



ANNUAL REPORT

January 1 – December 31, 2008

**CURRICULUM IMPROVEMENT
PARTNERSHIP AWARD II PROGRAM**

Hartnell College

Name of Institution

Dr. Pimol Moth and Ms. Shannon McCann

Principal Investigators

CIPA II Program

Year 3

Annual Report -- January 1 – December 31, 2008

1.0 Name of Institution: Hartnell College

2.0 Names of Co-Principal Investigators: Dr. Pimol Moth and Ms. Shannon McCann

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

4.0 Project Activities

Overview

During our third and final year, we are now able to witness the success of the programs established through the CIPA II grant. This year, we had our largest cohort of interns with 18 students participating in summer internships. This represents a 64% increase from last year's intern cohort. We have also seen students gain hands-on project management experience and develop their communication, leadership, and teamwork skills through their participation in several Engineering 45 Special Projects such as the Project Management Institute, the Physics Olympics, the Robotics Olympics, and the Regional and International Remotely Operated Vehicle competitions. During the third year of the execution of our grant, students were noticeably more pro-active and have approached the members of the CIPA II grant team to indicate their interest in participating in these activities because they had heard such positive feedback from their peers during the previous years.

In addition, student participation in CIPA II funded activities has helped them to earn high achievements and be awarded prestigious scholarships. In 2007, a Hartnell STEM student who has participated in several CIPA related activities, Ricky Fernandez, was awarded a NASA MUST (Motivating Students in Science and Technology) scholarship to pursue his studies in Physics at the University of California in Santa Cruz. Ricky spent this summer at the Kennedy Space Center in a NASA MUST sponsored internship. Ricky also won the prestigious \$20,000 UCSC Karl Pister Scholarship in spring 2008 to further support his undergraduate studies. Two other outstanding CIPA students, Daniel Chairez and Leonel Medrano, have both been awarded \$20,000 scholarships from the Matsui Foundation to continue their engineering studies at Cal Poly, San Luis Obispo in fall 2008. Daniel and Leonel were both enrolled in our summer Project Management Institute and were both summer interns at the Naval Postgraduate School. In addition, Daniel Chairez is one of the 2008 recipients of the NASA MUST Scholarship.

During this final year, several unexpected and positive outcomes have occurred as a result of the grant. Because of the success of our grant, research institutions are now inviting us to partner with them on future grants and establishing new internships. The mentors from our partner institutions have been very impressed with the interns from Hartnell and would like to see more interns at their institutions. We have had enthusiastic support from the Cebrowski Institute for the internship program at the Naval Postgraduate School, and because of this, we were able to have a record number of interns working on cutting-edge research projects. Our president has enthusiastically embraced project management and has spear-headed the creation of Hartnell's new Science and Math Institute as a means to institutionalize project management and serve as a regional focal point and funding source to improve and enrich the educational efforts of the Hartnell College math and science programs.

Engineering Curriculum Upgrade

The infusion of project management training into Hartnell engineering courses was completed in spring 2008 with approval of the course updates for three engineering courses. The CIPA II team worked with the engineering instructors at the college to revise EGN 4 (Materials Science), EGN 6 (Introduction to Circuit Analysis), and EGN 8 (Engineering Statics) to include components of project management into the course outlines. Some of the project management content added to the revised course outlines include: student participation on team projects and instruction on staffing management, schedule management, quality control and assurance, risk analysis, and cost analysis.

During the spring 2008 semester EGN 45, the engineering special projects course, was launched for the first time. Ten students were enrolled in this special projects course, working as a team to write a project plan to design, construct, and test a remotely operated vehicle (ROV). Last year, the ROV team won 2nd place in the Monterey Bay Regional ROV competition held at the Monterey Peninsula College (MPC). This year, the goal of their project was to enter the ROV into the International ROV competition held at the University of San Diego, and sponsored by the Marine Advanced Technology Education (MATE) Center. The Hartnell ROV team traveled to San Diego in June 2008 for this competition. During their first time participating in the international competition, Hartnell placed 13th out of 27 community colleges and universities around the world and won the "Biggest Bang for the Buck" award. They scored higher than several top universities such as the Massachusetts Institute of Technology, UC Santa Cruz, and UC Davis.

