

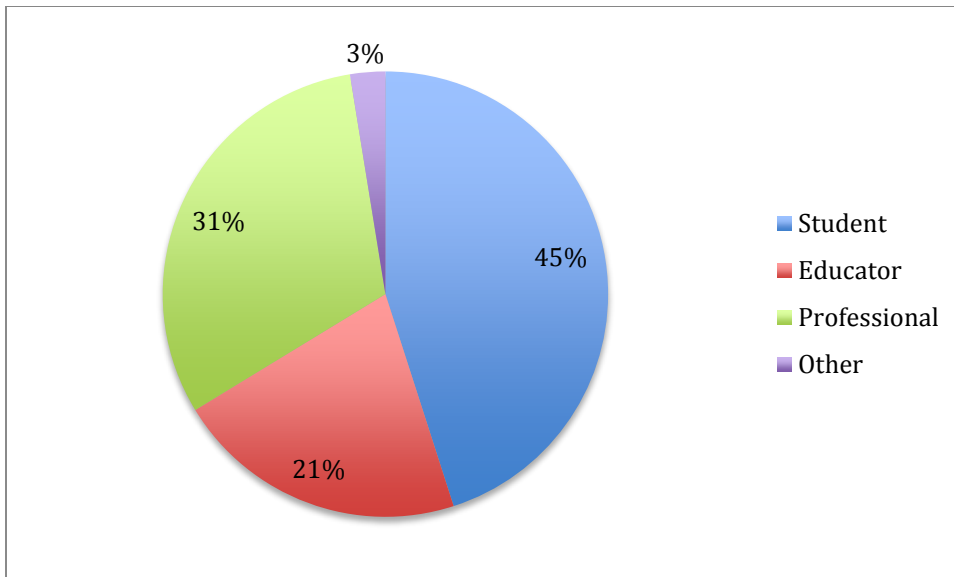
**WiCyS Evaluation  
2014-2015  
Year 2  
Prepared by Dr. Ada Haynes**

## WiCyS Conference 2015

The second National Women in Cyber Security Conference WiCyS took place in Atlanta, Georgia on March 27-28, 2015. Although the NSF grant provided funding for 150 attendees, due to the extraordinary interest and generous support from conference sponsors, the event actually had approximately 475 attendees. The attendees were students, faculty, researchers, and industry professionals. The conference was evaluated by a general survey and follow up in depth semi-structured interviews with selected attendees. In addition, the evaluator both observed the conference and conducted informal interviews of attendees at the conference.

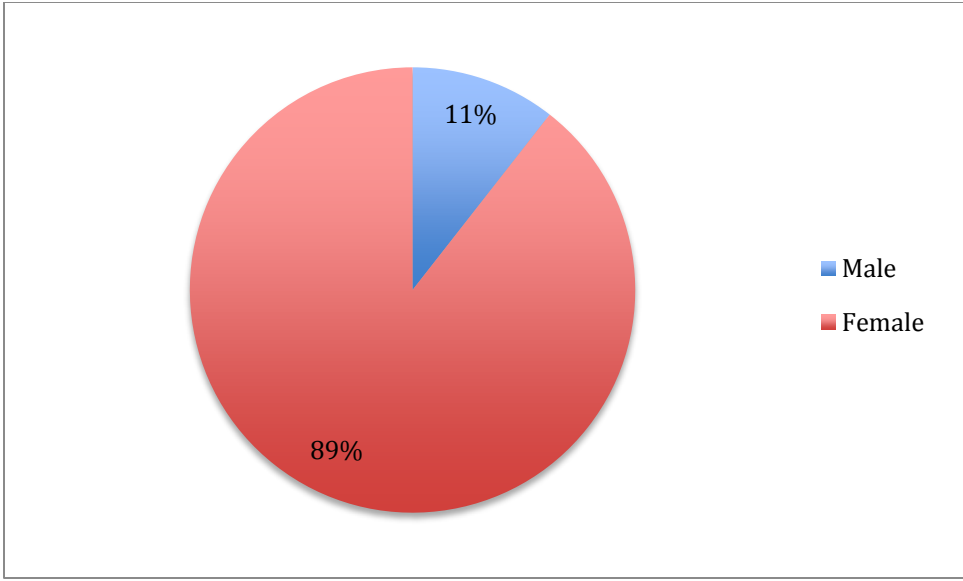
### Diversity of Attendees

Of the approximately 475 attendees, a total of 353 attendees completed the conference survey for a response rate of 74%. The following information is from those surveys. The attendees were from different walks of life. On the survey, 45% classified themselves as students, 21% educators, 31% as professionals, and 3% as other. Other included government and educational program recruiter. See Figure 1.

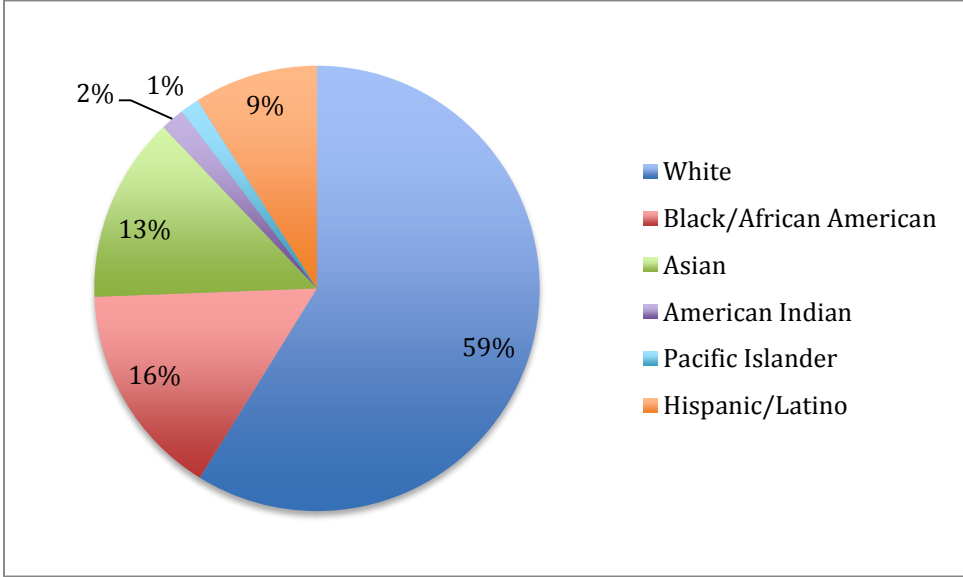


**Figure 1: Type of Attendees**

Of those completing the survey, 89% were female and 11% were male. See Figure 2. Figure 3 shows the diverse race/ethnicity composition of the attendees. Compared to first year of the conference, the diversity in each of these categories has increased. This year 59% of the attendees were white, 16% black/African American, 13% Asian, 9% Latino/Hispanic, 2% American Indian and 1% Pacific Islander.

