

SpaceTEC[®]

National Aerospace
Technical Education Center

Talk

FALL 2008

SpaceTEC[®] Member Institutions

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(California)

Antelope Valley College
(California)

Brevard
Community College
(Florida)

Calhoun
Community College
(Alabama)

Community College
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(Alabama)

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(New Mexico)

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(Washington)

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(Ohio)

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District
(Texas)

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Community College
(Virginia)

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SpaceTEC[®] Conducts First Aerospace Workforce Microgravity Training Program

Over 80 technicians, engineers, and scientists participated in the first Florida Aerospace Microgravity Training Program developed by SpaceTEC through a grant from the Brevard Workforce Development Board. These individuals represented technicians, engineers and scientists from Boeing, Computer Sciences Raytheon, Harris, Lockheed Martin, NASA, Pratt & Whitney Rocketdyne, SAIC, Bionetics, United Launch Alliance, United Paradyne, United Space Alliance, and Wyle Labs.

The participants were instructed on the activities to be performed during the missions. The first activity was an action-reaction activity that involved interacting with a small foam capsule during the first few parabolas. The next was a fluids activity that included a "density bottle" filled with oil and water to show how microgravity affects fluid mixing. The capstone activity included the use of space station medical kits provided by Wyle Labs. The participants were required to apply a bandage during the parabolas.

The missions were a success, and 15 of the participants were trained as "Workforce Coaches" to support future programs. The following represent what a few of the participants and their employers had to say about their experience.

- "This program showed me that even though something can be taught and you believe you understand it, you really don't have a grasp on microgravity until it's been experienced."
- "Training was a big morale boost for those who took the 0-G training. None of us will ever fly in space so this is the closest any of us will ever get. All should get the chance prior to Shuttle program end!!!!"
- "Learning about microgravity in the classroom and then having the opportunity to practically apply that knowledge has changed the way I think about astronauts living and working in space. It definitely opened my eyes to a whole new set of problems that need to be considered for long term space travel!"



SpaceTEC® Supports Super Loki Launch from CCAFS

A suborbital “Super Loki” rocket was launched by Space Florida with support from the Air Force 45th Space Wing, University of Central Florida and SpaceTEC, marking the resumption of Super Loki launches from the Cape Canaveral Spaceport.

Space Florida has a large inventory of Super Loki rockets and hopes to use them to support a robust educational university payload launch program. SpaceTEC is responsible for maintaining Launch Complex 47 for these types of launches and plans to incorporate these activities into Brevard Community College and other educational partner’s aerospace programs.



SpaceTEC® Comes to the Northwest

In partnership with SpaceTEC, Edmonds Community College ushered in a new era in aerospace history: SpaceTEC® Aerospace Technician Certification became a reality for eight individuals.

David Friction, SpaceTEC certification coordinator, conducted certification exams at the Materials Science Department in Monroe Hall at Edmonds Community College. Dave certified: Gary Coykendall, Jason Sawatzki, Earl Brown, Christopher Meade, David Wood, Harry Frick, David Dobrich and Joseph Meek as SpaceTEC Certified Aerospace Technicians.

Edmonds Community College (EdCC) Materials Science department, under the direction of Mel Cossette, has been instrumental in bringing SpaceTEC certification to Washington and the surrounding areas. With the large aerospace industry in the Northwest, the SpaceTEC Certification is a positive indicator of the skills, abilities and knowledge possessed by the Washington State workforce which can be an asset to manufacturing industries.

EdCC, a SpaceTEC partner, has also recognized the SpaceTEC certification through its Prior Learning Assessment program. To individuals who successfully complete the SpaceTEC certification, Edmonds will award up to 24 credits towards an Associate of Applied Science-Transfer Degree (AAS-T) in Aerospace Manufacturing, or up to 12 credits towards an AAS-T in Materials Science Technology.

Discussions are currently underway with local officials of the International Association of Machinists (IAM District Lodge 751) to provide this certification opportunity to their members.

On a national level, Edmonds has taken the lead in the development of a specialty concentration certification focused on composites, which is currently in the early stages of validation. Mel Cossette and Gary Coykendall (Edmonds) in collaboration with Pat Taylor (Thomas Nelson Community College) and Maggie Drake (Antelope Valley College) are developing the specialty certification which will be modeled after the Aerospace Core Technical Certification.

