



The Canaveral Flyer



A Newsletter of the Canaveral Section of ASME International

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**DID YOU RENEW
YOUR ASME
MEMBERSHIP?**

Message from the Chair...

Tremendous Turnout for January Events!

We started off 2004 with a bang with two very good events.

First we had a tour of Mathers Bridge set up by Will Judd. This was very well attended with more that 20 members and guest of our section in attendance. It was a beautiful Saturday morning along the Banana River where we got to see the inner workings of the bridge and find out about its upcoming replacement. See Will's article in this newsletter for more details. We hope to set up a follow up tour this fall to see hoe the construction of the new bridge is coming and go back again in the spring to see the new bridge in action. Thanks to Will Judd for setting up this great tour!

We followed up this event with our annual awards banquet where we recognized our own for their long years of service and membership in ASME. This year the event was held at the Melbourne Beach Hilton and it turned out to be a very enjoyable evening. See the following pages for details of the event.

In February we celebrate E-Week so take advantage of opportunities we will have going on at Florida Tech with some Impromptu Design Competition and Guest Speakers as well as getting a chance yourself to get out and promote Engineering in a local classroom.

Look forward to seeing you at our next events.

Dan Johnson

Mark your Calendars - 2003 Canaveral Section Events					
Date	Event	Location	RSVP Date	Contact	Contact Info
Feb 20	CCTS E-Week Banquet with Distinguished Lecturer: John Adams on Flight Mechanics of Golf Ball	TBA	Feb 13	Dan	Djohns08@harris.com
Feb 23-27	E-week event at local schools	TBA	TBA	Stephanie	STHopper@xch-bsco-06.ksc.nasa.gov
Mar 2004	Fla Tech/ Canaveral Section Joint Dinner & Senior Design Presentation	Fla Tech Campus	TBA	JD	jvangild@harris.com

Please see our web page at <http://www.asme.org/sections/canaveral/index.html> for further information of these and other events coming up soon.

Mathers Bridge Tour a Huge Success!

On Saturday, January 17th, approximately 25 members of the Canaveral Section and their guests met at Mathers Bridge in Indian Harbor Beach for a tour of the bridge. Members were greeted by Bruce Auchter and Red Winch, both engineers within the Brevard County Transportation Engineering Department. Bruce and Red gave the group an introduction to the history of the bridge and also explained the manner of operation and the maintenance requirements for the bridge. They answered a small number of questions and brought some engineering blueprints and specifications for a future version of Mathers Bridge for viewing. Their expertise gave a lot of insight to the significance and characteristics of Mathers Bridge.

Mathers Bridge is a swingspan bridge; this design keys on the entire middle section of the bridge pivoting around, allowing river traffic to pass by unobstructed. The design is also historically important, as Mathers Bridge is one of two swingspan bridges, out of nine in the state of Florida. The span of approximately 200 feet is second in size to only Max Brewer Bridge, which also resides in Brevard County. The current pony span is constructed of steel that was assembled in the year of 1927! A considerable amount of the procedure to open and close the bridge still comes from manual control, provided by a bridgetender.

Two bridgetenders, Walt Eisenmann and Maureen Evans, explained the working of the bridge controls from inside the tower. As a special treat, Walt and Maureen not only gave participants a look at their console and the great view of the Banana River, but gave a fun ride to people still outside who could stand in the middle of the pivoting span. During their ride, those members could also get a closer look at the motor and gearing mechanisms which rotated the span. As the span moved, members still on the stationary side of the bridge could observe the dual pressurized wedge devices which locked and leveled the bridge when it was closed, as well as the noticeable deflection of the pivoting span.

Mathers Bridge will be replaced with a newer span within the next year. The Canaveral Section was presented with an opportunity to see the bridge as it has functioned for years and also invited to follow up with tours during and after the installation of the newer bridge at the same location, which will implement newer equipment and facilities and include a lane for pedestrian traffic. A special thanks should be extended to Eric Citta and Mary Erickson of Brevard County's Central Roadway Maintenance office for arranging the tour. The tour was an enjoyable and unique learning experience for all that attended.

Will Judd

Awards Banquet

We celebrated our own this past January 21 when we held our annual awards banquet at the Melbourne Beach Hilton. We had just under 20 members and guests join us for an evening of recognizing our members for their active membership in ASME. The members received certificates suitable for framing from ASME listing their years as members. Here are the members that were recognized and we want to congratulate them again on this accomplishment!

