48th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit (JPC)

www.aiaa.org/jpc2012

10th International Energy Conversion Engineering Conference (IECEC)

www.iecec.org

30 July–1 August 2012
Hyatt Regency Atlanta
Atlanta, Georgia

EVENT PREVIEW

AIAA
The World's Forum for Aerospace Leadership

JPC Synopsis

AIAA, ASME, SAE, ASEE, and their industry partners proudly invite you to Atlanta, Georgia, for the 48th Joint Propulsion Conference (JPC). The design of our next generation flight and space systems will be dependent more than ever on innovative technologies providing high performance, increasingly efficient, sustainable, reliable, and affordable propulsion systems. Our ability to design, test, and fly new aircraft and spacecraft propulsion technologies will have far-reaching impacts on the revolutionary roles these complex systems play in our everyday lives.

Come to Atlanta and be part of the exciting future of the aerospace propulsion industry.

The objective of JPC 2012 is to identify and highlight how innovative aerospace propulsion technologies powering both new and evolving systems are being designed, tested, and flown. Flight applications include next generation commercial aircraft, regional, and business jets, military applications, supersonic/hypersonic high speed propulsion applications, commercial and government-sponsored launch systems, and orbital insertion, satellite, and interstellar propulsion. Special panel sessions to be announced will focus on advanced system applications that can be used to showcase propulsion systems and components, and the technologies that enable them.

JPC Organizing Committee

Executive Chair (Government)
Robert Lightfoot
Center Director
NASA Marshall Space Center

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Bart Olson
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SAE Technical Program Chair
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ASEE Technical Program Chair
Robert A. Frederick Jr.
University of Alabama in Huntsville

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*For the full conference program, including all paper titles, authors, and panel speakers, visit **www.aiaa.org/jpc2012** or **www.iecec.org.***

IECEC Synopsis

Aerospace Capabilities Applied to Solving Terrestrial Energy Problems – A Game Changer

The 10th International Energy Conversion Engineering Conference (IECEC) provides a forum to present and discuss engineering aspects of energy conversion technology, advanced energy and power systems, devices for terrestrial energy systems, and aerospace applications, along with the policies, programs, and environmental impacts associated with the development and utilization of these technologies.

IECEC is hosted by AIAA, which is joined this year by four Participating Organizations. These organizations are:

- The Heat Transfer Society of Japan (HTSJ)
- The IEEE Aerospace & Electronic Systems Society (AESS)
- The Egyptian Society of Mechanical Engineers (ESME)
- The Japan Society of Mechanical Engineers (JSME)

IECEC Organizing Committee

General Chair
Ramon Lugo
Director, NASA Glenn Research Center

Deputy General Chair
Robert "Joe" Shaw
NASA Glenn Research Center

Technical Program Chair
Michael Choi
NASA Goddard Space Flight Center

Deputy Technical Program Chair
Kenneth "Mark" Bryden
Iowa State University

Benefits of Attendance

Who Should Attend?

- Engineering managers and industry executives
- Engineers, researchers, and scientists
- Young aerospace professionals
- Educators and students

Why Attend?

Nowhere else will you get the depth and breadth of sessions on Propulsion and Energy Conversion.

- Expand your knowledge, as expert engineers and scientists share their latest research and development findings.
- Find out what lies ahead, as senior leaders in industry discuss their programs and business challenges during plenary and interactive panel sessions.
- Network, discuss challenges, and share ideas during technical sessions, luncheons, networking breaks, and social activities.

What to Expect?

Discussions with distinguished government and industry speakers.

