in September. The Association Aéronautique et Astronautique de France (3AF), AIAA's sister society in France, hosted and organized the event. AIAA's HyTASP Program Committee was responsible for the program development and AIAA staff provided support by handling registration, abstract and paper management, and marketing for the conference. Following a similar model, the AIAA/CEAS Aeroacoustics Conference will be hosted by DGLR in Berlin, Germany in 2013.

## Opening the Doors to Brazil

During 2012, a number of discussions occurred between representatives of AIAA and the Associação Brasileira de Engenharia e Ciências Mecânicas (the Brazilian Society of Mechanical Sciences and Engineering, ABCM) exploring potential collaboration between the societies. Although ABCM is not a direct equivalent to AIAA, in that it covers all areas of engineering in Brazil, there are areas of common interest, including aerospace engineering, fluid mechanics, thermal sciences, and combustion and environmental engineering. AIAA also has a number of members in Brazil, with approximately 90 professional members and 30 student members. For these reasons, the organizations have developed a Memorandum of Understanding (MOU) to define some general areas of collaboration that can be further defined once the MOU is approved by the governing bodies of AIAA and ABCM. Collaboration with Brazil could increase AIAA's activities and visibility in Latin America, adding to the existing cooperation the Institute has with Argentina.



# AIAA FOUNDATION

## “Exciting, Empowering, and Fun”

Founded in 1996, the AIAA Foundation is a tax-exempt nonprofit organization that seeks to enhance and support the effectiveness of current and future aerospace professionals, and of the organizations and institutions involved in aerospace.

To help shape the future of aerospace, the Foundation’s primary focus is on education in the “STEM” subjects of science, technology, engineering, and mathematics, driven by a simple philosophy: Make it exciting, make it empowering, and make it fun.

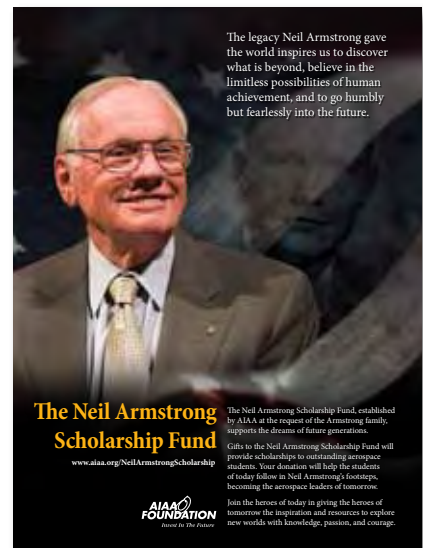
From K–12 through the university level and beyond, the AIAA Foundation’s underwriting of scholarships, classroom grants, design competitions, student conferences, and professional recognition for outstanding achievement enhances scientific literacy and advances the art and science of aerospace.

More information on the AIAA Foundation and its programs for students, teachers, and professionals is available at [www.aiaafoundation.org](http://www.aiaafoundation.org).

## AIAA Foundation Establishes Neil A. Armstrong Scholarship Endowment Fund

In August 2012, to honor the memory of AIAA Honorary Fellow Neil A. Armstrong (1930–2012), who was the first person to set foot on the Moon, the AIAA Foundation established the Neil A. Armstrong Scholarship Endowment Fund. The Foundation was deeply honored to have been selected by the Armstrong family as one of three recipients of gifts made in memory of Neil Armstrong.

Donations made to the Neil A. Armstrong Scholarship Endowment Fund will help ensure that the students of today have the opportunity to pursue the education necessary for them to follow in his footsteps as the aerospace leaders of tomorrow.



## AIAA Foundation Awards \$45,000 in Scholarships

Last year the AIAA Foundation Scholarship Program awarded eleven undergraduate student scholarships worth a combined total of \$27,500. In the graduate category, three \$2,500 graduate scholarships were awarded, and two graduate students received awards of \$5,000 each.

## Renewal is in the Air

Since the AIAA Foundation was first created, the executive director of AIAA has also served as the president of the Foundation. With the arrival of AIAA’s new executive director, Sandy Magnus, the AIAA Foundation therefore also welcomed a new leader. Her reflections on the importance of the Foundation and the role it has to play appear on the following page.





This year's theme for the AIAA Foundation, if you had to sum it up in one word, would be "renewal." A crucial part of what AIAA does is to foster and encourage the next generation of aerospace professionals, and the Foundation is a key part of that effort.

The Foundation offers many programs, ranging from scholarships that provide financial assistance to undergraduates, to professional awards that recognize excellence in aerospace, to design competitions and student conferences where both undergraduates and graduate students present their work and hone their presentation skills.

I was recently able to attend the Region I and Region VI student conferences, and met many of our student members in the process. I came away impressed by their enthusiasm, as well as by the quality of the work they presented, and am very hopeful for the future of our industry. My experience at these student paper competitions only highlighted to me the importance the role the Foundation can continue to play for AIAA.

Due to the current challenging economic environment, however, we are taking a step back, to thoughtfully consider how best to utilize the Foundation to promote our educational goals. In order to move forward from a solid base, it is important to go back to basics, and that is what we are doing right now at the Foundation.

A thorough examination of how we manage and administer the Foundation, as well as of our communication processes, is ongoing – with the goal of making the organization stronger and more efficient in the future. Working with the Foundation's Board of Trustees, we are discussing the strategic vision and mission of the Foundation, to ensure that it is appropriately aligned with the Institute and that we have a good plan in place for execution.

The educational mission is an important part of AIAA, and by appropriately utilizing the AIAA Foundation we can ensure a strong and durable base from which to work.

Our "renewal" process is underway, and I look forward to realizing the full potential of the Foundation as we move forward!

A handwritten signature in black ink, which appears to read "Sandra Hillgrus". The signature is fluid and cursive, with a long horizontal stroke at the end.

# Publishing Essential Technical Information

## BOOKS AND JOURNALS

### Aerospace Research Central – AIAA’s New Content Platform

September 2012 saw the launch of AIAA’s next-generation electronic library, Aerospace Research Central (ARC). More than a new name and new brand, ARC is a significant multiyear investment in the online architecture supporting and extending AIAA’s intellectual legacy. ARC was developed using the Literatum™ electronic publishing platform from Atypon® – which is also used by many of AIAA’s peers (such as the American Chemical Society and the American Society for Civil Engineers) and other commercial and not-for-profit publishers (e.g., Taylor & Francis and the World Bank). Literatum collectively hosts over 14 million journal articles and more than 70,000 ebooks, and as the platform for ARC, it now hosts 140,000 AIAA conference papers, more than 57,000 AIAA journal articles, close to 300 ebooks, and 84 Standards, covering more than 75 years of aerospace material.

ARC is not a static recreation of our previous electronic library, but instead offers some long-awaited enhanced features such as the ability to save and schedule searches, download citations, track citations to specific articles and papers over time, mark pieces of content as “favorites,” and sign up for alerts when new content is added in an area of interest.

Since November, subscribers of any of our current journals have been able to view articles online before they are printed. Features of these full-text HTML “Ahead of Print” articles include easy navigation to different sections of an article regardless of starting point, pop-up access to view references and figures as an article is being read, and direct links from each reference to the full reference citation.

Ahead of Print articles are published as they complete production and quality assurance review, and do not wait for assignment to a particular print issue before appearing online. Thus, the online publication date is the date of first publication for each article.

For all content, regardless of when it is published, ARC provides PDF and PDF Plus formats – as well as full-text HTML for journal articles published ahead of print. Plans call for ebooks and standards documents to also appear in full-text HTML – with additional innovations to follow.

Supplemental material has long been available for AIAA’s print books, but starting by summer 2013, journal authors will also be able to submit supplemental material to enhance the content of their articles. This reflects not only ARC’s new functionality but also the leadership and advocacy of AIAA Journal (AIAAJ) editor-in-chief Peretz Friedman and two of AIAAJ’s current associate editors, Meelan M. Choudhari (NASA Langley Research Center) and Joaquim R. R. A. Martins (University of Michigan).



Working with staff, Choudhari and Martins evaluated other scholarly publishers and identified the process and technical challenges to be overcome. AIAAJ and the Journal of Propulsion and Power (JPP) will pilot this capability before it is extended to all journals.

