

## Rockets Down Under



*Rocket Park in Woomera, South Australia - one location Past-Chair Michael Oelke visited while participating at this past summer's International Space University. Full story on page 5.*

## Becoming an AIAA member

Are you interested in becoming a member of the AIAA or renewing your membership? You can fill out a membership application online by going to the AIAA National website at [www.aiaa.org](http://www.aiaa.org) and selecting the AIAA Membership option.

## November 10<sup>th</sup> Input Deadline for the Next Edition of Horizons

Contributions can be submitted by email to T. Sophia Bright at [chairAIAA@aiaa-houston.org](mailto:chairAIAA@aiaa-houston.org). (remove AIAA from e-mail address)

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Publications Chair  
Open

Editor  
Open

### Contributing Authors

T. Sophia Bright  
Michael Oelke  
Elizabeth Blome

Douglas Yazell  
Timothy Propp

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## Chair's Corner

Greetings from the 2004-2005 Executive Council of your Houston Section! Continuing in the spirit of the previous council we have a quite a few goals that we hope to accomplish this year:

- Complete the transition to the new section website
- Improve overall communication with our members
- Continue to provide professional and technical development avenues for our members
- Establish a strong network of leadership to ensure continued success in the upcoming years for the Houston Section of AIAA

The 2003-2004 Executive Council made great strides towards accomplishing its goals from the previous year. They began transitioning to our new website and made great improvements in communicating with members. They also had several successful events sponsored by the Technical Committees. The council organized several well received programs related to the Century of Flight. Additionally last year's Executive Council picked up several National awards in the "Large Section" category in recognition of their outstanding efforts:

- 1<sup>st</sup> Place - Outstanding Section awarded to Past-Chair, Michael Oelke
- 1<sup>st</sup> Place – Career Enhancement awarded to Professional Development Chair, Jesus Reyna, JR
- 1<sup>st</sup> Place – Communications awarded to Chair-Elect, Steve King
- 2<sup>nd</sup> Place – Membership awarded to Membership Chair, Elizabeth Blome
- 1<sup>st</sup> Place – Harry Staub Precollege Outreach awarded to Precollege Chair, Joy Conrad King
- 3<sup>rd</sup> Place – Public Policy awarded to Public Policy Chair, Lynn Nicole Smith
- 1<sup>st</sup> Place – Young Professional Activity awarded to past-Young Professional Chair, Bradley S. Files

We have some big shoes to fill as we strive to meet our goals for the year, but I feel that we won't have any problems accomplishing those items. We have a lot of motivated people on Executive Council committed to reaching out and engaging our membership. We are looking forward to the challenges of the new term and a successful and productive year!

T. Sophia Bright  
Chairperson, AIAA Houston Section

## Campaign Officials Stress Importance of Aerospace Industry

*(Source: Aerospace Industries Association; issued Sept. 22, 2004; <http://www.defense-aerospace.com>)*

Washington --- Representatives of President George W. Bush and challenger Sen. John Kerry said the aerospace industry is vital to the nation's economic health and security and must be supported in any future president's administration.

Speaking to the Aviation and Space Stakeholders Coalition meeting at the Aerospace Industries Association (AIA) headquarters Monday, the campaign representatives agreed on the pressing need to ensure the future competitiveness of aerospace businesses.

Association President and CEO John Douglass said it was heartening to hear the candidate representatives recognize the importance of aviation and aerospace to the country.

"It's good to see both campaigns recognize the significance of the aerospace industry," Douglass said. "We only hope they back this up with investments of both time and money to support critical programs and improvements."

Douglass also urged both campaigns to recognize the importance of upgrading the nation's civil aviation system to ensure the security and reliability of air travel.

Former Congressman Bob Walker represented the Bush campaign while former NASA Associate Administrator Lori Garver spoke on Kerry's behalf.

They addressed more than 80 members of the coalition, which brings together the leaders of the associations that represent the manufacturers, operators, distributors and labor unions of the aerospace industry.

Several questions from members concerned efforts to improve an air traffic control system that is becoming outdated. An AIA priority this campaign season is to secure commitments from the candidates for an accelerated program to develop and deploy a new air traffic control system based on modern technology.