- Robert Lightfoot, Center Director, NASA Marshall Space Flight Center
- David Thompson, CEO, Orbital Sciences Corp.
- David Parekh, Vice President of Research, Director, United Technologies Research Center
- Wes Harris, MIT
- David Garrison, Managing Director, Engine and Component Maintenance for Delta Tech Ops
- Ronald Sega, Vice President of Energy and Environment, Institute of Energy and Environment, The Ohio State University

Networking and interaction with your peers during:

- Exhibits and Coffee Breaks
- Continuing Education Courses
- Sunday Evening Reception
- Awards Luncheon

JPC Special Sessions

Monday, 30 July
Space and High Speed Systems

0800–0900 hrs

JPC/IECEC Joint Opening Keynote

Overview of NASA Major Program Thrusts and Technology Development Opportunities

Speaker: **Robert Lightfoot, Center Director, NASA Marshall Space Flight Center**

1000–1200 hrs

NASA MSFC National Institute for Rocket Propulsion Systems

Moderator: **Dale Thomas**

1300–1400 hrs

Commercial Space: Past, Present, and Future

Speaker: **David Thompson, CEO, Orbital Sciences Corporation**

1400–1600 hrs

Commercial Space Development

1630–1830 hrs

Next Steps in Hypersonics – Turning Research into Reality

Moderator: **Mark Lewis, University of Maryland**

Tuesday, 31 July
Military and Commercial Aircraft Systems

0800–0900 hrs

JPC Keynote

Current and Future Airline Propulsion Challenges

Speaker: **David Garrison, Managing Director, Engine and Component Maintenance for Delta Tech Ops**

1000–1200 hrs

Challenges for Future Commercial Aircraft Propulsion

Moderator: **Richard A. Wahls, Project Scientist, Subsonic Fixed Wing Project, NASA**

1300–1500 hrs

Advanced Aircraft Propulsion Technology

Moderator: **James Kenyon, OSD**

1600–1800 hrs

Challenges for future rotorcraft propulsion

Moderator: **Susan Gorton, NASA LaRC, Project Manager, Subsonic Rotary Wing**

Wednesday, 1 August
Commercial Aviation and Space Public Policy and Education

0800–0900 hrs

JPC Keynote

State of Aeronautical Research

Speaker: **Wes Harris, MIT**

0930–1200 hrs

Clipped Wings: Assessing U.S. Aeronautical Flight Research

Moderator: **Victor Lebacqz, Principal, VICC Associates**

Panelists: **Rich Christiansen, Doug Bowers (AFRL), Navy, Airframer, Dale Carlson (GE)**

1200–1400 hrs

Awards Luncheon

Speaker: **Wayne Roberts, Lockheed Martin Fellow, Chief Test Pilot**

IECEC Special Sessions

Monday, 30 July

0800–0900 hrs
JPC/IECEC Joint Opening Keynote

Overview of NASA Major Program Thrusts and Technology Development Opportunities

Speaker: **Robert Lightfoot, Center Director, NASA Marshall Space Flight Center**

1000–1200 hrs

Shuttle Space Transportation Replacement Options and Progress

Chaired by: **Paul M. Anderson, Lockheed Martin Space Systems Company**

1400–1600 hrs

Micro/Nano Thermal Management Technology for Aerospace, Energy, and Environment

Speakers: **Timothy Fisher, Purdue University; Rama Venkatasubramanian, RTI International; Theodorian Borca-Tasciuc, Rensselaer Polytechnic Institute; Gerald Mahan, Pennsylvania State University**

1630–1830 hrs

Combustion Characteristics of High Hydrogen Content Fuels

Tuesday, 31 July

0800–0900 hrs
IECEC Keynote

Aerospace Capabilities Applied To Solving Terrestrial Energy Problems ... A University View

Speaker: **Ronald Sega, Vice President of Energy and Environment, Institute of Energy and Environment, The Ohio State University**

1000–1200 hrs

Robust and Resilient System Design Approaches for Next Generation Terrestrial Nuclear Energy Systems

Chaired by: **Piyush Sabharwall, Idaho National Laboratory**

Solar Assisted Absorption and Desiccant Cooling Technologies for Air Conditioning in Sunny Countries

Speakers: **Omar Abdelaziz, Oak Ridge National Laboratory; Arifeen Wahed, Solar Energy Research Institute of Singapore (SERIS); Eduardo A. Rincón, Autonomous University of the State of Mexico; Ming Qu, Purdue University; Jo Darkwa, University of Nottingham-Ningbo, China; Nesreen Ghaddar, Associate Provost, Qatar Chair in Energy Studies, Professor of Mechanical Engineering, American University of Beirut**

