

**ETIC Computer Science Task Force  
Communications and Outreach Plan  
2006**

**ETIC Goal:** Support the technology needs of businesses and other organizations in Oregon, help revitalize the state's economy, and develop a workforce of highly trained and skilled technology workers.

**Task Force Primary Goal:** Address the shortage of computer science professionals in Oregon through a multi-year, targeted outreach campaign at selected high schools in Oregon.

**Objective 1:** Expand the number of high school students in Oregon who have an understanding of the computer science field, and the college programs and job opportunities available:

- Determine what the most critical high school targets are so as to use resources most strategically and effectively.
- Develop outreach strategies and materials – such as a website, brochure-poster, and speaker's bureau – to provide information to high school students about the field of computer science, the certificate and degree programs offered in the Oregon's postsecondary education system, and the related career opportunities in Oregon's job market.
- Determine if and/or how we can help high school math, science, and computer science teachers with curriculum aides on computer science that they can incorporate into their lesson plans and teaching strategies.
- Work with industry trade associations to facilitate the development of a speaker's bureau of computer science professionals who can meet with high school students about the opportunities in the field; this project includes development of presentation materials and other support for speakers.

**Objective 2:** Ensure the availability of internships and other in-college work opportunities for CC/OUS students pursuing computer science degrees:

- Work with business and industry in Oregon to provide incentives – such as scholarships and internships – for more students to pursue a computer science degree in college

**Objective 3:** Gain support (for this effort) and increase the number of collaborative projects focused on increasing computer science professionals in Oregon:

- Communicate the computer science outreach strategy and plans to industry trade associations, K-12 education groups and associations, community colleges, the State Board of Higher Education's Academic Excellence and Economic Development Working Group (AEED), and OUS faculty.

**Primary Audiences:**

- Oregon high school students, particularly those in the upper grades, with current or potential interest in the computer science field. This will expand to middle school students in the future.
- Teachers of math, science, and computer science in Oregon high schools.

**Secondary Audiences:**

- Parents of high school students
- Deans, professors and current computer science students at OUS institutions and at community colleges.
- Business and industry groups and associations in Oregon which use computer science professionals in their organizations.
- Media, who can help spread the word statewide on effective outreach programs and results.

**Messages:**

A: For high school students

- Computer Science is a great field because of the diversity of jobs, the good pay ranges, and the flexibility and often global nature of the work environment.
- No matter what your interests, in nearly every field, computer scientists are part of the team.
- People who work in computer science are creative, are problem solvers and are team players.
- Because every industry uses technology these days, there is job security in the computer science field, and computer scientists have the ability to choose from many different industries, e.g., software development, financial services, education, nonprofit and community service organizations, entertainment, environment-focused companies, forestry, etc.
- All seven of the OUS institutions offer computer science degree programs, so there are a myriad of specialties and career focus options to choose from, as well as a wide range of campus environments to choose from, such as a large or small college, urban or rural campus, etc. Additionally, all 17 of Oregon's community colleges offer courses, certificate programs, and/or degree programs in computer science, some of which lead smoothly into the OUS degree programs, creating student-friendly career pathways.
- It's a good idea to take as much math as you can in high school to prepare for taking computer science in college; but even students without a strong math background (but with strengths in music, physics, law, electronics, technical writing) have gone into computer science and succeeded in college once they took additional math courses at the college level.
- A computer science degree is "portable": you can often do your work from home, from a café, or from a continent distant from the one you're sending your completed work to. It's also a "global" degree and makes you a sought after asset in almost any country around the world.

- While the computer science field currently has more men than women in it, women in the field report high levels of satisfaction in their work, as well as enjoying advantages in being among a minority of women with high levels of expertise in the field, which translates into enjoying greater job opportunities.
- Computer scientists are intelligent, creative, and hard workers who enjoy the challenges and opportunities in their career field.

B: For high school teachers, counselors, and administrators; and parents

- Students need accurate and diverse information on career fields, from credible sources, to help them determine their future educational and career paths.
- Showing students the practical applications for the math and science they are learning is another way to help them connect to and really understand the subject area.
- Exposing students to professionals in the computer science field helps them better understand the different types of careers and jobs, and the educational background they need to work in any given field.
- For parents: Computer Science is not a “dead” career, but remains a top field in Oregon and holds great future potential as well. [Parents have a lot of influence in their children choosing engineering and science careers]

C: For computer science deans, professors at OUS institutions

- Increases in the number of computer science students in your department leads to additional resources from the state, from industry, and other private and federal sources potentially.
- Building a solid, stable pipeline of computer science students supports Oregon’s largest business sector – high tech – as well as other industries, and thus helps our economy.

D: For business and industry groups

- Building a solid, stable pipeline of computer science students supports Oregon’s largest business sector – high tech – as well as other industries, and thus helps our economy.
- The best way for business/industry to ensure a strong, well trained cadre of technology workers is to support efforts that enrich the pipeline, such as scholarships, internships, special programs for high school students (such as Saturday Academy, ORTOP), and business-education partnerships.
- Without support of pipeline-building efforts, Oregon companies will continue to have to import higher-cost technology workers who also come with higher retention risks; or have to export jobs to where the talent is, leaving Oregonians behind.
- The Oregon University System has teamed up with the private sector in Oregon to work on effective strategies and programs that will address the shortage of technology workers.