The situation is made worse by forecasts of dramatic increases in air traffic demand in the near future, Douglass said.

"We think the candidates need to set some clear and unambiguous goals on modernization," Douglass said.

According to AIA officials, without an investment in this next-generation air traffic control system the nation would see a situation similar to the gridlock at Chicago's O'Hare International Airport repeated in as many as 25 other airports. Failure to act could also cost the industry billions of dollars in travel delay expenses. Any investment made in improving the system is more than paid for by positive impacts on the economy since the aerospace and aviation industries account for about 27 percent of the nation's total import and export activity.

Walker and Garver said their respective candidates have taken positions to make air traffic control improvements a priority.

## AIA Asks Bush, Kerry to Back Increased NASA Funding

*(Source: Aviation Week's Aerospace Daily and Defense Report, Kathy Gambrell, July 8, 2004; <http://www.aviationnow.com>)*

The Aerospace Industries Association (AIA) has sent letters to President Bush and Sen. John Kerry (D-Mass.), asking them to support increased funding for NASA in fiscal year 2005 and beyond.

"We just wanted to remind both candidates that this part of the aerospace industry is enormously important to us. It's enormously important to the American people and we need to make sure that NASA is adequately funded to meet this important need of the future," said AIA President and CEO John W. Douglass.

NASA is seeking \$16.2 billion for 2005, an \$866 million increase over the agency's 2004 budget. Of that increase, \$374 million has been earmarked for safety improvements to the shuttle fleet.

Douglass said that while Bush released his overall vision for the space program earlier in the year (DAILY, Jan. 15), the AIA wanted to encourage him to continue his sustained support for the agency.

"Your administration's proposed increase for FY '05, \$866 million, will advance the critical work of safely returning the shuttle to flight, completing assembly of the International Space Station, and rekindling robotic and human programs for exploration activities

beyond low-Earth orbit," said the AIA's letter to Bush.

Bush has proposed an ambitious space exploration initiative that would return the space shuttle to flight but retire the vehicle from service in 2010. It calls for NASA to develop a new Crew Exploration Vehicle, return humans to the moon by as early as 2015 and then take them on to Mars.

Douglass said it is important that the United States remain competitive with other countries. In the 1960s, the only nations with access to space were the United States and the Soviet Union, Douglass said. In that decade, the United States accounted for 60-70 percent of the space launches, with the Soviet Union averaging about roughly 20 percent. The number of U.S. space launches has dropped to roughly 25 percent overall, Douglass said, while the number from Europe has increased sharply.

### European challenge

"Europe has a plan for the future, and we think that Europe is also challenging us very heavily in commercial aviation, which means NASA has got to pay attention to its aeronautics budget, and not just aeronautics to support the space program, but aeronautics to support commercial and civil aviation and even military aviation here in the United States," Douglass said.

Kerry has not been as supportive of Bush's plan. Kerry's campaign has said that the Massachusetts senator would either maintain or expand funding for NASA if he wins the White House, but does not support Bush's exploration program (Daily, May 4). Douglass said he wants to hear Kerry's proposals for the aerospace agency.

"Kerry has said he supports a very robust NASA budget and a strong space program, but he has been a little bit critical of Bush's program. So we're saying to Kerry, if you don't like what the president has proposed, what's your proposal? We urged him to put some meat on the bones on his views," Douglass said.

In his letter to Kerry, Douglass wrote that "America's space industry must be able to rely on a stable, long-term vision during the tenures of future administrations that continue the space legacy initiated by President Kennedy's moon program."

Kerry has voted both for and against NASA spending. As a member of the Senate, he voted against an amendment in 1993 to cut the space station's budget by \$1.4 billion to reduce the federal deficit. In 1994, Kerry called for killing the space station and the National Aerospace Plane Program, and in

1995, he voted to cut \$1.8 billion in funding from NASA's Human Space Flight Program.

Douglass said he did not place much stock in a presidential candidate's senatorial voting record because senators often have other priorities to consider when deciding what issues to support. That, he said, can result in senators casting conflicting votes from session to session.

