
Submitted on: 06/13/2002

Principal Investigator: Greenfield, Terri

Organization: Portland Comm Col

Title:
Creating Avenues, Support and Equity for Women and Minorities in Advanced Technologies

<table>
<thead>
<tr>
<th>Project Participants</th>
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<tbody>
<tr>
<td><strong>Senior Personnel</strong></td>
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<tr>
<td>Name: Greenfield, Terri</td>
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<tr>
<td>Worked for more than 160 Hours: Yes</td>
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<td>Contribution to Project:</td>
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</tbody>
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| Name: VanAmerongen, Barbara |
| Worked for more than 160 Hours: Yes |
| Contribution to Project: |

| Name: Sloan, Susan |
| Worked for more than 160 Hours: Yes |
| Contribution to Project: |

| Name: Williams, Rosalyn |
| Worked for more than 160 Hours: Yes |
| Contribution to Project: |

| Name: McKinnon, Maurice |
| Worked for more than 160 Hours: No |
| Contribution to Project: |
| Maurice McKinnon is no longer working on this project |

Post-doc

Graduate Student

Undergraduate Student

Technician, Programmer

Other Participant

Research Experience for Undergraduates

Organizational Partners

Department of Labor

CASE Advisory Council

Society of Women Engineers
Centro Cultural

PIVOT

Junior Achievement

Worksystms, Inc

Women Work

Women In Technology International

Beaverton School District - Westview HS

Beaverton School District - Sunset HS

Beaverton School District - Southridge H

Portland School District - Jefferson HS

Portland School District - Marshall HS

Portland School District - Cleveland HS

Portland School District - Benson HS

Women in Telecommunications

Youth Opportunity Center

Other Collaborators or Contacts

Faculty and Staff at Portland Community College

Programs at Portland Community College

Multicultural Center
Native American Club
African American Club
Women's Resource Centers
TRiO Program
Advisors/Counselors
Alternative HS Completion Program
Adult Basic Skills
Cooperative Education

External Businesses/Industries

Intel
Nike
Mentor Graphics
Activities and Findings

Research and Education Activities:
The CASE project is designed to increase the number of women and minority students at Portland Community College enrolled in (and ultimately employed in) High Technology areas. A variety of strategies have been developed to facilitate this experience for women and minority students. The project is taking place at two Campuses: Sylvania and Cascade, with plans to expand to a third campus in the final year of the grant.

Major accomplishments of the project during its first year have included the:
1. Development of an Employer Advisory Committee with a comprehensive cross section of high tech employers participating, and volunteering their time to support the project.
2. Development of an IT career exploration course for academic credit (CIS 100), approved by the PCC Faculty curriculum committees and decision-making body.
3. Successful outreach activities to community partners and organizations.
4. Successful outreach activities to potential students, including Brown Bags, orientation sessions and presentations at a variety of events.
5. Organization of a CASE Club at each Campus for student support and networking.
6. Identification of tutoring resources at each campus, specifically for CASE participants.
7. Connection made, and enrollment of students in MentorNet, an international virtual mentoring program.
8. Training of tutors who will work with CASE students.
9. CASE Web Site Design
10. Women In Technology Conference to be held June 2002.

Total number of Faculty directly impacted at both campuses: 2
Total number of students directly impacted at both campuses: 80
Total number of Faculty indirectly impacted at both campuses: 55
Total number of students indirectly impacted at both campuses: 870

As the project is still in the initial start-up period, we are just beginning to see what has been changed by our program activities. A significant change resulted from the development and implementation of the new CIS 100 CASE class. Feedback from the students who have completed the class is that they are able to identify career paths which interest them; better understand the high tech industry and job market; and that they have developed an education and career plan for themselves with concrete steps leading to their individualized goals.

Staff, faculty and administrators at the College have identified the CASE project as a model of how to achieve improved outreach and retention of students traditionally underserved within the institution. PCC is currently working to create logical career pathways, starting with the IT field, that will better enable students to see how the courses they take connect with jobs in the 'real' world. This effort, combined with improved student support services, is part of an institution-wide effort to provide improved access and retention to women and minority students, as well as economically disadvantaged students.

The Employer Advisory Committee is early in its evolution, but the potential (based on the high interest and attendance from employers) exists for the advisory committee to provide numerous opportunities for students to connect with professionals in the IT field. Faculty are also excited about the opportunities the advisory committee provides for them to connect their courses to work experiences such as job shadows, internships, and project-based learning.

