



YEAR 2 THIRD QUARTERLY REPORT

May 1 – July 31, 2005

**CURRICULUM IMPROVEMENT
PARTNERSHIP AWARD PROGRAM**

Allan Hancock Joint Community College District

Name of Institution

Robert Alldredge, PI & Ardis Neilsen, Co-PI

Principal Investigator

Year 2
3rd Quarterly Report – May 1 through July 31, 2005

- 1.0 Name of Institution** Allan Hancock College (AHC)
- 2.0 Name of Principal Investigator(s)** Robert W. Alldredge, PI
 Ardis L. Neilsen, Co-PI
- 3.0 Name of CIPA Project** Mechatronics Curriculum Expansion Project
- 4.0 Project Activities**

A description of Year Two, third quarter activities is provided below.

Objective 1: To provide a summer youth Mechatronics Institute and Space Endeavour Camps featuring NASA curriculum in mechanical engineering, mechatronics, GPS, satellite tracking, and robots. Thirty minority students will attend. At least 50% will demonstrate a significant increase in knowledge.	
Status:	Achievement and ongoing progress noted.
Year Two, 3rd Quarter Progress	<p>With leveraged National Science Foundation “A STAR” funding and under the supervision of AHC Mathematics, Engineering, and Science Achievement (MESA) director Julie Niles, 16 statewide underrepresented college and university students attended the Mechatronics Institute, taught by returning instructor Dr. Ed Avila, July 11 – 24. With newly acquired knowledge and hands-on experience, these Mechatronics Institute “graduates,” in turn, mentored 15 underrepresented high school students – 12 of whom completed the four-day program – during the following week, July 18 – 21. Bob Alldredge, NASA CIPA Principal Investigator and electronics faculty member, provided support and oversight throughout the two sessions of the Mechatronics Institute offered this summer. Analyses of pre- and post-course surveys as well as a review of evaluation forms are currently being conducted to assess curriculum content and effectiveness, and results will be reported at year end.</p> <p>With NASA CIPA funding, a total of 15 underrepresented junior high school students were given the opportunity to attend a week-long Space Endeavour Camp, held at the Endeavour Center, a certified NASA Teacher Resource Center, at Vandenberg Air Force Base. Nine students attended during the July 18 – 22 session, and six more will be participating during the August 1 – 5 session. As is the case with the Mechatronics Institute, participants of the Space Endeavour Camps will offer individual evaluation of their week’s experience, and program effectiveness will be assessed through analyses of pre- and post-camp surveys. Results will be reported at year end.</p>

Objective 2: To increase the ability of the electronics faculty to quickly assess students' electronics skill levels and knowledge to facilitate student academic success. Purchase four NIDA workstations. Train 30 students per semester. Develop an open access electronics lab. Increase Hispanic student success rates by 5% per semester from fall 2004 to fall 2006.	
Status:	Achievement and ongoing progress noted.
Year Two, 3rd Quarter Progress	<p><u>NIDA Electronic Consoles/Workstations</u></p> <p>During this reporting period, an additional NIDA console was acquired for the electronics lab with leveraged funding, along with various electronics lab/experiment cards. The electronics lab now houses nine state-of-the-art NIDA consoles.</p> <p><u>Fall 2004 Underrepresented Student Retention & Success Rates and Spring 2005 Enrollment Data and Student Retention & Success Rates</u></p> <p>Data are being compiled and will be included in future reports.</p>

Objective 3: To partner with the Endeavour Center, a NASA Teacher Resource Education Center, to infuse NASA curriculum into the college's electronics program and to provide professional experience opportunities for students	
Status:	Achievement and ongoing progress noted.
Year Two, 3rd Quarter Progress	<p><u>CURRICULUM DEVELOPMENT/EXPANSION</u></p> <p>Principal Investigator Bob Alldredge continues to develop an A.S. degree and certificate option in Mechatronics. The degree and certificate proposal will be submitted in spring 2006 for institutional review and approval by AP&P, in advance of targeted fall 2006 implementation.</p> <p>Development of a NASA website informing viewers of the AHC Mechatronics Expansion Project is nearing completion. Mr. Alldredge targets September 2005 as the date for uploading to the Internet.</p> <p>A new noncredit class in Vocational English as a Second Language (VESL) Introduction to Electronics course has been approved and is currently advertised in the fall 2005 <u>SPECTRUM</u>. This course will introduce a pathway for underrepresented students, ages 18 and over, to eventually transition to credit electronics and mechatronics curriculum. CalWORKs funds were leveraged to support new curriculum development. Ardis Neilsen and Bob Alldredge worked jointly to develop the new course and recruit and hire new bilingual instructors.</p>

EDUCATIONAL OUTREACH & PROFESSIONAL EXPERIENCE /DEVELOPMENT OPPORTUNITIES

Year Two,
3rd Quarter
Progress

AHC, supported by its community partner, the Endeavour Center, offered Space 179, NOAA-N Satellite Educators' Launch Workshop for ½-unit credit at Lompoc Valley Center on May 10 – 11, 2005. Seventy-five statewide K-12 and college educators enrolled in the course and engaged in workshop and conference activities relevant to NASA's launch of the polar orbiting NOAA-N earth imaging satellite at Vandenberg AFB. Altogether, 105 individuals participated in the event, including six workshop presenters from NASA Jet Propulsion Laboratory; Paso Robles, CA and Los Gatos, CA high schools and Florida State University; 10 AHC MESA student volunteers; and evening keynote presentations by Jim Kennedy (NASA KSC Director); Dr. Colleen Hartman (Deputy Assistant Administrator for Satellite and Information Services, NESDIS/NOAA); Michael Mignogno (Polar Program Manager, NESDIS/NOAA); Capt. Joe Orlandi (Delta Flight Deputy Commander, 2nd SLS/30th Space Wing); Dr. James Crocker (VP of Civil Space, Lockheed Martin Space Systems); and Dr. Scott Messer of The Boeing Company. A variety of elementary through college curricula and educator resource materials were made available to conference participants by each of the six workshop presenters, as well as by Nina Jackson (Education Program Manager for NESDIS/NOAA) and Endeavour Center staff.

