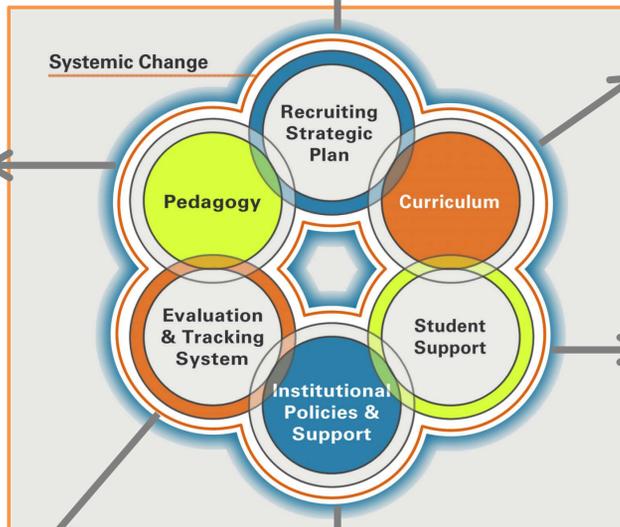


Diversity Initiatives Supporting Systemic Change

- Outreach to high school students and teachers of IT:
 - Informs about engineering majors, careers, and IT job market
 - Shares alumni stories
 - Addresses myths of IT geek culture
 - Uses positive marketing images
 - "Markets" majors and minors to undeclared students and other majors
- Holds panel discussions for northern and central schools (12 courses) promoting IT, engineering careers, Iron Range's engineering program, and the CIS major and minor
- Broadens recruiting and retention through courses taught by adjuncts and online
- Actively encourages women and minorities to major in computing

- Uses pair programming
- Uses student discussion or problem solving groups in class and other collaborative learning interventions
- Uses relevant and meaningful examples with broad appeal to explain concepts
- Routinely discusses options, advantages, and rewards of computing careers
- Expanding the number of faculty using best practices for retention
- Offers an online mentoring course for teaching assistants



- Offers official concentrations within the major
- Has a minor in computing
- Has multiple pathways into the major and minor
- Aligns courses with student career interests

- Brings students together with lunches and cookie breaks
- Cross-fertilizes groups (e.g., at Fall dinner and Christmas events)
- Pairs junior and senior students with professional mentors
- Provides training for peers and professionals to become mentors
- Trains TAs for freshman and sophomore core classes

- Has a comprehensive evaluation plan
- Uses NCWIT Tracking Tool
- Administered SEM surveys
- Evaluates student support interventions
- Evaluates funding and other high level support

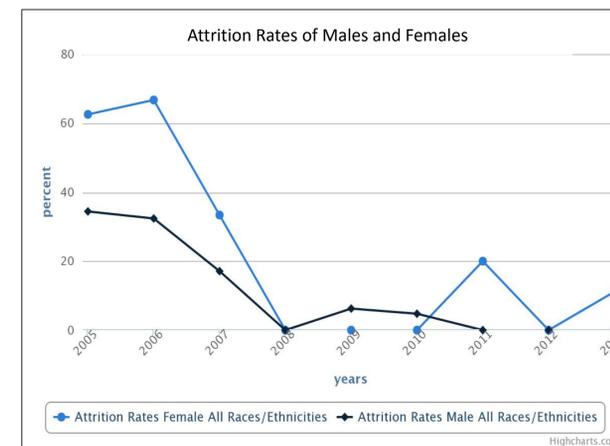
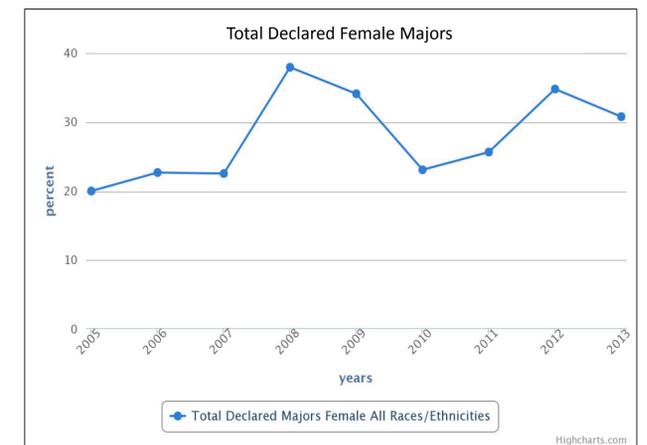
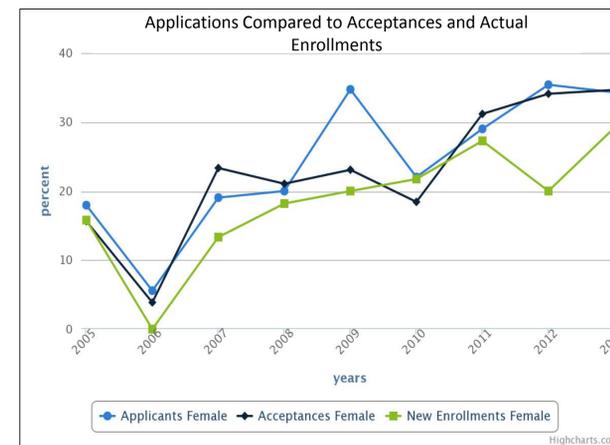
- Established standards for teaching assistants in CIS courses to ensure high quality
- Created a strategic plan to diversify the major as part of a 10 year goal to reach gender parity
- Collaborates with admissions and other relevant offices on campus
- Provides and funds faculty professional development
- Broadened admissions policies
- Funds faculty and student outreach
- Funds student groups
- Created *Increasing Women in Technology*, an NSF-funded four-year scholarship program
- Explicitly includes faculty diversity activities in annual reports or promotion and tenure portfolios

Information compiled from: NCWIT Strategic Recruitment & Retention Plans; NCWIT Tracking Tool

2015 Client Profile

College of St. Scholastica Computer Science/Information Systems NCWIT Member Since: 2008

NCWIT Tracking Tool Data College of St. Scholastica Computer Science/Information Systems