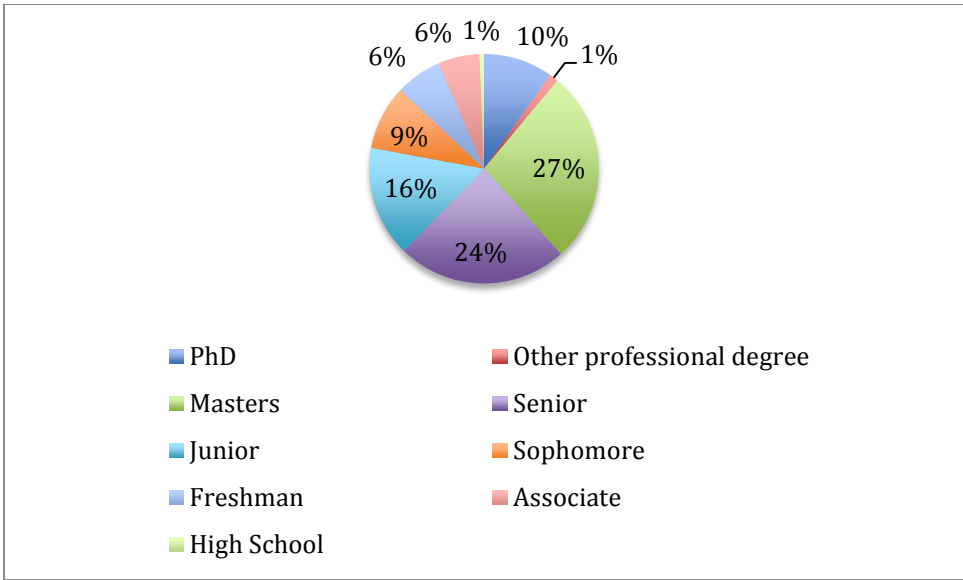


**Figure 2: Gender Composition of Attendees**

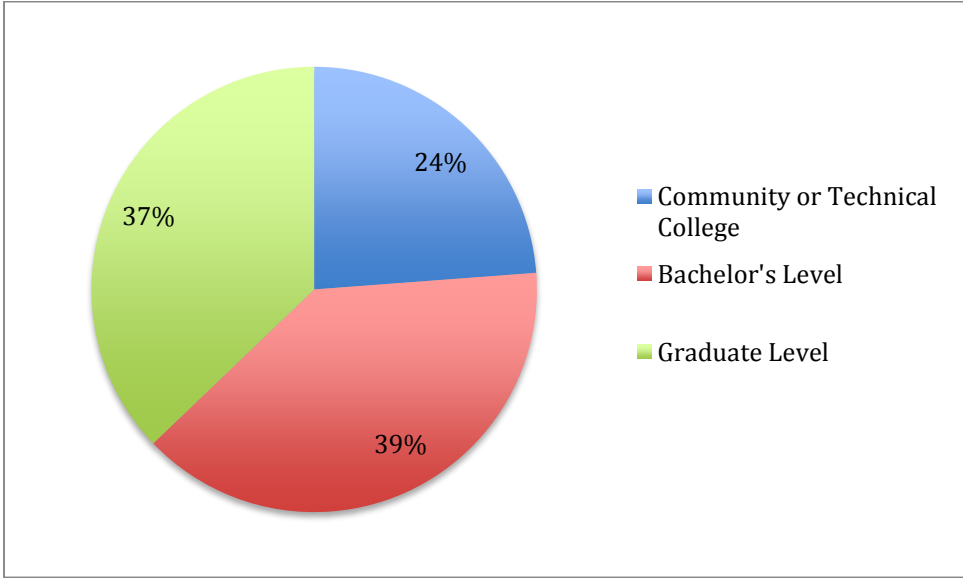


**Figure 3: Race/Ethnicity of Attendees**

There was also diversity among the student attendees as to where they were in their academic career. Figure 4 shows the degree that the students were working toward. Approximately, 10% of the students were working on their PhD, 1% were working on another professional degree, 27% were working on Master’s degrees, 55% were undergraduate students at a four-year institution, 6% were working on an Associate’s degree, and 1% were high school students. Based upon interviews at the conference, it was ascertained that students also came in with different backgrounds. Some came from traditional computer science backgrounds while others came from fields such as psychology and mathematics. The faculty also taught at diverse levels of education with 24% teaching at community or technical colleges, 39% at bachelor level, and 37% at the graduate level. Figure 5 reflects this diversity.



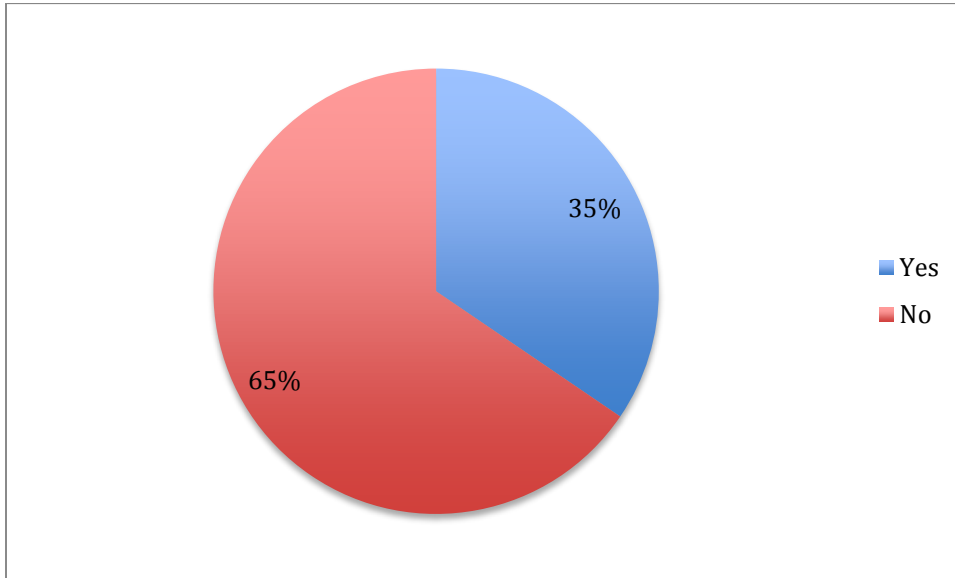
**Figure 4: Level of Education of Student Attendees**