Bill Harris	25 years	Larry Shelquist, P.E.	25 years
Henry Riley, Jr. P.E.	25 years	David Cardonette, P.E.	25 years
Louis Lemire, Jr.	25 years	Henry Croskeys, Jr.	35 years
Frank Barretta	25 years	Thomas Frost	50 years
David Clayton	25 years	Maurice Hoyt	50 years

Our keynote speaker for the evening was Carol Ann Garratt. Carol Ann is a pilot who took on the world, literally. She told of her adventures in her Mooney M20J airplane and how she flew around the world starting in nearby Kissimmee. She traveled west to California, Hawaii, Australia, New Zealand, India, South Africa, up into Europe, across to Greenland and finally back to the states. The 31,643 nautical mile trek allowed her to meet some fascinating people along the way, make some new friends, introduce kids to flying, and raise awareness of Lou Gehrigs Disease. The talk and slide show was fascinating and made for a really enjoyable evening.

Dan Johnson

What's happening at Florida Tech

The student section at Florida Tech will be hosting many fun filled events during E-week this year from impromptu design competitions to guest speakers. The E-week committee will determine exact dates and times for these events no later than February 13th. Contact JD for details on how you can get involved!

In March, Florida Tech will be hosting the annual joint dinner between the senior section and the student section, giving the students an opportunity to present their senior design projects. This event is always a great time. It allows the students to showoff their hard work and the senior members to keep abreast of the hands on projects the students are involved with.

To get in contact with the Florida Tech Student Section please do not hesitate to contact Student Section Advisor **JD Van Gilder** at jvangild@harris.com

Brain Teaser

This was our best month yet in regards to responses to the brain teaser question, even though I did take some flack for making it a little less challenging. Congratulations to William Couch, Allan Torsney, and Jim Elmore for getting it correct! Here is the solution to last months question if you missed it.

Solution:

If he runs up 6 steps, then he needs 30.0 seconds to reach the top.

If he runs up 13 steps, then he needs 19.5 seconds to reach the top.

The 7 additional steps take 10.5 seconds.

Therefore, each step takes 1.5 seconds.

Total steps in escalator = $6 + 30.0 / 1.5 = 26$ or Total steps in escalator = $13 + 19.5 / 1.5 = 26$.

If he did not run up any steps at all, he would reach the top of the escalator in 39.0 seconds (i.e., 26 steps x 1.5 seconds/step).

Take a look at the question below and give it a shot. Submit your answer to Dan Johnson at dan.johnson@harris.com and he will let you know how you did. At the end of the year we give a gift certificate out to the person who has received the most points for correct answers.

I have a miniature Pyramid of Egypt. It is 4 inches in height. I was invited to display it at an exhibition. I felt it was too small and decided to build a scaled-up model of the Pyramid out of material whose density is (1/ 10) times the density of the material used for the miniature. I did a "back-of-the-envelope" calculation to check whether the model would be big enough.

If the mass (or weight) of the miniature and the scaled-up model are to be the same, how many inches in height will be the scaled-up Pyramid? Give your answer to two places of decimal.

Good luck!

Treasure Coast SEA

Meetings are held on the third Friday of the month and meeting announcements will be sent via e-mail and the Vero Beach Press Journal prior to each meeting. If you would prefer to be reminded by any other method (phone, mail, etc.), please contact **Kelly Mather**.

CCTS E-Week Banquet and Distinguished Lecturer Extravaganza

CCTS is holding their Annual E-Week banquet this February 20, Friday evening, starting at 6:00 pm at the Holiday Inn in Cocoa Beach. **Tal Webb** has volunteered to organize this event so let's show our support by signing up today! See the attached link for more information on the dinner and presentations that will be taking Place.

<http://www.canaveralcts.org/CCTS-2004-EWB.pdf>

For the keynote speaker for that evening, **Alan Zakaluk** has worked his magic once again and has set up to have distinguished lecturer John C. Adams Jr. speak on the "Flight Mechanics of a Spinning Dimpled Spheroid". Here is a little background on what the presentation is all about.

Want to increase your driver distance off the tee? Carry fairway sand traps? Boom drives over trees to cut the corner? Come learn the factors influencing the aerodynamic flight trajectory of a golf ball - things like spin rate, launch angle, and launch velocity. This knowledge won't help cure your slice or hook, but surely you'll become the Tiger Woods of your foursome after you discover how Newton's second law of motion ($F = ma$) coupled with lift and drag aerodynamics due to spin applies to improving your game. As an educational sidelight, you will see how easy and effective it is to apply a Visual Basic for Applications macro in an Excel spreadsheet for simulation applications. This Visual Basic tool can help improve your productivity in "quick and dirty" analysis of many engineering problems.