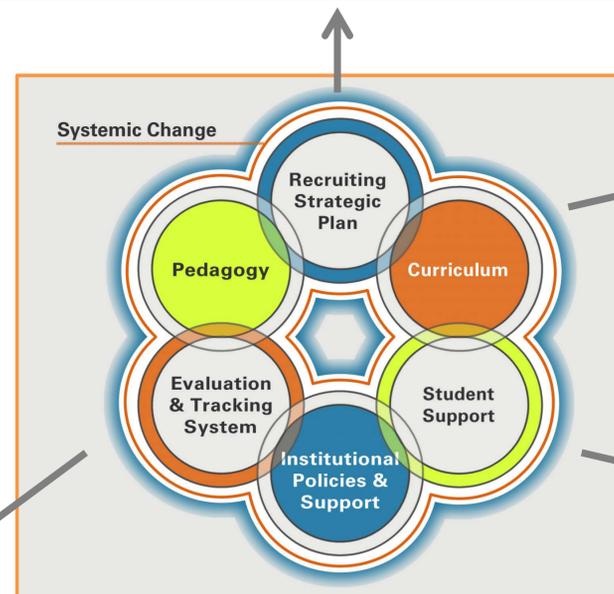
Diversity Initiatives Supporting Systemic Change

- Developed, uses inclusive classroom climate rubric
- Integrates collaborative learning in early courses
- Uses discussion or problem solving groups in class
- Uses pair programming
- Actively encourages women and minorities to major in computing
- Makes computing relevant:
 - Uses examples with broad appeal to explain concepts, assignments
 - Communicates relevance to different types of work environments
 - Routinely discusses options, advantages, and rewards of computing careers in intro courses
- Has affinity research groups

- Has a comprehensive evaluation plan
- Uses NCWIT Tracking Tool
- Tracks course outcomes by student sex and race
- Administered entry, SEM, and exit surveys

- Developed messaging about career opportunities and the nature of computing work
- Provides “talking points” to other campus offices that conduct outreach
- Participates in admissions events
- Informs students in non-major introductory courses about computing careers
- Trains students and faculty as ambassadors

- Revised website to appeal to diverse prospective students
- Distributes posters about Informatics
- Holds spring open houses for women
- Conducts outreach to K12: HS juniors and seniors, main “feeder” schools, community college students, and more
- Provides information for K12 teachers, counselors, parents, administrators



- Links students with non-profits for service learning credit
- Created a minor in Human-Centered Computing
- Created first U.S. Informatics major, in addition to existing Computer Science
- Created comprehensive curriculum that includes everything you can do in computing

- Provides career information outside of classes
- Encourages and funds student participation in conferences (e.g., Hopper, Tapia, STARS, etc.)
- Supports research experiences for undergraduates
- Has women/minority student groups

- Funds and supports faculty development
- Mandates teaching methods for early courses
- Conducts monthly teaching seminars for all undergraduate lecturers
- Funded website revision and testing
- Funds faculty and student outreach
- Funds student groups

- Explicitly includes diversity activities in faculty annual reports, tenure/promotion portfolios
- Publicizes intention to diversify student body
- Collaborates with admissions and other relevant offices on campus
- Became a NCWIT *Pacesetters* Member

Information compiled from: NCWIT Strategic Recruitment & Retention Plans

Michigan State University
Computer Science and Engineering,
Electrical Engineering and Computer
Engineering, Mechanical Engineering
NCWIT Member Since: 2011

Diversity Initiatives Supporting Systemic Change

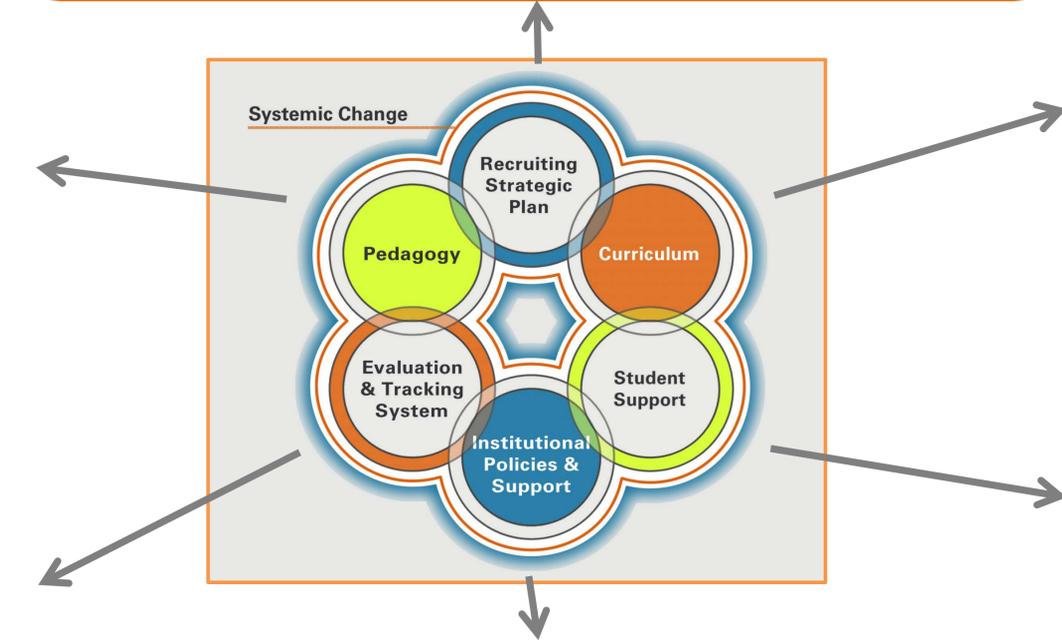
- Established process for "checking in" with female students early in semester
- Encourages professors to use collaborative techniques, such as random group assignments
- Favorably addresses issues identified by SEM survey:
 - Encourages faculty use of "Everyday Examples" in the classroom
 - Helps students identify engineering preferences
 - Improves student connection to the departments

- Shares impact stories and outcomes of SEM and persistence studies
- Implemented MapWorks retention and success system to retain at-risk 1st- and 2nd-year students before they fail, quit, or transfer

- Developed a marketing campaign with positive messages about being the most supportive of women in the region
- Inventories ways that female engineering majors are supported
- Invites biology and psychology majors to sample courses with Intro to IT, Enrichment, or Spatial Visualization training opportunities
- Created talking points for all Engineering and CS programs
- Promotes positive messages about engineering majors across campus showing biology and psychology applications, meaningful jobs, high pay, opportunities for women, and more
- Created and established outreach program with paid Ambassadors; including Ambassador and presenter training
- Incorporates talking points in all recruitment and outreach presentations

- Developed Enrichment course (piloted over two semesters: 2013-2014)
- Uses NCWIT "Did You Know" resources
- Encourages professors to implement "Cookies in the Classroom," sharing with students about personal interests and background

