In this SWE Space Coast Newsletter Edition:

- Don’t miss our Oct section meeting at the shooting range! Learn about gun safety. RSVP by Oct 24!
- The SWE National Conference is coming up! Nov 6-8, 2008 in Baltimore. Sign up today!
- Don’t forget to submit your travel photos for our newest feature…Travel Bug.
- Discover the 7 ways to mess up your 401(k)
- Learn 4 tips for career fortune.
- Go Green with energy home solution tips.
- Discover what junk food does to your brain in ‘Health Galore’
- A delicious meatloaf recipe in ‘Food For Thought’
- Plus more!!!
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### Space Coast Section 2008-2009 Events Calendar

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wed, October 29</td>
<td>Section Meeting: Learn to Shoot Safely</td>
<td>The Shooting Center, Titusville</td>
</tr>
<tr>
<td>November 6-8</td>
<td>SWE National Conference</td>
<td>Baltimore, MD</td>
</tr>
<tr>
<td>December</td>
<td>Book Club/ Christmas Party: “How Mrs. Claus Saved Christmas”</td>
<td>Lori McPherson’s house</td>
</tr>
<tr>
<td>Sat, January 31</td>
<td>Introducing Girls to Engineering</td>
<td>Cocoa Beach High School</td>
</tr>
<tr>
<td>Tues, February 24</td>
<td>SWE Engineering Awards Banquet</td>
<td>Rockledge Country Club</td>
</tr>
</tbody>
</table>

Check the website ([http://www.swe-sc.org](http://www.swe-sc.org)) for the latest details and update.
Society of Women Engineers
Space Coast Section
presents:

Learn to Shoot Safely

When: Wednesday, October 29, 2008
Where: Located ¼ mile East of US1 on SR 405 just outside the KSC entrance
The Shooting Center
6350 Horizon Dr, Titusville, FL 32780
Time: 5:30 – 8:30 PM
7:00 PM – Pizza dinner & presentation
Cost: Members - $35
      Non-Members - $40
      Students - $17.50
RSVP: Friday, October 24

Includes: fire arm, lane fee, 2 targets, 50 rounds of ammo, eye protection, ear protection, personal assistant and pizza w/ salad dinner

Questions? Contact Lori McPherson - (321) 446-0434

For reservation & payment information, visit http://www.swe-sc.org/
SWE National Issues

At the National Conference in November, the Council of Representatives (COR) will be considering several bylaws changes, including a major change to the structure of the Council — eliminating the section’s representation on the COR going to a regional representation with 2 professional members from each region, 1 student member from each region, 2 from the internationals and 2 “at large representatives” selected by the council. The new council would be renamed the SWE Senate. If you are interested in more information on the restructure and other proposed changes, contact one of the section’s representatives: Judy Kersey at judy.kersey@swe.org or Jennifer Bailey at jennifer.s.bailey@gmail.com
2008 SWE National Conference
Baltimore Convention Center, Baltimore, MD
November 06, 2008 - November 08, 2008

Registration is now open!

Call 1-877-SWE-INFO or visit www.swe.org for more information.
SWE Golf Fun

Join us for six weeks of golfing fun. Sign up for beginners or intermediate. Don’t miss out on this opportunity to network and enjoy a good game of golf!

Clinics will include:

- **Beginners** -- Basics such as grip, stance, ball position, and posture; Half swing & full swing techniques; Chipping, putting, long/mid/short irons, drivers and fairway woods

- **Intermediate** – Learn feel shots and how to hit the ball left, right, high or low; Work the actual flop shot; Learn the bub & run technique

**When:** Monday, Oct. 13, 20, 27 & Nov. 3, 10, 17

**Time:** 6:00 – 7:30 PM

**Where:** Duran Golf Club, Viera

**Cost:** $100 per single / $150 per couple

**Registration Deadline:** Wednesday, October 8th

**Registration:** Contact Vinny Cangiano @ (321) 626-8414 or email vlc@durangolf.com.
Save the Dates!!! 2008-2010 National Conference Schedule is here!
2008 National Conference Nov. 6 - 8, 2008 Baltimore, MD
2009 National Conference Oct. 15 - 17, 2009 Long Beach, CA
2010 National Conference Nov. 4 - 6, 2010 Orlando, FL