This will be a fun and informative presentation. **Tal Webb** has had the fortune to see this once before and gives it high marks so mark your calendar now.

If you have any question please do not hesitate to contact either Alan or myself.

Dan Johnson

Tallahassee Town Hall Meeting

Here is a message passed on from our friends in Tallahassee

On behalf of the ASME Tallahassee Section and FAMU-FSU College of Engineering ASME Student Section, I would like to offer an open invitation to you and your members to attend the 2004 ASME Tallahassee Town Hall Meeting (THM). This year's THM focuses on Aerospace and Florida – The Challenges of the New Millennium, and it is held at the Challenger Learning Center in Tallahassee on Wednesday, February 25, 2004. The program begins at 7 PM. There will be a poster session from 6:00 PM to 7:00 PM. Please let me know if you are interested to submit a poster. Additional information maybe found at...

<http://www.asme.org/sections/tallahassee/>.

Farhad Boeshaghi, Chair
ASME Tallahassee 2003-2004

ASME'S MEMBER INITIATIVE SYSTEM ON THE WEB

ASME'S Member Initiative System encourages any member or operating unit of ASME to propose improvements to Society policy or procedure or to make any suggestions which would improve the operation or activities of the Society.

To date, there have been 13 proposals submitted, on topics such as "ASME and Iraq Reconstruction" and "Committee on the International System of Units." To view the initiatives, as well as ASME's responses, visit the Member Initiative System web page at <http://www.asme.org/cma/mis.cfm>

Thumbnail Bio

This month's subject is about one of our Vero Beach members, Lee Everett.

A graduate of The Pennsylvania State University, with B.S. and M.S. degrees in Mechanical Engineering, Lee joined the Engineering Department of Philadelphia Electric Company in 1950. Three years later he was named to an atomic power study team in Detroit, Michigan, working on the development of nuclear power. He returned to Philadelphia in 1955, and was actively involved in many projects associated with power generation, including the company's nuclear power activities.

From June 1958 to June 1959, Lee attended the Industrial management School of the Massachusetts Institute of Technology on a Sloan Fellowship and received a M.S. degree in Industrial management. In 1970 he became Director of Research for the company, and in 1962 was named Manager of Engineering and Research Department. He was elected to the company's Board of Directors and named Executive Vice President. In April 1971, he was elected President of the company, and in April of 1982 Lee was elected Chairman of the Board and Chief Executive officer. Lee retired from the company in 1988.

Lee is a member of a number of engineering, nuclear, and technical societies. He is a Fellow and Honorary Member of ASME and a member of the National Academy of Engineering.

He was a Director of CoreStates bank, N.A., Fidelity Mutual Life Insurance Company, Martin Marietta Corporation and its successor Lockheed Martin Corporation, and Tasty Baking Company. Lee has been active in many civic, charitable, and business related organizations both nationally and in the Philadelphia area.

Lee has received numerous honors and awards during his career. Among the most notable are: the "Distinguished Citizen Award" from the Philadelphia Council. Boy Scouts of America; and the "Robert Morris Award" from the Valley Forge Council of the Boy Scouts. In 1986 he received the "Silver Beaver Award" from the Philadelphia Council. He also received the "Brotherhood Award" from the national Conference of Christians and Jews, and in 1985 received the "American Traditions Award" from B'nai B'rith International. He was granted an honorary Doctor of Laws degree from the Philadelphia College of Osteopathic Medicine in 1983, and in 1972 he was elected "Engineer of the Year" in the Delaware Valley. In 1971 he was made a "Distinguished Alumnus" of the Pennsylvania State University. He is a member of Tau Beta Pi, Pi Tau Sigma, and Pi Mu Epsilon honorary fraternities.

Lee is married to the former Marjorie Scherf, they have three sons. They live in Vero Beach where he serves as chairman of its public utility commission and is on the executive board of the Canaveral Sections Vero Beach Retiree Group known as SEA, Senior Engineering Associates.

Jack Wiles

ASME Announces Conference on Nanotechnology Growth in Biotech and Medical Devices

ASME's Nanotechnology Institute will sponsor a conference on growth opportunities for the Biotech and Medical Sectors in Nanotechnology from April 15-16 at the National Academies of Sciences and Engineering in Irvine, Calif.

The conference will provide engineers, business developers, professionals from the biotech and biomedical sectors and students solutions on how to capitalize on the next wave of new technology.

Attendees to the conference will receive a tour of the Integrated Nanosystems Research Facility at the University of California, Irvine.