## Additional Resources for 2004 Aerospace Election Issues

*By Sophia Bright, Chair*

As we get closer to election day we find ourselves in the position of picking a candidate that will address the issues we that are important to us. The Aerospace Industry Association (AIA) compiled a list of seven key public policy issues and asked both presidential candidates to weigh in on those issues:

- Develop a U.S. Leadership Plan to Improve the Capability of the Global Aviation System
- Commit the U.S. Government to Fundamental Reform of the U.S. Export Licensing Process
- Promote Increase in U.S. Intelligence Capability
- Improve U.S. Aerospace and Defense Industrial Cooperation with America's Allies
- Develop a Federal Plan for Revitalizing the U.S. Aerospace Workforce and Sustaining Manufacturing Jobs
- Commit to Replacing the Space Shuttle with a Modern Human-rated Space Transportation System
- Increase Federal Funding for Aerospace R&D

The presidential candidates' positions on the Space Shuttle were as follows:

**Kerry/Edwards** - "NASA is an invaluable asset to the American people and must receive adequate resources to continue its important mission of exploration... The most critical element of our space program should be reducing the costs and increasing the reliability of space transportation to and from low earth orbit... The civil space program acts as an engine for innovation for the entire country, making its enormous benefits hard to quantify but even harder to discount." (Space.com: Kerry Criticizes Bush for Space Vision June 16, 2004)

**Bush/Cheney** - "Our first goal is to complete the International Space Station by 2010... In 2010,

the Space Shuttle -- after nearly 30 years of duty -- will be retired from service. Our second goal is to develop and test a new spacecraft, the Crew Exploration Vehicle, by 2008, and to conduct the first manned mission no later than 2014... Our third goal is to return to the moon by 2020, as the launching point for missions beyond." (President's remarks at NASA Headquarters, January 14, 2004)

Positions on each of these issues can be found at <http://www.aia-aerospace.org/aianews/2k4election/>.

Other sources of information regarding public policy and legislative action can be found at <http://www.aiaa.org/> and clicking on the "Public Policy" link.

## International Space University Goes Down Under

*By Michael Oelke, Past-Chair*

**Q:** What do you get when you take 114 students from 27 countries, put them together for 9 weeks on the opposite side of the world, and bombard them with lectures, projects, a mid term exam, and two sounding rocket launches?

**A:** The ISU Summer Session Program 2004!

And what a program it was! I had the pleasure of attending the ISU Summer Session Program (SSP) this year in Adelaide, Australia as a student and can tell you that the program was outstanding. Based in Strasbourg, France from which it conducts an 11 month Masters of Space Science program, the ISU offers an SSP each year in a different location to encourage international cooperation in space. The program is intense - challenging both from a cultural and a technical point of view, but the benefits to the students and the space industry are great.

The focus of the SSP is to expose students to ISU's 'three I's - Intercultural, International, and Interdisciplinary', while providing a robust academic experience. ISU's success in creating this program relies on site selection, great faculty and students, a variety of cultural events, and an excellent staff.



*Zuni 1 launches on Aug 2, '04 reaching a maximum speed in excess of M2.0 and a height of over 7 km.*



*Rocio Redondo (Spain) and Yoshihiro Seki (Japan) collaborate on a payload for a sounding rocket.*

Of these, site selection and the staff are essential. Adelaide was chosen to host this year's SSP because of its history in developing spaceflight hardware and its proximity to the Woomera Prohibited Area – the rocket test range where Blue

Streak, Europa, and Redstone rockets were once fired. For this SSP, Flinders University, the University of South Australia, and Adelaide University cooperated to provide guest faculty and classroom facilities that enabled the entire session. In addition, with help from two ISU graduate students and the Australian Space Research Institute (ASRI), Adelaide was an excellent location to prepare the two sounding rockets for launch at Woomera. The ISU staff succeeded by planning and executing this and other aspects of a great program.

In addition to the academics, SSP04 also provided intercultural events through culture nights, workshops, and simply the opportunity to work with aerospace professionals from other countries. The future of our industry is going to be international and by participating in this session students are better prepared to operate in that climate.

