



THIRD QUARTERLY REPORT

July 1 - September 30, 2006

**CURRICULUM IMPROVEMENT
PARTNERSHIP AWARD II PROGRAM**

Hartnell College

Name of Institution

Dr. Pimol Moth and Mr. Lin Sten

Principal Investigators

CIPA II Program

Year 1

3rd Quarterly Report --July 1 - September 30, 2006

1.0 Name of Institution: Hartnell College

2.0 Names of Co-Principal Investigators: Dr. Pimol Moth and Mr. Lin Sten

3.0 Name of CIPA II Project: Engineering Program Upgrade with Project Management

4.0 Project Activities

Engineering Curriculum Upgrade

The Engineering 45 Special Projects curriculum document was finalized to await the faculty to form a quorum in the Curriculum Committee. (See Additional Remarks below.) Major progress was made on the whole curriculum upgrade at the September 18 CIPA team meeting. (See Meetings and Trips, and also Additional Remarks, below.)

Partnerships

See various items under Meetings and Trips below.

Guest Speakers

Hubble Space Telescope Fellowship recipient Dr. Joe Hennawi was the guest speaker at the annual Fremont Peak Observatory (FPO) Star Party on August 26. (See Meeting and Trips below.)

On September 29, Dr. James Newman, a NASA visiting professor at the Naval Postgraduate School (NPS) and veteran astronaut visited Hartnell to give a public talk titled "Reflections on Spaceflight." Additionally, he participated in a luncheon with STEM students. During the day-long event, STEM students were provided with the rare opportunity to speak directly with an astronaut and were encouraged by him to attend graduate school and to set high goals.

Meetings and Trips

On August 17, Dr. Pimol Moth visited the Naval Postgraduate School (NPS) to meet with the two summer interns, Joe Welch (Hartnell instructor), Dr. Martel (their advisor), and two NPS graduate students. Dr. Martell indicated that he was very pleased with the work that the interns

had completed during their time at NPS and enthusiastically expressed interest in continuing the internship program with Hartnell for next summer.

At the end of August, Mr. Clarence Brown (United Negro College Fund Special Programs CIPA manager) came to central California for two reasons: to review the NASA-Ames offices associated with the new \$3.5 million grant to United Negro College Fund Special Program from NASA (NASA Science and Technology Institute for Minority Serving Institutions at NASA-Ames); also, for a site visit to Hartnell College.

From August 26-29, Mr. Clarence Brown attended meetings and activities as described below.

On August 26, the yearly Star Party was held at Fremont Peak Observatory. Apropos of the CIPA grant, this event was a great success since it was attended by two Hartnell College administrators, all of the CIPA team, and all six FPO interns, the latter of which each introduced himself (herself) and gave a brief statement about their experiences and appreciation for their expanding concepts of project management. Dr. Joe Hennawi was the guest speaker for the evening, and he gave a fine talk. He is a model for what Hartnell students can accomplish since he graduated from Hartnell and went on to earn a doctorate. Joe is a valuable resource for us as an inspiration to our students as well as a potential source of science outreach funding, which is a part of his fellowship requirements.

On August 28, Mr. Clarence Brown joined the Hartnell CIPA team in a visit to the University of California at Santa Cruz (UCSC). Several different meetings occurred that day. The first meeting was about the possible involvement of Hartnell College in the existing National Science Foundation (NSF) project Developing Effective Engineering Pathways (DEEP) and establishing a Hartnell Engineering Academy at the Jack Baskin School of Engineering. The second meeting consisted of a tour of several optical engineering laboratories, where exciting research is being conducted, and in which interns could participate. The third meeting was held over lunch, and was as valuable as any of the others for the discussion and experiences shared. Particularly important was Art Cisneros' memory of his internship experience at UCSC, where he saw firsthand that engineering students sometimes spend all night working on exciting projects, and he began to realize that to be so excited about engineering endeavors was a desirable way to live. The fourth meeting was at the Center for Adaptive Optics (CfAO).

On August 29, Mr. Clarence Brown attended a CIPA team meeting. Most importantly he was given the chance to hear presentations from and to talk with the two NPS interns.

Later that morning (August 29), Manual Bersamin (Director of the Student Support Services Program at Hartnell College), a matriculation counselor, joined Mr. Clarence Brown, Mr. Andy Newton, and Mr. Lin Sten in a visit to Alisal High School in east Salinas.

That same day, Dr. Kathy Schrader and Ms. Beverly Grova (Dean of Advancement & Development, and Executive Director of the Hartnell College Foundation) joined these four for lunch. That night Mr. Clarence Brown and Mr. Lin Sten had dinner together to continue their discussion of educational and motivational issues in the college environment.

A pivotal CIPA team meeting occurred on September 18. The CIPA team unanimously approved the idea of creating a 1-unit --16 class hours plus 32 homework hours--body of project management course material. The value of this approach is that once all this material is brought together in one document, it can be used in several ways: it can be used for a 1-unit class as designed, including PHY 45 or EGN 45; any portion of it can be used for any engineering course; it can be used to train future interns; it can be used to train faculty who are teaching, or are planning to teach, engineering courses. After a satisfactory draft of this material has been composed and approved by the CIPA team and engineering faculty, Bob Knecht (director of Engineering Practices Introductory Course Sequence (EPICS) at the Colorado School of Mines) will be hired to review it.

At Hartnell College, the CIPA II team meets approximately every other week to discuss the grant, review progress, and plan the pertinent activities.

The Advisory Board will meet in the fourth quarter after the advisors review the first three quarterly reports.

Feasibility Study for a Hartnell Engineering Academy at UCSC.