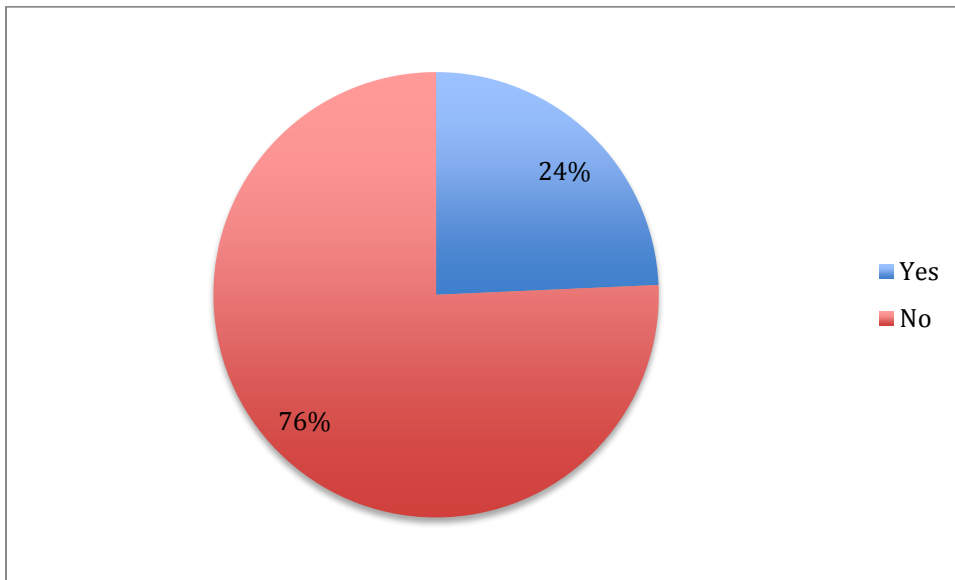
**Figure 5: Type of Institution Where Faculty Teach**

Approximately one-third (35%) of the attendees had attended other women in computing conferences. See Figure 6. Only 27% of students had attended other women in security conferences while 43% of the educators had attended other women in computing conferences. However, most of the attendees (79%) had never attended other women in security conferences. This is reflected in Figure 7. A larger percentage than the previous year had attended women in security conferences this year. Partly this can be attributed to many of the attendees having attended WiCyS 2014. Of the student attendees, 87% had never attended other women in security conferences. Approximately 24% of the attendees had attended WiCyS in 2014 with 21% of the students and 39% of the educators having attended WiCyS 2014. This is an excellent composition with approximately one fourth of attendees coming back for a second year

and three quarters of the attendees being first timers. We would expect more faculty than students to be repeat attendees since students graduate and new students enter cybersecurity.

