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Girls in IT: How to develop talent and leverage support

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Girls in IT: How to Develop Talent and Leverage Support

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SUMMARY

The objectives of this panel are to inform the audience about national and regional initiatives developed by the National Center for Women & Information Technology (NCWIT) to reach out to middle and high school girls; learn from promising experiences in which the panelists have been directly involved; and discuss venues to scale and sustain efforts to increase women's participation in technology careers. Panelists will describe their particular experiences, and discuss ways to utilize the Aspirations in Computing program to increase enrollment and retention of females in computing. A minimum of 30 minutes will be set aside for question and answer.

Categories and Subject Descriptors

K.3.2 [**Computer and Information Science Education**]: Computer science education; K.7.1 [**The Computing Profession**]: Occupations

General Terms

Design, Experimentation, Human Factors, Management, Measurement, Performance

Keywords

Women in Computing, K-12 Education, Community Outreach, Industry-Education Relationships

1. OVERVIEW

Aspirations in Computing is a talent-development pipeline initiative of the National Center for Women & Information Technology (NCWIT). Currently, not enough high-achieving young women in math and science are entering the fields of engineering and computer science. In 2011, just 18% of undergraduate Computing and Information Sciences degrees were awarded to women; in 1985, women earned 37% of these degrees. Young women make up 56% of all college graduates, yet only 18% of computer science graduates [1, 2]. Aspirations in Computing is harnessing this untapped talent source by providing encouragement and visibility, and recognizing technically-inclined young women regionally and nationally. In fall 2009, NCWIT piloted local Affiliate Aspirations in Computing programs in three states, Illinois, Texas, and Florida. In 2013, there were 54 local affiliates serving all 50 states, the District of Columbia, Puerto Rico and the U.S. Virgin Islands. This year, Aspirations Award Affiliates recognized over 1,000 winners and runner-ups. The Aspirations in Computing program has proven successful in retaining women in STEM fields. Participants are surveyed annually to ascertain persistence in the field, college enrollment, and other levels of participation. Of 295 respondents, 193 were in college, and 61% of those students reported a computer science or computer engineering major or minor. Eighty-eight percent of respondents reported a major/minor in a traditionally male-dominated STEM field (Math & Biology are not included in this percentage because women are not under-represented in those disciplines) [2].

2. MIHAELA SABIN

University of New Hampshire at Manchester (UNH Manchester) has joined the NCWIT Academic Alliance (AA) in September 2013. Membership in the AA is free for participating academic institutions and has been benefitting the collge with free access to leading-edge best practices for recruiting and retaining women; opportunity for faculty to attend the NCWIT Summit's workshops and round table discussions; access to member-only funding opportunities to involve and support young women in computing-related activities; and exemplary support to establish a regional tri-state affiliate - Maine, New Hampshire and Vermont, for the Aspirations in Computing Award competition.

The NH Tri-State affiliate recognized ten high school girls and held the award ceremony event at UNH Manchester on April 26, 2013, jointly with the UNH Undergraduate Research Conference – Computing and Engineering Technology Day Senior Projects and Poster Presentations. The event included a hands-on workshop on creating a mobile app on Android phones using the AppInventor platform; panel of women professionals from

Manchester and Nashua technology companies; tour of the Computing and Engineering Technology facility and participation in poster presentations; and award presentations ceremony. The Aspirations in Computing Educator award was presented to Ken Franson, teacher at the Lakes Region Technology Center, Wolfeboro, NH.

3. DEBORAH LABELLE

NCWIT offers the Aspirations in Computing national award each Spring to women of high school age. The award application process asks applicants to explain their current activity and future plans to study in a technical field. National winners of the award receive a small cash award, a new computer, and a trophy for herself and one for her school. More importantly, this award is a way to give needed visibility to the fact that young women are interested in technology and are doing great things at the high school level. In addition, it is a way for women to connect with each other locally and around the nation.