Additionally, during summer 2008, eighteen students were enrolled in EGN 45 as part of their participation in the 2008 Project Management Institute (PMI). This represents a 64% increase from last year's internship cohort (eleven students). PMI for Hartnell STEM Interns is a training program sponsored by the NASA-CIPA II grant and aimed at infusing project management into early research experiences for science, technology, engineering, and mathematics (STEM) students at Hartnell College. Students who receive internships with the CIPA II partners are enrolled in the institute and are trained in project management before they pursue their internships.

Partnerships

Hartnell is continuing its strong history of partnerships by working closely with their partners to articulate courses, ensure guaranteed admission, and provide early research experiences and project management experience. Hartnell continues to maintain strong relationships and establish new ones with prestigious institutions such as the UCSC Baskin School of Engineering and its affiliated research center at NASA-Ames, the Center for Adaptive Optics (CfAO) at UCSC, the Naval Postgraduate School (NPS), the Fremont Peak Observatory Association (FPOA), the Monterey Bay Aquarium, and the Marine Advanced Technology Education (MATE) Center in developing and implementing this project.

CIPA II Grant Funded Internships

Fremont Peak Observatory Association

Hartnell is continuing and expanding its successful intern team placement at the Fremont Peak Observatory (FPO). This year's team of six students participated in the PMI, created a project plan, and worked as a team to carry out the plan, which called for them to prepare and deliver a series of public night astronomy observing programs.

In addition, due to the recent acquisition of astronomical instrumentation made possible by the grant, FPO added a research component to their internship program this year. Miguel Rodriguez and Fabian Hernandez collected and analyzed data on Near Earth Asteroids. This expansion of the FPO internship program benefited Hartnell STEM students by offering a wider variety of astronomy internship experiences, so that both rising freshmen and more advanced students find challenging opportunities in astronomy. This successful internship program will be extended through 2010 as Hartnell's NSF Science Talent Expansion Project (STEP) grant takes over supporting this student team. A final note is that Miguel Rodriguez, the Hartnell student returning for a second year of work with the team, was honored by the Fremont Peak Observatory Association after his superlative work with last year's intern team.

Naval Postgraduate School

Hartnell's partnership with the Naval Postgraduate School (NPS) continues to flourish. This partnership, which yielded placements for two Hartnell STEM student interns in 2006 and four in 2007, has now moved to a new level of collaboration. NPS was awarded Hartnell's Partnership of Excellence award on April 19th, 2008. Dr. Craig Martell, who was instrumental in arranging the 2006 and 2007 internships, helped link the Hartnell CIPA II team with the Cebrowski Institute at NPS. The Cebrowski Institute for Innovation and Information Superiority sponsors cross-discipline projects leading to innovations that strengthen global security in the information age. Dr. Peter Denning, Director of the Cebrowski Institute, has a strong passion for outreach and agreed to have the individual efforts of the NPS researchers who had been working with Hartnell's interns be brought under the umbrella of the Cebrowski Institute so that researchers from across the NPS campus could be linked with interns from local educational institutions. This linkage has resulted in a vastly increased number of research internships for Hartnell STEM students in 2008. This year, 11 students worked with 8 researchers at NPS on such cutting edge research projects as: Probabilistic Search Theory; Autonomous Underwater Vehicles; Humanitarian Assistance/Disaster Relief; Mechanical and Astronautical Engineering;

Automatic Understanding of Modern Computer-mediated Communication; Computer Vision and Image Processing; Document and Media; and Rocketry and Propulsion.

Monterey Bay Aquarium

Hartnell student Tiana Dias was placed this summer working with aquarium researcher Marissa Viens on sea otter blood diseases at the Monterey Bay Aquarium.