ISU was created 18 years ago through the vision of three students and to this day seeks to build the future of the space industry. To learn more about the SSP04 and ISU, please contact an alumnus like myself or go to: [www.isunet.edu](http://www.isunet.edu). SSP05 is in Vancouver next June. Scholarships are available and some outstanding companies like Boeing provide excellent support to employees. Be sure to consider ISU if you wish to have a great learning experience – both professionally and culturally.

## AIAA Provides Opportunities for Continuing Education Program Credits

*By Timothy Propp, Vice Chair - Technical*

During the 78<sup>th</sup> Texas Legislative session (2003), State Bill 277 was passed instructing the Texas Board of Professional Engineers (TBPE) to develop and implement a Continuing Education Program (CEP). The CEP will begin in calendar year 2005, meaning non-exempt licensed engineers must provide CEP hours with the renewal received in 2005. The CEP rules adopted by the Board require each non-exempt licensed engineer to obtain 15 hours of continuing education annually. Of the 15 hours, one hour must be spent on ethics training, and a maximum of five hours can be obtained from self-directed study. If more than 15 hours are obtained in one year, up to 14 hours can be rolled over to the next year. There are several approved methods of obtaining CEP hours:

- complete/audit college credit course
- complete continuing education course
- completion of short course/tutorials
- present/attend seminars/technical presentations
- teaching/instructing any of the above
- publishing papers, articles, books
- participation in professional/technical societies
- patents issued
- engaging in self-directed study

The Board has decided to allow license holders to begin collecting hours as of September 1, 2003. This was done to ensure adequate time is provided to collect CEP hours prior to the beginning of the program in January 2005.

The Houston Section of the AIAA provides several opportunities for licensed engineers to obtain CEP hours throughout the year:

- Lunch and Learns: 1 hour of credit per Lunch and Learn
- Annual Technical Symposium: 1 hour of credit per Track Session (6 Track Sessions offered in 2004)
- Executive Council: 1 hour of credit for 1 year of active service
- Serving on a Committee: 1 hour of credit for 1 year of active service

For more information regarding the TBPE CEP, please refer to the following website:  
[http://www.tbpe.state.tx.us/CEP\\_Info.htm](http://www.tbpe.state.tx.us/CEP_Info.htm).

For information regarding open positions in the AIAA Houston Section, please contact our Vice Chair-Operations @ [vicechair-ops@aiaa-houston.org](mailto:vicechair-ops@aiaa-houston.org) or our Vice Chair-Technical @ [vicechair-tech@aiaa-houston.org](mailto:vicechair-tech@aiaa-houston.org).

## Welcome New Houston Section AIAA Members!

*By Elizabeth Blome, Membership Chair*

If you see one of these folks at the next section event, please give them a hearty welcome.

We are pleased to introduce:  
 David Adlis, The Aerospace Corporation  
 Susan Ahrens, Unites Space Alliance  
 Genie Bopp, Wyle Laboratories  
 David Bradt, SAIC  
 Marion Brown, Nova Southeastern University  
 Paul Campbell, Lockheed Engineering and Science

Jeffrey Davis, NASA  
 Jeff Donoughue, Boeing  
 William Evans, United Space Alliance  
 Mark Gray, United Space Alliance  
 Douglas Hamilton, Wyle Laboratories  
 Shalima Jampala, ARES Corporation  
 Cagri Kanver, University of Houston  
 Keka Kar Kar, Aragon Middle School  
 Frank Little, Texas A&M  
 Patrick Mitchell, SAIC  
 Jianjun Ni, NASA  
 George, Parma, NASA  
 Sudhakar Rajulu, NSBRI/NASA  
 Jaime Ramirez, Texas A&M  
 Jagannatha Rao, University of Houston  
 Gale Rhodes, Lockheed Martin Space Operations  
 Michael Ross, United Space Alliance  
 Matthew Scudder, Boeing  
 James Watts, Lockheed Martin Space Operations  
 Daniel Whalen, SICSA  
 Steven Yuan, FMC Corporation

## Help AIAA Help You - Update Your Membership Records!!

*By Elizabeth Blome, Membership Chair*

It is often said that the aerospace industry is the only place where you can have the same job for five years and work for five different companies. That is especially true given the industry wide consolidation that has happened in the last few years. As companies have changed so have the building signs and the business cards. Additionally, our environment provides most people with the ability to move from one company to another as we try to expand our occupational horizons.