Principal Investigator Bob Alldredge and Co-Principal Investigator Ardis Neilsen have participated in numerous meetings involving educational, commercial, military, and government entities, to impart awareness of the industry-driven curriculum advances that have recently been implemented and continue to be developed in the electronics program, thanks to generous leveraged funding through NASA CIPA and other sources. The strategies developed to increase enrollment, retention, and success rates of underrepresented, educationally disadvantaged student populations continue to be implemented and promoted throughout the community. The following represent opportunities capitalized upon for partnership growth and enhancement opportunities:

May 5: Ardis Neilsen discussed space-related curricula and grant program services with General Lance Lord, commander of the Air Force Space Command, at a luncheon meeting attended by education, community, and Air Force leaders.

May 25: NASA CIPA support staff member Margaret Lau met with CMSgt Richard Blevins, a potential lead instructor for Space courses at Vandenberg Air Force Base.

July 25-29: Bob Alldredge, Ardis Neilsen, and Margaret Lau participated in the NASA NAFF, JPPF, and CIPA Technical Exchange Symposium held in San Jose, CA.

Objective 4: To expand the partnership with the NSF SpaceTEC Consortium to share curriculum, employment research information, and national cost effective strategies to provide training to new technicians.	
Status:	Achievement and ongoing progress noted.
Year Two, 3rd Quarter Progress	<p>Five thousand copies of a new, four-color brochure which promotes the A.S. degree and certificate program in Electronics Technology – Space Operations have been printed, supported by NSF SpaceTEC grant funds.</p> <p>AHC honored its first five recipients of the SpaceTEC national core aerospace certificates at an awards presentation and reception on June 23. Outgoing college president, Dr. Ann Foxworthy, and board president, Henry Grennan, presented the certificates to the honorees. Joining them in congratulating the honorees and their family members were Board Trustee Bernard Jones; Student Trustee Richard Terry; several AHC administrators including Ardis Neilsen; electronics and engineering faculty members, Bob Alldredge and Dom Dal Bello, respectively; NSF SpaceTEC staff members; and numerous supervisors, Air Force squadron leaders, and other Vandenberg AFB superior officers. The five honorees are Denis Kellermann, Jay Patton and Dan Romeyn of Lockheed Martin Technical Operations; and TSgt Dean Krambeck and MSgt Stephen Hrkach of the 532nd Training Squadron, 30th Space Wing at Vandenberg AFB.</p> <p>Partner colleges in the NSF SpaceTEC Consortium have developed core aerospace certification refresher course curriculum (1 unit). Refresher course materials have been distributed to the 15 local SpaceTEC baseline participants for self-study purposes in advance of their second attempt at passing the written component of the SpaceTEC certification, as allowed by virtue of their status as baseline certification participants.</p>

5.0 Personnel Changes

As of July 1, 2005, NASA CIPA Co-PI Ardis Neilsen has been appointed Dean, Noncredit Education & Community Programs at Allan Hancock College. José Ortiz, Ph.D., began his tenure as Superintendent/President of Allan Hancock College on July 5, replacing Dr. Ann Foxworthy, who retired after 13 years of distinguished service in that capacity.

6.0 Expenditures

\$41,609 of Year 2 funding remains to be expended as of July 31, 2005. Expenditures to date have been accrued in personnel, equipment, supplies, K-14 outreach, and travel.

7.0 Additional Remarks

None.



AHC MESA student volunteers and faculty/staff members support the NOAA-N Educators' Launch Conference. May 10 – 11, 2005



NSF SpaceTEC leveraged funds supported this campus ceremony recognizing the first Central Coast nationally certified aerospace technicians from Lockheed Martin Corporation and the U.S. Air Force, Vandenberg AFB. Pictured (L to R)

are: AHC Student Trustee Richard Terry; Trustee Bernard Jones; Board President Henry Grennan; Superintendent/President Emeritus Dr. Ann Foxworthy; NSF SpaceTEC certified core aerospace techs TSgt Dean Krambeck, Jay Patton, MSgt Stephen Hrkach, and Dan Romeyn. June 23, 2005.



James Watson (shown on the left), a university engineering student and NSF “A STAR” intern, mentors Santa Maria High School student Eriberto Morales as he completes a Mechatronics Institute electronics circuit board assignment. The NASA CIPA-supported Mechatronics Institute curriculum was shared with AHC’s MESA program, so more underrepresented students could benefit from the knowledge and skill sets taught. July 18, 2005.



“Commander” Ashton Rodriguez, a NASA CIPA-sponsored junior high school Space Endeavour Camp participant, shows off his six-fin Wizard rocket that he is about to launch. August 5, 2005.