1200–1400 hrs
Awards Luncheon

Aerospace Capabilities Applied to Solving Terrestrial Energy Problems … A Federal Laboratory View

Speaker: **William Harrison III, Technical Advisor for Fuels and Energy, Air Force Research Laboratory**

1630–1830 hrs

The Future of Smart Grid in the United States and Abroad

Speakers: **Scott Duncan, Georgia Institute of Technology; Takashi Hikihara, Kyoto University; Reji Kumar Pillai, President, India Smart Grid Forum**

Wednesday, 1 August

0800–0900 hrs
IECEC Keynote

Aerospace Capabilities Applied to Solving Terrestrial Energy Problems ... An Aerospace Industry View

Speaker: **David Parekh, Vice President of Research, Director, United Technologies Research Center**

0930–1200 hrs

The Latest Advances in Radioisotope Power Systems – A Mission Perspective

Panelists will present their perspectives on Radioisotope Power Systems, including MMRTG, ASRG and RTG, on Mars Science Lab, New Horizons, and ASRG missions.

Event at a Glance

	Sunday 29 July 2012	Monday 30 July 2012			Tuesday 31 July 2012			Wednesday 1 August 2012				Thursday–Friday 2–3 August 2012
		IECEC	JPC Space and High Speed Systems		IECEC	JPC Military and Commercial Aircraft Systems		IECEC	JPC Commercial Aviation and Space Public Policy and Education			
0700 hrs		Speakers' Briefing			Speakers' Briefing			Speakers' Briefing				Continuing Education Courses
0800 hrs		Introduction and Keynote Speaker Robert Lightfoot, Center Director, NASA MSFC			IECEC Keynote Aerospace Capabilities Applied to Solving Terrestrial Energy Problems…A University View The Ohio State University	JPC Keynote David Garrison, Managing Director, Engine and Component Maintenance for Delta Tech Ops		IECEC Plenary Aerospace Capabilities Applied to Solving Terrestrial Energy Problems … An Aerospace Industry View	JPC Keynote Wes Harris, Charles Stark Draper Professor of Aeronautics and Astronautics, Massachusetts Institute of Technology	Lockheed Martin Tour (Tickets Required)		
0900 hrs		Networking Coffee Break		Exhibit Hall Open	Networking Coffee Break		Exhibit Hall Open	Networking Coffee Break			Exhibit Hall Open	
1000 hrs		Panel Shuttle Space Transportation Replacement Options and Progress and IECEC Parallel Technical Sessions	Panel NASA MSFC National Institute for Rocket Propulsion Systems and JPC Parallel Technical Sessions		Panel I. Solar Assisted Absorption and Desiccant Cooling Technologies for Air Conditioning in Sunny Countries II. Robust and Resilient System Design Approaches for Next Generation Terrestrial Nuclear Energy Systems and IECEC Parallel Technical Sessions	Panel Challenges for Future Commercial Aircraft Propulsion and JPC Parallel Technical Sessions		Panel The Latest Advances in Radioisotope Power Systems – A Mission Perspective and IECEC Parallel Technical Sessions	Panel Clipped Wings: Assessing U.S. Aeronautical Flight Research and JPC Parallel Technical Sessions			
1100 hrs												
1200 hrs		Exhibit Hall Lunch Reception (Tickets Required)			IECEC Awards Luncheon Speaker: William Harrison III, Technical Advisor for Fuels and Energy, Air Force Research Laboratory (Tickets Required)	Exhibit Hall Break		Lunch on Your Own	JPC Awards Luncheon Speaker: Wayne Roberts, LM Fellow, Chief of Test Pilots (Tickets Required)			
1300 hrs		Keynote Speaker David Thompson, CEO, Orbital Sciences Corporation				Panel Interagency Propulsion Technology Development and JPC Parallel Technical Sessions						
1400 hrs		Panel Micro/Nano Thermal Management Technology for Aerospace, Energy and Environment and IECEC Parallel Technical Sessions	Panel Commercial Space Development and JPC Parallel Technical Sessions		IECEC Technical Sessions			IECEC Technical Sessions	NSTC Aeronautics S&T Subcommittee Public Outreach and JPC Parallel Technical Sessions			
1500 hrs	Registration Open					Break						
1600 hrs					Break							
1700 hrs		Panel Combustion Characteristics of High Hydrogen Content Fuels and IECEC Parallel Technical Sessions	Panel Next Steps in Hypersonics Turning Research into Reality and JPC Parallel Technical Sessions		Panels The Future of Smart Grid in the United States and Abroad and IECEC Parallel Technical Sessions	Panel Challenges for Future Rotorcraft Propulsion and JPC Parallel Technical Sessions						
1800 hrs												
1900 hrs	Exhibit Hall Reception 1900–2100 hrs (Tickets Required)											