With all of these potential changes have you verified if your AIAA member record is up to date? Knowing where our members are working is vital to the Houston Section in obtaining corporate support for local AIAA activities (such as our monthly dinner meeting, workshops, etc.). Please take a few minutes and visit the AIAA website at <http://www.aiaa.org/> to update your member information or call customer service at 1-800-NEW-AIAA (639-2422). Feel free to also contact me at 281-244-7121 or by email at [elizabeth.c.blomeAIAA@nasa.gov](mailto:elizabeth.c.blomeAIAA@nasa.gov) (remove 'AIAA' before sending).

# Cranium Cruncher

By Douglas Yazell, Councilor

June 2004 puzzle:

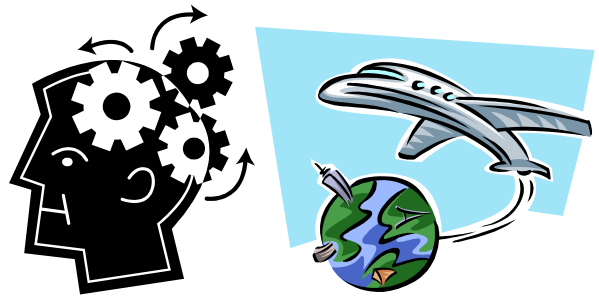
"Given an aircraft's velocity vector's coordinates in two coordinate systems with the same origin, can we find the orientation between the two coordinate systems? Is it unique? If not, describe all solutions."

June 2004 answer:

There are an infinite number of solutions which can be pictured easily (though it certainly took me and others a lot of work). Imagine one coordinate system and a sketch of the given vector projected into the XY plane and from there to the X and Y axes, to emphasize the given coordinates. Then imagine the other coordinate system with a different orientation. Project the same vector to this XY plane and from there to these X and Y axes to picture those given coordinates. Now allow this coordinate system to rotate about the given vector. That describes all possible orientations between the two coordinate systems. In this moving coordinate system, the vector coordinates do not change during that rotation.

Calculations were not needed to obtain full credit for this puzzle, but here is one way to find any of those direction cosine matrices describing the orientation between the two coordinate systems. Given the vector coordinates in one coordinate system, we rotate another coordinate system from that orientation by a Z-axis rotation, then a Y-axis rotation so that its X-axis lies along the given vector. Then rotate it about that X-axis unit basis vector by any value (call that rotation angle  $\delta$ ), then use the other given coordinates to rotate this coordinate system through a Y-axis rotation, then a Z-axis rotation. The product of those 5 rotation matrices is the direction cosine matrix. It is a simple function of  $\delta$ .

Here are the names of those who sent correct answers to me: Judah Richardson of Rice University. In the fall, he will be a senior in mechanical engineering.



This month's puzzle:

"Given an aircraft velocity vector's coordinates before and after a rotation of that vector, find the rotation axis. Is it unique? If not, describe all possible solutions."

Hints:

- 1) There are more than the two obvious rotation axes.
- 2) Full credit can be obtained without equations, using words like lines, axes, vectors, rotations, circles, etc.
- 3) We are not finding matrix solutions here (rotation matrices), but the answer could be expressed in that format, and they are the same answers presented above for last month's puzzle (direction cosine matrices).

Send solutions to me at [douglas.yazell@honeywell.com](mailto:douglas.yazell@honeywell.com) (remove 'AIAA' before sending), or call me at 281-244-3925 (to deliver solutions, ask for more hints, talk it over, etc.).

My thanks go to the same people as noted in last month's article. I submit this month's puzzle as a member of two technical committees in our section. The first is our International Space Activities Committee (ISAC). ISAC is chaired this year by Padraig Moloney (NASA), and the other members are Dr. Zafar Taqvi (Dynacs) and Elizabeth Blome (NASA). The second is our Astrodynamics technical committee, chaired by Dr. Albert Jackson (Lockheed Martin), an engineer at NASA and a visiting scientist at the Lunar Planetary Institute. Like all of our committees in the technical branch of our section, we are always looking for new members: students, young professionals, experts, etc. We don't impose much on our members' time, but there are many potential benefits.