- Identifies and implements changes to increase sense of community among students
- Develops natural networks among students
- Developed, delivers a presentation to share messages and tools with all departments
- "Did You Know" email campaign makes tools accessible to faculty to promote faculty-student interaction



- Assesses diversity of faculty for each major
- Developed a Diversity Certificate to engage faculty in a low-cost, high-impact program to increase diversity knowledge, demonstrate commitment to NCWIT best practices, and incentivize faculty
- Created awareness and provided information about diversity in departments
- Encourages diversity in recruiting and hiring TAs, mentors, peer leaders, and tutors
- Institutionalized best practices, improved communication, sharing of data, and commitment to shared goals
- Shares strategic plans, outcomes, and annual reports with multiple stakeholders to increase institutional understanding and support

Information compiled from: NCWIT Strategic Recruitment & Retention Plans

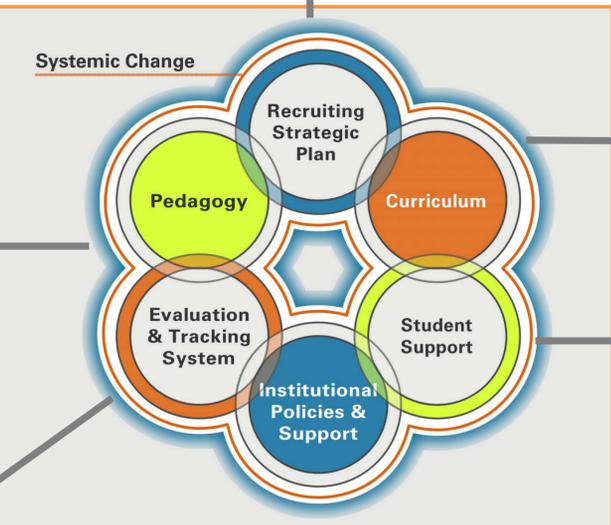
Purdue University
Computer Science
NCWIT Member Since: 2005

Diversity Initiatives Supporting Systemic Change

- Conducts an information session at Women in Science meetings
- Advisors share relevant information with other advisors on campus
- Created outreach presentations for high schools and for counselors visiting Purdue through the admissions department
- Offers a Bridge Program
- Established a learning community for women in CS, which was used to attract women to CS
- Conducts a "Meet and Greet the Faculty" event to increase student exposure to the CS department

- Offers online course to high school students and students who want to change their major
- Improves student performance with a course about course tools and resources

- Works with Exploratory Studies advisors
- Guides students with Mentor program
- Sustains relationships between students and advisors
- Provides students with options to express concerns and ideas

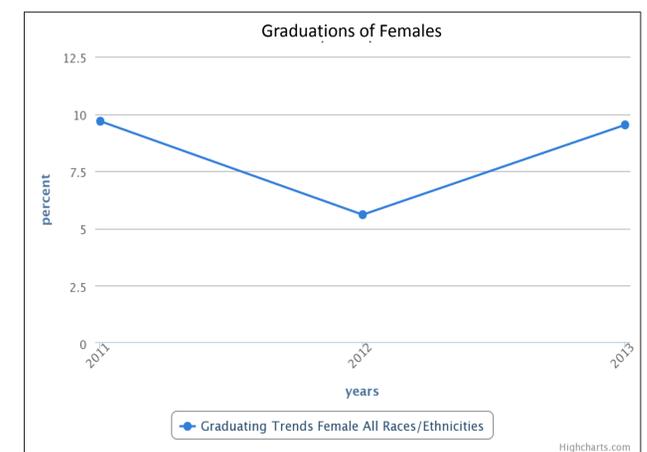
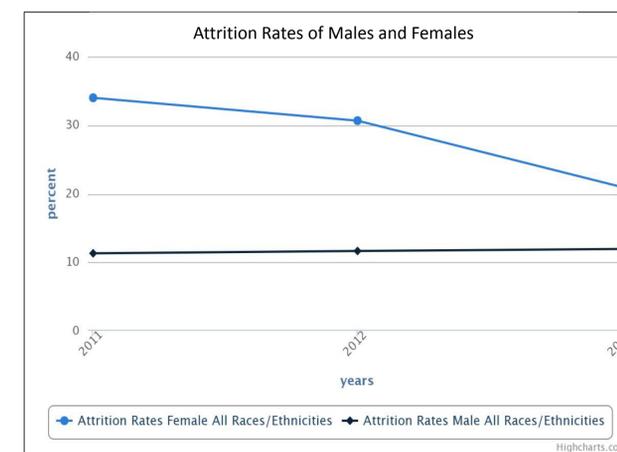
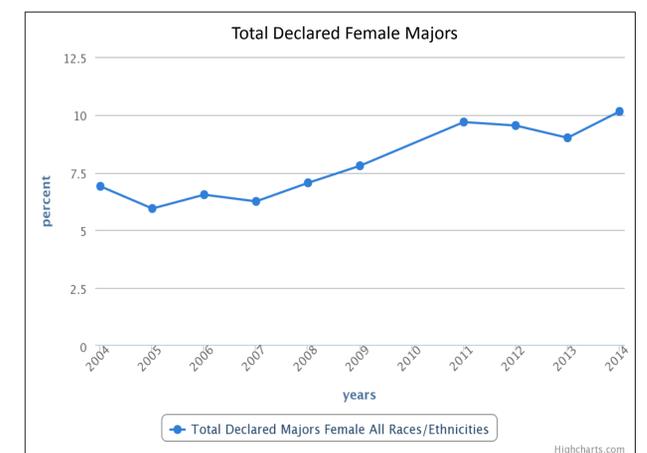
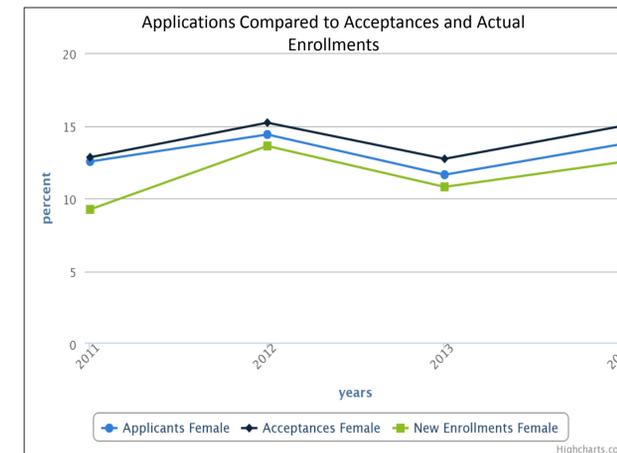