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Japan Aerospace Exploration Agency

General Conference Information

Registration Information

AIAA is committed to sponsoring world-class conferences on current technical issues in a safe and secure environment. Delegates will be required to provide proper identification prior to receiving a conference badge and associated materials. All delegates must provide a valid photo ID (driver's license or passport) when they check in. For student registrations, a valid student ID is also required.

On-Site Registration Hours

On-site registration will be held at the Hyatt Regency Atlanta as follows:

Sunday, 29 July	1500–1900 hrs
Monday, 30 July	0700–1800 hrs
Tuesday, 31 July	0700–1800 hrs
Wednesday, 1 August	0700–1700 hrs

Airport and Transportation

Hartsfield-Jackson Atlanta International Airport (ATL) is approximately 10 miles from the Hyatt (about a 20-minute drive).

Shuttles, taxis, and private car service are available. The Hyatt is connected by skyway bridge to the Peachtree Center MARTA Station for easy access to Atlanta's public rail system; one-way tickets are $2.50.

Accompanying Persons Program

Accompanying persons are invited to meet on Monday, 30 July, at 1000 hrs, at the Hyatt Regency Atlanta. Information about local attractions, activities, tours, shows, and restaurants will be available, and coffee and tea will be served.

Delta Accompanying Persons Tour

Tuesday, 31 July

Buses will depart at 0830 hrs.

The Museum's collections and facilities include The Spirit of Delta, Delta's first 767, bought by employees, retirees, and friends and donated to Delta in 1982. The Archives maintains over 200,000 images, 1,000 films, and one of the world's largest airline uniform collections in a museum; a replica of the first Delta station in Monroe, Louisiana; and an 800-square-foot museum shop, housed in a redesigned section of the hull of the first L-1011 ever built. Tickets are $15, include transportation, and are available on a first-come, first-served basis. Limit 50.

Lockheed Martin Facility Tour

Wednesday, 1 August

Buses will depart at 0830 hrs.

The tour will be conducted at the Lockheed Martin Marietta facility, home of the C-130J Super Hercules advanced tactical aircraft production line and the C-5 Super Galaxy modernization production line. Visitors will get to see both production lines. Additionally, visitors will get an overview of the site history and see the F35 JSF mid fuselage and P-3 wing production areas. Tickets are $15, include transportation, and available on a first-come, first-served basis. Limit 50.

Networking Coffee Breaks

Networking coffee breaks for all attendees will take place in the exhibit hall. Times are designated in the program. Coffee and other beverages will be served.

For those registration types that include Award Luncheon tickets, those registrants who selected IECEC as their primary conference receive the Tuesday IECEC Awards Luncheon ticket, and those who selected JPC as their primary conference will receive the Wednesday JPC Awards Luncheon ticket. Tickets are not exchangeable or refundable. The cost is included in the registration fee where indicated. Additional tickets may be purchased upon registration or at the on-site registration desk while supplies last.