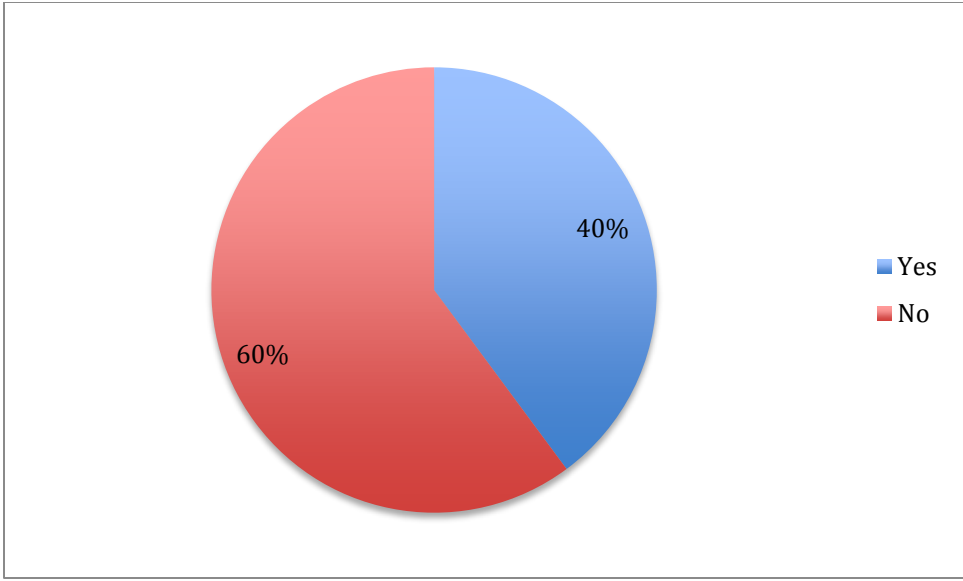


**Figure 6: Percentage of Attendees Who Have Attended Other Women in Computing Conferences**

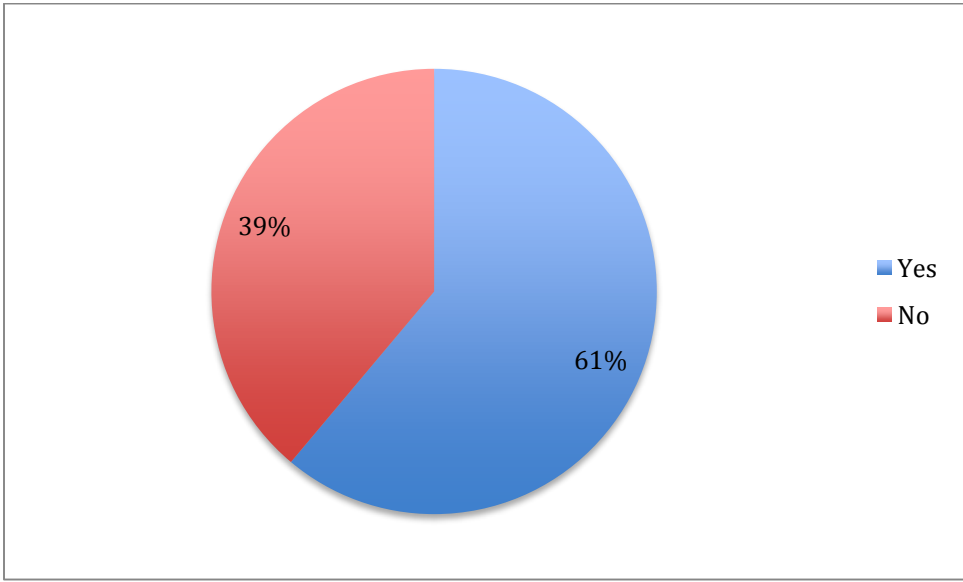


**Figure 7: Percentage Who Have Attended Other Women in Security Conferences**

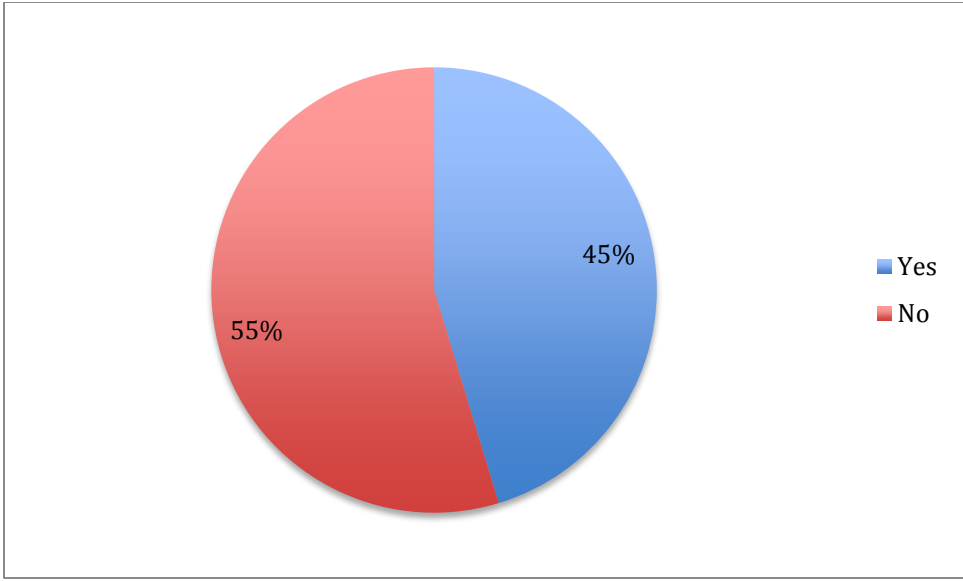
Approximately 40% of the attendees received a scholarship through WiCyS to attend. See Figure 8. Breaking this down further in Figure 9, we see that 77% of the students received WiCyS scholarships and 23% did not. By contrast, only 45% of Educators received a WiCyS scholarship, while 55% did not. See Figure 10.



