

SpaceTEC[®]

National Aerospace
Technical Education Center

Talk

WINTER 2005

SpaceTEC[®] Member Institutions

Allan Hancock College
(California)

Antelope Valley College
(California)

Brevard
Community College
(Florida)

Calhoun
Community College
(Alabama)

Community College
of the Air Force
(Alabama)

Cuyahoga
Community College
(Ohio)

Embry Riddle
Aeronautical University
(Florida and Arizona)

Palm Beach
Community College
(Florida)

Pearl River
Community College
(Mississippi)

Prince George's
Community College
(Maryland)

San Jacinto College
(Texas)

Thomas Nelson
Community College
(Virginia)

Visit the SpaceTEC[®]
website at:
<http://www.spacetec.org/>

Message from the PI . . .

SpaceTEC[®] Celebrates Its Links to NSF, FAA, and DOL

By Dr. Al Koller, SpaceTEC[®] PI

This fall marked the mid-point of our third year as a National Science Foundation Center of Excellence, and we are celebrating in style! Meetings, an agreement, a new grant, and a monograph helped to define our national program.

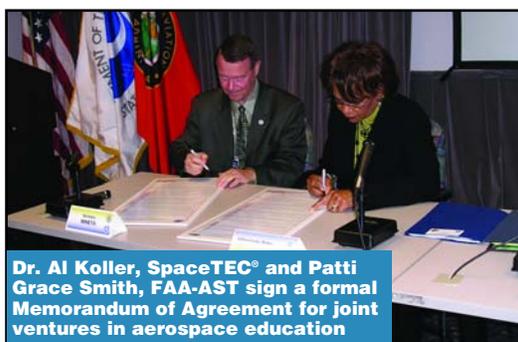
In September, members of the SpaceTEC[®] National Visiting Committee and our National Aerospace Technology Advisory Committee (NATAC) attended meetings at Spaceport Florida to hear about the plans for the rollout of our national technician certification examination "baseline". The Florida ATAC voted unanimously to commit \$5000 of their internal funding to purchase 100 exam vouchers to be used for Florida aerospace organizations sponsoring candidates to sit for both the written and oral/practical parts of the exam between December 1, 2004, and March 4, 2005. A total of 200 candidates will be offered the examination at no cost as part of the baseline process, which includes a complete assessment of the examination instruments and analyses to



NATAC Members at Allan Hancock College, Lompoc Campus

establish validity and reliability for follow-on work. Also in September, Co-PIs and representatives from all 12 SpaceTEC[®] partner colleges met in Lompoc, California, for a session with the NATAC to demonstrate the national examination process and review/approve its implementation at eight sites in five states (*see related article on page 2*).

As if that isn't enough to get us celebrating, we were honored to be a part of a signing ceremony for a formal Memorandum of Agreement with the Federal Aviation Administration's Office of Commercial Space Transportation on October 27th as part of the formal meeting of FAA's Commercial Space Transportation Advisory Committee (COMSTAC). This session was attended by a number of high-ranking aerospace and government officials, including Secretary of Transportation Mineta, FAA Administrator Blakey, and FAA Associate Administrator Patti Grace Smith.



Dr. Al Koller, SpaceTEC[®] and Patti Grace Smith, FAA-AST sign a formal Memorandum of Agreement for joint ventures in aerospace education

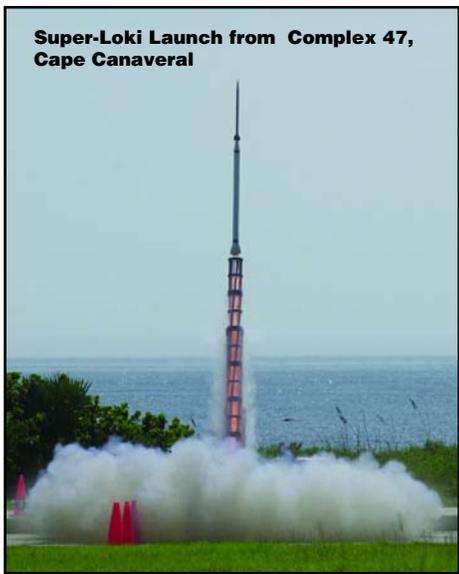
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SpaceTEC® Celebrates Its Links to NSF, FAA, and DOL, continued

The signing itself took place after a presentation on SpaceTEC® activities that was extremely well received, and large ceremonial copies of the Agreement have been signed and will hang in offices at FAA HQ in Washington D.C. and at SpaceTEC® HQ, Cape Canaveral, FL.