Awards Presentation

The following AIAA awards are scheduled to be presented:

IECEC Awards Luncheon, Tuesday, 31 July

- Aerospace Power Systems Award
- Energy Systems Award

JPC Awards Luncheon, Wednesday, 1 August

- Air Breathing Propulsion Award
- Ground Testing Award
- Engineer of the Year Award
- Propellants and Combustion Award
- Sustained Service Award
- Wyld Propulsion Award

Opening Reception

The opening reception will be held Sunday, 29 July, 1830–2000 hrs, in the exhibit hall. The cost is included in the registration fee where indicated. Additional tickets may be purchased upon registration or at the on-site registration desk, while supplies last.

Exhibits

The Exhibit will feature an impressive exhibit showcasing leading industry products and services relating to air breathing, liquid, solid, nuclear, electric, and other forms of propulsion for aerospace.

Monday, 30 July	0900–1600 hrs
Tuesday, 31 July	0900–1600 hrs
Wednesday, 1 August	0700–1400 hrs

To reserve your exhibit space, contact Fernanda Swan, AIAA Exhibit Business Manager, at 703.264.7622, 800.739.4422, or fernandas@aiaa.org.

Presentation Stage

AIAA is excited to provide this additional complimentary marketing opportunity for exhibitors. The presentation stage in the exhibit hall will give exhibitors the opportunity to showcase their company and products by giving a short presentation (15 minutes) to conference attendees during one of the show days. Seating and AV will be provided by AIAA. As space is limited, the available slots will be confirmed on a first-come, first-served basis.

For more information, or to secure your spot, email Carmela Brittingham at carmelab@aiaa.org.

Cyber Café

Computers with complimentary Internet access for conference attendees will be available at the AIAA Cyber Café, located in the exhibit hall. Hours of operation are as follows:

Monday, 30 July	0700–1800 hrs
Tuesday, 31 July	0700–1800 hrs
Wednesday, 1 August	0700–1400 hrs

Conference Proceedings

Proceedings for these conferences will be available in an online format. The cost is included in the registration fee where indicated. The online proceedings will be available on **23 July 2012**.

"No Paper, No Podium" and "No Podium, No Paper" Policies

If a written paper is not submitted by the final manuscript deadline, authors will not be permitted to present the paper at the conference. Also, if the paper is not presented at the conference, it will be withdrawn from the conference proceedings. It is the responsibility of those authors whose papers or presentations are accepted to ensure that a representative attends the conference to present the paper. These policies are intended to improve the quality of the conference for attendees.

Speakers' Briefing

Authors who are presenting papers, keynote speakers, panelists, and session chairs will meet for a short briefing on the day of their presentation(s) at 0700 hrs in Centennial Ballroom at the Hyatt Regency Atlanta.

Young Professional Networking Reception

The AIAA Young Professional Committee is hosting a networking reception for early career professionals on Monday, 30 July at the Hyatt Regency Atlanta. This is a great opportunity for young professionals age 35 and under to meet and make new contacts. Join the Young Professional Committee for food, drinks, and relaxed socializing.

Young Professional Guide for Gaining Management Support

Young professionals have the unique opportunity to meet and learn from some of the most important people in the business by attending conferences and participating in AIAA activities. A detailed online guide, published by the AIAA Young Professional Committee, is available to help you gain support and financial backing from your company. The guide explains the benefits of participation, offers recommendations, provides a sample letter for seeking management support and funding, and shows you how to get the most out of your participation. The online guide is on the AIAA website at **www.aiaa.org/YPGuide.**