Findings:
2a. Major achievements
To date, our most significant achievements have included:
1. Development of an Employer Advisory Committee with a comprehensive cross section of high tech employers participating, and volunteering their time to support the project.
2. Development of an IT career exploration course for academic credit (CIS 100), approved by PCC Faculty curriculum committees and decision-making body.
3. Successful outreach activities to community partners and organizations.
4. Successful outreach activities to potential students, including Brown Bags, orientation sessions and presentations at a variety of events.
5. Organization of a CASE Club at each Campus for student support and networking.
6. Identification of tutoring resources at each campus, specifically for CASE participants.
7. Connection made, and enrollment of students in MentorNet, an international virtual mentoring program.
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2c. Processes used in materials development
Materials were developed with the use of collaborative processes with industry representatives, and then field-tested with a 'pilot' group of students. Based on this experience and student, Faculty, and employer feedback, materials were reworked and 'tweaked' to better serve students and clarify industry standards.

2f. Impact information
The total number of students impacted by the CASE project to date is 950. Of these, 80 students completed the CIS 100 course, 870 students participated in orientations, brown bag events, tutoring, and the CASE Club. Fifty-seven Faculty were impacted by the project. Two of these provided direct instruction in the CIS 100 classes and 55 of them were involved in presentations and trainings, and CASE events.

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Staff, Faculty and administrators at the College have identified the CASE project as a model of how to achieve improved outreach and retention of students traditionally underserved within the institution. PCC is currently working to create logical career pathways, starting with the IT field, that will better enable students to see how the courses they take connect with jobs in the 'real' world. This effort, combined with improved student support services, is part of an institution-wide effort to provide improved access and retention to women and minority students, as well as economically disadvantages students.

2g. Processes used for student recruitment and retention
Processes used for student recruitment have included:
- Written information mailed to every student who has completed a GED at the College
- Development of fliers mailed out to a myriad of community based organizations, one-stops, local women's organizations
- Presentations in computer information systems and computer science and developmental math, reading and writing curses at each Campus
- Coordination with Student Services
- Presentations to employers, community organizations, high schools, and prospective students
- Brown bag lunches for students to participate in discussions with women and minorities currently employed in come way in high tech jobs

Processes used for student retention have included:
- Formation of a CASE Club
- Training of tutors on CASE related audiences
- Case management services provided by College student resource specialists
- Brown bag lunches for students to participate in discussions with women and minorities currently employed in some way in high tech jobs
- Support services such as books, child care, transportation

2i. Evaluation
Evaluation activities are still under development. The evaluator identified in the proposal moved out of state in the Fall of 2001, so we have been looking at models of data collection, and sources of outside evaluation within our budget constraints. Students in CIS 100 have completed course evaluations. These will be used to inform instruction and expand the range of curriculum offered to the students. For example, the class has been modularized so as to be more flexible in its offering.

2j. Cost sharing
We have received more support from our own College than we estimated in the original proposal. PCC has made the following contributions:

- In funding the tuition and fees of the students enrolled in the TEKnology course (formerly Exploratorium), PCC is contributing 3 years x 3 terms/year x 2 classes/term x 25 students/class x 4 cr.hr./class x $40 tuition/cr.hr.=$72,000 to direct student support.

- In allocating 2 non-CASE student support specialists to work with CASE students as part of their regular workload, PCC is contributing 2
specialists $37,660 salary/specialist x 2 years = $52,724 plus $18,776 benefits = $71,500.

-In spending the monies allocated to tutors for the CASE project to pay not only for tutors but also to train all (CASE and non-CASE) technology tutors to better work with the targeted populations, PCC is increasing the impact of the project: $10,000 cost of non-CASE tutors x .10 non-CASE tutor time allocated to CASE training = $1,000

This amounts to a contribution of $144,500 allocated to CASE participants by PCC.

Government support has come from the Department of Labor, staff funded by Perkins money and Worksystems, Inc, our local Workforce Investment Act Agency.

2k. Additional Support
Contributions to support the project have come from the US Department of Labor Women's Bureau, and the State of Oregon Womenwork! and Region X Womenwork! to fund the Women in Technology conference to take place in June of 2002. A grant has also been received from WomenWork! (A national education and employment organization interested in furthering women’s equity issues across the country) and is being utilized to pay Faculty to develop a 'bridge' curriculum for women and minority students who want to participate in high tech areas, but lack the basic academic skills to be successful. This one term course will teach basic reading, writing, and math using technology so that students will be able to improve their academic skills while learning the basics of navigating a computer. We hope to pilot this curriculum Fall, 2002.

Additional support has come to us in several forms. Industry has 'loaned' us employees to serve on the Advisory Committee, act as mentors, participate in campus activities and support students in other ways.