**Figure 8: Percentage of Attendees Receiving WiCyS Scholarships**

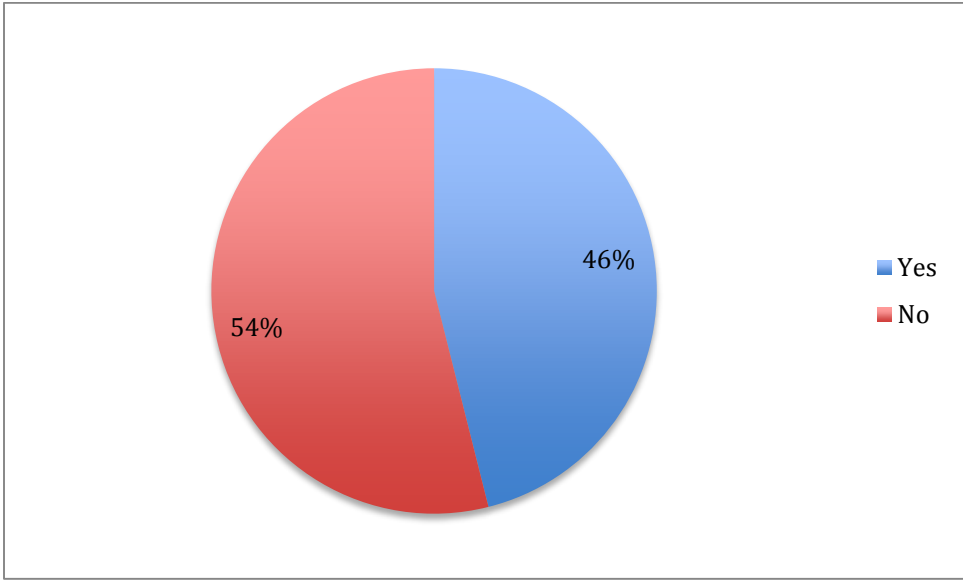


**Figure 9: Percentage of Students Receiving WiCyS Scholarships**

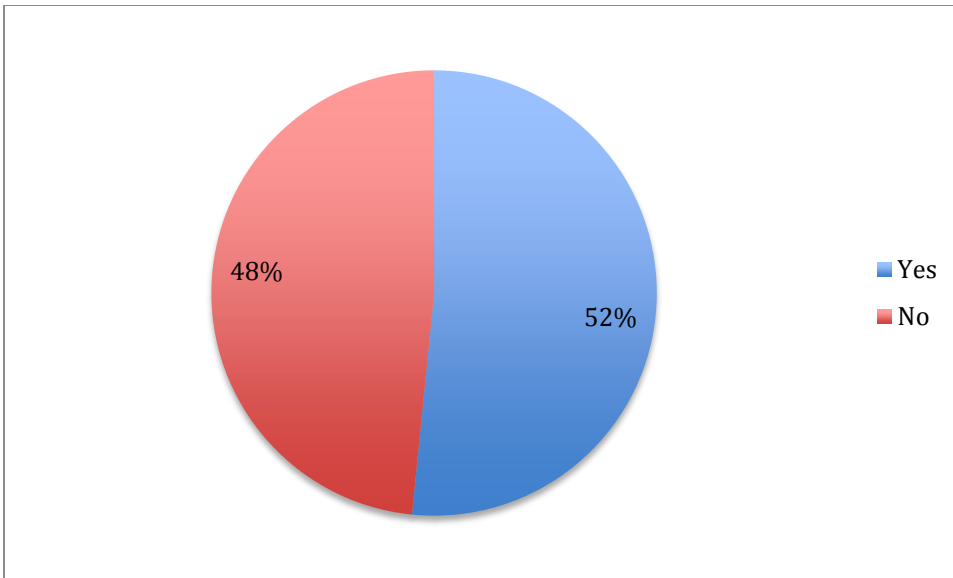


**Figure 10: Percentage of Educators Receiving WiCyS Scholarships**

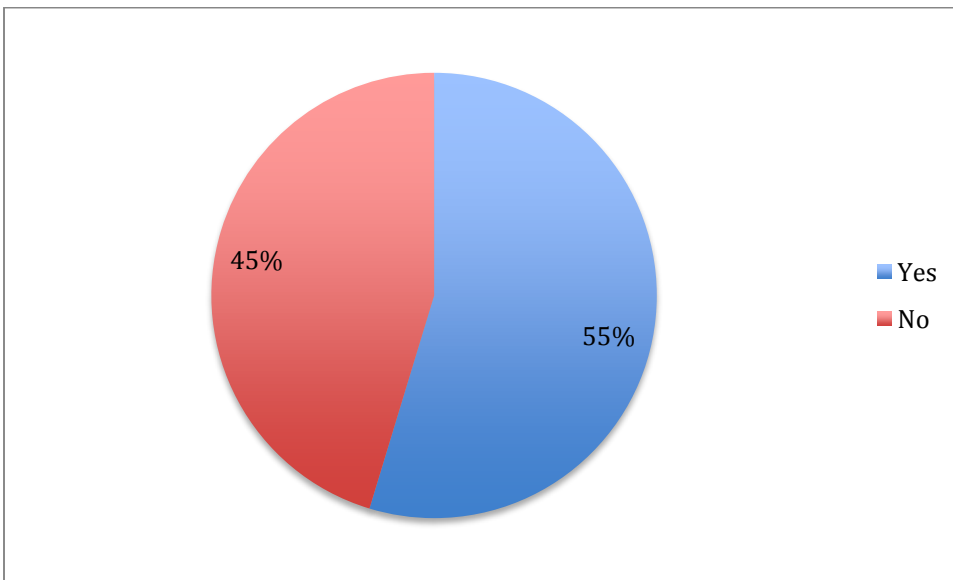
Likewise, 46% of all attendees received other external funding to attend, while 54% did not receive other external funding to attend. See Figure 11. Again we can further breakdown this funding for students and educators. Figure 12 shows that 52% of the student attendees received other external funding, while 48% did not receive any other external funding. As seen in Figure 13, 55% of the educators received some other form of external funding and 45% did not.



**Figure 11: Percentage of Attendees Receiving Other External Funding**



**Figure 12: Percentage of Students Receiving Other External Funding**

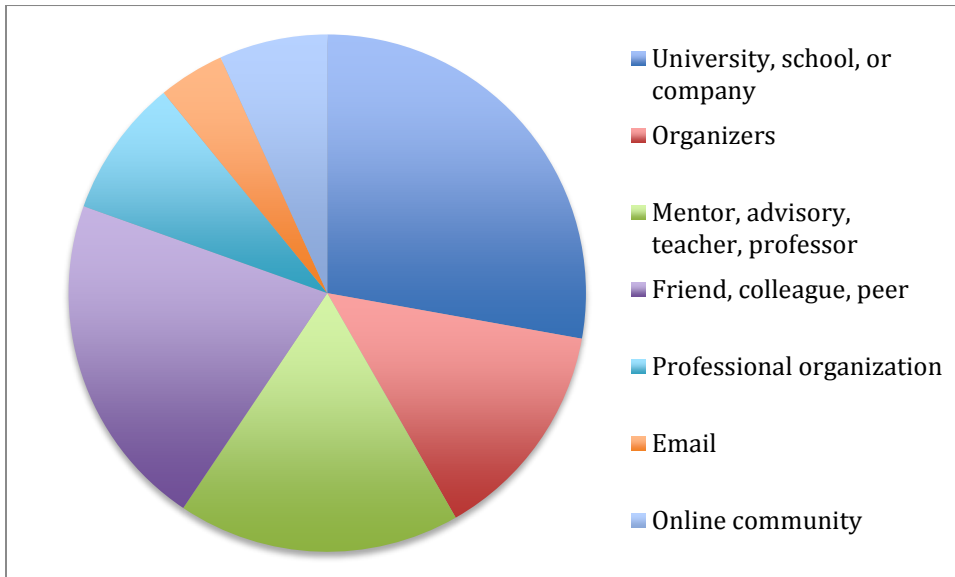


**Figure 13: Percentage of Educators Receiving Other External Funding**

**Dissemination Prior to WiCyS**

Part of the success of WiCyS can be attributed to the dissemination prior to the event. Figure 14 denotes how attendees found out about the conference. The two most common responses were university, school, or company (28%) and friend, colleague or peer (21%). Mentor, advisor, teacher, or professor accounted for 18%, organizers 14%, professional organizations 8%, online community 8%, and email 4%. This indicates the prevalence of people hearing about WiCyS from others. This implies that WiCyS has a positive reputation.