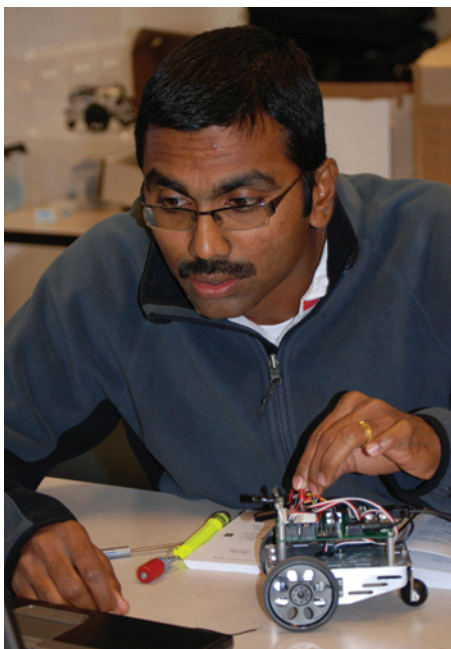


David Friction presents SpaceTEC Certified Aerospace Technician Certificates. (Top Row) David Friction, Gary Coykendall, Jason Sawatzki, Earl Brown, Christopher Meade, (Bottom Row) David Wood, Harry Frick, David Dobrich. (Missing Joseph Meek)

Allan Hancock Student Turns Passing Interest into Career Choice

Intrigued by a news release he found on the Allan Hancock College (AHC) website, Saji Mathew enrolled in the Summer 2008 Mechatronics Institute, an educational outreach activity supported in part by NSF SpaceTEC. Having worked for various airlines for many years, Mathew felt that it was time for a career change.

"This is something new," Mathew said while at the Institute. "I don't have any background in this, but so far, it is working for me." Mathew currently is enrolled as a full-time student at AHC, pursuing an associate of science degree in mechatronics. Two SpaceTEC national technical core courses, Space 104, Quality Management Control and Safety (3 units) and Space 128, Materials and Processes (3 units), are embedded within the mechatronics certificate and degree program.



Saji Mathew

SpaceTEC® Certified Aerospace Technicians approaching 300

SpaceTEC is pleased to announce it is nearing the milestone of 300 SpaceTEC Certified Aerospace Technicians, nationwide. Currently, SpaceTEC has certified 288 technicians. Over the past several months, SpaceTEC has also added seven new companies to the list of those employing certified aerospace technicians.

In addition to the 288 certified technicians, SpaceTEC has also registered and provided Readiness Course packets to an additional 200 individuals. These individuals will complete their testing process before the year's end.



New Program Gives Students First Look at Building Robots

Through the support of SpaceTEC, over 40 College Now students at North Central State College (NCSC) will for the first time learn to build robots and learn about airfoils and aerospace technology in their studies at NCSC. All of the coursework will be for college credit, and specific materials science coursework will be delivered through a "Differentiated Classroom" with the use of an avatar.

First North Alabama Regional Aerospace Technician Appreciation Night Held

Calhoun Community College, along with six industry partners and support from SpaceTEC Headquarters, hosted the first North Alabama Regional Aerospace Technician Appreciation Night on August 19, 2008. It was particularly appropriate that the venue for the event was the U. S. Space and Rocket Center's *Davidson Center for Space Exploration* under one of the remaining Saturn V launch vehicles designed to transport men to the moon during the Apollo Program in the 1960s.

The evening's events highlighted the special historical significance of the facility and the equally important impact of aerospace technicians' contributions to our nation's space program. Close to 400 technicians and their guests, from ATK, Boeing, ERC, InfoPro, Qualis and ULA attended. Included in the 400 technicians and guests were 56 Core Certified Aerospace Technicians in the north Alabama area as well as several Calhoun Aerospace Technology program students.

Jim Swindell welcomed and thanked the technicians for the incredible work they do by saying, "Your job will be even more important as our country makes plans to return to the Moon and on to Mars and beyond. At Calhoun Community College, we are on the forefront of providing an academic and hands-on educational experience, including options in cooperative education, industry training and certification of aerospace technicians."

Dr. Al Koller, Jr., former NASA engineer, program manager, and retired SpaceTEC executive director, also addressed the technicians. "You made history tonight as a pioneer in the program to certify aerospace technicians, and your recognition opens a new chapter for all those who do the day-to-day technical work that is so vital to our nation's continued success in space. Without you and dedicated technicians like you with the requisite skills and competencies to carry our space programs forward, we would be unable to maintain



Dr. Al Koller

leadership in critical technical areas for our country's ground-breaking space programs. Because of you we continue to **reach for the stars**, keeping our promise to learn more about space and fulfilling our destiny to explore the Universe."