Registration Information

	Registration Type	By 2 July 2012 Conference Rate	By 2 July 2012 AIAA Member Rate	Conference Sessions	Exhibits	Sunday Reception	Monday Lunch	Tuesday Awards Luncheon or Wednesday Awards Luncheon	Online Proceedings
Option 1	Full Conference	$885	$730	●	●	●	●	●	●
Option 2	Undergraduate Student	$50	$20	●	●				
Option 3	Undergraduate Student with Networking	$222	$192	●	●	●	●	●	
Option 4	Graduate or Ph.D. Student	$90	$60	●	●				
Option 5	Graduate or Ph.D. Student with Networking	$262	$232	●	●	●	●	●	
Option 6	Retired AIAA Member	n/a	$40	●	●	●	●	●	
Option 7	Group Rate*	n/a	$657	●	●	●	●	●	●
Option 8	Continuing Education Courses	$1,343	$1,256	●	●	●	●	●	●
	Extra Tickets					$65	$55	$52	$170
	Tuesday Delta Accompanying Persons Tour	$15	$15						
	Propulsion Aerodynamics Workshop (PAW01)	$307	$307						
	Lockheed Martin Tour	$15	$15						

Pricing subject to change.

*Advance only. 10% discount off AIAA member rate for 10 or more persons from the same organization who register and pay at the same time with a single form of payment. Includes sessions, all catered events, and single-user access to online proceedings. A complete typed list of registrants, along with completed individual registration forms and a single payment, must be received by the preregistration deadline of 25 July 2012.

Only in Atlanta can you...

… see the largest fish through the largest window in the largest aquarium in the world.

At the Georgia Aquarium, you can see tens of thousands of animals in more than eight million gallons of water. The world's largest aquarium houses whale sharks, the largest fish in the sea and the only whale sharks in an aquarium in North America.

… stroll through collections of art from around the world without leaving Atlanta.

The High Museum of Art, the premier art museum in the South, is in a multi-year partnership with The Museum of Modern Art that through 2013 will bring many international exhibitions to Atlanta. Past exhibitions have included masterpieces by Claude Monet and Leonardo da Vinci.

… try "a Coke and a smile."

Born and raised in Atlanta, Coca-Cola is synonymous with Atlanta. Visit the World of Coca-Cola to learn the story of the famous soft drink, now celebrating its 125th year. Go back to the early years of Coke's creation in Atlanta and follow the global brand through the decades. After you've refreshed yourself with more than 60 products from around the world, step out of the museum's front door and into the hub of the tourism district.

… race the gold shoes for a gold medal.

The host of the 1996 Centennial Olympic Games, Atlanta continues to commemorate the Olympic legacy. Centennial Olympic Park was the world's gathering place during the Games and includes the Fountain of Rings, the world's largest fountain utilizing the Olympic symbol of five interconnecting rings.

Hotel Reservations

AIAA has made arrangements for a block of rooms at the:

Hyatt Regency Atlanta
265 Peachtree Street NE
Atlanta, Georgia, USA 30303
Tel: +1 404.577.1234 Fax: +1 404.588.4137
Reservations: 888.421.1442

Room rates are $145 per night for single or double occupancy, plus applicable taxes. Please identify yourself as being with the AIAA conference. These rooms will be held for AIAA until 28 June 2012 or until the block is full. After 28 June 2012, any unused rooms will be released to the general public. You are encouraged to book your hotel room early. (Online Reservations)

Government employees—There are a limited number of sleeping rooms available at the government per diem rate. Government I.D. is required upon check-in. (Online Reservations)

Continuing Education Courses

Let AIAA Continuing Education courses pave the way to your continuing and future success! As the premier association representing aeronautics and astronautics professionals, AIAA has been a conduit for continuing education for more than sixty years. AIAA offers the best instructors and courses, and is committed to keeping aerospace professionals at their technical best.

On 2–3 August at the Hyatt Regency Atlanta, AIAA will be offering Continuing Education courses in conjunction with the AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit. Please check the Conference website for up-to-date information regarding the courses.

Register for any course and attend the Conference for FREE! (The course registration fee includes full conference participation: admittance to technical and plenary sessions; receptions, luncheons, and online proceedings.)

Please note that course materials will not be distributed on site. AIAA and your course instructor highly recommend that you bring your computer with the course notes already downloaded. Once you have registered for the course, the course notes will be available about two weeks prior to the course event, and remain available to you in perpetuity.