- Provides supplemental instruction to retain students
- Provides peer tutoring to retain students
- Improve TAs' interactions with students with TA Training Program

- Administered entry survey to identify influences to major
- Administered 2nd course survey to track retention
- Administered Graduating Student Survey to collect feedback on department culture, effectiveness, faculty, and courses
- Collects feedback regarding new and ongoing activities for new students
- Assesses Learning Communities (LC)

- Funds student social media ambassador to post text messages and photos to engage undergraduates and prospective students
- Created an ombudsman position so students can express concerns and complaints about CS
- Created Advisor Champions to gauge student experiences and to become aware of issues as soon as possible

NCWIT Tracking Tool Data Purdue University Computer Science



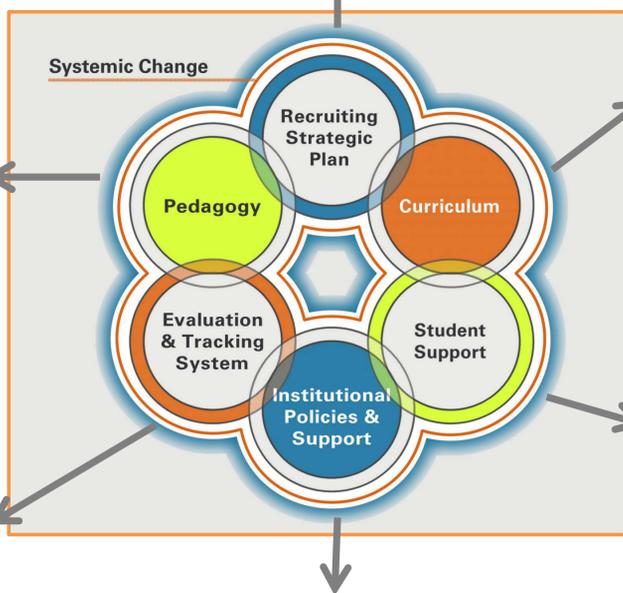
Information compiled from: NCWIT Strategic Recruitment & Retention Plans; NCWIT Tracking Tool

Diversity Initiatives Supporting Systemic Change

- Created accurate messaging about CS major for Intro to Engineering course to appeal to undecided engineering majors
- Recruited Ambassadors to provide outreach to on- and off-campus audiences
- Created messaging for high school teachers and counselors to share with parents and students
- Used Introduction to Programming as recruiting platform for non-majors
- Creation of a virtual "transfer success module" for CS
- Advised community college transfers to retake math courses to improve their success in CS curriculum
- Reached out to NCWIT Award for Aspirations in Computing winners and applicants
- Sent personal notes from departmental women students to admitted students

- Committed to improving the student experience in Intro to Programming so that inexperienced students have a safe environment to learn and advanced students are not bored
- Supported intro course instructors in using relevant examples
- Implemented recitation section for first CS Course; study groups already in place

- Used annual strategic planning, evaluation, and reporting to understand, address, and solve recruiting challenges
- Increased percentage of female students enrolled from 13% to 15%



- Developed new course for experienced programmers
- Improved timing of course-taking to align with Foundation Exam (FE) for Computer Science
- Created FE prep course
- Discussed creating targeted minors (e.g., health professions)

- Advised students who do and do not pass the FE exam
- Created materials to be used by advisors of 1st year students

- Created research-based roadmap to achieve gender parity
- Collaborated with university initiatives to improve the success of transfer students
- Institutionalized recruiting plan as "living document"

Information compiled from: NCWIT Strategic Recruitment & Retention Plans; NCWIT Tracking Tool

2015 Client Profile

University of Central Florida

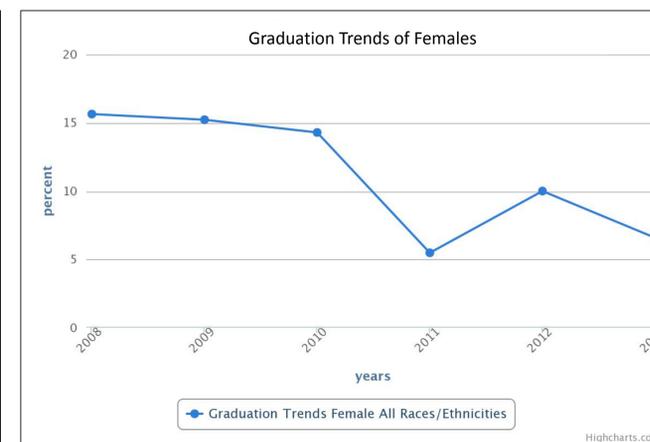
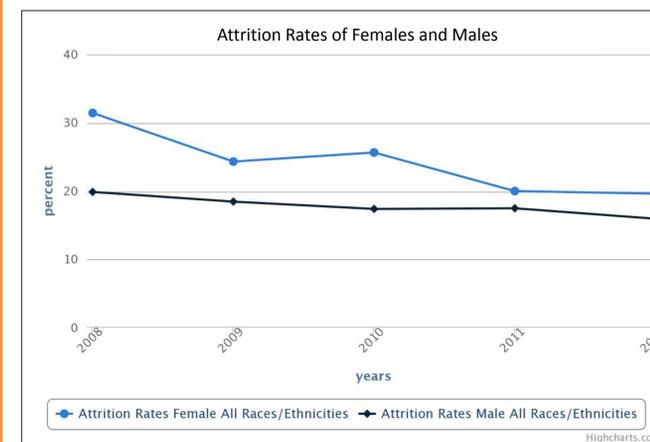
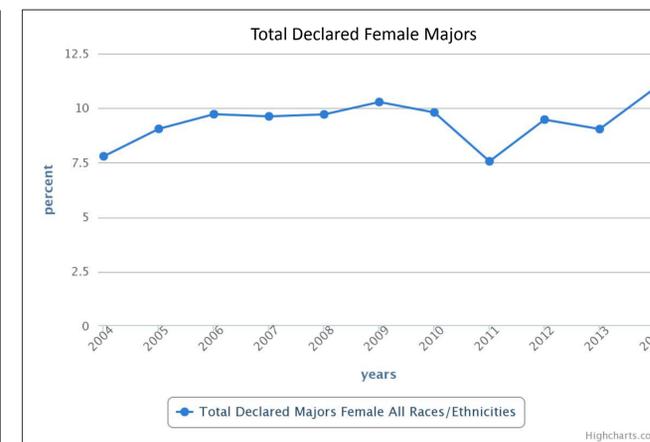
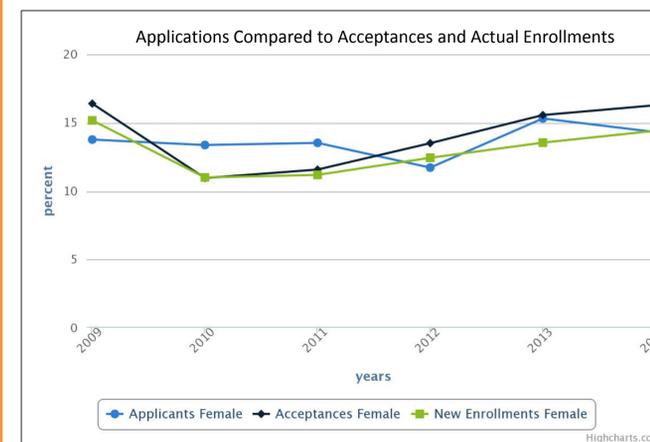
Computer Science