# Calendar of Events

## September 2004

28 Social Gathering

## October 2004

1 NBL Tour  
4 EC Meeting  
16 Wings over Houston  
21 Dinner Meeting (Town Hall Meeting with AIAA President, Don Richardson)  
TBD Lunch-n-Learn

## November 2004

1 EC Meeting  
19 Social Gathering (TBD)  
TBD Facility Tour  
TBD Lunch-n-Learn

## December 2004

6 EC Meeting  
10 Social Gathering (TBD)  
16 Dinner meeting (TBD)  
TBD Facility Tour  
TBD Lunch-n-Learn

## January 2005

10 EC Meeting  
10 – 13 43<sup>rd</sup> Aerospace Sciences Meeting (Reno, NV)  
13 Social Gathering (TBD)  
22 Mars Rover Competition  
TBD Future City Design Competition  
TBD Facility Tour  
TBD Lunch-n-Learn

## February 2005

7 EC Meeting  
15 Social Gathering (TBD)  
17 Dinner Meeting (TBD)  
19 Mid-Level Professional Workshop  
18-20 Mars Settlement Design Competition  
20-26 National Engineer's Week  
TBD Lunch-n-Learn

## March 2005

4-6 Mars Settlement Design Competition  
7 EC Meeting  
17-19 Science and Engineering Fair of Houston  
TBD Lunch-n-Learn

## April 2005

4 EC Meeting  
8-9 Region IV Student Paper Conference (New Mexico)  
14 Social Gathering (TBD)  
15 Associate Fellow Nominations Due  
28 Dinner Meeting  
TBD Lunch-n-Learn  
TBD Annual Technical Symposium  
TBD Space Operations Workshop

## May 2005

2 EC Meeting  
13 Social Gathering (TBD)  
15 Associate Fellow References Due  
TBD Facility Tour  
TBD Lunch-n-Learn

## June 2005

6 EC Meeting  
10 Social Gathering (TBD)  
15 Fellow Nominations Due  
16 Awards Banquet  
30 Annual Reports Due  
TBD Lunch-n-Learn