SWE-SC September Meeting Overview

Our September 9th meeting was held at the Beautiful Duran Golf Club Restaurant. Our speaker, Scott Colloredo of NASA, gave a detailed presentation on the Constellation program and it's many components. We had nearly 60 members, non-members and guests at the event, and all thought the presentation was excellent. The slideshow from the meeting has been posted on our website if you missed it (although the narrative had much of the key information). Many of our members had excellent questions for Scott - and some even helped answer questions from the floor.
ACROSS
1. Chemical symbol for thallium
3. Transmission line buried in a substrate
6. International phonetic alphabet letter "L"
9. 1e-6 ms
15. Enhanced Graphics Adapter
16. Caused maximum current to flow
18. Beat Frequency Oscillator
19. First-in, first-out, abbr.
21. A keyboard key
24. Network department, abbr.
25. Transmission Control Protocol
26. A trigonometry function
28. ______ cosine filter
29. Constellation : The lion
30. Switch position
31. Bluetooth modules & ICs vendor in Richardson, TX
32. Type of microwave diode
33. Total Radiated Power
36. Moved a surface remotely
39. Circuit element connecting PCB layers
41. The bending of electromagnetic energy
42. Boolean expression, pl.
44. IEEE802.11, FCC Part
15, or MIL-STD-202, for example
45. Chemical symbol for antimony

DOWN
1. Chemical symbol for thallium
2. The "L" in ADSL
4. Unit of volume
5. Project box
7. High power microwave amplifiers
8. Automatic network analyzer, abbr.
10. Half of DSB
11. 30 GHz to 300 GHz
12. Caused the temperature to drop
13. Type of logic gate
14. Specifies system parameters
17. Effect caused by a nonlinearity
20. Calculus operation, pl.
22. Electronic document imager
23. Characters Per Inch
26. A plane figure enclosed by two radii of a circle and the arc between them
27. Automatic Level Control
30. Switch position
31. Bluetooth modules & ICs vendor in Richardson, TX
32. Type of microwave diode
33. Total Radiated Power
39. Circuit element connecting PCB layers
40. Boolean expression, pl.
43. Chemical symbol for antimony
Meet & Greet

Name: Kathleen Harer

Workplace... Retired from NASA for over 10 years but do some consulting in Safety and Technology Development areas

Profession... Degrees are in Aeronautics and Astronautics, Industrial Engineering, and Management (MBA) but most of career was in the safety, health and environmental field

Work Description... Consulting but most of time is now spent on volunteer activities: Space Coast Feline Network President, FIRST Florida Regional Competition Chair, SWE

How many years as a SWE member... Joined SWE as a student member of the University of Washington Student Section in 1968, so this is my 40th year in SWE.

Tell us a little about yourself... I spend most of my time doing volunteer work. I'm heavily involved with animal-related activities here in Brevard County. Space Coast Feline Network, of which I am President, is an organization dedicated to reducing the number of feral and stray cats in the County through an aggressive Trap-Neuter-Return (TNR) program. I have been involved with the FIRST robotics program for over 10 years. I've served as a judge for regional competitions here in Florida as well as other locations throughout the US and Canada. I currently chair the Florida Regional Competition Committee as we prepare to welcome 63 teams from throughout the world to UCF next March 12-14, 2009. I'm proud to have been a founding member of the Space Coast Section, as well as a founding member of the Smoky Mountain Section when I lived in Tennessee. I was President of SWE in 1987-88, 20 years after I joined SWE as a student member. This was also when we had our Annual Conference in San Juan, Puerto Rico, the first and only time that event was held outside of the continental US.