The supplementary material made available to online subscribers can include multiple files for a given article, including data sets, extensive tables, multimedia such as animation, sound, or video files, and other supporting material. The journal article will still be self-contained and must stand on its own, but the supplemental material will add further value and depth to the primary content presented in the article.

Rapid release of electronic content and inclusion of supplementary material are becoming standard practice in scholarly publishing. ARC ensures that AIAA continues to provide high-quality publications with timely updates and easy, flexible access for our customers.

### **New Identity and Focus for *Journal of Aerospace Information Systems* (formerly *Journal of Aerospace Computing, Information, and Communication*)**

In May 2012, Ashok Srivastava, Ph.D., was formally appointed as the new editor-in-chief for *Journal of Aerospace Computing, Information, and Communication*, succeeding Dr. Michael Hinchey, who retired at the end of 2011. Formerly with NASA Ames Research Center, Dr. Srivastava is now Director and Chief Data Scientist at Verizon, where he leads a new research and development center in Palo Alto, California.

He immediately took on the task of reinvigorating the journal and ascertaining how it can be most relevant to the aerospace community. To that end, he proposed changing the name of the journal and revising its scope. In the fall of 2012, Vice President for Publications Vigor Yang created a task force to consider these proposed changes, and its recommendations were then reviewed by members of the Journals Subcommittee and the Publications Planning and Review Subcommittee. In January 2013, the Journals Subcommittee and the full Publications Committee approved the new name, *Journal of Aerospace Information Systems*, and its enhanced scope, which will allow JAIS to focus on the extensive computing and information systems that are increasingly the foundation of modern aerospace systems.

### **New Editor-in-Chief for Progress in Astronautics and Aeronautics Book Series**

At the Aerospace Sciences Meeting in January 2013, the Board of Directors approved the appointment of Dr. Timothy Lieuwen as editor-in-chief of the Progress in Astronautics and Aeronautics book series, for a three-year term. A professor in the School of Aerospace Engineering at Georgia Institute of Technology, with a joint appointment in the School of Mechanical Engineering, Lieuwen also serves as the Executive Director of the Strategic Energy Institute. Following the retirement of Dr. Frank Lu, Lieuwen served as the interim editor-in-chief of the series during 2012, and then was chosen for the permanent position through a competitive search process led by Michael Mendenhall, the chair of the Books Series Subcommittee of the Publications Committee.



### **Books Published in 2012**

#### ***AIAA Education Series***

***Introduction to Aerospace Materials***, by A. Mouritz (copublished with Woodhead Publishing Ltd.)

***Aircraft Design: A Conceptual Approach, Fifth Edition***, by D. Raymer

***The Aerodynamic Design of Aircraft***, by D. Kuchemann (Reprint of 1978 Pergamon Press edition)

***Missile Design and System Engineering***, by E. Fleeman

***Aircraft and Rotorcraft System Identification, Second Edition***, by M. Tischler and R. Rempfle

#### ***Progress in Astronautics and Aeronautics***

***Tactical and Strategic Missile Guidance, Sixth Edition***, Vol. 239, by P. Zarchan

***Morphing Aerospace Vehicles and Structures***, Vol. 240, by J. Valasek (copublished with John Wiley & Sons, Ltd.)

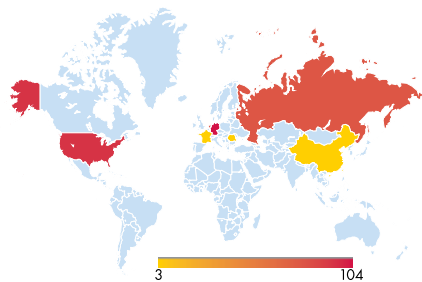
***Advances in Intelligent and Autonomous Aerospace Systems***, Vol. 241, by J. Valasek

#### ***Library of Flight***

***Aerodynamic Principles of Flight Vehicles***, by A. Panaras

***AIAA Aerospace Design Engineers Guide, Sixth Edition***

## Distribution of Takedown Notices for Pirated AIAA Book Content



Site Location	Notices
Germany	104
United States	89
Russia	72
Netherlands	69
Cyprus	16
France	4
Hong Kong	4
Romania	4
China	3

Source: Digimarc Guardian

## AIAA Takes Additional Steps to Protect Intellectual Property

AIAA has recently retained the services of Attributor, A Digimarc Company (www.attributor.com) to help protect AIAA and its authors' content from online digital piracy. Digimarc Guardian™ is an end-to-end service that discovers and validates pirated content on cyberlockers, peer-to-peer networks, and other offending websites. In addition to Attributor's automated monitoring, AIAA staff and authors will be able to report suspected pirated material for investigation and follow-up. Attributor will monitor 150 of AIAA's new and top-selling books and standards documents for abuse. When Attributor identifies illegally posted and shared content, it will issue the appropriate takedown notices and monitor for compliance.

Taking this step will improve the protection of AIAA and its authors because it is nearly impossible for individual authors or publishers to adequately monitor for potential abuses, and even when violations are found, it is very difficult to ensure that the offender or the host Internet service provider has complied. AIAA is limiting the service to 150 titles at this stage, until we can quantify the scope of the piracy of our content. We will be able to change up to ten titles a month as we determine the risk to individual publications. At the end of six months we will assess the impact and ongoing benefit of the service. We will have the option of modifying the number of titles covered and the number of takedown notices issued in a given month.

In the first two months, Attributor issued 365 takedown notices, with a 75% success rate. Of the 150 titles being monitored, portions of 48 titles were discovered on piracy sites. Attributor is averaging about 6.3 days between the takedown notice issuance and site compliance on AIAA content. Of interest, most of the servers holding pirated AIAA content are in Western countries.

Monitoring of journal articles and meeting papers may be discussed in the future, although monitoring this type of content is not as straightforward as it is for books. Currently, Aerospace Research Central (ARC) has robust abuse monitoring built in to protect content on the site. The existing baseline monitoring consists of the following actions:

- For any behavior that triggers a "spider trap hit," any session that lasts more than four hours, or the creation of more than 25 sessions within a five-minute window, ARC will impose a permanent IP range block of content pending AIAA administrator review and resolution.
- ARC will block access for two hours if there are more than 200 PDF or full-text downloads in a single session.

Since the launch of ARC in September, the system has imposed 311 temporary IP address blocks and 276 permanent blocks. Of these, 75 permanent blocks were lifted after administrator review or actual follow-up with the offending institution. This approach not only protects against and prevents further abuse, but also shows signs of educating users in other cultures, as we have received written apologies from students when it was made clear to them that their behavior resulted in denial of access for their university. As the quantitative data accumulate we will evaluate these settings and adjust them accordingly.

Type of Abuse Trigger	No. of Temporary Blocks	No. of Permanent Blocks	Number of Permanent Restorations	AIAA Administrator-Imposed Blocks
Spider Trap	0	0	N/A	0
Excessive Downloads	311	1	0	0
Excessive Session Length	N/A	0	N/A	0
Excess No. of Sessions w/ in 5 minutes	N/A	276	75	1

## Improving the Subscription Order and Fulfillment Processes

One key to creating happy and returning subscribers is making the ordering and renewal process simple, intuitive, and convenient. This has not always been the case with AIAA subscriptions; the process has not been consistent for individual and institutional subscribers with varying needs and ordering cycles, and has become more complex as AIAA has developed in turn a new association management system, a revamped website, and now Aerospace Research Central (ARC). In 2012, following the relaunch of the AIAA website and while preparing for the launch for ARC, staff turned its attention to improving the customer ordering experience for our subscription products.

The experience and needs of a typical AIAA member are naturally quite different from a corporate or university librarian, although easy and accurate ordering are fundamental desires of both. Key differences center around pricing, order methodology, the role of intermediaries (i.e., subscription agents), and timing. Individual AIAA members are entitled to a significant price differential when ordering directly from AIAA. By contrast, institutional subscription prices are considerably higher, and librarians who order journals and other subscriptions from multiple publishers often rely on international subscription agents to place orders on their behalf. In fact, a substantial number of AIAA's institutional orders are submitted by a handful of international agents. As for timing, AIAA members can subscribe and renew when they join AIAA or at virtually any point they choose. Libraries, by contrast, typically order in the late fall so that new subscriptions are in place on 1 January of each year. These differences called for independent solutions to permit ease of ordering for all of our customers.