Externally Funded Internships

NASA-MUST (Motivating Undergraduates in Science and Technology) Program

In 2007 Ricky Fernandez was awarded a NASA-MUST scholarship. As part of the program, Ricky also had the opportunity to participate in an internship at NASA's Kennedy Space Flight Center during the summer of 2008. During this internship, Ricky worked with Dr. David Grau to research a new technique for Non Destructive Testing of components of the Delta II rocket.

U.C. Santa Cruz, Astronomy & Astrophysics Program

In 2008 Dr. Enrico Ramirez heard about the success of the Hartnell internship program and asked if we could provide him with a summer intern to support his research at U.C. Santa Cruz's Astronomy & Astrophysics Department. Maria Uribe, who was an intern at Fremont Peak Observatory through the Project Management Institute in 2007 and is now attending UC Berkeley was the ideal candidate for the program. She worked with Drs. Enrico Ramirez Ruiz and Jill Naiman on a project titled "Feeding Intermediate Mass Black Holes". Maria also participated in the 2008 Project Management Institute and was a great role model for the students. Because of his successful experience with Maria as an intern, Dr. Ruiz is interested in working with more Hartnell students in the future.

Project Management Institute

The Project Management Institute (PMI) for Hartnell STEM Interns is the training program launched in 2007 and aimed at infusing Project Management into early research experiences for STEM students at Hartnell College. Students who receive internships from the CIPA II partners participate in the PMI as a part of their internship experience and are required to write a project plan with content relating to their specific internship. In 2007 the PMI was extremely successful in supporting the interns as they developed and implemented their internship project plans and presented them in a research symposium at the end of the summer. Therefore, this program is being continued this year and again consists of three phases of student participation.

PMI Orientation Workshop

The Orientation Workshop was held on June 18, 2008 and served to introduce the interns to the principles of project management and orient them to the overall structure of the PMI. This day-long workshop included a team competition which served to bring to life the project management instruction the interns received earlier in the day. Finally, this workshop helped establish a strong working relationship among the team of interns.



Figure 1. PMI Orientation Workshop instructors and interns. Back row: Jose Quezada, Ignacio Maravilla, Tim Courrejou, Tiana Dias, Maria Uribe, Timothy Fuller, Miguel Rodriguez, Jim Riley, Lawrence Keener, Rodrigo Sanchez, Leonel Medrano, Shannon McCann, Hector Zhu. Front row: Tito Polo, Daniel Chairez, Ila Caughman-Vasquez, Christina Gonzales, Genaro Sanchez, Fabian Hernandez, Luciano Cerritos, Pimol Moth



Figure 2. Students work together as a team to construct the longest spinning top during the orientation workshop.

PMI Reflective Research Discussions

The reflective research discussions consisted of weekly web-based discussion exchanges in which the interns participated throughout the summer in order to keep in contact with each other and to keep their mentors and sponsors apprised of their progress. During the month of June the weekly discussion threads focused on the development of each intern's summer research project plan. During July the threads were geared toward reflections upon how the research was progressing by comparing work accomplished to the schedule developed in the project plan. During August the threads turned towards closing out the research projects and preparing for the research symposium.

PMI Research Symposium

The research symposium was held on September 6th, 2008 and served as a venue for the summer cohort of Hartnell STEM interns to present their work in a professional manner to each other and to representatives from Hartnell College, grant funding representatives, local media and industry and associated research institutions. The interns were encouraged to bring their parents and other family members to enjoy a banquet with Hartnell's president and other notable attendees. The evening concluded with formal research presentations by the interns.

The students who took part in the PMI in 2007 and 2008 were surveyed after the orientation workshop and after the conclusion of the PMI as a whole. They reported overwhelmingly positive impressions of the value of Project Management as a tool for organizing and completing projects. They gave unanimous support to the activities conducted in support of the PMI and advocated for continuation of the PMI for future internship cohorts. The students in this special projects course learned and retained more than in a traditional course because they were encouraged to think for themselves and were actively involved in their own learning. The Project Management Institute was so successful that it was the stimulus for Dr. Phoebe Helm's endorsement of Hartnell's newly launched Science and Math Institute, discussed in more detail below.