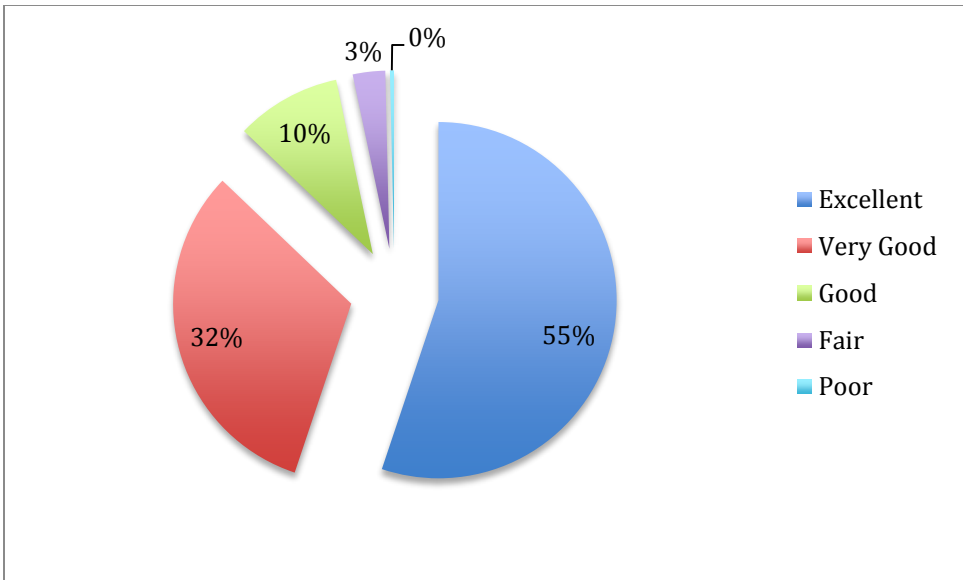
**Figure 14: How Heard about the Conference**

### **Overall Impact of the Event**

The response to WiCyS 2015 was overwhelmingly positive. The first indication of the success of the conference was that there was over three times as many attendees at the conference as NSF funding provided. A total of 540 individuals registered for the conference. A waiting list for rooms had to be established.

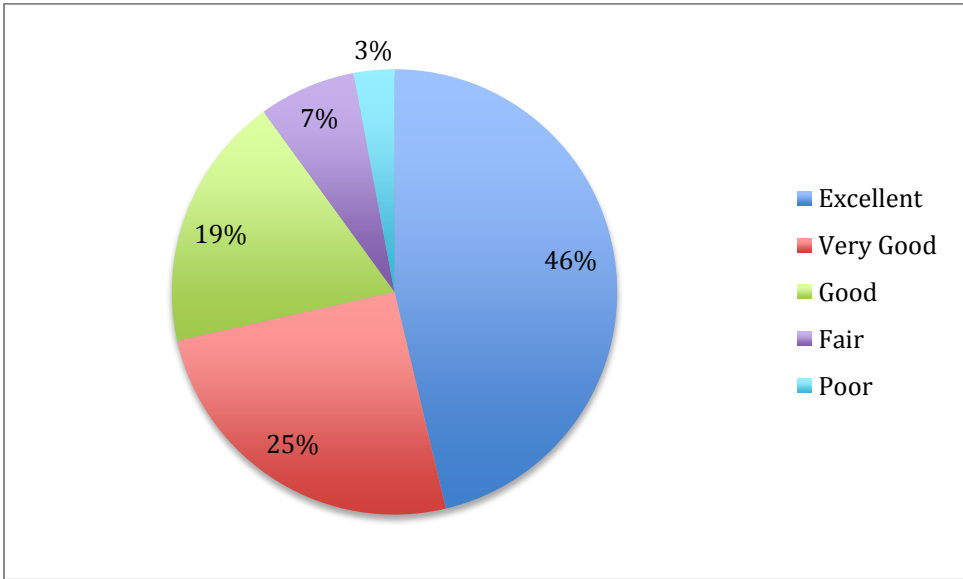
The next indication of the success of the conference was from observations at the conference. It was clear that there was a diverse group of attendees based on gender, race/ethnicity, education level, and type of attendee at the conference. Despite the crowds at the conference, all attendees seemed excited and engaged in conference activities as well as networking. Sessions were full and often standing room only. The biggest complaint about the conference was the lack of space in the workshops.

Another indication of the success of the conference is from the surveys completed by attendees. Of the attendees completing the survey, 97% rated the overall conference as good to excellent while only 3% rated it fair and one attendee (.4%) rated it poor. See Figure 15. The most common modal response was excellent with 55% rating it excellent, 32% very good, 10% good, 3% fair and .4% poor.



**Figure 15: Ratings of Conference Overall**

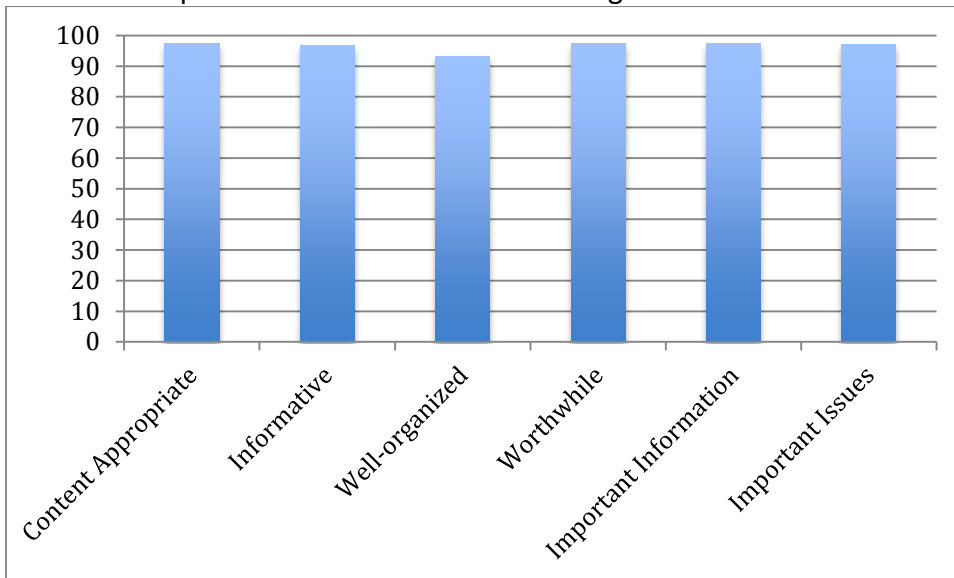
The registration for the conference was quick, friendly, and efficient. This was based on personal observation of the evaluator and confirmed by the surveys. The only problem with the registration was that enthusiasm for the conference led almost all of the attendees to show up at registration as soon as it opened or before. Fortunately, the conference staff regrouped and solved this problem by opening registration early and by rearranging the registration process to reduce wait times.