Accordingly, as of November 2012, AIAA's institutional subscription-order processing and fulfillment are being handled by Turpin Distribution, an international fulfillment and distribution company providing services to the academic, scholarly, and professional publishing industry. With a staff of over 100 dedicated to subscription fulfillment, Turpin has served the society publishing community for more than 40 years. Among its clients are the Organisation for Economic Co-operation and Development (OECD), the British Library, the American Association for Cancer Research, Manchester University Press, and the United Nations.

Outsourcing institutional subscription fulfillment will create greater efficiencies and capitalize on Turpin's expertise, create closer ties to international subscription agents (a critical element in the scholarly journal publishing value chain), and provide U.S. and U.K. operation centers with library customer support in English, French, German, and Spanish. Although this relationship is in its earliest stages, we are already seeing earlier renewals from AIAA's biggest subscribers, a financial benefit to AIAA that also ensures reliable and uninterrupted access to institutional customers worldwide.

For AIAA member subscribers, we recognize and value the personal connection, and they will still be able to contact AIAA Headquarters directly for all individual subscription needs. In summer 2012, AIAA started work to make our members' online subscription ordering experience less cumbersome and more intuitive. The result is a new online renewal wizard for journal subscriptions. Individual AIAA members now are able to purchase and renew journal subscriptions as they join AIAA or renew a membership, when they make other purchases or register for meetings, or as a single subscription-focused transaction. Members can personally manage their current subscriptions (e.g., to view expiration dates or renew subscriptions), and they can purchase new subscriptions to additional journals at any time. The wizard promotes our journals to individuals as they join AIAA and makes it easy for members to take advantage of this important AIAA benefit.

## Journal Special Sections 2012

### *Journal of Aircraft*

November–December 2012: “**SACCON Uninhabited Combat Aerial Vehicle Experimental and Numerical Simulations**” (seven papers), organized by Guest Editor Russell M. Cummings.

### *Journal of Propulsion and Power*

March–April 2012: “**Low Jet Noise**” (six papers), organized by Associate Editor Lourdes Maurice.

### *Journal of Spacecraft and Rockets*

July–August and September–October 2012: “**The Ares Project**” (23 papers spread over two issues), organized by Associate Editor S. Paul Pao.

November–December 2012: “**New Millennium Program Space Technology 8: Validation through Modeling and Test**” (nine papers), organized by Associate Editors Oliver de Weck and Lee Peterson and Guest Associate Editor Vit Babushka.

## Journal Special Papers 2012

### *Journal of Guidance, Control, and Dynamics*

#### **HISTORY OF KEY TECHNOLOGIES PAPER**

May–June 2012: “**Flight Dynamics and Control: From the Douglas Skyrocket to the Space Shuttle**” by Herman A. Rediess.

#### **SURVEY PAPERS**

May–June 2012: “**Survey of Spacecraft Trajectory Design in Strongly Perturbed Environments**” by Ryan Russell.

July–August 2012: “**Survey of State-Dependent Riccati Equation in Nonlinear Optimal Feedback Control Synthesis**” by Tayfun Cimen.

## AIAA Committees on Standards

Aerodynamic Decelerator

Aerospace Pressure Vessels

Atmospheric and Space Environments

Computational Fluid Dynamics

Electric Propulsion Testing

Hydrogen

Mission Assurance

Solar Cells/Solar Panels

Space Systems Battery Safety

Space Plug-and-Play Architecture

Systems Engineering

## Recently Published Standards

AIAA SP-137-2012

Status of Inflight Icing Forecasting Products and Plans for Future Development (Special Project Report)

AIAA G-129-2012

Nomenclature and Axis Systems for Aerodynamic Wind Tunnel Testing

ANSI/AIAA G-043A-2012

Guide to the Preparation of Operational Concept Documents

## Standards Approved by the SEC for Publication

AIAA G-133-1-2012

SPA: XTED

AIAA S-133-2-2012

SPA: Networking

AIAA S-133-3-2012

SPA: Logical Interface

AIAA S-133-5-2012

SPA: Power Service

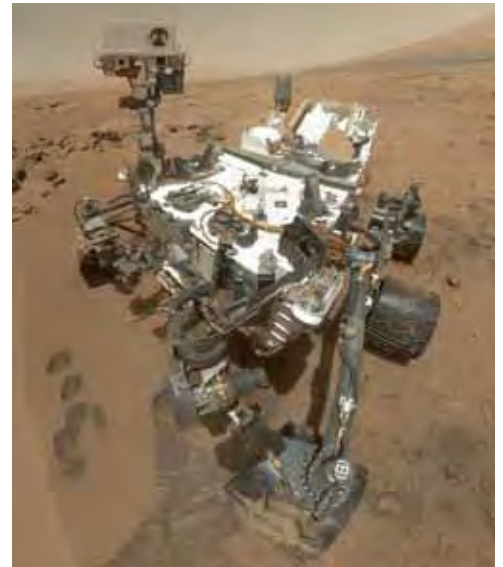
AIAA S-133-9-2012

SPA: Spacewire

## STANDARDS

### NASA's Curiosity Rover Maximizes Data Sent to Earth by Using International Space Data Communication Standards Developed by CCSDS

NASA's Mars Science Laboratory (MSL) mission began its planned two-year Mars surface exploration mission on 6 August 2012 with the landing of its large mobile laboratory, the "Curiosity" Mars rover.



Curiosity's one-ton payload includes 10 science instruments that will gather and analyze samples of rocks and soil. Some of the rover's scientific data, including images collected by its 17 onboard cameras, are sent directly to Earth via NASA's Deep Space Network (DSN) of large ground antennas. With Curiosity fully operational, most of its data will be transferred via relay satellites in orbit around Mars, primarily the Mars Reconnaissance Orbiter (MRO) and the Mars Odyssey (ODY) spacecraft.

The MSL Mars-Earth communications systems are using internationally-agreed space data communications standards to enable reliable transmission of the expected rich data sets. These standards were developed by a team of international space data communication specialists collaborating within the Consultative Committee for Space Data Systems (CCSDS). AIAA administers the Secretariat for CCSDS.

Standards allow the maximum amount of data to reach scientists and the public during the brief data transmission windows available each day. Since Mars and Earth are both rotating on their axes, the rover and the relay satellites are only periodically visible from Earth and to each other, limiting direct-to-Earth communications to brief opportunities.

The workhorse data communications standards for Curiosity consist of two major groups:

- "Long-haul" communications directly to and from Mars.
- "Proximity" communications between the orbiter and the Martian surface.

The long-haul standards are the internationally-agreed CCSDS "Packet Telemetry" and "Packet Telecommand," which respectively permit the fully-standardized communication of spacecraft measurement and control information. These protocols are specifically tailored to provide very high performance over weak, long-delay radio channels.

Proximity communications use special NASA and ESA (European Space Agency) UHF radios on the orbiters, optimized for short-delay, short-contact communications passes between an orbiter and the surface. These radios implement the CCSDS Proximity-1 Space Link Protocol (Prox-1), which is central to the data return strategy of Curiosity.

CCSDS data standards are also used in the MSL Operations Center in the Jet Propulsion Laboratory in Pasadena, Calif. NASA's Advanced Multi-Mission Operations System (AMMOS) provides standardized, multi-mission tools and services to missions, including MSL, to reduce operation costs while providing higher reliability and performance than if each mission acquired its own unique tools and services. AMMOS and Curiosity are together utilizing a set of 11 CCSDS data standards.

## CCSDS Experimental Protocol Used to Control Robot on Earth

In October 2012, ESA and NASA conducted an experiment to test the interplanetary Internet by having an astronaut at the International Space Station (ISS) send commands to a robot on Earth. The experimental technology, called Delay Tolerant Networking (DTN) protocol, is being developed and tested in CCSDS. DTN could be a future way to communicate with astronauts on Mars because it offers a more robust way to send data over vast distances.

ISS Expedition 33 commander Sunita Williams used a laptop with DTN software to control a rover at the ESA offices in Germany. DTN is similar to the Internet on Earth, but is much more tolerant to the delays and disruptions that are likely to occur when data is shuttling between planets, satellites, space stations, and distant spacecrafts.

The system uses a network of nodes or connection points to cope with delays. If there is a disruption, the data gets stored at one of the nodes until the communication is available again to send it further. This “store and forward” mechanism ensures data is not lost and gradually works its way towards its destination.