Science and Math Institute

During the fall, 2008 semester, the Science and Math Institute officially opened its doors at Hartnell College. Dr. Jesse Cude, our Physics Instructor Emeritus was hired as the Director of the Science and Math Institute. The Institute seeks to develop and support connections among regional STEM organizations, to create and publicize STEM educational opportunities in and beyond the community, to connect the student population of the region with STEM-related research and career opportunities, to make scientific and technological trends tangible and relevant to our community, to provide an environment to engage the senses and open minds, and to showcase local STEM talent and achievements.

In addition, the Science and Math Institute will seek to institutionalize the Project Management Institute. In 2008, 22 students have been selected to be part of a STEM internship research project led by Shannon McCann. This group of highly motivated STEM students met one hour per week in fall 2008 to research available internship opportunities and prepare their resumes, letters and other application materials. In spring 2009 these students will continue to meet weekly to gain skills in research abstract and poster preparation, PowerPoint, Excel, Matlab, project management and life science laboratory techniques. As these students win internship placements they will meet with their advisors and write project management plans to govern their summer 2009 internship projects. The 2008 – 2009 internship project is a pilot project for a 1 unit STEM career preparation course which is currently undergoing approval by Hartnell's curriculum committee. This course will launch in Fall 2009 and will serve to extend and institutionalize the internship training and support initiated by the NASA-CIPA II PMI.

CIPA II Meetings

Bi-weekly CIPA II Meetings

Throughout the life of this grant the CIPA II team has been meeting on a fairly regular bi-weekly basis to evaluate progress and plan future steps. The minutes of all CIPA II team meetings are available on the Hartnell CIPA II website.

Monthly Hartnell Science and Math Institute Planning Meetings

Members of the CIPA II team have been instrumental in planning for the fall 2008 launch of Hartnell's Science and Math Institute. This Institute was called for by Dr. Phoebe Helm after she observed the achievements of the team's summer 2007 research interns. This planning team met with a multidisciplinary group of local scientists and educators throughout fall 2007 which

resulted in the Hartnell Science and Math Visioning Workshop held on January 24th, 2008. This workshop brought together STEM industry, research and educational leaders from around the central coast region to articulate desired features of such an Institute. The outcome of that day's work has served to inform the Hartnell planning team as they have met on a monthly basis throughout the spring to plan this Institute which will serve as a regional focal point to improve and enrich the educational efforts of the Hartnell College Math and Science programs.

Advisory Board Meetings

The Hartnell CIPA II team is continuing to work with its superlative Advisory Board which meets on a regular basis. A Board meeting was held on February 14th, 2008 to plan for the Project Management Institute and summer research internships and on October 27th, 2008 to review plans for sustaining the internship program and strengthening the UCSC/Baskin pipeline through internships.

CIPA II Trips & Activities

Hartnell Engineering Excursion

On March 16 - 19, Dr. Jeff Hughey, Hartnell Biology Instructor and Dr. Pimol Moth, Hartnell Astronomy/Physics Instructor led 10 Hartnell STEM students on a trip to Southern California to tour several engineering organizations and universities, which included Aerospace Corporation, Northrop Grumman Integrated Systems, California Institute of Technology, the Jet Propulsion Laboratory, and California Polytechnic University at Pomona. The goals of the visit were to give the students the opportunity to interact with real life engineers and project managers and learn about the different programs and projects available at the universities and industries.

Naval Postgraduate School Open House

On April 4th, 11 Hartnell STEM students attended an NPS Open House intended to introduce these students to faculty interested in mentoring interns during the summer. The open house was organized by Alison Kerr, Programs Manager of the Cebrowski Institute, Kim Wahlin, and Sue Higgins, Deputy Director of the Cebrowski Institute. NPS faculty in attendance were Dr. Brian Steckler (HFN Research Group), Dr. Knox Millsaps (Mechanical and Astronautical Engineering Department), Dr. Mathias Kolsch (Computer Vision and Image Processing Group), Dr. Bret Michael (Application and Measurement of Advanced Formal Independent Verification and Validation Techniques), Dr. Craig Martell (Speech and Language Group of the Autonomous Systems Lab), and Dr. Simson Garfinkel (Computer Science).