NCWIT Member Since: 2009

NCWIT Tracking Tool Data

University of Central Florida

Computer Science

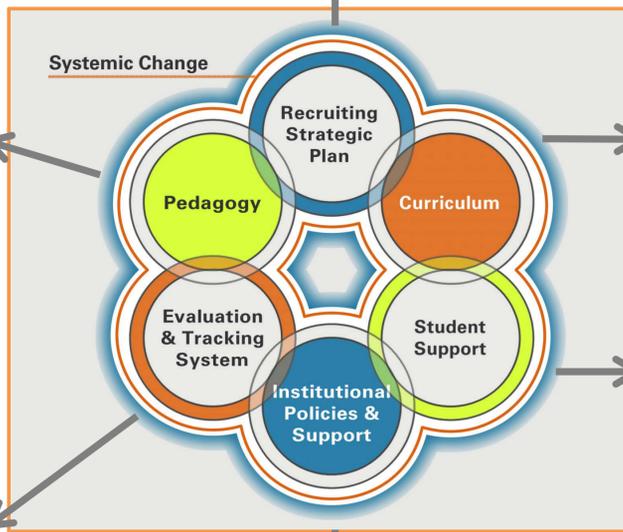


Diversity Initiatives Supporting Systemic Change

- Identifies qualified target audiences for recruitment
- Develops messaging about career opportunities and the nature of computing work
- Uses students and faculty as ambassadors for the major at admissions events
- Informs and personally recruits capable students in non-major introductory courses through faculty
- Prints and distributes posters about program
- Developed an appealing website for diverse prospective students
- Conducts student "roadshows" and other outreach in middle and high schools
- Provides information and workshops to K12 teachers, counselors
- Conducts outreach with high school students visiting campus
- Participates in NCWIT Award for Aspirations in Computing

- Encourages faculty to use engaging examples in lectures
- Communicates relevance of CS to different types of work environments
- Routinely discusses options, advantages, rewards, and humanitarian aspects of computing careers
- Demonstrates student projects by women undergraduates in website videos

- Collects admissions and enrollment data by gender and ethnicity for past 5 years
- Reviews results of prior spatial visualization test
- Tracks Penn Emerging Scholars Program students' course taking patterns to assess impact of program



- Offers a "true intro" course for students with no experience
- Offers Penn Emerging Scholars Program for students without programming experience
- Plans a prerequisite advising event

- Established Penn Emerging Scholars Program community
- Invites women to join Women In Computer Science group
- Arranges courses so that the most difficult are not taken concurrently, but without dumbing down the major

- Offers faculty and student diversity talks by experts (e.g., unconscious bias, stereotype threat, spatial visualization, faculty encouraging of students, and developing an intro course to promote diversity)
- Highlights outreach efforts in departmental newsletter
- Investigated NCWIT Student Engagement in the Major survey modules to examine departmental climate
- Developed web pages with fresh image of computer scientists
- Provides funding for faculty and student outreach as well as student groups
- Distributes NCWIT Top 10 Ways to Retain Students to faculty
- Adapted NCWIT Top 10 Ways to Retain Students for engineering faculty
- Increased students' attendance at the Grace Hopper Conference

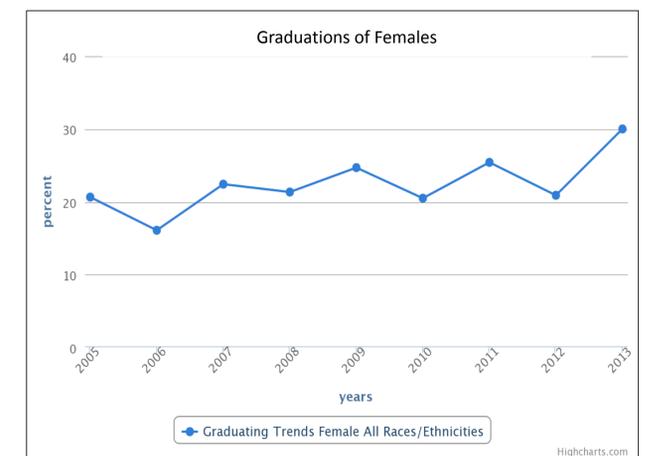
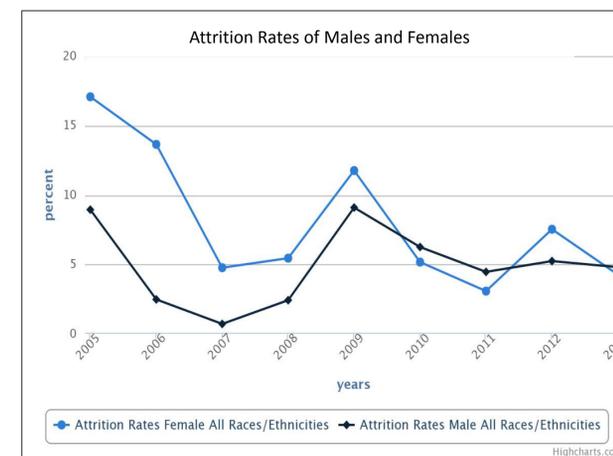
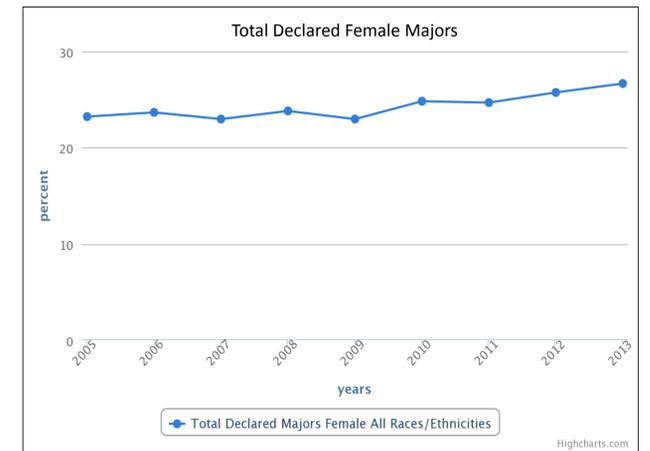
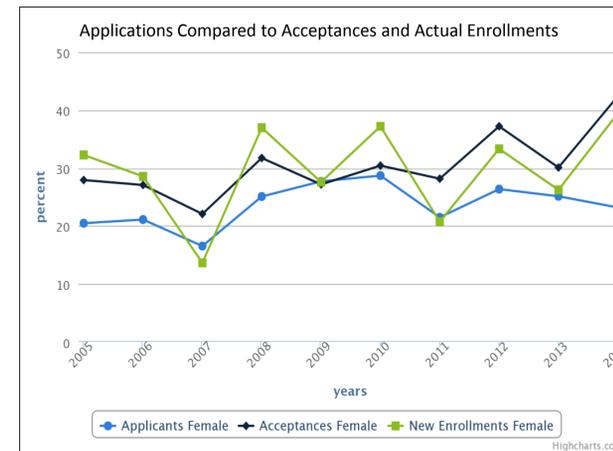
Information compiled from: NCWIT Strategic Recruitment & Retention Plans; NCWIT Tracking Tool