Jim Halsell, former astronaut and ATK vice president of Space Explorations Systems, joined ATK Launch Systems following a 26 year career in the U.S. Air Force. While in the Air Force, Jim was an F-4 pilot and a Space Shuttle astronaut where he flew five Shuttle missions – three as a mission commander, logging over 1,500 hours in space. Jim now leads the ATK team in Huntsville in support of the Marshall Center's development of the Ares I and Ares V launch vehicles and told the group, "You can have the best engineers in the world, but their work will be worthless if you don't also have experienced and knowledgeable aerospace technicians to turn the engineering drawings into actual hardware that can perform as designed."

Stephen A. Cook, manager Ares Projects, NASA Marshall Space Flight Center, is responsible for overall project management direction of NASA's Ares I crew



Davidson Center for Space Exploration – U.S. Space and Rocket Center

continued



Jim Halsell

launch vehicle and NASA's future Ares V cargo launch vehicle and Earth Departure Stage. Steve held the audience's attention with a 15 minute visual of the Ares program along with remarks about the future in space.

The event also included awards to technicians. Each sponsoring SpaceTEC industry partner was given the opportunity to select a company Aerospace Technician of the Year. This activity recognized local technicians who have performed above and beyond the usual requirements of depth and breadth of expertise, quality of work, demonstrated safety adherence and continuous professional improvement.

From this group, the 2008 Regional Technician of the Year was chosen. This award will be given annually to one individual chosen from the select group of local company technicians, nominated by



Steve Cook



Boeing's Technician Barry Wilson

participating employers as being among the "Best of the Best" in Aerospace Manufacturing within the Tennessee Valley region. ATK Launch has donated a \$500 cash award for five years.



Troy Daugeette receiving the North Alabama Regional Aerospace Technician of the Year Award

A panel of representatives from sponsoring industries selected Troy Daugeette as Regional Aerospace Technician of the Year for 2008. He was also recognized for this award at the Huntsville Association of Technical Societies (HATS) Professional of the Year Award (POY) on Sept 9, 2008, where HATS member organizations publicly recognize one of their own for exceptional professionalism.



ERC's Technician Ralph Keller



InfoPro's Technician Steve "Bo" Jones



Qualis' Technician Scott Hamm



ULA's Technician Regina Corcoran

FAA Extends Welcome Mat to AVC Electronics Students

After a seven-year stint with the Army — including a one-year tour in Iraq — Leonar Colindres was ready to spend more time with his wife and children. He was faced with the issue of how his skills as an infantry staff sergeant would help him get a civilian job. And, like thousands of soldiers before him, he turned to college to acquire job skills.

"I really didn't know what to do. My counselors said 'Why don't you try electronics?'" Colindres said. With that, he enrolled in electronics technology courses at Antelope Valley College (AVC) in spring 2006. Today, thanks to a cooperative program between the college and the Federal Aviation Administration (FAA), Colindres just started a full-time job with the FAA in Palmdale.

Four other AVC electronics students have been offered internships that could eventually lead to full-time job offers from the FAA. "I think over the last 10 years we've actually hired 18 students from (AVC's) program," said Elmore Wigfall, FAA technical operations manager for the Los Angeles District. "Some of the best techs over here came from the program."

The venture is the Collegiate Training Initiative (CTI), a nationwide program between select colleges and the FAA that enables electronics students to get internships and, potentially, full-time jobs with the agency. "Since the FAA systems are actively involved in air traffic control operations, the reliability of those systems is critical," said Maggie Drake, AVC dean of technical education. Drake has first hand experience working as a technician with the FAA during the early part of her career.

"They have very high standards for the technicians that they hire. It is a credit to the quality of our program that we have so many former students succeeding with this agency," Drake said. Interns gain exposure to the multi-faceted electronics needs of the FAA, including communications, surveillance, and navigational aid for aircraft, engineering support and automation systems. "After that one-year of internship, they're eligible for direct hire right into the FAA," said Wigfall.

For anyone familiar with the involved process of acquiring civil service jobs, the CTI approach provides an attractive option. "They're easy to hire and they're good techs as well. (AVC) seems to get a mature group of people who are really looking for jobs," Wigfall said.