Message to SWE Members... I encourage everyone to find a way to be involved with SWE, whether at the section, regional or national level. Both you and SWE will benefit.
The SWE-SC Newsletter presents:

**New!!! Travel Bug**

Our newest section where your pictures are the stars!

We want to know where our members have been. Where are they going? What fun things are they up to? Send us your pictures along with a caption of picture content and your picture could be featured in a future edition of Travel Bug. To shy to submit a pic of yourself? Show us your family or a scenic shot! So take out those cameras and start snapping away!

Send your pictures to Ivette @ ivette.rivera-1@nasa.gov
Travel Bug

What did you do this summer? Send us your pictures!

Shelley Stone & her family went on a UK adventure and snapped this picture in Inverness, Scotland.
This Month in Engineering History

October 1981

During the fall of 1981, IBM introduced the IBM PC 5150. At the time, Apple and Tandy dominated the minicomputer market with a combined 39 percent share. The announcement in 1980 that IBM would soon produce a personal computer immediately put IBM in the lead. The first PCs ranged from $1,565 for a stripped-down system to $4,500 for a full business system with color graphics, two docks and a printer. Depending on the model, the machine could store 16,000 to 260,000 characters in memory. IBM projected sales of 240,000 units for the first five years. The PC hit that goal in the first couple months.
Engineering Marvels

The Taj Mahal

It was built by the Mughal emperor Shah Jahan (reigned 1628-58) to immortalize his favourite wife, Mumtaz Mahal. She died in childbirth in 1631, after having been the emperor's inseparable companion since their marriage in 1612. The construction of Taj Mahal begun soon after Mumtaz's death with the principal mausoleum completed in 1648. The surrounding buildings and garden were finished five years later.

The five principal elements of the complex—main gateway, garden, mosque, jawab, and mausoleum (including its four minarets) — were conceived and designed as a unified entity according to the tenets of Mughal building practice, which allowed no subsequent addition or alteration. Building commenced about 1632. More than 20,000 workers were employed from India, Persia, the Ottoman Empire, and Europe to complete the mausoleum itself by 1639; the adjunct buildings were finished by 1643, and decoration work continued until at least 1647. Construction of the 42-acre complex spanned 22 years at a cost between five million rupees.

Fast Facts:
- In 1983, The Taj Mahal was designated a UNESCO World Heritage Site.
- The marbel dome’s height is about the same size as the base of the building, about 35 meters.
- Muslim tradition forbids elaborate decoration of graves and hence Mumtaz and Shah Jahan are laid in a relatively plain crypt beneath the inner chamber with their faces turned right and towards Mecca.
- For security reasons only five items - water in transparent bottles, small video cameras, still cameras, mobile phones and small ladies' purses - are allowed inside the Taj Mahal.
7 Ways to Mess Up Your 401(k)
by Liz Pulliam Weston

In many ways, the 401(k) picture looks bright.

Most folks who have access to a 401(k) take advantage of their workplace retirement plans. Average balances are up over the past few years. And workers seem to have finally gotten the message that company stock is not their best investment option.

But millions of workers are still blowing it every day when dealing with their retirement plans. Here are the seven biggest blunders you can make:

1. Not Signing Up

There's simply no reason not to participate in a plan that's even halfway decent, yet one out of four eligible workers fail to sign up. Participation among young workers is even more dismal: Only 48% of those aged 20 to 29 are enrolled, according to Hewitt's survey of large plans. That's just dumb.
2. Missing out on the full company match

The typical large-company plan matches 50% of your contributions, up to 6% of your salary. Your match may not be as generous, but it still makes sense to take maximum advantage of what essentially is free money -- and 22% of you don't. Don't think you can afford to contribute enough to get the full match? You're probably wrong. Each dollar you don't put into a company retirement plan is subject to federal, state and local income taxes. So if you're in a 30% combined (federal and state) tax bracket, each buck you toss into a 401(k) will reduce your paycheck by just 70 cents. If you're afraid of going whole-hog, just inch your contribution up each quarter by 1% more of your salary. Most people can compensate for the decreased income by bringing lunch from home one or two more times each week.