During this time, the members of the CIPA II team also met with Sue Higgins, the Deputy Director of the Cebrowski Institute to discuss the development of a formal structure for the internship relationship between Hartnell College and the Naval Postgraduate School, along with other possible connections between the institutions. After the meeting with the researchers, Brian Steckler led the students and the CIPA II team on a tour of his Wireless Communications laboratory and the Nemesis vehicle used for communications operations during Hurricane Katrina.



Figure 3. Naval Postgraduate School Open House participants. Back Row: Pimol Moth, Nour Daas, Leonel Medrano, Daniel Chairez, Genaro Sanchez, Rodrigo Sanchez, Tim Courrejou, Ignacio Maravilla, Shannon McCann. Front row: Jose Quezada, Ernesto Mendoza, Brian Steckler, Ricardo Cerritos, Luciano Cerritos

Hartnell Physics Olympics

On April 10, the Hartnell Physics Department hosted the Physics Olympics, which was organized by the Society of Physics Students Club under the supervision of Dr. Pimol Moth. The students worked as a team and used project management principles to plan, organize, and execute the Physics Olympics. On this day Physics students from Hartnell College and the local high schools competed in several different competitions that involved an application in Physics. To ensure that they executed the project successfully and on schedule, the students were required to write a project plan that included: Scope Management, Staffing Management, Schedule Management, Communication Management, and Risk Management. In addition, the students were responsible for running and staffing their activity.

Naval Postgraduate School Autonomous Undersea Vehicles Lab Tour

On May 2nd, 10 Hartnell STEM students visited the Naval Postgraduate School to tour the Center for Autonomous Undersea Vehicles (AUV). The tour was led by Dr. Anthony Healey, Distinguished Professor and Chair and Director of the Center for AUV Research and Sean Kragelund, an NPS graduate student. The tour was chaperoned by Dr. Pimol Moth and Shannon McCann and served to introduce students to internship opportunities at the AUV lab. Due to the excitement caused by the lab visit, three students who participated in the tour worked throughout the summer with Professor Healey and his graduate students on a project at the AUV lab.

Parallax Boe-Bot Robotics Training

On May 16 – 17th, Hartnell College, sponsored by the NASA CIPA II grant, hosted a Parallax Educators Course in Robotics. Several Hartnell instructors (including Dr. Pimol Moth), a local high school instructor, and several STEM students participated in the training. During this course, the participants learned about microcontrollers and how to write code using PBASIC and customize circuits to achieve different goals. These concepts were applied to program Boe-Bot robots to perform different functions. The training was held in part to prepare instructors and students for the Robotics Olympics, which was held during the fall 2008 semester. The Robotics Olympics is a CIPA II sponsored activity that involved a team of Hartnell engineering students who used principles of project management to plan, organize, and host the activity at Hartnell College.

Monterey Bay Regional Remotely Operated Vehicle (ROV) Competition

On June 25th, nine students from the Hartnell College Rockets and Robotics Club competed in the Marine Advanced Technology Education (MATE) International ROV (Remotely Operated Vehicle) competition at UC San Diego. The students were judged on the quality of their engineering technical report, engineering presentation, poster presentation, and the successful completion of three mission tasks. In their first time at the international competition, the Hartnell College team placed 13th out of the 27 participating community colleges and universities. Notably, they tied for 6th place in the engineering presentation and won the “The Biggest Bang for the Buck” award, which was awarded to the team that spent the least amount of money on a vehicle that performed well.



Figure 4. Hartnell’s Rockets and Robotics ROV team. Standing: Pimol Moth, Luciano Cerritos, Daniel Chairez, Nour Daas, Jose Quezada, Ignacio Maravilla, Leonel Medrano. Sitting: Justin Jordan, Ricardo Cerritos, Genaro Sanchez



Figure 5. Left: Ricardo Cerritos driving the ROV with support from teammate Justin Jordan. Right: Hartnell’s ROV team completes one of the mission tasks, freeing a mock ocean bottom seismometer from the “seafloor”.