2l. Aspects where the project is either on schedule or ahead of schedule.
We did not offer CIS 100 until Winter term, as we used the first quarter of the grant to hire staff, develop curriculum, identify industry partners, market and do outreach for the project. Our classes have been ahead of schedule in terms of the number of students served. We had full classes at each campus in the Winter (with a waiting list at one campus) and Spring term the classes were full before the start of classes. Both campuses currently have waiting lists so we have developed ways of engaging students prior to attending the class.

The web site is on schedule and being developed this term. Our association with MentorNet has been much faster than we anticipated, and even with a Fall cut-off deadline from them, we were able to enroll two dozen students for Fall, Winter, and Spring terms. Students waiting to enroll in MentorNet until next year are being connected with a 'virtual mentor' from our local employer pool.

We have added the Women in Technology Conference for this year, which wasn't in our original plan.

2m. Small additions or small changes
The changes we have made have been related to organizational structure. When we realized that giving up $100,000 from personnel was going to be such a negative impact on the project service delivery, we came up with an interim plan (currently in place) and a plan for next year, which we submitted to our grants officer and have had approved.

Using the anticipated carry-over of funds from this first year, plus the already approved re-distribution of next year's funds, we intend to expand our comprehensive program services on both Campuses. Since our original goal was to establish this project as a sustainable part of the 'mainstream' college over the next three years, projects at each Campus will assist us in moving toward that goal. It is still our intent that CASE will become part of the Campus culture and, where appropriate, combine with other campus initiatives so as to be viewed as an integral part of the College.

2n. Difficulties
The project has struggled with the logistics of running CASE on two very different Campuses. As project administrators and staff analyzed the differences in both student populations and organizational culture, it became obvious that the program structure needed to be modified to be more site-specific.

Training and Development:
In the areas of training and development for staff we have offered several opportunities. Most importantly, Faculty and staff have had the benefit of close interaction with members of the Employer Advisory Committee as advisors and speakers in the classes. Faculty has had an opportunity to work collaboratively with each other to develop the course and curriculum and to share materials, resources, and market data information with each other.

Outreach Activities:
Dissemination activities have included:

Outreach within the College:
Developmental Ed classes
Computer Information Systems classes
Computer Science classes
ENNL classes
College entry-level Writing and Math classes
Displaced Homemakers Program
College Counseling Centers
Campus Clubs
Faculty meetings
One-Stop Career Centers
Multicultural Center
Women's Resource Center
Adult Basic Skills

Outreach within the Community
Youth Opportunity Center
Worksystems, Inc.
Junior Achievement
Women in Technology, International
Area High Schools
Society of Women Engineers
Women in Telecommunications
Self Enhancement, Inc
SouthEast Works
PIVOT a Job Corp Teen Parent Program
Nike
Intel
Axian
Mentor Graphics
Hewlett Packard
Software Association of Oregon
Dislocated Workers Program
Centro Cultural

Journal Publications

Books or Other One-time Publications

Web/Internet Site

URL(s):
in development stage

Description:
Designed and currently under development, the CASE web site is scheduled for implementation at the end of this fiscal year. Stakeholders have been identified as:
- Interested potential students to CASE
- Current CASE Students
- PCC Faculty/Advisors/ Counselors
- Business and Industry
- Other schools connecting through NSF that are interested in emulating this program at their own school
- PCC NSF CASE staff
The types of information found on the web site will be:
- Program definition - What is CASE?
- Benefits to students
- NSF Staff contacts
- FAQ's on details about the program
- CASE Orientation presentations - downloadable
- Links to class materials
- Calendar of events: orientations/brown bags
- Contacts for job shadowing, coop ed., mentoring
- Links related to reimbursement of moneys
- Other outside interesting links for potential and existing CASE students
- Links for equity training (GESA)
- List of businesses/industries involved
- List of associated groups
- List of advisory committee members
- CASE white papers and presentations, statistics
- CASE staff meeting minutes

Other Specific Products

Product Type: Newspapers/Newsletters

Product Description:
Publications in:
Centro Oregonian
Skanner
USA Today
Asian Reporter
PCC Insider
PCC Communities

Sharing Information:
Please see appendices

Contributions

Contributions within Discipline:
Please see appendices

Contributions to Other Disciplines:
Please see appendices

Contributions to Human Resource Development:
Please see appendices

Contributions to Resources for Research and Education:
Please see appendices

Contributions Beyond Science and Engineering:
Please see appendices

Special Requirements

Special reporting requirements: None
Change in Objectives or Scope: None
Unobligated funds: $ 98,000.00

Animal, Human Subjects, Biohazards: None
Categories for which nothing is reported:

Any Journal
Any Book