## New Leadership

Three new leaders were recently elected to fill vacant positions on standardization committees administered by AIAA.

AIAA administers the international secretariat for the International Organization for Standardization (ISO) Technical Committee (TC) 20, Subcommittee (SC) 14 on Space Systems and Operations. The new chairman of SC 14 is William (Bill) Ailor, Ph.D., of The Aerospace Corporation. He replaced Mr. Larry Schultz of NASA, who retired in 2012.

In addition, AIAA administers the U.S. Technical Advisory Group (TAG) for SC 14 and ISO TC 20/SC 13 on Space Data and Information Transfer Systems. Bill Ailor was the former chairman of the U.S. TAG for SC 14 and he was replaced by Fred Slane of the Space Infrastructure Foundation. Adrian Hooke of NASA/JPL was the former chairman of the U.S. TAG for SC 13 and his untimely death created a vacancy at this position. James Afarin of NASA Headquarters recently replaced him as chairman.

## Excellence in Space Standardization Award to Dr. Christopher Rumsey

The Excellence in Aerospace Standardization Award (EASA), chosen by the AIAA Standards Executive Council, was awarded to Dr. Christopher Rumsey of NASA Langley Research Center. The award recognizes significant contributions to the Computational Fluid Dynamics (CFD) community in developing the CFD General Notation System (CGNS) as an internationally recognized standard for representation and exchange of CFD data.



## Standards Under Development

AIAA G-095-201X Guide for the Safety of Hydrogen and Hydrogen Systems
AIAA S-133-7-201X SPA: Ontology
AIAA S-115A-201X LEO Spacecraft Charging Design Standard and Handbook
AIAA S-112A-201X Qualification and Quality Requirements for Space Solar Panels
AIAA R-093A-201X Calibration of Subsonic and Transonic Wind Tunnels
AIAA S-017B-201X Aerodynamic Decelerator and Parachute Drawings
ANSI/AIAA G-034A-201X Guide to Reference and Standard Ionosphere Models
AIAA S-133-4-201X SPA: Physical Interface
AIAA S-133-6-201X SPA: System Timing
AIAA S-133-8-201X SPA: Test Bypass
AIAA S-133-10-201X SPA: System Capabilities
ANSI/AIAA S-080A-201X Space Systems—Metallic Pressure Vessels, Pressurized Structures, Pressure Components, and Special Pressure Equipment
ANSI/AIAA S-081B-201X Space Systems—Composite Overwrapped Pressure Vessels (COPVs)
ANSI/AIAA S-089-201X Space Systems—Composite Pressurized Structures
ANSI/AIAA S-136-201X Battery Safety Standard for Space Applications
ANSI/AIAA R-138-201X Fabrication, Calibration, Usage of Inductive Magnetic Field Probes with Application to Electric Propulsion Testing
AIAA G-140-201X Guide on Terrestrial Environment (Climatic) Criteria Guidelines for Use in Aerospace Vehicle Development

# Creating Value – Networks and Information Exchange



## AIAA's 2014 Forums and Expositions

- More Insights
- More Contacts
- More Opportunities

Get ready for the expanded and enhanced AIAA Forums, with the outstanding technical conferences you support, and more!



## EVENTS

### AIAA Moves Toward New Forums

For more than a year, AIAA has been assessing our conference portfolio and discussing how we might better serve our membership and reach a broader cross section of the aerospace community. This effort was led by the Technical Activities Committee, with feedback from the various technical discipline constituencies and input from other areas of the Institute.

Based on the results of this process, in May the AIAA Board of Directors approved the “AIAA Forum Strategy” for implementation beginning in 2014. The new strategy consists of five major events:

- AIAA Science and Technology Forum and Exposition
- AIAA Aviation and Aeronautics Forum and Exposition
- AIAA Propulsion and Energy Forum and Exposition
- AIAA Space and Astronautics Forum and Exposition
- AIAA Defense and Security Forum and Exposition

AIAA's existing technical conferences will meet as part of these forums. However, the forum strategy is more than just co-locating existing conferences under larger umbrella forums. It is an attempt to enhance our events to serve not only those members focused in the traditional aerospace technologies but also those working further up the “product chain,” in process execution and mission applications as well as integration and systems. This strategy is designed to help AIAA maintain and strengthen its technical leadership role while also becoming more relevant to a larger segment of the aerospace community.

The participation and support of AIAA members will help ensure that this new strategy is a great success, not only for our current members and conference attendees, but also for our future ones.

More information about AIAA's forums can be found at [www.aiaa.org/Forums](http://www.aiaa.org/Forums).





■ Clockwise from upper left: Audience members applaud at the International Conference on Environmental Systems; discussing a poster presentation at AIAA SPACE 2012; launch systems are the focus of a display at the Joint Propulsion Conference; participants listen to a presentation at the Global Space Exploration Conference. At center: the Paper Airplane Contest at the 2012 AIAA ATIO/MAO Conference was won by Peter Lu, a student at the University of Michigan.

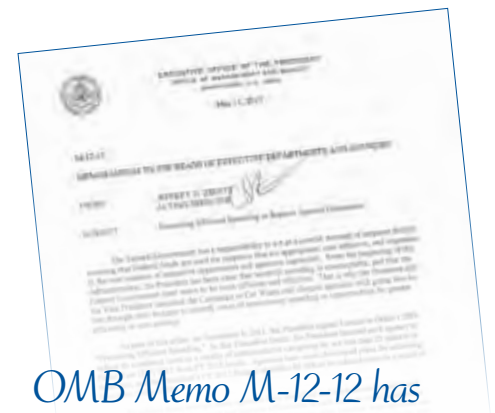
## Impact of Government Restrictions on AIAA Events

Like much of the aerospace community, AIAA has been impacted by the government restrictions on conference participation put in place in the wake of the GSA scandal in 2012. AIAA started seeing a real impact as of mid-year 2012.

In July, we cancelled the 7th AIAA Biennial National Forum on Weapon System Effectiveness, scheduled for 24–28 September 2012 at Eglin Air Force Base, because of the challenges of organizing it with Air Force co-sponsorship under new government rules. In the future, this conference is planned to be part of the new AIAA Defense and Security Forum and Exposition, along with our two other classified conferences, the Missiles Sciences Conference and the Strategic and Tactical Missile Systems Conference.

In August, AIAA was informed by the Federal Aviation Administration Office of Commercial Space Transportation that we could no longer organize their annual Commercial Space Transportation Conference that was scheduled for February 2013 because FAA could not approve that role for us under the new conference guidelines for government organizations.

In addition, attendance at all AIAA events in the summer and fall 2012 timeframe were down from projected targets as a consequence of guidance handed down by various agencies. We expect conference attendance will be affected throughout 2013 as well.



*OMB Memo M-12-12 has been interpreted to restrict government participation in professional technical conferences.*

## Reaching New Audiences

In 2012, AIAA focused on reaching new audiences through various events.

### Complex Aerospace Systems Exchange

Design and development of complex systems is a central competence of the aerospace community, but it had not been a regular topic at any of AIAA's conferences, until 2012, when AIAA launched a new event, the Complex Aerospace Systems Exchange (CASE), which was held in parallel with the AIAA SPACE 2012 Conference in September, in Pasadena, California.



The objective of CASE was to provide a forum for professionals working in complex system development to share problems and insights, and to bridge the gap between the technology and science of components and the integration and management skills needed to field successful aerospace systems of increasing complexity. The program consisted of three tracks with a total of 15 sessions, all in a panel-discussion format designed to encourage audience participation and interaction. In 2013 CASE will be a part of AVIATION 2013.

### ITAR Restricted Sessions at AIAA Events

As a part of its transition to the new event model, in May 2012 the AIAA Board of Directors approved inclusion of ITAR-compliant sessions at some AIAA conferences. The 49th AIAA/ASME/SAE/ASEE Joint Propulsion Conference in July 2013 will serve as the beta-test case for ITAR sessions. While the bulk of the technical sessions will continue to be fully open to all attendees, a subset of sessions will allow U.S. persons to share information that historically has not been approved for presentation at open conferences.