2015 Client Profile

University of Pennsylvania Computer and Information Sciences, Mechanical Engineering and Applied Mechanics

NCWIT Member Since: 2008

NCWIT Tracking Tool Data University of Pennsylvania Computer and Information Sciences

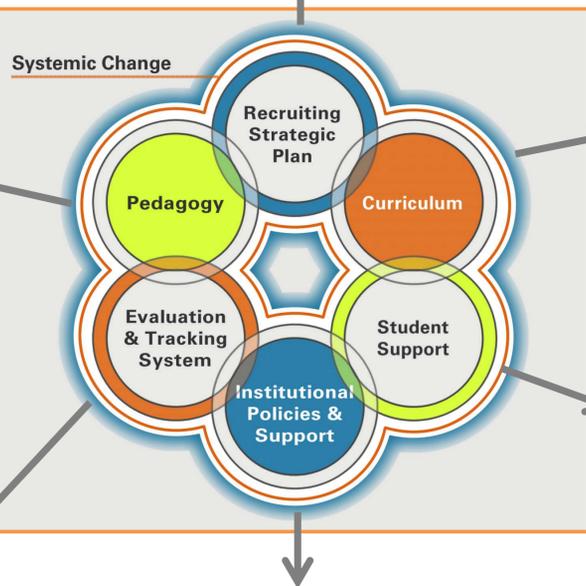


Diversity Initiatives Supporting Systemic Change

- Provides consistent messages about flexibility, rewarding work, high pay, and socially relevant careers for women in engineering majors for Career Days
- Hosts positive computing image events on campus and created swag materials
- Builds relationships and makes sure students have accurate information, correct messaging, materials, and training
- Creates opportunities for friends to learn about engineering majors for women through Student Ambassadors, Career Days, Orientation, and Career Center
- Teams with local feeder schools to develop recruiting materials
- Encourages advisors to refer female students to Computing, EE, and CE when math skills are adequate, but students are undecided

- Faculty encourages students and expose them to real-world applications
- Provides tutoring and other supports
- Promotes positive images
- Provides connections to Everyday Examples in classes

- Identifies and accesses existing data sources; defines data needs and identifies possible methods; reports Tracking Tool data annually
- Tracks CS applications, acceptances, and admissions annually by changing policy to allow for more accurate tracking, early identification, and understanding of the impact of efforts



- Introduces Spatial Visualization into CS courses
- Received approval to offer computational thinking course as university core course
- Introduced Peer-Led Team Learning (PLTL) into the community college feeder school
- Integrated community college female peer leaders into peer leader training

- Identified and allocated spaces for Pre-Engineering majors
- Provides students with a place to belong
- Supports for women with ACM-W and other women's groups