To register for this conference, or for more information call InfoCentral at (800) 843-2763 or visit the website at <http://www.asme.org/events/nanobio>

ASME Sponsors EPA's 'P3' Award

ASME is sponsoring the 'P3' Award, a student design competition that will provide grants to teams of college students to research, develop, and design sustainable solutions to environmental challenges.

ASME is one of the Environmental Protection Agency's 27 partner organizations from industry, non-profit and governmental agencies to sponsor the P3 Award.

Eligible teams initially compete for \$10,000 grants. The winners will use the money to research their projects during the academic year. In 2005, the recipients will be invited to Washington, D.C. to compete for the 'P3' award, which will provide further funding for more design development and implementation.

Applications can be found at <http://es.epa.gov/ncer/rfa/>

Winning Strategies to Career Negotiations

Tips to getting that raise, promotion or new job

- **Prioritize your needs.** Define your overall objectives in terms of responsibilities, work environment, salary and benefits— and keep these in focus throughout the discussion.
- **Consider the employer's needs.** The more you understand what the employer is looking for, the more effectively will you communicate your value.
- **Strive for mutual understanding.** "Put yourself in his shoes." If you keep in mind the other person's style and values, it's easier to overcome areas where you may disagree.
- **Actively listen.** Focus on what is being said, rather than what you wish to say—otherwise you may miss subtle, verbal and nonverbal cues that convey the employer's needs.
- **Be open-minded.** Believing there's just one way to arrive at a positive outcome is very limiting. Instead brainstorm several outcomes that are mutually beneficial and then keep an open mind—an unanticipated solution may present itself through dialogue.
- **Research salary data.** Having objective salary criteria is absolutely critical. Objective data minimizes the emotion of the discussion, as well as provides third-party credibility.
- **Practice, Practice, ...** Role-playing with a career coach, or other objective individual, will show you exactly what you are comfortable asking for and how you come across to others.

Visit ASME's Career Center at www.asme.org/jobs for more information on career building and negotiations.

Links to Useful Websites

Southern Field Office

<http://www.asme.org/regions/sro/>

Region XI Home Page

<http://www.asme-xi.org/>

ASME International Home Page

<http://www.asme.org/>

Canaveral Council of Technical Societies (CCTS)

<http://www.canaveraacts.org/>

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DOCTORAL DEGREES CONTINUE DECLINE IN SCIENCE AND ENGINEERING

Two surveys recently released by the U.S. National Science Foundation offer a broad picture of the recipients of bachelors, masters and doctoral degrees in science and engineering in the past four years.

The 2002 Survey of Earned Doctorates (SED) reveals an overall decline in the number of Science and Engineering Doctoral degrees awarded in 2002. Continuing a downward trend in recent years, the 24,500 degrees nationwide represent the lowest number since 1993.

The SED is an annual census of research doctorate recipients conducted by the National Opinion Research Center (NORC) at the University of Chicago under a contract with NSF's Division of Science Resources Statistics (SRS).

According to the 2002 SED, women received 45 percent of the total doctorates awarded. That was 1 percent more than the year before and represented the largest share ever in a trend that continues upward. Further, "it was the first year in history that women earned the majority of research doctorates awarded to U.S. citizens," said Tom Hoffer, senior research scientist and SED project director at NORC.

Joan Burrelli, an NSF senior analyst, noted the continuing underrepresentation of women in engineering, however. "Women still have a way to go there. They received 17.5 percent of the doctorates in 2002, compared to 16.9 percent the previous year, while in the sciences, women are now above 42 percent of the total Ph.D.s earned."

African Americans and Latinos, the largest underrepresented groups, made small gains in the overall number of doctorates awarded between 2001 and 2002. Those groups received 10 percent of the total doctorates in 2002, while earning 9.6 percent in the previous year. Within science and engineering, African Americans represented 3.4 percent of the 2002 doctorates, the same as the previous year. Latinos increased from 4.7 percent of total S&E doctorates in 2001 to 5 percent in 2002.

In addition to the SED survey, another more detailed examination of science and engineering bachelors and masters degree recipients from 2001 has also just been released by the NSF, using data from the National Survey of Recent College Graduates (NSRCG). Statistics in the Characteristics of Recent Science and Engineering Graduates: 2001 cover educational, occupational, demographic, employer and salary information.

For the full report of the "2002 Survey of Earned Doctorates (SED)", go to:

<http://www.norc.uchicago.edu/issues/docdata.htm>

Read highlights in the NSF press release at:

<http://www.nsf.gov/od/lpa/news/03/pr03134.htm>

For the Characteristics of Recent Science and Engineering Graduates: 2001, see:

<http://www.nsf.gov/sbe/srs/nsf04302/htmstart.html>



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