Volunteering to review applications for this award is one way to get involved in NCWIT's initiatives without having to commit a lot of time. The review process is all online, and well organized. The volunteer can choose which areas he or she wishes to review. The volunteers are also invited to attend the award ceremony. Deborah found that being an application reviewer gave her the opportunity to see what sort of technical expertise these young women are developing, where they plan to use their expertise in the future, and how their interest in technology began. Reading the applications of these young women is inspiring and gives the volunteer an avenue to promote women in computing.

4. HIRANYA MIR

Hiranya is a 2011 National Award winner and a 2012 & 2011 Southern Florida Affiliate Award winner. She is interested in a variety of technology related projects, including robotics, networking, and programming. Hiranya is involved in Women of Tomorrow, where she encourages young girls to explore IT and become professionals. She is Vice President of SECME, and head of the Robotic Hand team where she is working on creating and programming a bionic hand.

Because of her dedication and accomplishments, Hiranya received the I.T. Essentials Award, and became CompTIA A+ Certified. Her enthusiasm for learning computer systems runs deep, and she is currently enrolled in Cisco's NetRiders and NetRiders Security competitions. Hiranya attends Embry-Riddle Aeronautical University with a scholarship she received in part because of her accomplishments as an NCWIT Award for Aspirations in Computing award winner.

5. KAREN PATTEN

The Integrated Information Technology (*i*IT) Program Undergraduate at the University of South Carolina is a founding member of IT-oLogy, along with IBM and Blue Cross Blue Shield – South Carolina. IT-oLogy is a non-profit collaboration of business, academic institutions, and organizations dedicated to growing the IT talent, fostering economic development, and advancing the IT profession. IT-oLogy has three main initiatives: Promote IT (for K-12); Teach IT (for Higher Education); and Grow IT (for Professionals). Students within the *i*IT Program are actively involved in promoting IT to high school girls and programs through several different activities. Each year a student

project team coordinates and delivers a "Create IT" Day for freshmen and sophomore high school students. These students build laptops, develop games, and use IT to solve problems. Students within the student chapter of the Association of IT Professionals also work jointly with students from the Society of Women Engineers student chapter to sponsor, together with IT-oLogy, a high school Tech Day for Women, which invites women IT professionals and faculty to share their IT career stories.

6. SUZANNE POIRIER

Today, mangers in software development struggle to find qualified candidates. In a recent hiring push at Skillsoft, many of the applicants were under qualified and, even more surprisingly, there were very few women that applied. Companies can encourage female participation at college job fairs by sending female role models into the field. However, college is far too late to reach out to young women to grab their interest in technology.

Suzanne in her pursuit to find out why women were so underrepresented in her chosen field found local opportunities to participate in various events to capture young women's interest in technology. By participating as a panelist at the NH Tri-State NCWIT affiliate award event for high school girls, and as a teacher's aide in Girls Technology Day state-wide event, it stressed the importance of collaboration between industry and academic institutions to create opportunities to show young women that IT and other STEM-related disciplines can be interesting, fun, creative, and something in which they can excel.

7. SETH REICHELSON

Seth Reichelson is the AP Computer Science teacher at Lake Brantley High School in Orland, Florida. He is the current SECME National Champion (three time champ), IBM's Mainframes North American Teacher of the Year, 2009 Bright House Star Teacher of the Year, 2009 Air Force Teacher of the Year, and 2010 Florida's School Board Innovation in Technology Award winner. He has also won all-Florida ACM high school programming contests for the past three years. He is a passionate advocate for diversity and inclusion in the technology field. Seth initially got involved with NCWIT when he attended a Tapestry Workshop with the goal of recruiting more young women into his AP Computer Science class. Using the NCWIT practices he successfully recruited more young women into his AP CS class and currently almost 50% of his AP CS students are female. In 2011, Seth received the NCWIT Aspirations in Computing Educator Award for his outstanding work recruiting and supporting his female students.

8. REFERENCES

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