NAFP/JFPF/CIPA Symposium

From July 20-26, Pimol Moth, Andy Newton, Daniel Chairez, and Leonel Medrano participated in the NAFP/JFPF/CIPA Symposium held in Baltimore, Maryland. The NAFP (NASA Administrator’s Fellowship Project), JFPF (Jenkins Pre-doctoral Fellowship Project), and CIPA (Curriculum Improvement Partnership Award) programs are all funded by NASA and administered by UNCFSP (United Negro College Fund Special Programs).

Daniel and Leonel attended student breakout sessions on co-op opportunities and resume and interview tips while Mr. Newton and Dr. Moth participated in the Reverse Site Visit. The principal investigators from the CIPA institutions gave presentations on the goals of their grants and their progress toward those goals to the NASA review panel. The review panel was impressed with Hartnell's presentation. The only question the panel had was what efforts Hartnell was making to recruit more Latino woman into the sciences. In response, Mr. Newton informed them about the new WISE (Women in Science Education) program at Hartnell.

On the last day, Dr. Moth and the students presented Hartnell's CIPA program to the NASA Symposium. They also presented to NASA and UNCFSP (Clarence Brown, Dr. Melissa Green, Dr. Harriet Jenkins, Dr. Carl Person) a certificate of recognition for their tremendous impact at Hartnell. After the presentation, Robert Trevino, Advanced EVA technology group lead at the Johnson Space center and NAFP fellow to Texas A&M University, approached the Hartnell team and told them that he would like to visit Hartnell to give a talk to our students about the opportunities at NASA. In general, Hartnell made an excellent impression during the trip and the students were inspired by the talks and encouragement. Leonel and Daniel are now thinking about the possibility of pursuing a PhD.

Winning Government Contracts Training Course

From November 12-14, 2008 Shannon McCann traveled to El Paso, Texas to participate in the Winning Government Contracts training course organized by the UNCFSP Institute for Advancement. The purpose of the training was to introduce NAFP fellows and CIPA II grant participants to the process of applying for government contracts. The training was organized by Sondra Lancaster of the UNCFSP and was held on the campus of the University of Texas El Paso. The three day training proved valuable for three reasons. First, the information covered in the course should prove useful when applying for grants in general. Second, the training course provided an opportunity to share ideas with NAFP fellows and representatives from CIPA II institutions. Finally, Shannon had the opportunity to spend time with Natalie Gore, who is the new Director of Academic Programs at NASA-Ames. She is very eager to place some of our students in NASA sponsored internships.

Annual Hartnell Robotics Olympics

Hartnell's Robotics Club hosted the 2nd Annual Robotics Olympics in December, 2008. During the event 16 teams representing Hartnell College and 4 high schools (Soledad, King City, Everett Alvarez, and North Salinas) competed in two competitions involving Parallax Boe-Bot robots at Hartnell College.

This year's event was bigger and better than the pilot year where only three teams from Hartnell competed. This year, several dozen students were recruited from the local Salinas and South County high schools and from the Introduction to Engineering class in an effort to increase the interest and awareness of students in science, technology, and engineering fields. Justin Jordan, president of the Robotics club organized and led two training sessions on October 4th and 11th to help students assemble the robots, learn basic programming, and circuitry. Jordan along with Ignacio Maravilla and Luciano Cerritos, two additional members of the Robotics Club, recruited students from the local high schools by giving demonstrations of the robot and spent several weeks mentoring the high school and Hartnell engineering students in preparation for the competition.



Figure 5. High component of the Robotics Olympics. Left: Maze competition. Right: Students wiring and programming the robots.

This activity generated much positive press for Hartnell College, gave the engineering students in the Robotics club an interesting and hands on application of project management, and increased interest among the underserved population in the STEM fields.