Wigfall noted the additional benefit to both the FAA and prospective employee is getting to see if the interns are a good match for the agency and vice versa. "I



Pictured left to right: Rick Motawakel, electronics instructor at AVC, and students Leonar Colindres, Nathan Bode, Francisco Ortega, and Omar Labra.

think the program as an outreach between the FAA and the community is an excellent one," said Wigfall. "It gives us the opportunity to go and recruit to bring in good people who will stay in the area."

For interns, it's the potential to get a job that has a minimum starting pay (which includes locality pay) of \$41,461 a year. Experienced technicians with several years experience at FAA can move up the merit pay system ladder to earn in excess of \$100,000 annually.

But the money is a secondary consideration to Colindres. "My whole goal in life is not to make money, it's to be happy. They've got a whole bunch of things you can move around into," Colindres said.

Among the four students invited to take part in the internship program is Nathan Bode, who is spending his summer alternating between taking an electronics course at the college and working as an intern at the FAA in Palmdale. Bode's been interested in electronics since he was a child. "My grandfather was an electronics technician and an electrical engineer. My dad was an electronics radio communication technician in the Navy," Bode said.

And, when Wigfall and his FAA associates came to AVC to discuss the internship program, Bode jumped at the chance. "It's a great opportunity and anyone who has the opportunity ... should take it," Bode said.

Wigfall said there are no guarantees of a job for Bode or the other three interns. Yet he is quick to add that he's "been successful about 98 percent of the time" in hiring interns for full-time jobs.

The FAA manager went on to explain that Palmdale is a challenging location to recruit employees. People outside of the area are not interested in moving here, he said. Thus the internships take on even greater

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significance for staffing in the district Wigfall oversees, which includes facilities at Boron and Dagget. "What we try to do is get people interested in electronics and we place them in our disciplines as needed," Wigfall said.

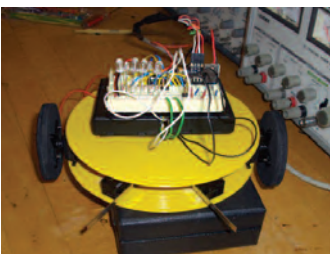
Rick Motawakel, AVC's full-time electronics technology instructor, said the success of students in the FAA program and elsewhere is helping revive an instructional program that lacked significant enrollment. Motawakel said about a third of his students are women. The profession offers a clean environment and is considered more of a "white collar" job, according to Motawakel.

"Right now there's a lot of need for electronic technicians out there," Motawakel said. He explained part of that demand is created by retirements. Furthermore, Motawakel said an engineering major graduating from a university would be hard-pressed to find an entry-level position that pays as much as some of the electronic technicians can earn with just a two-year degree.

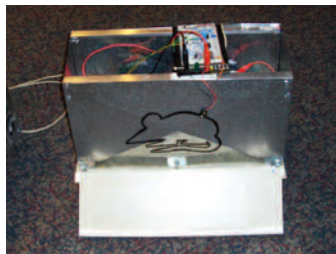
That reality isn't lost on Bode in his internship. "I'm five classes away from getting an A.S. (Associate in Science degree)," which will put him in line for possibly getting a job with the FAA.

New at NCSC – The Mechatronics Club

North Central State College Technology Chair Randy Storms gives credit to Engineering Design student Christie Rawls, who has been instrumental in the development of a new club at NCSC—the Mechatronics Club. The mission statement of the club states, "With changing technology there has to be a club to support the interests of students and enthusiasts in engineering. The Mechatronics Club is for students in aerospace, electrical, mechanical, or any other discipline who are interested in robotics or mechatronics. The club will participate in the National Robotics Challenge, possible field trips to various industrial sites and by holding our own competitions."



Maze robot designed by an Engineering student.



"Sumobot" for the National Robotics Challenge (2008)

WE R IT

For the third year North Central State College (NCSC) will host the annual Women in IT event at the NCSC- Kehoe Center in Shelby, on Friday, November 14, 2008.

Women in IT was the brainchild of the CISCO company, the world's leading supplier of networking equipment and network management for the Internet. CISCO is working with the National Center for Women in Technology to provide "students, parents and educators with a variety of tips for encouraging young women to excel in math, computing and technology, along with sample lesson plans for teaching computing to females."

This year over 25 two-year and four-year colleges will host Ohio's Women in IT event, a day-long seminar with hands-on activities designed to introduce young ladies to a variety of areas in science and technology fields. North Central State College – Kehoe Center will introduce the students to a variety of technologies in Aerospace, and 3-D Drafting, how learning can be done on-line, and other areas. As a follow-up, the Technology and Workforce Development Division will have an Open House on March 1, 2009.



2007 We R IT



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