## July 2005

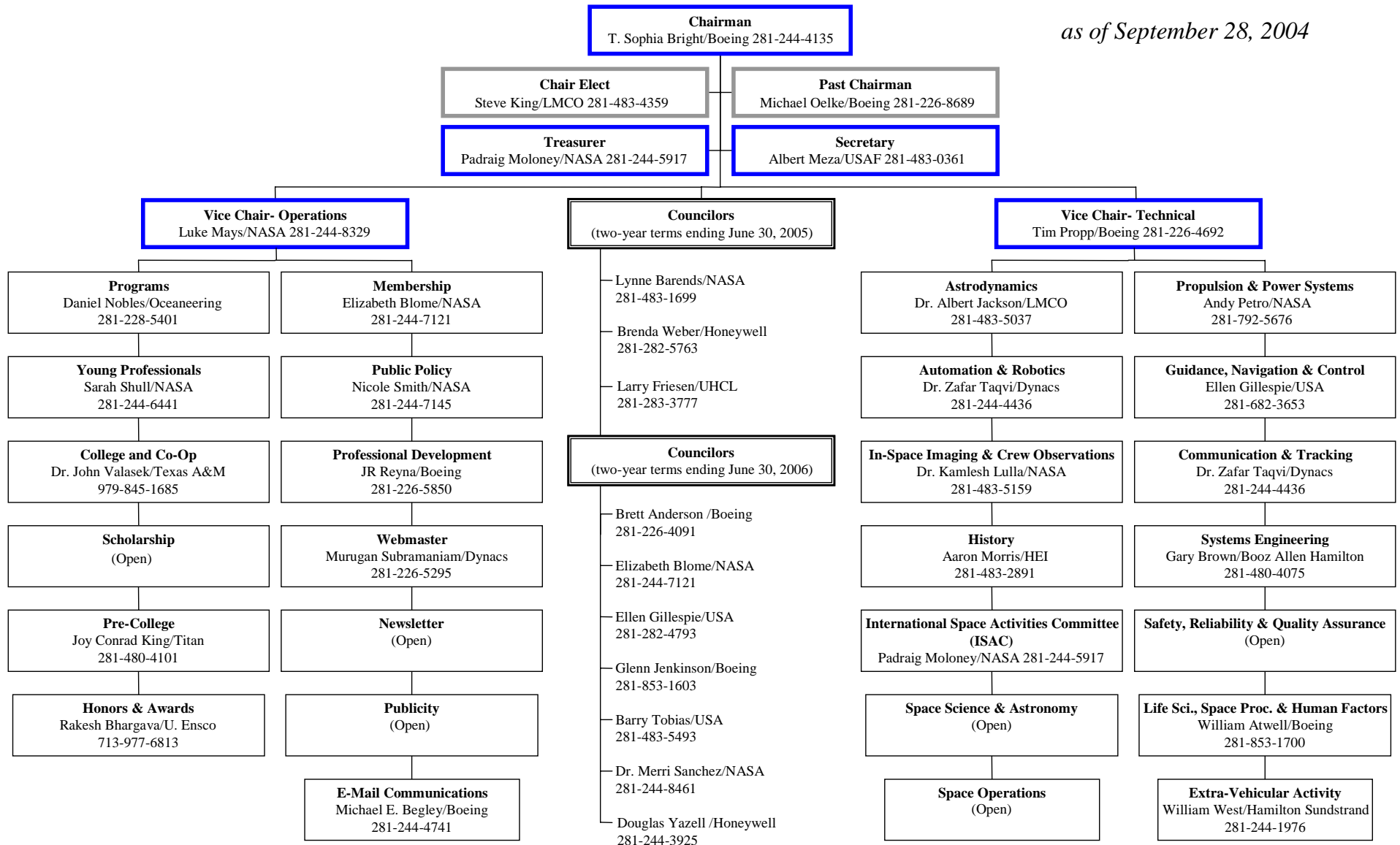
15 Fellow Nominations Due  
TBD Social Gathering (TBD)  
TBD Lunch-n-Learn

# AIAA Houston Section

# Executive Council

## 2004-2005

as of September 28, 2004





American Institute of Aeronautics and Astronautics

HOUSTON SECTION • P.O. Box 57524 • Webster, Texas 77598

Web site: [www.aiaa-houston.org](http://www.aiaa-houston.org)

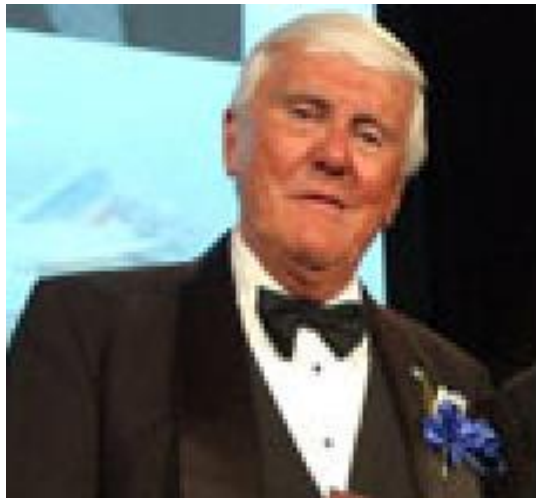
T. Sophia Bright  
CHAIR, 2004-2005

## TOWN HALL MEETING

Thursday, October 21<sup>st</sup>, 2004

**AIAA National President**

**Dr. Don Richardson  
SAIC**



Topic: AIAA Town Hall

Wondering what AIAA is doing for you? Do you want an opportunity to take your questions straight to the top? Dr. Don Richardson, the National President of the AIAA, is coming here to Houston just to talk to you! It is a town hall meeting, in which you will have an opportunity to ask questions and make suggestions.

### PRESENTER

Dr. Don Richardson is a Fellow of the American Institute of Aeronautics and Astronautics (AIAA) and has been a member of AIAA continuously for 55 years. He is currently the President-elect of the AIAA (2003-2004) and will be serving as the AIAA President for 2004-2005. He has been named as a Fellow of the Royal Aeronautical Society (FRAeS), and has recently been co-opted by the Royal Aeronautical Society to serve on their Engineering Council for 2003-2004. He has been awarded the NASA Public Service Medal in 2002 for his work in reinvigorating U.S. Federal funding for R&D in aeronautics. He holds bachelor's, master's and Ph.D. degrees in aeronautical and mechanical engineering.