Hartnell CIPA II Website

Dr. Moth regularly updates the website for the grant in order to ensure that all documents and information are easily accessible by the CIPA II team, their partner representatives, advisory board, and UNCSFP. The address is <http://www.hartnell.edu/nasa-cipa>. The website describes the goals of CIPA II and provides links to the various Hartnell CIPA II documents. Of particular interest are the minutes for the bi-weekly team meetings and the bi-monthly Advisory Board meetings.

Important Documents

2008 PMI Internship Symposium Abstract Book

The 2008 PMI Internship Symposium Abstract Book contains abstracts from the nineteen Hartnell STEM students who participated in the PMI summer internship program. The booklet includes the agenda for the 2008 PMI Internship Symposium and summarizes the work that the students completed during their internship.

Semi-Annual Report

The Hartnell CIPA II team submitted the Semi-Annual report by email to Mr. Clarence Brown on July 14th, 2008. The report described activities for the grant period from January 1- June 30, 2008.

Progress Report for Reverse Site Visit

This report was required by NASA in preparation for the CIPA II Reverse Site Visit and Symposium to be held from July 21 - 25, 2008 in Baltimore, Maryland. The report covered grant progress to date and was submitted with original signatures to Mr. Clarence Brown on the due date of July 14, 2008.

Performance Outcome and Student Performance Report

This report was compiled and submitted online to the NASA Minority University Research and Education Program POSTrack system on the due date on January 20th, 2008. The report included data on grant spending, the gender and ethnicity of the investigators and students involved in grant activities, and the outcomes and partnership linkages associated with the CIPA II grant.

Self-Evaluation Report

The Hartnell CIPA II team submitted a self evaluation report for Year Two by email to Mr. Brown on January 30, 2008. The self-evaluation report included a discussion on the outcomes, impacts, and sustainability and institutionalization of the grant for the 2007 grant year.

NASA Basic Data Report.

As requested by Mr. Clarence Brown the Hartnell CIPA II team submitted a data report on the impact of the grant, as measured by the number of students eligible for the workforce, the number of new or revised STEM courses, and the number of underserved/underrepresented student participating in CIPA II grant funded programs. This was delivered on the deadline of April 25th, 2008.

Guest Speakers

On March 28th, 2008 Dr. Tom Wilkinson gave an invited lecture at Hartnell for a large audience of students and faculty. Dr. Wilkinson began his college career at Hartnell, studying engineering and physics under Dr. Jesse Cude. He then graduated from Berkeley with a degree in Engineering Physics and earned a Ph.D. in biological sciences at Purdue. Dr. Wilkinson now conducts research at the UCLA Medical School in the Molecular & Medical Pharmacology Department, studying HIV, viral proteins using NMR spectroscopy and surface plasmon resonance techniques.

In December, 2008, Young Kim, Outreach Coordinator from the UCSC, Jack Baskin School of Engineering and Miles Hansen, a Hartnell alumni and participant of the Project Management Institute majoring in engineering visited Hartnell and met with STEM students and members of the Physics club to answer questions and give advice about the transfer process and programs offered at the Baskin School. Mr. Kim's and Miles' visit supports part of the initiatives of the CIPA II grant to increase the transfer rates of engineering students to four-year universities.

5.0 Personnel Changes

In September, 2008, Mr. Tito Polo, Hartnell physics and engineering lab assistant, was hired to serve as a Robotics Olympics support personnel. His duties were to support the Robotics Olympics training activities and competition preparation.

6.0 Expenditures

In Summer 2008 Hartnell College received \$26,789 in Year One carryover funds from the UNCFSP. In order to make the best use of this late infusion of funding Hartnell applied for a no-cost extension for the December 31, 2008 end date of the grant. On September 25, 2008 this extension was granted and the grant team then readjusted its budget allocations to make the best use of the additional time and funding. The 2008 budget reflects the expenditures for year three for a grant award of \$150,000. The carryover expenditures will be documented in the final report, which will include the spending from the period of January 1-February 28, 2009.