**Figure 16: Conference Registration**

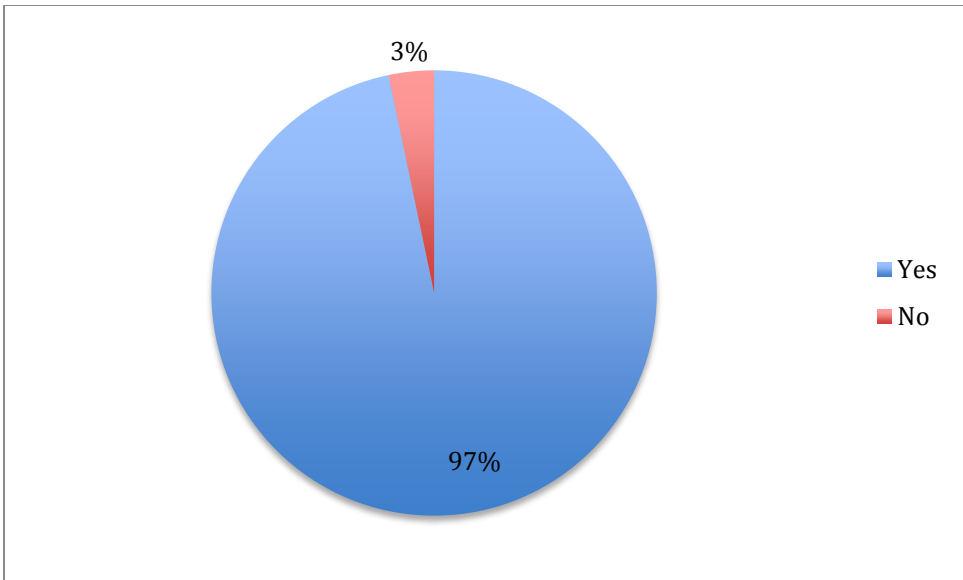
Overwhelmingly, the attendees felt this was a quality conference. This was reflected in the surveys and interviews. Of the attendees, 97.5% found the content to be appropriate. A total of 96.8% felt that it was informative. Similarly, 93.2% felt that it

was well organized. Likewise 97.5% felt that it was worthwhile and that they gained important information. In addition, 97% of attendees said that the conference addressed important issues in the field. See Figure 17.

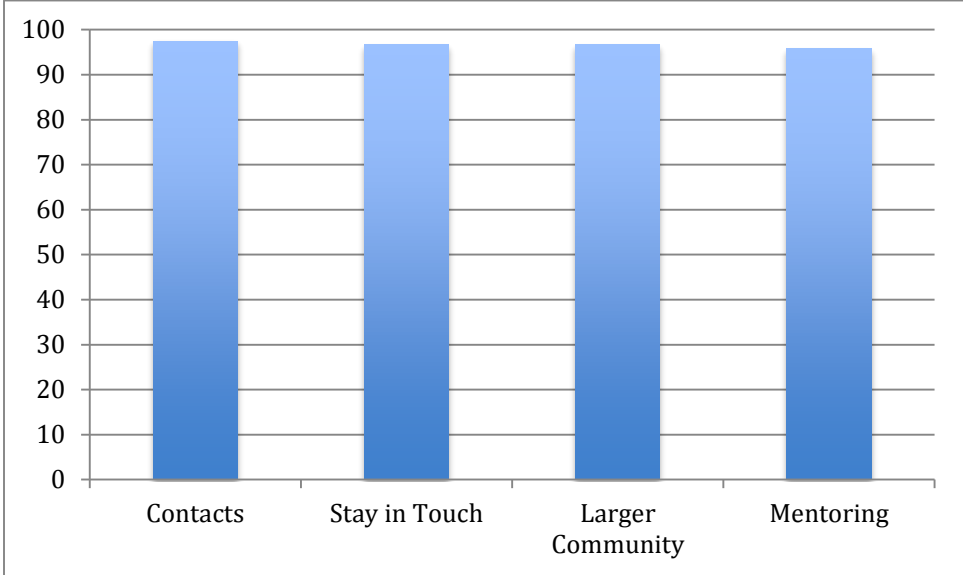


**Figure 17: Percentage of Attendees who Found WiCyS Valuable**

WiCyS plays an important role in networking and mentoring. Evidence for this can be found from the surveys, observations at the conference, and follow up interviews. Many of the women both at the conference and from telephone interviews expressed a sense of isolation or alienation as woman in the cyber security field. WiCyS plays an important role in reducing this isolation with 96.7% of attendees responding that they felt less isolated because of WiCyS. See Figure 18. People found WiCyS to be an excellent networking opportunity with 97.5% of attendees saying it helped them establish personal and professional contacts. Even more surprising is that 96.7% of attendees planned to keep in touch with people that they met at the conference. Follow up interviews from the conference indicate that people have indeed kept in touch with individuals that they met at the conference. People appreciated both the opportunity to mentor others and to be the recipient of mentorship that WiCyS provides with 95.8% of attendees saying that attending the conference has increased their intention to either be a mentor or to find a mentor. See Figure 19.