Hybrid Rocket Propulsion

The "Hybrid Rocket Propulsion" short course is quintessential for all professionals specializing in chemical propulsion. This course reviews the fundamentals of hybrid rocket propulsion with special emphasis on application-based design and system integration, propellant selection, flow field and regression rate modeling, solid fuel pyrolysis, scaling effects, transient behavior, and combustion instability. Advantages and disadvantages of both conventional and unconventional vortex hybrid configurations are examined and discussed.

Advanced Solid Rockets

Solid propulsion is vital to tactical, space, strategic and launch vehicles. The course examines fundamental and advanced concepts related to solid rockets. Theoretical and practical aspects of the field are covered.

Hydrogen Safety

The Hydrogen Safety course is intended to provide the student with a working knowledge of safety issues associated with the use of hydrogen. Using the aerospace industry standard, "Guide to Safety of Hydrogen and Hydrogen Systems," AIAA G-095-2004, this course presents basic safety philosophy and principles and reviews a practical set of guidelines for safe hydrogen use. The information presented in this course is intended as a reference to hydrogen systems design and operations and handling practices; users are encouraged to assess their individual programs and develop additional requirements as needed.

NPSS: A Practical Introduction

The objective of this course is to give attendees a working knowledge of NPSS software and allow them to create and/or modify system models using this tool. The course material will discuss the object oriented architecture and how it is used in NPSS to develop flexible yet robust models. A detailed presentation of NPSS execution options, syntax, and interfaces with external codes will be addressed.

Missile Design and System Engineering

This short course provides the fundamentals of missile design, development, and system engineering. A system-level, integrated method is provided for missile configuration design and analysis. It addresses the broad range of alternatives in satisfying missile performance, cost, and risk requirements. Methods are generally simple closed-form analytical expressions that are physics-based, to provide insight into the primary driving parameters. Configuration sizing examples are presented for rocket, turbojet, and ramjet-powered missiles. Systems engineering considerations include launch platform integration constraints. Typical values of missile parameters and the characteristics of current operational missiles are discussed as well as the enabling subsystems and technologies for missiles. Sixty-six videos illustrate missile development activities and performance. Attendees will vote on the relative emphasis of types of targets, types of launch platforms, technical topics, and round table discussion.

For detailed information on these courses, visit the AIAA website at www.aiaa.org.

1st AIAA Propulsion Aerodynamics Workshop (PAW01)

Saturday, 29 July

Sponsored by the Air Breathing Propulsion Systems Integration Technical Committee, PAW01 will focus on assessing the accuracy of CFD in obtaining multi-stream air breathing jet performance and flow structure. CFD studies will be performed as a blind trial and compared with the available experimental data. Example grids will be provided for unstructured and structured solvers as well as geometry and test conditions. Participants are encouraged to also develop their own mesh and may run one or more cases, on one or more grids. The workshop provides an impartial forum that will be utilized to present the findings, discuss the results, exchange ideas, and evaluate the effectiveness of existing computer codes and modeling techniques. The main objectives of PAW01 are to:

- Assess the numerical prediction capability (e.g., mesh, numerics, turbulent modeling) of current-generation CFD technology/codes for air breathing propulsion related aerodynamic flows.
- Develop practical CFD guidelines for 2-D and 3-D CFD prediction of jet related flow fields.
- Enable development of more accurate prediction methods, processes, procedures, and tools.
- Provide an impartial forum for evaluating existing CFD codes and modeling techniques.