Direct labor

Dr. Pimol Moth, Co-Principal Investigator	\$15,262
Mrs. Shannon McCann, Co-Principal Investigator	\$3,045
Mr. Andy Newton, Partnership Liaison	\$16,675
Mr. Tito Polo, Robotics Olympics & Intern Coordinator	\$3,210
Robotics Olympics Student Leadership Team	\$3,135
Miscellaneous Benefits	\$13,112
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	\$54,439

Equipment

Emission spectrometers for physics and astronomy labs	\$8,454
Robotics equipment for Robotics Olympics and outreach	\$3,718
Projection equipment for planetarium	\$877
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	\$13,049

Supplies

Supplies for MATE Student ROV and Robotics Olympics competitions	\$8,550
Supplies for Project Management Institute Research Symposium	\$3,715
Supplies for science & engineering outreach	\$1,982
Books, DVDs & other supplies for engineering & astronomy courses	\$1,124
Supplies for Physics Olympics competition	\$612
MatLab software for CSS 4 Introduction to Scientific Programming	\$375
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	\$16,358

Other Direct Costs

Summer 2008 Student Internship Stipends	\$38,892
Fall 2008 STEM Internship Project Stipends	\$4,400
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	\$43,292

Travel

CIPA II Reverse Site Visit (Baltimore) for 4 persons	\$4,921
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Indirect Costs

Allocated at 10% of project costs	\$12,894
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Total Expenditures to Date	\$144,953
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**CIPA II PROGRAM
ANNUAL Fiscal Report
For Year Ending December 31, 2008**

INSTITUTION Hartnell College**Current Year Grant Award****\$150,000**

	Budget	Expenses	Remainder
1. Direct Labor (Salaries, Wages, & Fringe Benefits)	\$106,040	\$51,304	\$54,736
2. Other Direct Costs			
a. Faculty release time, Summer study	\$0	\$0	\$0
b. Staff Support	Inc. Above		
c. Student Assistants	\$0	\$3,135	(\$3,135)
d. Facility Improvement	In-kind		
e. Equipment	\$4,000	\$13,049	(\$9,049)
f. Supplies	\$13,000	\$16,358	(\$3,358)
g. Copying, faxing	In-kind		
h. Office Space	In-kind		
i. Travel	\$7,324	\$4,921	\$2,403
j. Other	\$6,000	\$43,292	(\$37,292)
3. Indirect Costs and Other	\$13,636	\$12,894	\$742
4. Subtotal	\$150,000	\$144,953	\$5,047
5. Cost Sharing (if applicable)	\$0	\$0	\$0
6. Total Expenditures	\$150,000	\$144,953	\$5,047

Approved:


CIPA II Principal Investigator


Chief Financial Officer

1-30-09
Date

1/30/09
Date

7.0 Additional Remarks

The most challenging task for our team in concluding our grant is the institutionalization of the internships and the Project Management Institute. Over the last year we have been discussing sustainability of the CIPA II grant activities through the leveraging of other grants at the College such as the NSF STEP grant, Hartnell's Mathematics, Engineering, and Science Achievement (MESA) program, and through institutional support from partner organizations. We have already identified several potential future funding sources such as the funding of the Fremont Peak Observatory internships by Hartnell's NSF Science Talent Expansion Project (STEP) grant and the potential of future funding of the NPS internships through collaborations with Cebrowski Institute. We have also begun the process of institutionalizing the Project Management Institute by establishing a 1.0 unit STEM internship course administered under the umbrella of the Science and Math Institute.

On September 23rd, the Hartnell CIPA II team requested a no cost extension for the expenditure of the carry-over of funds from Year One. Our request was approved by Clarence Brown on September 25th with the understanding that the funds will be spent by February 28, 2009 and that the final report will be sent by March 15, 2009.

End of Report
Appendix Documents Follow

Appendix Documents

1. No Cost Extension Approval Letter
2. 2008 Project Management Institute Research Symposium Intern Abstract Booklet
3. October 27, 2008 Advisory Board Agenda