3. Taking too little risk

About 15% of participants don't invest anything in their available 401(k) stock choices. It's understandable that some people would want to lighten up on stocks, either because they were approaching retirement or they learned they weren't quite as risk-tolerant as they thought. But few investors will be able to reach their retirement goals without any exposure to equities. Leading financial planners believe the average investor needs to keep at least half of his portfolio invested in stocks, regardless of age, if he wants an adequate income in retirement.
7 Ways to Mess Up Your 401(k) (cont.)

4. Taking too much risk

At the opposite end of the scale are the investors who overload on stocks. Nearly 40% put all or nearly all of their money into their 401(k) equity funds or into their company's stock, with little exposure to fixed-income investments. During the go-go years, it was popular to opine that only old folks needed bonds. The stock market swoon, however, proved that most investors can benefit from the cushioning effect of bonds and cash. The classic balanced portfolio -- 60% stocks, 30% bonds and 10% cash -- is a good starting point for most investors. You can ratchet up the stock exposure if you're young or aggressive.

5. Drinking the company Kool-Aid

In 1999, before Enron flamed out and took many of its workers' retirement dreams along with it, company stock made up 19% of 401(k) assets nationwide. That percentage has since shrunk to 11%. The Enron debacle pounded home the point that you do not want your retirement account riding on the same company that provides your job. Yet many people still falsely believe that their company's shares are somehow less risky than a diversified mutual fund. Some 33% of workers who were offered company stock as an option put more than 20% of their 401(k) money there. If you must invest in company stock, try to limit the overall investment to 10% of your balance. If your company matches your contributions with its own stock -- invest all of your own money elsewhere.
7 Ways to Mess Up Your 401(k) (cont.)

6. Taking out loans

What seems like a great idea -- Borrow your own money! Pay yourself interest! -- has plenty of traps for the unwary. The biggest pitfall is the risk you take should you lose your job. Your loan would become due, and, if you couldn't pay it back at once, you'd typically owe income taxes and penalties on the unpaid balance. The interest rate you pay yourself may be lower than what you would pay most other creditors, but paying yourself interest is no substitute for the real return you would be earning if you had invested those payments instead.

7. Cashing out

Next to not signing up, cashing out your 401(k) when you leave a job is the dumbest move you can make with a retirement plan. Yet 45% of the 160,000 401(k) participants surveyed in 2005 did just that. The cash-out rates were highest among workers in their 20s. Nearly two-thirds of these workers raided their 401(k) accounts rather than rolling them over to individual retirement accounts or their new employers' plans. They doubtless think they have years to save for retirement, so why not enjoy the cash now? But the younger you are, the bigger the price you pay for a 401(k) cash-out. That's because your money, had it been left alone, could have earned tax-deferred returns for decades. That $10,000 you cashed out at 25 could have netted you $200,000 or more in retirement cash, assuming an 8% average annual return and retirement at age 65. Then there's the tax bite: Combined, the income taxes and penalties you pay typically equal a quarter to nearly half of your early withdrawal. Your 401(k) money isn't a windfall to be blown on vacations or cars or anything else that will be long forgotten by the time you're 65. This money may be all you have to live on. So treat it with some respect, people.
How do some people fall into the job of their dreams even when they aren't looking for it? Why does it seem like everyone you know is gaining momentum in their career, while yours is stuck at a standstill? And why are you combing through job openings online when everyone else claims to be getting jobs based on the help of "someone they know"?

You've asked yourself these questions a thousand times and found no answer. Like most people, you hope for the best in your career, but have no idea what it takes to succeed. The secret to having a rewarding career, however, isn't as mysterious as many may think. The truth is all a person may need to do to get ahead in the world of work is become a better planner. The following page identifies four ways people can be more effective career planners.