A commercial instrument pilot with multi-engine land and seaplane ratings, he has been an active pilot for 57 years. His engineering career has included assignments as an aerodynamics and flight test engineer, research pilot, and engineering manager. He is presently employed as a Corporate Vice President of Science Application International Corporation (SAIC) responsible for all FAA and civil aviation corporate activities.

### DINNER MEETING

**5:30 Social (Cash Bar)**  
**6:00 Dinner**  
**7:00 Awards & Presentation**

**Entrée: Chicken Almandine**

<b>MEMBERS &amp; SPOUSES</b>	<b>\$15.00</b>
<b>NON-MEMBERS</b>	<b>\$17.00</b>
<b>STUDENTS</b>	<b>\$5.00</b>

**Lakewood Yacht Club  
2425 NASA Rd 1, Seabrook, TX 77586**

From NASA JSC: follow NASA RD 1 for 7 1/2 miles until you see the Auto Parts O'Reilly store sign in the distance on your right hand side. Make a right turn on to Seventh Street before you pass the store. The street to your right is Lidstone, turn right on Lidstone and proceed to the LYC gate.

ALL ARE WELCOME

MAKE DINNER RESERVATIONS ONLINE AT [www.aiaa-houston.org](http://www.aiaa-houston.org)  
OR CONTACT DANIEL NOBLES AT 281-228-5401 OR [dnobles@oceanengineering.com](mailto:dnobles@oceanengineering.com)

PLEASE SPECIFY ANY SPECIAL MENU NEEDS.

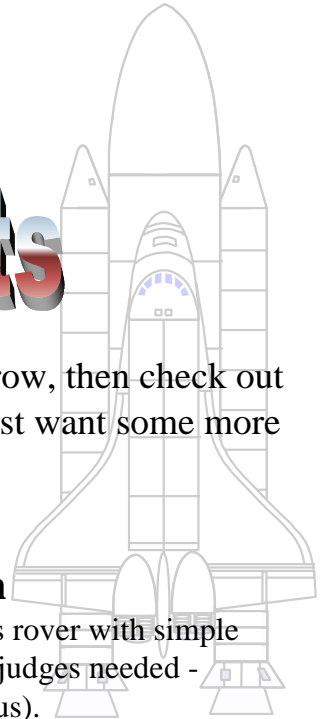
**NOTE: RESERVATION DEADLINE IS *MONDAY, OCTOBER 18, AT 5:00 PM.***

**ANY CANCELLATIONS ARE REQUIRED PRIOR TO DEADLINE. NO-SHOWS WILL BE BILLED.  
DINNER RESERVATIONS ARE NOT REQUIRED FOR ATTENDING THE TOWN HALL MEETING ONLY.**



American Institute of Aeronautics and Astronautics

# Pre-College Events



If you've ever wanted to get involved with the engineers of tomorrow, then check out these opportunities below. If you are interested in volunteering or just want some more information for your own kids then contact Joy Conrad King at [aiaa\\_houston@yahoo.com](mailto:aiaa_houston@yahoo.com).

**January 22, 2005**

## **Mars Rover Competition**

Students in grades 3-8 build a Mars rover with simple objects as part of a school project (judges needed - University of Houston, main campus).

**January 2005**

## **Future City Design Competition**

7th and 8th graders use SimCity™ computer software to design futuristic cities (mentors and judges needed - San Jacinto University).

**February 18-20, 2005**

## **Mars Settlement Design Competition**

**March 4-6, 2005**

Industry simulation weekend for high school students to design a futuristic Mars community (subject experts and judges needed - NASA/JSC).

**February 20-26, 2005**

## **National Engineers Week**

Visit classrooms around the Houston area.

**March 17-19, 2005**

## **Science and Engineering Fair of Houston**

Judge middle and high school projects to select AIAA prize winners (George R. Brown).