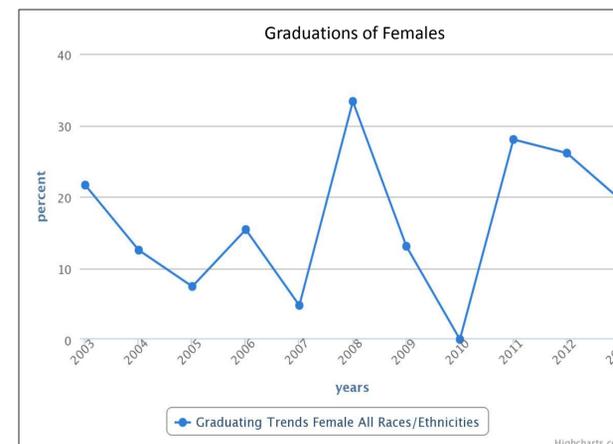
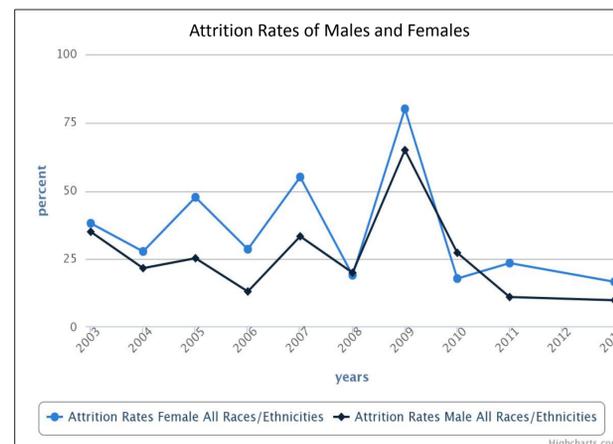
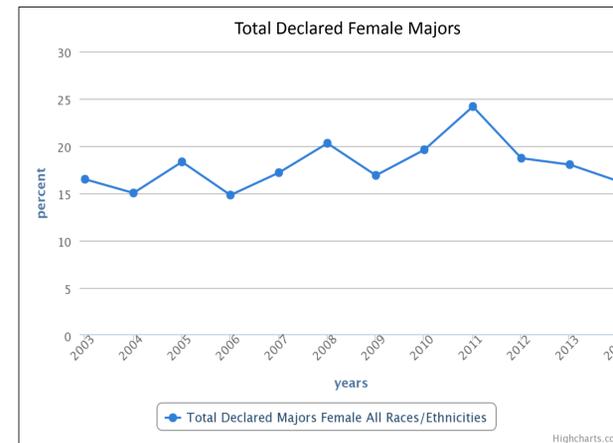
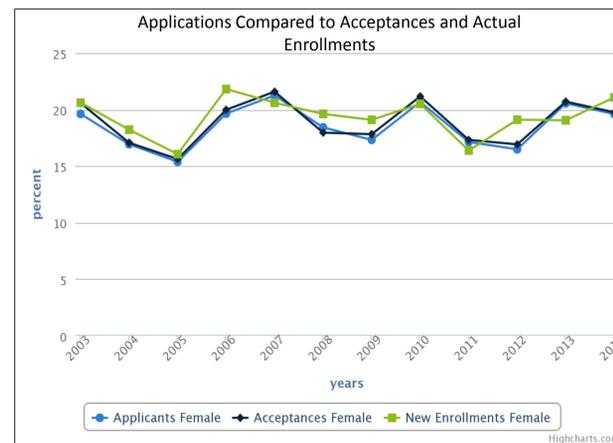
- Requests lists of departmental major preferences from Pre-Engineering prior to hand-off
- Creates a regular schedule for transfer of students from pre-engineering status to accepted status so that departments can schedule events, be prepared for students, and embrace them with supportive culture
- Working to change policy to allow for more accurate tracking, early identification, and linkage to prospective major departments, faculty, students, and activities
- Invites families to participate in departmental activities and graduation
- Provides students with training to address gender equity

2015 Client Profile

University of Texas El Paso Computer Science, Electrical and Computer Engineering

NCWIT Member Since: 2007

NCWIT Tracking Tool Data University of Texas El Paso Computer Science



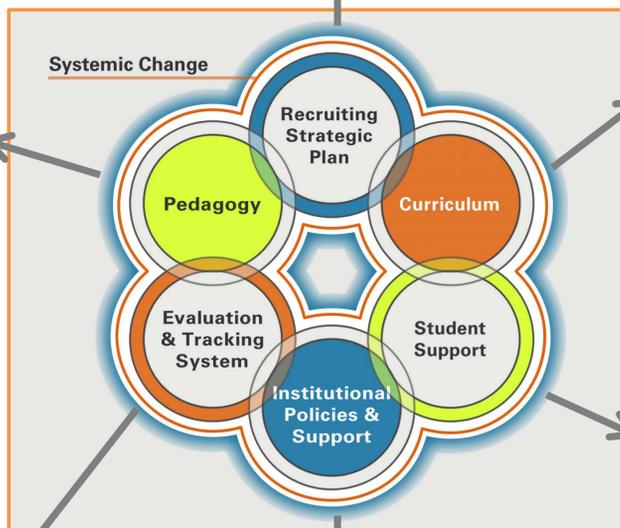
Information compiled from: NCWIT Strategic Recruitment & Retention Plans; NCWIT Tracking Tool

Diversity Initiatives Supporting Systemic Change

- Target audiences for recruitment
- Develops messaging about career opportunities and the nature of computing work
- Has faculty inform and personally recruit capable students in non-major introductory courses
- Uses students to conduct "roadshows" in high schools
- Identifies and conducts outreach with main "feeder" schools
- Holds training programs and thank you event for teachers which increases our collaboration with local teachers.
- Summer day camps for middle and high school students
- NCWIT Aspirations Award Host for regional competition
- Has a Strategic Recruiting Plan

- Uses student discussion or problem solving groups in class
- Actively encourages women to major in computing
- Uses examples with broad appeal to explain concepts and assignments relevant and meaningful to students
- Communicates relevancy of CS to different types of work environments.
- We host an annual "What I learned on the job that I wish I had learned in school" seminar course

- Administers an exit survey
- Administers Climate Surveys periodically to assess department culture



- Redesigned curriculum for flexibility – often more appealing to women and double majors
- Development of a revised and welcoming 'one size fits all' introductory course

- We host several events for internship and career preparation each quarter
- Has peer or tier mentoring program
- Provides faculty-student mentoring
- Encourages student participation in conferences, including Grace Hopper, Richard Tapia, NCWIT and others
- Provides research opportunities
- Has a women's group
- Strong Professional Advising Staff
- Sponsorship for the Tapia Conference