### NASA Technology Days

In November, AIAA supported the organization of NASA Technology Days, a three-day public technology showcase at the Cleveland Public Auditorium and Conference Center. The space technology showcase brought together stakeholders from industry, academia, and the U.S. government to engage in strategy development, partnership building, and fostering technology transfer and innovation.

Attendees received a comprehensive overview of NASA's technology programs for space science, exploration, and aeronautics, and discovered innovative and advanced technologies. Visitors explored the NASA showcase, featuring mature technologies from the aerospace, advanced energy, automotive, innovative manufacturing, and human health industries. The demonstrations and exhibits provided opportunities for networking, business development, and forging new relationships while attendees learned about the ways that leading technologies have contributed to economic growth and innovation.

The event also featured presentations by NASA program executives about the agency's upcoming technology initiatives, and attendees had the opportunity to discuss technology transfer and strategic partnerships with NASA officials.

The NASA Glenn Research Center, NASA Goddard Space Flight Center, and NASA Langley Research Center participated in the showcase, providing exhibits and information on how small businesses can partner with NASA for technology development, transfer, and innovation. AIAA organized the event on behalf of NASA's Office of the Chief Technologist, with strong support from the National Institute of Aerospace.



■ Robert Lightfoot, Associate Administrator of NASA, delivering the opening keynote address at NASA Technology Days.

# TECHNICAL ACTIVITIES

Although the primary focus of many AIAA Technical Committees (TCs) and Program Committees (PCs) is organizing recognized technical forums for engineers, researchers, and scientists in their discipline areas, the work of these groups extends beyond technical conferences. Through the various activities undertaken by TCs and PCs, the technical excellence of the Institute is shared throughout the community. Below are some highlights of TC and PC activities during 2012.

## Exciting the Next Generation

The **Adaptive Structures TC** continued to provide education kits to local students and is working with the National Institute of Aerospace on an outreach program to STEM teachers. The **Atmospheric Flight Mechanics TC** worked on developing a website to provide information on aerospace science for K–12 students. The **Astrodynamics TC** developed a successful proposal for the 2012 AIAA Undergraduate Space Competition. The **Intelligent Systems TC** held an undergraduate engineering video contest at the University of Cincinnati to answer the question “What is an Intelligent System?” Contestants were students in the Introduction to Systems Engineering class and TC members served as judges. The **Gas Turbine Engines TC** established an engine design competition jointly sponsored by AIAA and the American Society of Mechanical Engineers/International Gas Turbine Institute, and successfully held the first year of the competition.

## Preserving Technical Knowledge through Publications

The **Materials TC** led an effort to write a comprehensive book on Aerospace Materials. The book has been pre-approved by AIAA for publication and is nearly complete. The **Atmospheric Flight Mechanics TC** identified the most influential papers presented at AIAA Atmospheric Flight Mechanics Conferences in the 1980s. Over 500 papers were examined, with 18 finalists chosen to represent the research topics of the day. Authors of these “AFM Most Influential Papers of the 1980s” were invited to discuss the work in their papers, share their personal experiences, and give a perspective on their work in light of recent developments. The **Aerodynamic Decelerator Systems TC** continued to seek parachute document collections from around the world and send them to a technical collection archival library for archiving. These collections are available online and free of charge. The **Systems Engineering TC** worked on updating a bibliography of the most significant documents in key areas of systems engineering. The goal is to make this resource available to the broader AIAA community and provide URLs that will allow users to access the documents.

## Tackling Technical Challenges Together

Co-organized by the **Aeroacoustics TC** and NASA, the second workshop on Benchmark Problems for Airframe Noise Computations was held in conjunction with the 2012 Aeroacoustics Conference. Noise sources studied included a trailing edge, tandem cylinders, three landing gear, and two slats. Experimental data and numerical predictions were provided by research groups from around the world, and some tests were blind. Turbulence-resolving simulations have reached good consensus between teams and with experiments. Calculation of radiated noise from these simulations has less maturity. The **Air Breathing Propulsion Systems Integration TC** hosted the 1st Propulsion Aerodynamics Workshop in conjunction with the 2012 Joint Propulsion Conference (JPC). During the one-day workshop, 17 teams presented results from numerical analyses conducted in the months prior to the conference on two test cases: a set of convergent conical nozzles, and an S-duct inlet. At the end of presentations for each case, a “best presentation” was selected. A final summary, including work of selected participants, will be presented during the 2013 JPC conference, and a two-day follow-on workshop is being planned for the 2014 Propulsion and Energy Forum.

## AIAA Technical and Program Committees

Representing more than 80 topics, AIAA's TCs and PCs include:

Adaptive Structures	Life Sciences and Systems
Aeroacoustics	Lighter-than-Air Systems
Aerodynamic Decelerator Systems	Liquid Propulsion Management
Aerodynamic Measurement Technology	Materials
Aerospace Power Systems	Meshing, Visualization, and Computational Environments
Aerospace Traffic Management	Microgravity and Space Processes
Air Breathing Propulsion Systems Integration	Missile Systems
Air Transportation Systems	Modeling and Simulation
Aircraft Design	Multidisciplinary Design Optimization
Aircraft Operations	Non-Deterministic Approaches
Applied Aerodynamics	Nuclear and Future Flight Propulsion
Astrodynamics	Plasmadynamics and Lasers
Atmospheric and Space Environments	Product Support
Atmospheric Flight Mechanics	Propellants and Combustion
Balloon Systems	Reusable Launch Vehicles
Communications Systems	Sensor Systems
Computer Systems	Society and Aerospace Technology
Design Engineering	Software
Digital Avionics	Solid Rockets
Directed Energy Systems	Space Architecture
Economics	Space Automation and Robotics
Electric Propulsion	Space Colonization
Energetic Components and Systems	Space Environmental Systems
Energy Optimized Aircraft and Equipment Systems	Space Exploration
Flight Testing	Space Logistics
Fluid Dynamics	Space Operations and Support
Gas Turbine Engines	Space Resources
General Aviation	Space Station
Gossamer Spacecraft	Space Systems
Green Engineering	Space Tethers
Ground Testing	Space Transportation
Guidance, Navigation and Control	Structural Dynamics
High Speed Air Breathing Propulsion	Structures
History	Survivability
Homeland Security	Systems Engineering
Hybrid Rockets	Terrestrial Energy Systems
HyTASP	Thermophysics
Information and Command and Control Systems	Unmanned Systems
Intelligent Systems	Value Driven Design
Legal Aspects of Aeronautics and Astronautics	V/STOL Aircraft Systems
	Weapon System Effectiveness

## AIAA SECTIONS ENGAGE AND INSPIRE

Every month AIAA's 60 sections hold activities across the country and around the world, as members exchange information and build professional relationships, mentor young professionals, and reach out to students and the community at large. Here are a few samples of events from the seven AIAA regions, reflecting some of the scope and diversity of the work of AIAA section members.

### Region I

At the **Long Island Section's** sixth annual Flying Airplane Model Competition, 49 third-grade through fifth-grade students, in teams of two or three, successfully built and then flew their balsa wood models in four competitive events. All of the models flew and all of the students took turns flying their airplanes. AIAA members helped plan the event, which took place at the Cradle of Aviation Museum. They gave a presentation about aerodynamics and airplane control, led a model construction session, and served as judges during the competition. The events not only tested the models, but also tested the ability of the students to learn from their flight successes and failures, and to change the trim and balance of the models to improve their performance.

Each year, the **National Capital Section (NCS)**, AIAA's largest, undertakes a multifaceted effort to recognize outstanding STEM educators and students across the Washington area. It funds eight regional science fairs for middle and high school students in Maryland, Virginia, and Washington, D.C., with support from AIAA corporate member sponsors, and with NCS members as volunteer judges. Winning aerospace-related projects are recognized with certificates and free student membership in AIAA, and first-place winners receive a full scholarship to a weeklong stay at Space Camp in Huntsville, Alabama, which offers students a stimulating hands-on approach to study not available in the typical classroom setting. Corporate partners in the 2012 science fair scholarship program were Lockheed Martin and Honeywell International.

### Region II

Captain Judy Rice, a teacher and a pilot, addressed the **Cape Canaveral Section** about her planned "flight of adventure" for 2013: an around-the-world flight during which she will be teaching lessons to promote STEM education to children in the various countries along her route.