In today's fast-paced, competitive job market, possessing one or two of these qualities won't cut it. People must develop the entire package to stay ahead of their competition and prepare for sudden career changes -- good and bad.
4 Secrets to Career Fortune (cont.)

Be active
• Do not rely on other people to make plans for you.
• Identify the career choices right for you, rather than accept others’ suggestions or whatever job is available at the moment.

Get involved
• Discuss your career with family, friends and knowledgeable people as they relate to your career interests.
• Learn more through career research, job shadows and informational interviews.

Make compromises
• Look for new opportunities and realistically appraise your career options.
• Understand that you will have to make some sacrifices, such as accepting a job that pays a hundred grand a year, but may only come with two weeks of paid vacation.

Set goals
• Use short-term goals as benchmarks to stay motivated toward reaching long-term goals.
• Review and revise goals to meet your current needs.
Looking for energy improving solutions for your home? It's a good idea. You'll realize the perks of long term cost savings for your pocketbook and the added benefit of promoting a green environment. Here are some energy improving solutions to get you started.

• Tame those high electricity bills by sealing air leaks and installing additional wall and roof insulation.

• Keep the temperature of your water heater down to 120 degrees Fahrenheit. It'll be hot enough for every day usage, but will keep your bills down.

• Use light bulbs that are Energy Star CFL wherever you have a tendency to flick on the light switch.

• Check with your local utility company to see if they offer any discount programs for meeting certain energy requirements.
“You are what you eat” is probably never more apparent than soon after you eat a convenient, good-tasting junk-food meal. Most of the time you begin to feel tired, your mood sinks, your brain feels foggy, and you may even feel hungry again, not to mention all the guilt you have for putting things into your body that you know will move you toward sickness and disease.

You may feel a strange sensation on the roof of your mouth, a signal that you are harming yourself. Pay attention to the signals and clues your body is giving you, especially after you eat unhealthy food.

The more that you eat a diet full of sugar, grains and bad fats (especially trans fats), the more you are impairing your brain’s ability to “hear” the biochemical signals that tell it to stop eating and storing fat—a good indication of why there are an increasing amount of obese people now.

These signals come from the hormones insulin and leptin, and their job is to, among other things, control your metabolism. Insulin works mostly at the cellular level, telling the vast majority of your cells whether to burn or store fat and sugar, and whether to utilize that energy for maintenance, repair or reproduction. Leptin, on the other hand, sends signals that reduce your hunger, increase fat burning and reduce fat storage.
Food for Thought

“Mom’s Turkey Meatloaf”

- 3/4 cup quick-cooking oats
- 1/2 cup skim milk
- 1 medium onion, peeled
- 2 pounds ground turkey breast
- 1/2 cup chopped red bell pepper
- 2 eggs, beaten
- 2 teaspoons Worcestershire sauce
- 1/4 cup ketchup
- 1/2 teaspoon salt
- Freshly ground black pepper
- 1 (8-ounce) can tomato sauce

Preheat the oven to 350 degrees F.

In a small bowl, stir together the oats and milk. Thinly slice 1/4 of the onion and set aside. Finely chop the remaining onion. In a large bowl combine the turkey, oat mixture, chopped onion, bell pepper, eggs, Worcestershire sauce, ketchup, salt and a few grinds of pepper. Mix just until well combined.

Transfer the mixture to a 9 by 13-inch baking dish and shape into a loaf about 5 inches wide and 2 1/2 inches high. Pour the tomato sauce over the meatloaf and sprinkle with the sliced onions. Bake for about 1 hour or until an instant-read thermometer registers 160 degrees F. Remove from the oven and let rest for 10 to 15 minutes before slicing.
SPACE COAST SECTION SWE MISSION

Our mission is to inform the community of opportunities open to women in engineering and to encourage women to enter and grow in engineering and the sciences.

Society of Women Engineers
Space Coast Section
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