And if that's **still** not enough to make you celebrate, on that same day, George Strohm represented SpaceTEC® and Brevard Community College at a ceremony in Tampa, Florida, to receive a grant award of \$98,560 from Elaine Chao, Secretary of the Department of Labor, for support of student launches from Complex 47 at Cape Canaveral Air Force Station as part of the President's High Technology Job Initiative. We plan to partner with the Civil Air Patrol through the Community College of the Air Force to sponsor a national competition that will host the winners to a launch at Complex 47 next summer.

Last, but certainly not least, Dr. Pat Cunniff completed our monograph in time for these events. "Championing Tomorrow's U. S. Technical Workforce: A National Priority for Future Success" catalogs the SpaceTEC® project and the part each college has played. Copies are available upon request. Thanks, Pat!



Super-Loki Launch from Complex 47, Cape Canaveral

New SpaceTEC® Program Manager Named

Frank Margiotta was recently hired as SpaceTEC® Program Manager and replaces Dave Brotemarkle who retired on Oct. 29, 2004. Frank holds a B.S. from Colorado State University and an M.B.A. from the University of Central Florida. He is familiar with the SpaceTEC® program, having participated in the development of the original proposal to NSF.

Mr. Margiotta has broad business management experience and has led and implemented productivity, quality, and profitability programs, maintained and directed marketing and community relations



Frank Margiotta

activities, and written numerous successful requests for funding and technical proposals to both public and private organizations.

Welcome aboard, Frank.

Allan Hancock Hosts Fall 2004 SpaceTEC®/NATAC Meeting

The campus of Allan Hancock College in Lompoc, California, served as the host site for the fall 2004 combined meeting of SpaceTEC® Co-PI's and members of the SpaceTEC® National Aerospace Technology Advisory Committee (NATAC).

Activities on the agenda for the three-day meeting (September 28-30, 2004) included the signing of an articulation agreement between SpaceTEC® partner institutions Allan Hancock and Embry Riddle Aeronautical University; a briefing provided by Dr. Al Koller, SpaceTEC® principal investigator, to members of the NATAC; updates on the SpaceTEC® website, calendar and contact databases; and an overview on the new Technician Certification Program.

Members of the NATAC attending the meeting were Larry Goch, Air Force Association; Midge Davis, Barrios Technology; John Vickers, NASA; Marshall Heard, Florida Aviation and Aerospace Alliance; Geoff Schuler, Boeing-Alabama; George Grimshaw, Dryden Flight Research Center; and Jeff Little, Jacobs Sverdrup.

Representatives from the following SpaceTEC® member institutions were also in attendance: Allan Hancock College, Antelope Valley College, Brevard Community College, Calhoun Community College, Cuyahoga Community College, Embry Riddle Aeronautical University, Palm Beach Community College, Pearl River Community College, Prince George's Community College, San Jacinto College, and Thomas Nelson Community College.



SpaceTEC® Recognizes First National Core-Certified Aerospace Technicians

On Friday, December 10, 2004, two aerospace workers in Florida passed all three parts of the SpaceTEC® National Technician Core Certification Examination – written, oral and practical – to become the nation's first core-certified aerospace technicians. Stephen M. Blaschak, a United Space Alliance technician, and Jeffrey Duncan, a technician with the Lockheed Martin Titan Program, both graduated from the Brevard Community College (BCC) Aerospace Technology Program at ceremonies in Melbourne, Florida, with their national certificates in hand.

To help meet the need for training our nation's aerospace workforce, local representatives from government, labor, education and industry formed an alliance in November 2000 to develop the curriculum and educational programs needed to train the aerospace technicians of the future. Called ATAC (Aerospace Technology Advisory Committee), this group of leaders in aerospace recognized the need for an accredited teaching program for aerospace workers similar to the FAA licensing for avia-

tion mechanics. The result is a 70-hour accredited college program offered by BCC, culminating in an Associate of Applied Science degree or an Associate of Science degree in Aerospace Technology.

Along with an accredited technical training program, the ATAC helped in forming SpaceTEC®, a National Science Foundation Center of Excellence, based at BCC's Spaceport Center. SpaceTEC® operates a consortium of 12 colleges in eight states that have been developing an accredited National Technician Certification Examination. The exam is geared to test the basic knowledge and hands-on skills of an entry-level aerospace technician, serving as a quality control process for aerospace hiring practices.