Young potential aviators and seasoned flyers all enjoyed the evening presentation, as Captain Rice shared her experiences flying through Oman, India, and Thailand in preparation for her own around-the-world flight. She told of flying with Carol Ann Garratt, a third-time around-the-world pilot, and of encountered the challenges of two women flying through India in a small airplane; their delightful experience riding elephants up mountains; and trekking through the rain forests in Thailand.

### Region III

In May 2012, the **Northern Ohio Section** sponsored a Young Professional Luncheon with AIAA President Dr. Michael Griffin at the Ohio Aerospace Institute (OAI), in conjunction with his OAI Distinguished Lecture "Balancing Governmental and Commercial Roles in 21st Century Space Exploration." The Northern Ohio Section also co-sponsored Dr. Griffin's lecture. During the luncheon, which was attended by fifteen AIAA Northern Ohio Section young professionals, Griffin fielded questions from the participants, engaged them in a lively dialogue on a variety of topics, and pleasantly surprised the group when he suggested extending the session an extra 30 minutes. Interest in the event resulted in several young professionals applying for or renewing membership in AIAA.

■ 2012 National Capital Section Science Fair Winners, with NCS Chair Bruce Milam and Science Fair Committee Chair Dr. Natalia Sizov.



■ Captain Judy Rice, Skye Bleu, and AIAA Cape Canaveral Section Chairman Tristan Clouse.

## Region IV

The **Oklahoma Section** participated in Speedfest II in April 2012. Founded in 2011, Speedfest is an exciting, high-speed aircraft competition that is intended to foster enthusiasm for aviation and unmanned aircraft design. Speedfest II introduced two new racing classes: Alpha (Advanced) Class, which for the first time was open to all collegiate teams; and India (Invitational) class, which is open to high school teams. A total of 10 teams competed in Speedfest II, including well over 100 students and teachers.

Speedfest II also featured demonstrational flights, including helicopter and airplane aerobatics, giant scale warbirds, scale jets, a helicopter flying on autopilot, small-scale electric warbird combat, and flyovers of several manned aircraft. The official gate count for Speedfest II was over 900 people, a twenty percent increase from Speedfest I.

## Region V

The **Rocky Mountain Section** held its first Annual Technical Symposium in October 2012 at the Denver Museum of Nature and Science, with the theme of “Game Changing Technologies and Strategies – Collaboration to Explore Burgeoning Technology Horizons,” to bring together the Denver/Rocky Mountain area’s innovative, enthusiastic technical minds for a one-day event to collaborate, network, and share ideas about new technologies and implementation strategies. Nearly 100 professionals, young professionals, and students participated, enjoying 20 technical presentations and three keynote speakers. The event was very well received, and many attendees and sponsors have already expressing an interest in next year’s event.

## Region VI

Members of the **Utah Section** celebrated Engineers’ Week with a series of events at Northrop Grumman on Hill Air Force Base. Activities included a kick-off pancake breakfast, high school and elementary outreach, a bridge-building competition, a distinguished speaker, and five separate presentations from university groups (Weber State’s HARBOR Project, Utah State’s Rocket / Moon Buggy / Climbing Projects, BYU’s Metrology Project, BYU’s Space Cube Project, and the University of Utah’s Mechanical Leech Project). In addition to all those activities, the section also attended the annual banquet of the Utah Engineering Council’s (UEC) and the Hill Air Force Base Science Engineering & Technology Management award banquet.

## Region VII

The **Sydney Section** arranged a public lecture at the Commonwealth Scientific and Industrial Research Organisation (CSIRO) in Canberra. Dr. Soyeon Yi, South Korea’s first astronaut, spoke about her launch into space with two Russian cosmonauts in 2008 and the science experiments she performed during her 11 days at the International Space Station. This event attracted considerable interest, and Dr. Yi was interviewed on one of the major radio stations in Canberra prior to the event. Following the presentation, the speaker answered many questions about her career experiences from the audience, which included a large number of high school students and their parents.



■ Speedfest competitors.

■ Among the Engineers’ Week events sponsored by the Utah Section was a bridge-building competition.



■ South Korea’s first astronaut, Dr. Soyeon Yi, spoke to the Sydney Section.

# Expanding the Reach of the Profession



■ A new AIAA video launched the 2014 forums at the 2013 Aerospace Sciences Meeting.

## COMMUNICATIONS

### Raising Our Profile

AIAA's name was in the press more than 6,400 times during FY2012. The number of press citations in 2012 was greater than in any previous year where we've tracked such data.

We also saw an increase in the number of reporters contacting AIAA for stories. More than 40 news outlets contacted us, including CNN.com, NBC News, The Economist, Reuters, and U.S. News and World Report – and this was the first time that we have been contacted within the same year by the “big three” U.S. national broadcast news media outlets plus the BBC and NPR.

AIAA's Global Space Exploration Conference, which we offered in cooperation with the International Astronautical Federation, drew 33 reporters from around the world to cover the event. AIAA President Dr. Michael Griffin held a very successful press conference that discussed the importance of developing bipartisan goals for space exploration.

### Video Tells the Story

To promote AIAA's expanded new forums in 2014, we have developed not only new logos, a new event overview brochure, and a new booth design, but also a high-impact, high-energy video to announce the 2014 forums. The “Are You Ready” video was launched at the 2013 Aerospace Sciences Meeting to convey the excitement of the expanded events.

Video continues to be a growing piece of our communications mix. We live-streamed various activities from three conferences in 2012, attracting nearly 400,000 viewer minutes from 5,500 unique viewers.

### A Little Bird Told You

AIAA continues to expand its social media engagement. AIAA's Twitter presence has grown to 3,800 followers. Twitter feeds launched on the AIAA home page and at our events have shown considerable interest and activity. Social networking features (such as “Like” and a Twitter feed) have also been added to our event landing pages. The number of AIAA Facebook fans also continues to grow, with the highest engagement around interesting facts and photos – and AIAA will keep exploring ways to further enhance its online engagement activities.



# THE AIAA HISTORIC AEROSPACE SITES PROGRAM

## Recognizing the Contributions of Our Predecessors

AIAA continues to honor the work of aerospace pioneers around the world. The AIAA Historic Aerospace Sites Program, created in 2000, celebrates the contributions of aerospace pioneers in the aerospace community at large as well as in their local communities. In particular for lesser-known sites, this helps ensure that they and their contributions will not be forgotten. Recently recognized sites include:

### T.S.C. Lowe’s balloon launch, Washington, D.C.

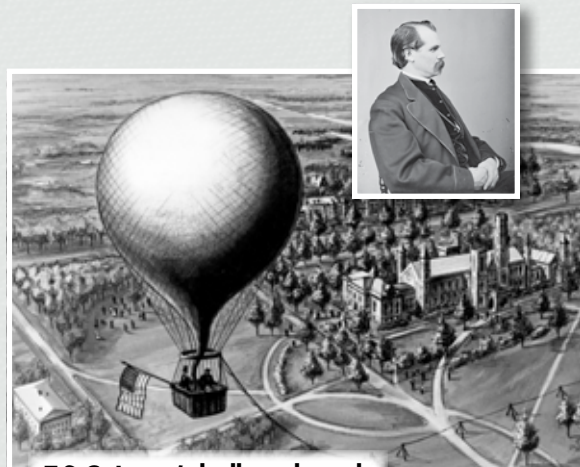
Seventy-eight years after the first balloon flight, in France, balloon enthusiasts around the world had begun to find practical uses for ballooning. On what is now the National Mall, by the Smithsonian National Air and Space Museum, Thaddeus S.C. Lowe made his famous balloon observation flight in 1861. While aloft, he sent the first telegram from the air. It went to President Lincoln in the White House, and marked the beginning of the Union Army Balloon Corps, and, ultimately, the birth of aerial reconnaissance in the United States.

### Pearson Field, Vancouver, Washington

Pearson Field, one of the oldest operating airports in the United States, was a major military airfield in the interwar years. In 1905, the Gelatine, a dirigible launched from the nearby Lewis and Clark Centennial Exposition, landed at the site – then known as Fort Vancouver Polo Grounds, initiating an enduring and illustrious connection to aeronautics and record-breaking endurance flights. The first airplane flew from Pearson Field in 1912, and the airport was officially dedicated in 1925. From then on, the airport played a key role in the growing importance of military air power and general aviation in the Pacific Northwest.