**Tactics:**

- Complete focus groups at two Oregon high schools, representative of Oregon's demographics, in order to better understand the types of materials, messages, and channels that will be effective in reaching high school students and achieving the Task Force goals. [Completed]
- Design, launch, and make students aware of a focused website that will provide comprehensive information on computer science that will appeal to teens, such as jobs and pay of people with computer science degrees, types of classes to take in high school to prepare for a CS degree, types of college courses and degree programs available in Oregon, etc. (Website content based on responses to focus group questions and analysis of popular teen websites.) [Completed]
- Produce for high school students a hard-copy brochure which folds out to a wall poster, which includes key information on computer science as a degree and career field. (Brochure content based on responses to focus group questions and analysis of effective teen-focused advertising.) [Completed]
- Work with industry groups to develop a speaker's bureau made up of a diversity of professionals in the computer science field, from different fields, levels, age groups, ethnic backgrounds, gender, etc. Communicate with high schools statewide to offer members of the speaker's bureau for career-day and other related speaking opportunities. Try to develop a cadre of speakers from across the state in order to be able to offer speakers in rural areas as well. Also contact high school science clubs and make presentations to these groups by industry people (buy pizza, etc.)
- Develop and distribute a variety of power point slide decks and or CDs/DVDs that can be used for speaker's bureau presentations at high schools, at high school teacher curriculum conferences, and within classrooms as a tie in to math, science, and computer science classes. [Completed] Could also produce a video of a speaker and distribute this to schools.
- Present information on the outreach campaign and other related ETIC efforts at education and business conferences (including teacher in-service conferences), and at association board meetings, throughout the state (as part of a panel, as a break out session, through an informational booth, etc.).
- Do an informational mailing to deans and other computer science faculty describing the effort of the Task Force, and including resources, such as the brochure-poster, and the website URL, and suggested distribution. [Completed; should be repeated]
- Determine the best channels for reaching parents, potentially working with the PTA association statewide, and finding other ways to get information on computer science careers to parents.
- Tie into National Engineers Month; companies book in directly with schools to make presentations; also contact the Business Education Compact (BEC)

to see if we can tie in to their outreach efforts and mutually support one another.

- Determine if these types of presentations to students at high school can fulfill career “points” requirements.
- Gather data from survey of industry members to determine the number of computer science hires in the state and how many come from industry; and get the number of computer science graduates per year who come out of OUS. ETIC is working in this.

**Channels:**

- Internet (for website)
- Brochure-poster distribution at high schools through teachers, counselors and administrators directly to students in classrooms or participating in assemblies or career-day events; and use of high schools for speaker’s bureau presentations (use mail to get materials to school, with suggested distribution options provided).
- Brochure-poster distribution through university and community college computer science programs to high school and/or community college.
- Students who have requested information on programs, or who are visiting the campus; and to college students who may be taking a computer science course and are considering it as a major (use mail to get materials to campuses, with suggested distribution options provided).
- Education and business conferences and events.
- Live presentations at high schools and other venues.
- CD/DVD curriculum presentations through high school math, science, and computer science classes.

**Evaluation:**

**Task force success is measured** by a set of metrics/indicators which will enable the Computer Science Task Force to track and evaluate its progress and performance in meeting its primary goal and objectives:

- For example, by December 2007, increase the number of students pursuing and completing computer science degrees by \_\_%, by December 2008 by \_\_%, by December 2009 by \_\_%, and by December 2010 by \_\_% from current numbers (December 2005)
- Look at tying into ETIC’s 2x goal for increasing engineering and computer science graduates in the Oregon University System
- Collect from OUS institutions current and historical numbers of students pursuing computer science degrees, and the numbers graduating with computer science degrees, in order to track and evaluate increases, and use these as a baseline for monitoring the success of the outreach strategy over time.
- Track and evaluate the “hits” and time spent on the student-focused website over time; and make content, design and navigation changes as needed based on evaluation of hits.

**Comment [C1]:** [Note: Why December? Why not use June completion numbers?].

- Measure any changes in numbers of students enrolling as computer science majors from the key high schools at which targeted Task Force efforts had taken place (e.g., speaker's bureau speakers, brochure-poster distribution, etc.)

**Calendar of Activities:**

2006

January – February:

- Design and develop the power point presentations, the brochure-poster and the website. [Completed]
- Distribute the power points and the brochure-poster to pilot high schools. [2<sup>nd</sup> piece completed]
- Beta test web site. [Completed]
- Gather baseline statistics to use for tracking and evaluating campaign efforts and changes in key indicators over time.
- Identify upcoming education and business conferences, and develop and send out proposals to speak at these on the Task Force effort. [Phase I completed; need to repeat]

March-May:

- Launch web site in March; do media outreach on site to dailies and weeklies across the state on website and on informational brochure. [Completed]
- Distribute "how to use" letter and brochure-poster to OUS computer science departments, and to community colleges. [Completed]
- Develop speaker's bureau working with ETIC and industry groups. [Powerpoint deck completed only]
- Distribute power point curriculum slides to high school math and science teachers.
- Send out proposals to speak at summer, fall and winter conferences.

June- September: TBD

October-December: TBD

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