The SpaceTEC® core certification examination process began on December 1 as part of the rollout of a national technician certification examination "baseline." A total of 200 candidates in five states will be offered the opportunity to take the test free of charge as part of the baseline-testing phase. Once the exam is validated through this testing process, it will become available for candidates at a cost of \$250.

The exam consists of both a proctored written exam and a

hands-on oral/practical test administered by a certified SpaceTEC® Examiner. The tests cover 1) Introduction to Aerospace, 2) Aerospace Safety, 3) Material & Processes I & II, 4) Basic Electricity, 5) Tests and Measurements and 6) Applied Mechanics.

Testing is open to candidates who have a qualifying two-year technical degree, an A&P Mechanics License, or at least 2 years of aerospace-related military or aerospace workplace experience. Reference materials are available and a sample exam can be seen at the SpaceTEC® website: www.spacotec.org. For more information, call the SpaceTEC® offices at (321) 730-1020.



From left to right: Dr. Al Koller, SpaceTEC® PI; Jeff Duncan, Lockheed; Steve Blaschak, United Space Alliance; and Rick Lengyel, lead SpaceTEC® examiner.





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To submit information for this publication, or to be placed on the mailing list, please write to the Office of Public Relations, Calhoun Community College, P.O. Box 2216, Decatur, AL 35609-2216, or call 256/306-2561.

www.spacotec.org

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Antelope Valley College Hosts Composites Workshop

Antelope Valley College (AVC) was the host for a Composites Techniques workshop for SpaceTEC® member colleges, June 28-30, 2004. Participants included faculty and administrators from Calhoun Community College, Palm Beach Community College, Brevard Community College, Thomas Nelson Community College, Allan Hancock College, NASA Dryden Flight Research Center and College of the Canyons in Santa Clarita, California.

Led by composites expert and AVC faculty Gary Eisenberg, participants shaped foam core B-2 Bomber models, covered them in graphic cloth, and finish-sanded them after curing. In all, participants were able to complete three different projects using three different composites techniques. Dr. Jon Saken of Palm Beach CC said, "By the end of the first day, I learned enough to completely redesign and expand the rocketry program we instituted at our college. Our students will now be able to launch larger rockets carrying heavier payloads by constructing the rockets completely from composites."

The workshop was held in the new Technology Education building composites laboratory. This laboratory also supports AVC classes for students wanting to learn aircraft



fabrication techniques. AVC started the Aircraft Fabrication program in fall 2003 in response to the need for well-trained employees for the local aerospace program. Tony Pinto, Brevard Community College, commented, "This composites workshop was very beneficial in learning techniques using hands-on experience. Excellent instructors and facilities."

After two days of hands-on learning, participants were treated to some very rare field trip opportunities. During the morning of June 30, a group of participants was allowed to tour Scaled Composites facilities in Mojave, CA. This included an up-close and personal viewing of SpaceShipOne and White Knight just one week after the first successful launch into space. That afternoon, participants toured the Northrop Grumman facility at Palmdale, CA. This tour included a rare peek at the B-2 Bomber, a walk around the Global Hawk unmanned aerial vehicle, and a walk through the Joint

Strike Fighter fuselage assembly area.

Antelope Valley College hopes to host another similar workshop in June 2005.