### Bell Aircraft Manufacturing Plant, Wheatfield, New York

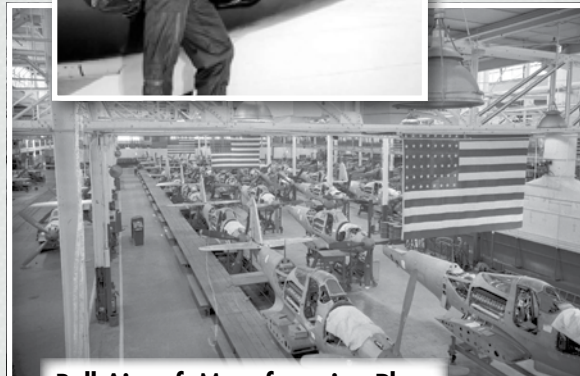
The Bell Aircraft Corporation designed and built several types of fighter aircraft during World War II, but it is most famous for the Bell X-1, the first aircraft to break the sound barrier. It is also recognized for the development and production of America’s first jet fighter and many other successful aircraft. The iconic Bell 47 helicopter, with its distinctive bubble canopy, and other Bell military helicopters changed the world of vertical flight. Bell also made critical contributions to the U.S. space program, including the rocket engine that lifted Apollo astronauts from the lunar surface.



T.S.C. Lowe’s balloon launch



Pearson Field



Bell Aircraft Manufacturing Plant

## AMID HEADWINDS, AIAA PREPARES FOR FUTURE GROWTH

AIAA has continued to be a careful steward of its financial resources in a challenging environment. AIAA's long-term endowment portfolio assets continued to improve in FY12 against the backdrop of an uncertain short-term financial landscape, ending more than \$4 million better than the ending balance in FY11, and well off the market lows of 2008–2009.

However, the inopportune convergence of unique economic and political factors in FY12 created strong operational headwinds and led to mixed results despite the steadily improving macroeconomic environment.

Contributing significantly to these headwinds were the travel restrictions imposed by the Office of Management and Budget (OMB) on federal personnel traveling to conferences. The restrictions were in response to the extensive news coverage of fiscal improprieties and misuse of taxpayer dollars by General Services Administration (GSA) employees in Las Vegas at their 2010 annual conference.

As news of the GSA scandal came to light in the spring and summer of 2012, deep reductions in federal travel to all conferences were mandated. Despite successful Institute efforts at mitigation, our conferences still saw a substantial reduction in attendance by the U.S. government scientific and technical workforce. This significantly eroded AIAA Conference Key Indicators, as well as our overall operational performance in FY12.

This year is highlighted by the following performance:

- **The Endowment Portfolio** grew in FY12, reflecting the broader market recovery. The Endowment Portfolio began FY12 with a value of \$ 21,157K, and ended the year with an increase of \$4,303K to \$25,460K.
- **The Pension Fund Portfolio** increased to \$11,547K in FY12 from \$9,537K in FY11. The improvement in the Pension Fund Portfolio performance is welcome in that it reduces the Institute's overall unfunded pension liability and keeps AIAA well above government-mandated funding minimums.

Despite the mixed financial picture and against this backdrop of uncertainty, AIAA continues to make critical strategic investments in its products and services for the benefit of its membership. In 2012, AIAA launched Aerospace Research Central (ARC). With ARC, users will be able to more efficiently than ever access the world's largest database of aerospace research online. Major enhancements include the ability to download citations, to bundle content based on topic disciplines, and to access journal articles ahead of the print edition, among many others. The suite of features offered by ARC will add

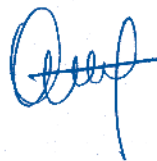
value to AIAA's extensive online content and provide a means to monetize that content in new, more flexible ways with users from anywhere in the world.

This is just one example of the many ways in which the Institute has adapted to the rigors of a new environment in which information is accessed, vetted, and used, ensuring that we will remain relevant to the widest range of member demographics.

The Institute continues to be committed to enhancing levels of service, creating and supporting world-class products and programs, and integrating technology that drives innovative ways of delivering value to our individual members as well as our institutional and corporate partners around the world.

For the fiscal year the overall net result, as indicated in the attached audited Consolidated Statements of Financial Position, was an increase in the Institute's total assets to \$36,720K at the end of FY12 from \$27,862K in FY11 and an increase in the Institute's unrestricted net assets for FY12 to \$8,484K from \$7,416K in FY11.

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 FY12, AIAA received an unqualified clean audit opinion from our independent auditors, Johnson-Lambert LLP, concerning our consolidated financial statements and our business and accounting practices. Key elements of our combined audited financial statements are found on the following pages.



Angelo M. Iasiello  
AIAA Treasurer

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

**Angelo M. Iasiello**  
AIAA Treasurer  
1801 Alexander Bell Drive,  
Suite 500  
Reston, VA 20191



## CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

Year ended September 30, 2012 (in thousands)

Year ended September 30, 2011 (in thousands)

	Institute	Foundation	Eliminations	Consolidated	Institute	Foundation	Eliminations	Consolidated
<b>Assets</b>								
Cash and cash equivalents	\$ 836	\$ 59	\$ —	\$ 895	\$ 2,797	\$ 4	\$ —	\$ 2,801
Investments	25,460	4,626	—	30,086	21,157	4,626	—	25,783
Accounts receivable, net	603	—	—	603	984	—	—	984
Pledges receivable, net	—	247	—	247	—	112	—	112
Due from Foundation/Institute	—	3	(3)	—	547	—	(547)	—
Prepaid expenses and other current assets	380	—	—	380	479	12	—	491
Inventory	33	—	—	33	82	—	—	82
Beneficial interest in trusts	7,056	—	—	7,056	—	—	—	—
Fixed assets, net	2,352	—	—	2,352	1,816	—	—	1,816
<b>Total assets</b>	<b>\$ 36,720</b>	<b>\$ 4,935</b>	<b>\$ (3)</b>	<b>\$ 41,652</b>	<b>\$ 27,862</b>	<b>\$ 4,754</b>	<b>\$ (547)</b>	<b>\$ 32,069</b>
<b>Liabilities and net assets</b>								
Accounts payable and accrued expenses	\$ 2,859	\$ 68	\$ —	\$ 2,927	\$ 3,233	\$ 43	\$ —	\$ 3,276
Due to Foundation/Institute	3	—	(3)	—	—	547	(547)	—
Deferred member dues	2,871	—	—	2,871	2,878	—	—	2,878
Deferred subscriptions	5,898	—	—	5,898	5,954	—	—	5,954
Deferred other	264	8	—	272	326	—	—	326
Other liabilities	163	—	—	163	138	—	—	138
Capital lease obligation	48	—	—	48	82	—	—	82
Defined benefit pension liability	9,074	—	—	9,074	7,835	—	—	7,835
<b>Total liabilities</b>	<b>21,180</b>	<b>76</b>	<b>(3)</b>	<b>21,253</b>	<b>20,446</b>	<b>590</b>	<b>(547)</b>	<b>20,489</b>
<b>Net assets</b>								
Unrestricted net assets	8,484	3,531	—	12,015	7,416	3,277	—	10,693
Temporarily restricted net assets	7,056	472	—	7,528	—	51	—	51
Permanently restricted net assets	—	856	—	856	—	836	—	836
<b>Total net assets</b>	<b>15,540</b>	<b>4,859</b>	<b>—</b>	<b>20,399</b>	<b>7,416</b>	<b>4,164</b>	<b>—</b>	<b>11,580</b>
<b>Total liabilities and net assets</b>	<b>\$ 36,720</b>	<b>\$ 4,935</b>	<b>\$ (3)</b>	<b>\$ 41,652</b>	<b>\$ 27,862</b>	<b>\$ 4,754</b>	<b>\$ (547)</b>	<b>\$ 32,069</b>