For more information please visit http://aiaapaw.tecplot.com

Exhibitors

Aerojet

Arnold Engineering Development Center

General Electric Aviation

Moog

Pointwise

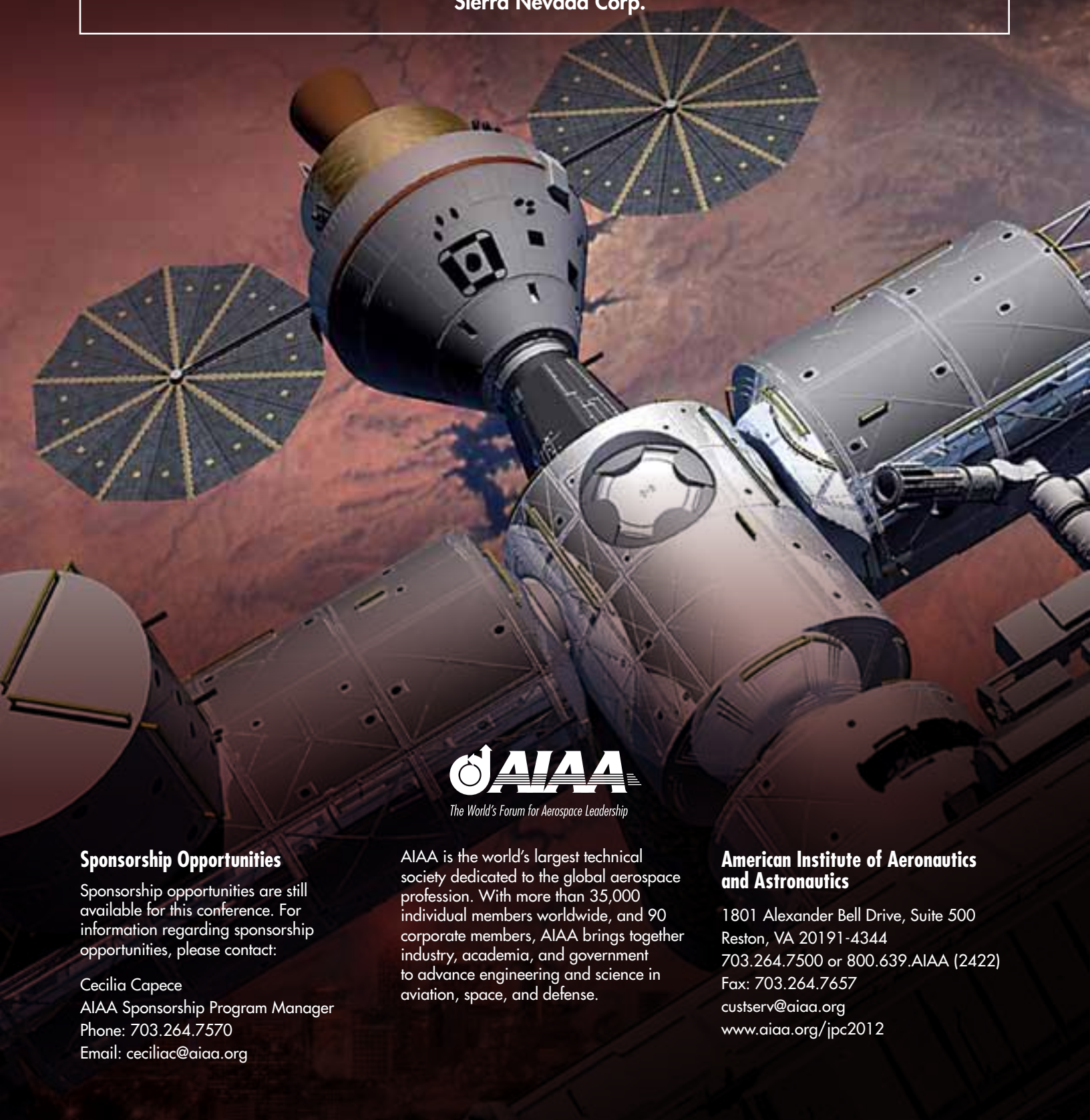
Pratt & Whitney Rocketdyne

Sierra Nevada Corp.

Thales Components

Vacco

Wyle



AIAA

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Sponsorship Opportunities

Sponsorship opportunities are still available for this conference. For information regarding sponsorship opportunities, please contact:

Cecilia Capece
AIAA Sponsorship Program Manager
Phone: 703.264.7570
Email: ceciliac@aiaa.org

AIAA is the world's largest technical society dedicated to the global aerospace profession. With more than 35,000 individual members worldwide, and 90 corporate members, AIAA brings together industry, academia, and government to advance engineering and science in aviation, space, and defense.

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