Aerospace Technology Focus of Recent High Tech Symposium

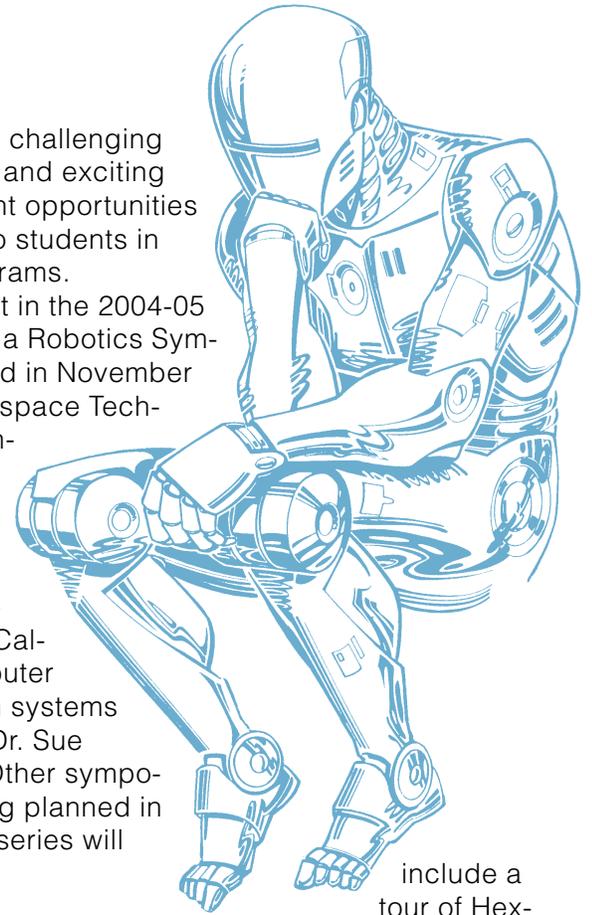
The Calhoun Community College Tech Prep High Tech Symposium Series is a Tech Prep initiative designed to provide opportunities for junior and senior high school students within the Calhoun service area to take part in a variety of work-based learning experiences. The series consists of five seminars presented over the course of the school year. Each symposium day focuses on the importance of technology in the industrial sector and the importance of Career/Technical Education in preparing to enter the workforce. Thirty-three students from city and county schools in Morgan, Limestone and Madison counties are participating in this year's symposium series.

Aerospace and electronics technology took front and center during the second symposium of the 2004-05 year. The one-day event in early December included tours of the Boeing Delta facility in Decatur, Wildwood Electronics in Huntsville and the Calhoun Aerospace and Advanced Electronics Manufacturing programs. Students were able to learn first-hand about aerospace component manufacturing at the component and large-scale assembly stages and see how the process ties back to skills learned in classrooms such as those in Calhoun's Aerospace and Advanced Electronics manufacturing programs.

The Boeing tour included a close-up look at the overall Delta IV assembly process. At Wildwood Electronics, students learned of the skills and equipment used to assemble components and manufacture assemblies for some of the world's most sophisticated aerospace and defense equipment, some of which are part of the Delta IV rocket. Back at Calhoun, instructor Sherman Banks dis-

cussed the challenging curriculum and exciting employment opportunities available to students in these programs.

The first in the 2004-05 series was a Robotics Symposium held in November at the Aerospace Technology Center on the Calhoun campus. Facilitator for the program was Calhoun computer information systems instructor Dr. Sue Mitchell. Other symposiums being planned in this year's series will



include a tour of Hex-

cel, a major composite material manufacturer; BP Amoco; and NASA's Marshall Space Flight Center. Each will include tours of the related technology programs at Calhoun.

The High Tech Symposium Series offers a variety of learning experiences from hands-on robotics construction to simulating operations in a chemical plant control room. Students who complete the series earn two hours of elective applied technology credit at Calhoun. For more information regarding the program, contact Tech Prep Resource Specialist Gwen Baker at 256-306-2665.



Students involved in Calhoun's High Tech Symposium series learn new skills in robotics. Tours of Boeing Delta, Wildwood Electronics and NASA's Marshall Space Flight Center were also part of the program.

Space Scholars Institute at Prince George's Community College

In an effort to strengthen recruitment into the college's Space Technology and Engineering Technology programs, Prince George's Community College sponsored its first Space Scholars Institute for 10th through 12th grade students. The two-week program, supported by SpaceTEC®, was held summer 2004.

Invitation letters were mailed in March to all principals, science supervisors, mathematics supervisors, and technology coordinators in the public and private schools in Prince George's County. The letter, with brochure, invit-



ed these school administrators to nominate eligible students for the program. The program set up the following criteria for admission: Completion of a minimum of one high school sci-

ence course with a grade of B or better; completion of Algebra I or higher level mathematics course with a grade of B or better; and letter of recommendation from high school teacher. Over 35 applications were received for the 22 available spots. The Selection Committee reviewed all applications and invited 25 students into the program (assuming that some would have made other plans and could not accept). Since we had a waiting list, all those invited were required to commit in writing to the program approximately one month before the program began.

The curriculum was predominantly hands-on and included an introduction to soldering, work on circuit boards, the making of an electronic "space bug", and the design of a robotic Mars Rover.

At the conclusion of the program, students were grouped into four teams. Each team selected a topic for its research presentation. These 10-15 minute team presentations were given at an evening program attended by approximately 100 parents and guests.

Two field trips were held, one to the Applied Physics Laboratory of



Johns Hopkins University to see their clean room, and the second to NASA Goddard to learn about Goddard's work with the Hubble Space Telescope.