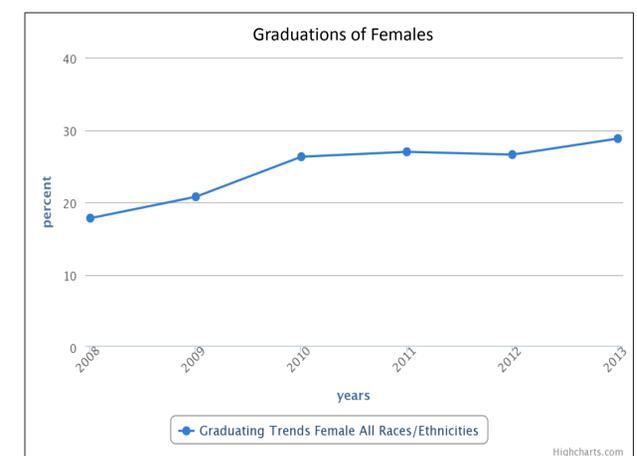
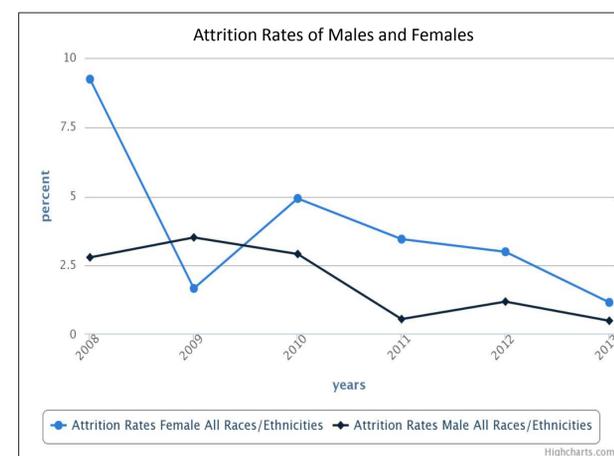
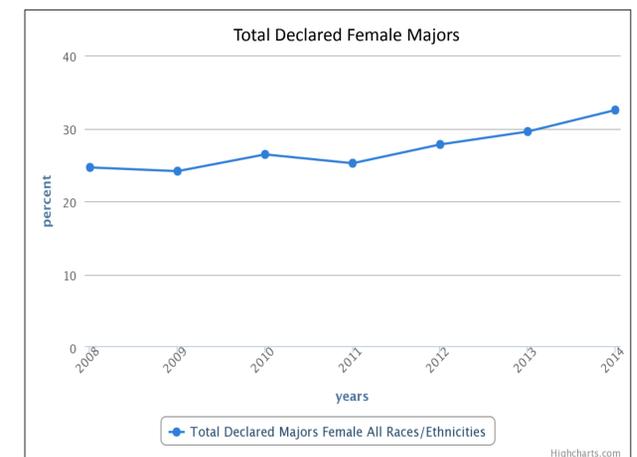
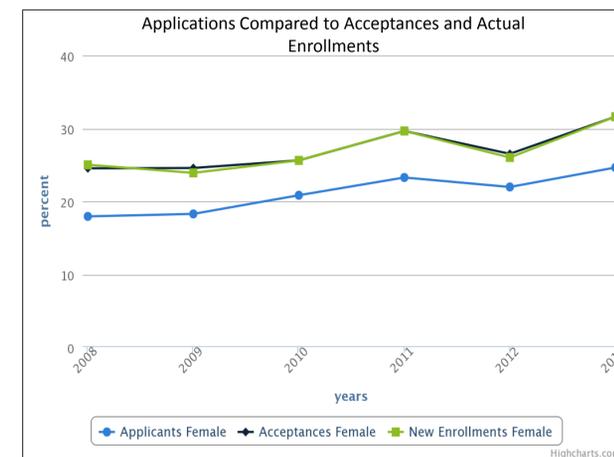
- NCWIT *Pacesetters* Member
- Finalized a diversity committee
- Has a Strategic Retention Plan
- Provides funding for faculty and student outreach as well as student groups
- Publicly announces department's intention to diversify student body
- We make it clear that creating a welcoming environment and a level playing field is a top priority for the department
- Our student Facebook page is incredibly active as a place for informal conversation amongst students
- Active chapter of the ACM-W that hosts social, academic, and career-related events for women

Information compiled from: NCWIT Strategic Recruitment & Retention Plans; NCWIT Tracking Tool

2015 Client Profile

University of Washington
Computer Science
NCWIT Member Since: 2008

NCWIT Tracking Tool Data University of Washington Computer Science



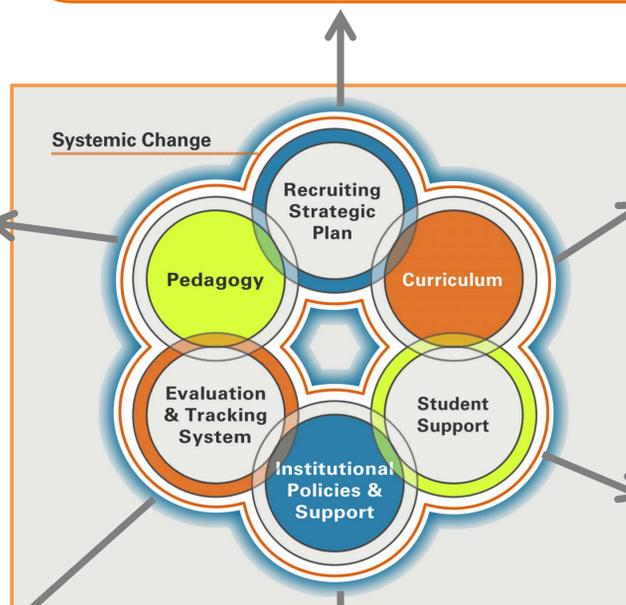
Diversity Initiatives Supporting Systemic Change

- Uses pair programming
- Uses student discussion or problem solving groups in class
- Faculty encourage women and minorities to major in CS
- Uses examples with broad appeal to explain concepts and assignments relevant and meaningful to students
- Communicates relevance of CS to different types of work environments
- Routinely discusses options, advantages, and rewards of computing careers

- Has a comprehensive evaluation plan
- Tracks course outcomes by student sex and race
- Administers entry, SEM, exit surveys and acts on results
- Evaluates individual teaching, curricular, and student interventions

- Uses student ambassadors to escort First Year Engineering and other prospective women through stations that display key technical areas and faculty research
- Contacts all women in University Studies (US) who wished to be admitted to engineering and describes the path into engineering; provides engineering mentors who came through US pathway while they

- are still in US
- Proactively invites all admitted women attending information sessions to participate in the women's living and learning community
- Works with advisors to invite all US women interested in engineering to open houses and information sessions during or prior to course request time



- Approved minor in Applied Business Computing
- Uses tools in labs to make jewelry, art, and music; upper class and graduate students teach women how to use the engineering tools and have "jewelry making days" in the lab
- Provides an intro to CS course targeted to students with no programming experience

- Provides collaborative learning opportunities in early courses
- Has a mentoring program for women in First Year Engineering program who have an interest in a CS or ECE major
- Funds women in mentoring program to attend Grace Hopper in fall of sophomore year
- Provides career information outside of classes

- Became a NCWIT *Pacesetters* Member
- Formed a diversity committee
- Has corporate support for diversity initiatives
- Publicly announces department's intention to diversify student body, and explicitly includes faculty diversity activities in annual reports and promotion and tenure portfolios
- Collaborates with admissions and other relevant offices on campus

- Provides funding for student/faculty outreach as well as student groups
- Provides funding for website development and testing
- Provides faculty professional development
- Includes a requirement that department chair candidates have experience in enhancing the representation and success of under-represented populations

Information compiled from: NCWIT Strategic Recruitment & Retention Plans; NCWIT Tracking Tool

2015 Client Profile

Virginia Tech
Computer Science
NCWIT Member Since: 2006

NCWIT Tracking Tool Data Virginia Tech Computer Science