(This item was included in the 2nd Quarterly Report. Also, see the August 26 item under Meetings and Trips.) Hartnell College's CIPA team will coordinate with the UCSC Jack Baskin School of Engineering to determine how to create a Hartnell Engineering Academy on-site at UCSC. It is anticipated that in the fourth quarter a memorandum of understanding (MOU) will be complete with representatives of the Jack Baskin School of Engineering.

Internships in progress, completed, or promised, and research opportunities

NASA-Ames

During the second quarter, a Hartnell student was selected for a NASA-Ames internship for the summer. She received \$5,000 plus expenses from NASA. Her internship was sponsored by the NASA Science and Technology Institute for Minority Serving Institutions at NASA-Ames.

Stratospheric Observatory For Infrared Astronomy (SOFIA)

As mentioned in the 2nd Quarterly Report, Mr. Andy Newton was investigating the possibility of Hartnell College collaborating with its research partners to design a project that could be flown on the SOFIA aircraft based at NASA-Ames. During this third quarter SOFIA passed a "program feasibility" study by NASA, but funding has not yet been identified.

FPOA

As mentioned in the 2nd Quarterly Report, six Hartnell STEM students have been working as summer interns for the FPOA, and will continue doing so through the end of October. FPOA members are very interested in Hartnell recruiting students to participate in future internships at the observatory. (See the August 26 Star Party item under Meetings and Trips above.)

Center for Adaptive Optics (CfAO) at UCSC

As mentioned in the 2nd Quarterly Report, two minority Hartnell engineering students held seven-week summer internships with the CfAO. The students worked with CfAO research

scientists on projects in adaptive optics engineering and instrumentation. Each student's \$3,000 stipend and expenses were paid by CfAO. (See August 28 item under Meetings and Trips above.) We are guaranteed two internships each summer as long as we have qualified candidates.

Naval Postgraduate School

As mentioned in the 2nd Quarterly Report, two Hartnell STEM student interns worked this summer on the Computer Science/Artificial Intelligence project at NPS. They began work on June 5 and ended on [??? August 20]. They were paid \$500 each by the CIPA II grant. (See the August 28 item under Meetings and Trips above.)

Documents

Under the work package "Write Quarterly Reports . . ." of the WBS the 2nd Quarterly Report was completed and sent by e-mail to CIPA management on the July 14 due date.

Under the control account "Curriculum Design" of the WBS, a draft of the document titled "Project Management Infusion Proposal" was completed. This document is scheduled for development and completion in the fourth quarter, and then it will be reviewed and accepted by the CIPA team and engineering faculty by the end of the quarter. (See September 18 item under Meetings and Trips above.) It is anticipated that this document will be reviewed by Mr. Bob Knecht (Colorado School of Mines) before final acceptance.

The document titled "Fremont Peak Observatory Internship Project Plan Guidelines" was completed on May 28. This document served as a guide for the FPOA interns to create a project management plan for the summer public observing program at FPO, and was structured to maximize internship learning of project management skills and vocabulary in their internship.

Under the work package "Develop Project Plan," Microsoft Project Professional was used to update the Gantt chart in the Hartnell College CIPA II Project Management Plan. Corrections were made to the Gantt chart presented in the June 2 version of the Plan, and the control accounts "Marketing PM to STEM Courses" and "History" were expanded into work packages. The update has not yet been reviewed by the CIPA team.

Under the control account "Marketing PM to STEM Courses," the first work package under the revised WBS calls for a document. The first draft of "Market Project Management to STEM Courses" was completed on June 26. This document has not been reviewed by the CIPA team.

5.0 Personnel Changes

At the end of December, Lin Sten will be leaving Hartnell College to move to southern California, where he hopes to continue introducing project management into STEM courses as a useful tool for learning the core material of any course. It is anticipated that Hartnell College will find an excellent replacement for Lin from among its pool of highly qualified instructors.

As mentioned in the 2nd Quarterly Report, Dr. Jesse Cude retired as an instructor at Hartnell College. He has remained involved with CIPA as the budget manager and curriculum advisor. He will retain his current position on the CIPA team until at least June 30, 2007.

6.0 Expenditures

Direct labor

\$3,000	Dr. Pimol Moth	co-principal investigator
\$3,000	Mr. Lin Sten	co-principal investigator
\$3,600	Mr. Andy Newton	partnership liaison
\$1,500	Dr. Jesse Cude	curriculum advisor and budget manager
\$1,500	Mr. Jim Riley	project management advisor
\$1,000	2 Internships (\$500x2)	NPS
\$2,400	6 Internships (\$100/day)	FPOA (from July 1 to September 30)
\$0	2 Internships	CfAO
\$0	1 Internship	NASA-Ames

Travel

\$0

Equipment

\$0

TOTAL in third quarter: \$16,000

TOTAL in second quarter: \$18,700 (detailed in the 2nd Quarterly Report)

TOTAL in first quarter: \$25,950 (detailed in the 1st Quarterly Report)

7.0 Additional Remarks

Due to the current labor dispute at Hartnell College, it is still impossible to achieve a quorum for Curriculum Committee meetings. Apropos of approval of the engineering special projects class (Engineering 45), this difficulty has been resolved by the decision to make use of the extant special projects class for physics (Physics 45). Its design is broad enough to include most special projects that might be imagined for Engineering 45. This resolution extends to other courses that had been planned for revision under the control account (in the WBS) titled "Course Design," and whose formal approval might be delayed by the unlikely possibility of a continuing labor dispute, by the 1-unit project management course proposal discussed above. (See the September 18 item under Meetings and Trips above.)

Mr. Tito Polo (Physical Science Laboratory Technician) has worked to get the 10 new laptop computers available for use in the engineering classes. The system administration questions have been resolved. These computers will be in service before the end of October.