Student evaluations of the program were excellent. Students indicated that they learned far more than they had anticipated, that they preferred the hands-on lab work to straight lecturing, and that they enjoyed working with other students from different high schools.

The college's public relations team was able to place over a dozen stories about individual students and the program in local newspapers in our county.

The college will host its second Space Scholars Institute during summer 2005. Recruitment will begin in early spring.

San Jacinto College's Aeronautical Technology Department Soars High

The Aeronautical Technology Department has been part of San Jacinto College for over 30 years. The department offers several options for a student interested in a career in aviation as a pilot, an aircraft dispatcher, or in aviation management. The department prides itself on the quality of training it delivers and on the mentoring environment that it provides for its students. One of the many supporters of the program is Sarah Bull. Sarah recently attended San Jacinto College and is in training for a pilot position with Continental's ExpressJet Airlines. When asked about her experience in the aviation program at San Jacinto College, Sarah says that her overall experience

was a good one; an experience in which the instructors seemed to look at learning from a student's perspective. She said it was easy to learn from the instructors because of the attention that they give to each student.

When asked about her experience as a female in an otherwise male-dominated field, Sarah says that she's never had any problems with gender differences in the course of her studies or now in her training as a pilot.

Sarah was a transfer student from St. Louis University who, after her time at San Jacinto College, transferred to Embry-Riddle Aeronautical University and is currently completing her studies there while training with ExpressJet.

Sarah is one of several students to undergo the transfer from San Jacinto College to Embry-Riddle and is an advocate of the upcoming articulation agreement between the two institutions.

The Aeronautical Technology Department recently said good-bye to its department chair, Larry Tucker, who moved to Embry-Riddle. At the same time, the college welcomes Bob Willhoite as the new department chair. Anyone interested in any of the programs that the department offers is encouraged to contact Bob Willhoite at (281) 476-1501, ext 1505, robert.willhoite@sjcd.edu, or Christy Mapes at (281) 483-1146, Christy.mapes@sjcd.edu.

Florida Lt. Governor Jennings Visits SpaceTEC® Offices

Florida Lt. Gov. Toni Jennings visited SpaceTEC® offices on Thursday, Jan. 6, 2005, in recognition of the aerospace program's accomplishments and to announce increased support for high skill/high pay training programs which address industry needs. Identifying SpaceTEC® as a national model of excellence in technician training, Lt. Governor Jennings praised the program for not only developing a local educational program with significant input and guidance from the aerospace industry, but also for developing nationwide partnerships that have strengthened aerospace technical education across the country.

Jennings said high tech training programs at community colleges are critical to future economic development, and praised BCC's aerospace technology program as a national model.

The high point of the visit was the recognition of Mr. Steve Blaschak and Mr. Jeff Duncan as the first two recipients of the SpaceTEC® National Core Certification (*see related article on page 3*). Both individuals are recent graduates of the BCC aerospace program and are currently employed within the aerospace industry.

Also in attendance were Florida Congressman Dr. Dave Weldon, 45th Space Wing Commander Col. Mark Owen, Florida Community College Chancellor David Armstrong, Brevard Community College President Dr. Thomas Gamble, NATAC members Marshall Heard, Adrian Laffitte, and Al Wassel, retired SpaceTEC® Program Manager Dave Brotemarkle and BCC Associate Director George Strohm, as well as NASA and industry representatives from Boeing, Lockheed Martin, United Space Alliance and others.

"SpaceTEC® has proactively stepped up to the plate to serve the needs of America's space industry by providing specific educational training and certification the workforce requires to help achieve our nation's space related goals... Steve and I are just the first of many who will soon hold the SpaceTEC® certification, as I am confident it will be the standard in the Aerospace industry."

— Jeff Duncan,
SpaceTEC® National Core
Certification recipient

"For a long time, I held a dream of working in the aerospace industry but without the proper employable skills, I always found myself on the 'outside looking in'... The two-year aerospace technician program at BCC, from which I graduated with an Associate of Science degree, gave me the knowledge and employable skills that I needed to become an Aerospace Technician... I expect the Aerospace Technician program and the SpaceTEC® certifications will become a benchmark for the aerospace industry, and I am proud to be a part of it."

— Steve Blaschak,
SpaceTEC® National Core
Certification recipient



Lt. Gov. Jennings greets BCC students in SpaceTEC® lab.



◀ **Certificate recipients with Lt. Gov. Jennings. Left to right: Steve Blaschak, Lt. Gov. Jennings, Jeff Duncan.**



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