## CONSOLIDATED STATEMENT OF ACTIVITIES

Year ended September 30, 2012 <i>(in thousands)</i>	Institute	Foundation	Eliminations	Consolidated
<b>Revenue</b>				
Member services	\$ 2,216	\$ —	\$ —	\$ 2,216
Education	480	16	—	496
Technical publications	5,308	—	—	5,308
International	557	—	—	557
Technical activities	10,430	—	—	10,430
Corporate membership and Institute outreach	1,595	—	—	1,595
Public policy	17	—	—	17
Standards	1,031	—	—	1,031
Other program services	—	2	—	2
Revenues before investment return, contributions and net assets released from restriction	21,634	18	—	21,652
Investment return	3,983	654	—	4,637
Contributions	60	245	(150)	155
Change in discount and allowance	—	(13)	—	(13)
Net assets released from restriction	—	93	—	93
Total revenue	25,677	997	(150)	26,524
<b>Expenses</b>				
Program services:				
Member services	1,763	45	—	1,808
Education	827	309	—	1,136
International	645	—	—	645
Technical publications	3,733	—	—	3,733
Technical activities	7,565	—	—	7,565
Corporate membership and Institute outreach	2,931	—	—	2,931
Public policy	594	—	—	594
Standards	1,133	—	—	1,133
Strategic plan initiatives	236	—	—	236
Other program services	275	131	—	406
Fundraising	150	208	(150)	208
General and Administrative	2,914	64	—	2,978
Total expenses before investment expenses	22,766	757	(150)	23,373
Investment expenses	14	3	—	17
Total expenses	22,780	760	(150))	23,390
Replenishment of unrestricted net assets for funding of expenses in excess of earnings	—	17	—	17
Change in unrestricted net assets	2,897	254	—	3,151
Change in temporarily restricted net assets:				
Investment return	—	181	—	181
Contributions	7,056	350	—	7,406
Net assets released from restriction	—	(93)	—	(93)
Replenishment of unrestricted net assets for funding of expenses in excess of earnings	—	(17)	—	(17)
Change in temporarily restricted net assets:	7,056	421	—	7,477
Change in permanently restricted net assets				
Contributions	—	20	—	20
Change in permanently restricted net assets	—	20	—	20
Change in net assets from operations	9,953	695	—	10,648
Pension related changes other than net periodic pension cost	(1,829)	—	—	(1,829)
Net change in net assets	8,124	695	—	8,819
Net assets, beginning of year	7,416	4,164	—	11,580
<b>Net assets, end of year</b>	<b>\$ 15,540</b>	<b>\$ 4,859</b>	<b>\$ —</b>	<b>\$ 20,399</b>

## CONSOLIDATED STATEMENT OF ACTIVITIES

Year ended September 30, 2011 <i>(in thousands)</i>	Institute	Foundation	Eliminations	Consolidated
<b>Revenue</b>				
Member services	\$ 2,243	\$ —	\$ —	\$ 2,243
Education	727	—	—	727
Technical publications	5,939	—	—	5,939
International	84	—	—	84
Technical activities	11,251	—	—	11,251
Corporate membership and Institute outreach	2,532	—	(97)	2,435
Public policy	21	—	—	21
Standards	951	—	—	951
Strategic plan initiatives	2	—	—	2
Other program services	—	24	—	24
Revenues before investment return, contributions and net assets released from restriction	23,750	24	(97)	23,677
Investment loss	(600)	(202)	—	(802)
Contributions	66	329	(150)	245
Change in discount and allowance	—	13	—	13
Net assets released from restriction	—	40	—	40
Total revenue	23,216	204	(247)	23,173
<b>Expenses</b>				
Program services:				
Member services	1,862	113	—	1,975
Education	1,057	332	—	1,389
International	188	—	—	188
Technical publications	3,849	—	—	3,849
Technical activities	7,656	—	—	7,656
Corporate membership and Institute outreach	3,963	—	(97)	3,866
Public policy	606	—	—	606
Standards	1,065	—	—	1,065
Strategic plan initiatives	75	—	—	75
Other program services	124	48	—	172
Fundraising	150	209	(150)	209
General and Administrative	3,009	70	—	3,079
Total expenses before investment expenses	23,604	772	(247)	24,129
Investment expenses	180	24	—	204
Total expenses	23,784	796	(247)	24,333
Expenses in excess of earnings - temporarily restricted net assets	—	(12)	—	(12)
Change in unrestricted net assets	(568)	(604)	—	(1,172)
Change in temporary restricted net assets				
Investment return	—	17	—	17
Net assets released from restriction	—	(40)	—	(40)
Transfer of expenses in excess of earnings to unrestricted net assets	—	12	—	12
Change in temporarily restricted net assets	—	(11)	—	(11)
Change in net assets from operations	(568)	(615)	—	(1,183)
Pension related changes other than net periodic pension cost	(1,287)	—	—	(1,287)
Net change in net assets	(1,855)	(615)	—	(2,470)
Net assets, beginning of year	9,271	4,779	—	14,050
<b>Net assets, end of year</b>	<b>\$ 7,416</b>	<b>\$ 4,164</b>	<b>\$ —</b>	<b>\$ 11,580</b>

## CONSOLIDATED STATEMENTS OF CASH FLOWS

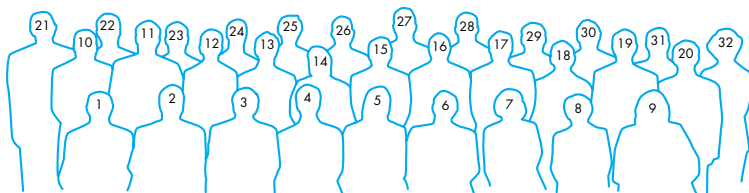
	Years ended September 30,	
	2012	2011
	<i>(in thousands)</i>	
<b>Cash flows from operating activities</b>		
Net change in net assets	\$ 8,819	\$ (2,470)
Adjustments to reconcile change in net assets to net cash (used in) provided by operating activities:		
Depreciation and amortization	431	387
Contributions restricted for long term investment	(20)	—
Net realized and unrealized losses (gains) on investments	(3,955)	1,582
Changes in operating assets and liabilities:		
Accounts receivable, net	381	(164)
Pledges receivable, net	(135)	41
Beneficial interest in trusts	(7,056)	—
Prepaid expenses and other current assets	111	30
Inventory	49	10
Accounts payable and accrued expenses	(349)	52
Defined benefit pension liability	1,239	1,727
Other liabilities	25	(4)
Capital lease obligation	(34)	(33)
Deferred income	(119)	296
Net cash (used in) provided by operating activities	<u>(613)</u>	<u>1,454</u>
<b>Cash flows from investing activities</b>		
Proceeds from the sale of investments	2,007	43,647
Purchases of investments	(2,353)	(43,271)
Purchases of furniture, equipment, leasehold improvements, and software	(967)	(599)
Net cash used in investing activities	<u>(1,313)</u>	<u>(223)</u>
<b>Cash flows from financing activities</b>		
Contributions to be held permanently	20	—
Net cash provided by financing activities	<u>20</u>	<u>—</u>
Net change in cash and cash equivalents	(1,906)	1,231
Cash and cash equivalents, beginning of year	2,801	1,570
Cash and cash equivalents, end of year	<u>\$ 895</u>	<u>\$ 2,801</u>

# Leadership



## 2012–2013 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 2012 through May 2013.



### ■ Members of the 2012–2013 AIAA

#### Board of Directors: Front row (L–R):

1. Shamim Rahman, 2. Neal Pfeiffer, 3. Klaus Dannenberg, 4. Ferdinand Grosveld, 5. Merrie Sanchez, 6. Michael Griffin, 7. Sandy Magnus, 8. Susan Ying, 9. Laura Richard. **Middle row:** 10. Darin Haudrich, 11. Matthew Cannella, 12. Carol Cash, 13. George Lesieutre, 14. Jane Hansen, 15. Sivaram Gogineni, 16. Bob Winn, 17. James Walker, 18. Ashwani Gupta, 19. Vigor Yang, 20. In Lee. **Back row:** 21. Neal Barlow, 22. Allen Arrington, 23. Stephen Rottler, 24. Steve Gorrell, 25. Alan Lowrey, 26. James Neidhoefer, 27. Bob Lindberg, 28. Basil Hassan, 29. Trevor Sorensen, 30. Juergen Quest, 31. Angelo Iasiello, 32. Mary Snitch. **Not pictured:** Kathleen Atkins, Brian Dailey, James Keenan, Laura McGill, Kevin Massey.

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University of Alabama in Huntsville



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Lockheed Martin Corporation (retired)

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Dr. Vigor Yang  
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University



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Laboratories

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Dr. Klaus Dannenberg, Deputy Executive Director/Secretary  
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