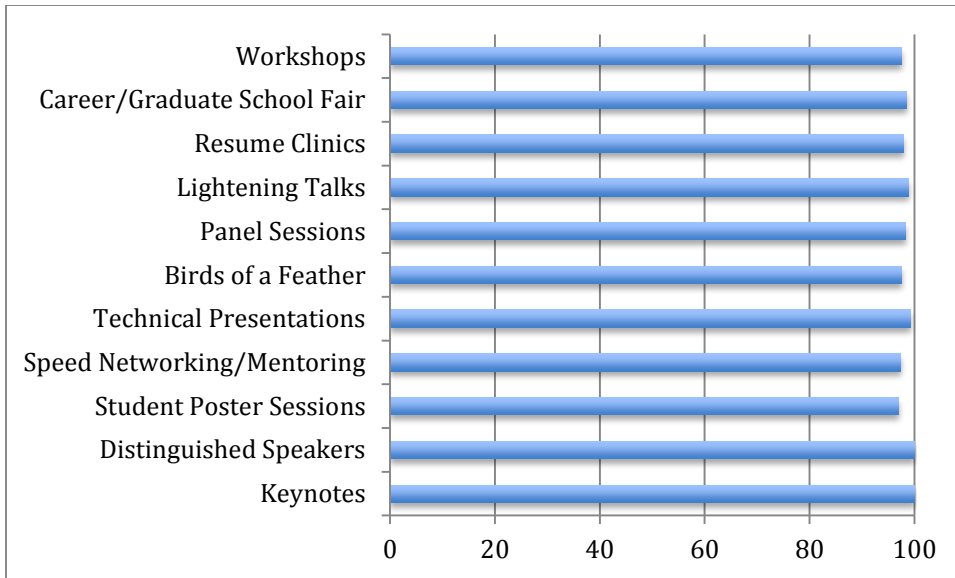


**Figure 18: Percentage of Attendees who Felt Less Isolated because of WiCyS**



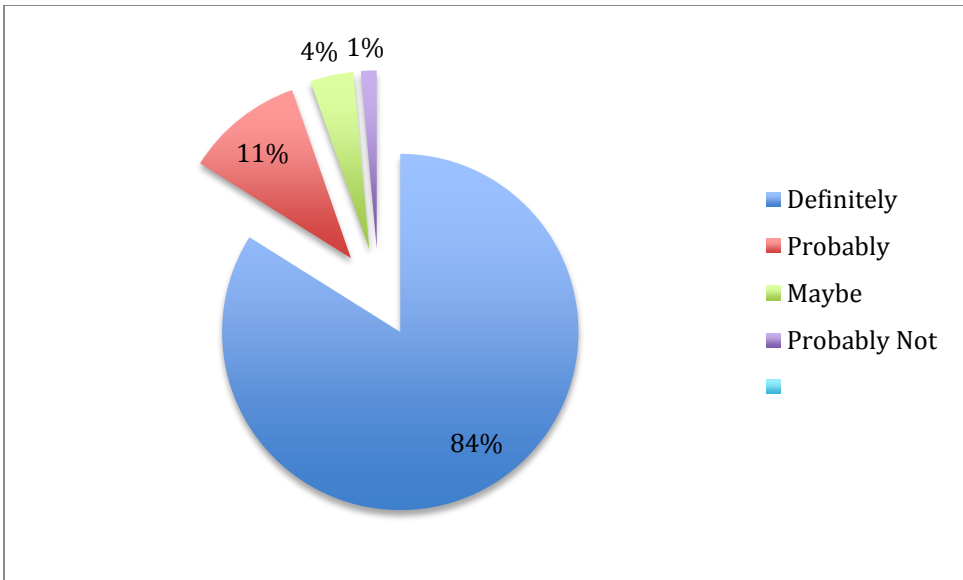
**Figure 19: Networking and Mentoring**

Figure 20 shows the attendees ratings of each of the components of WiCyS. Of the attendees responding, 100% found both the keynote sessions and the distinguished speaker sessions valuable. Of those attending the student poster session, 97% found it valuable. Those attending the technical presentations and Birds of a Feather Sessions found them valuable at the rates of 99.2% and 97.5% respectively. The panels were rated valuable by 98.3%, while 98.7% rated the Lightning Talks valuable. The workshops were found valuable by 97.6% of the attendees. The Career/Graduate School Fair was rated valuable by 98.5%, the Speed Networking/Mentoring by 97.4%, and the Resume Clinic by 98% of attendees. Finally, 100% of attendees found the networking opportunities valuable.

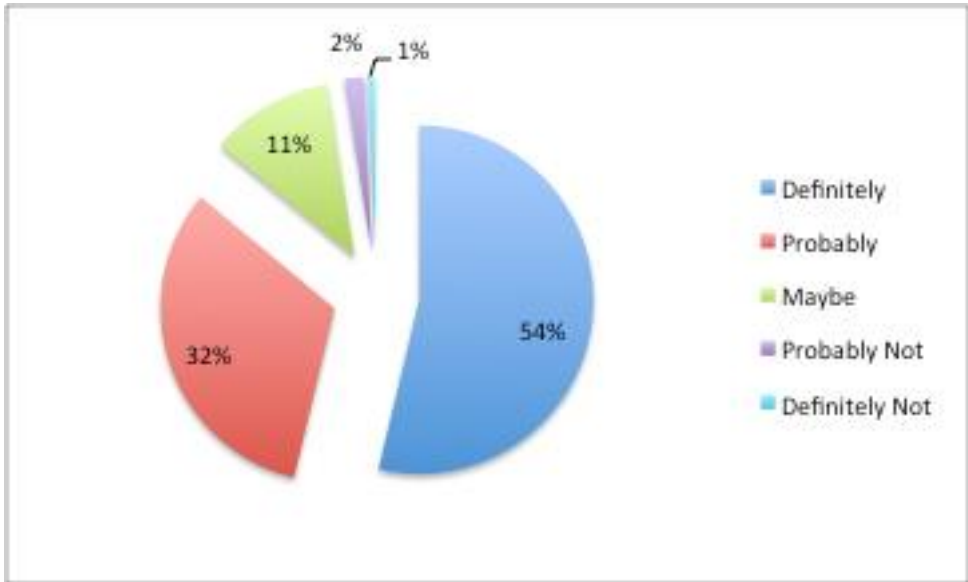


**Figure 20: Percentage of Attendees Ratings of Each of the WiCyS Components as Valuable**

Other indications of the success of the conference are the percentage of attendees who would recommend the conference to others and the percentage of attendees who plan on attending next year. Figure 21 shows the percentage of attendees who would recommend the conference to others. Here it is important to note that 84% would definitely recommend the conference while only 1% would probably not recommend. **No one said that they definitely would not recommend the conference.** Figure 22 shows the percentage of attendees who plan on attending next year. Again note that 54% plan on definitely attending with 32% probably attending. Only 2% of the respondents said probably not and only 1% said they definitely were not attending. Comments included, “It is all based upon funding, but I am pretty confident we will attend”, “I am starting a new job and will probably not be able to get time off from work”, “it depends on location”, “I will be out of school and unable to afford it”, and “depends on when and where”.



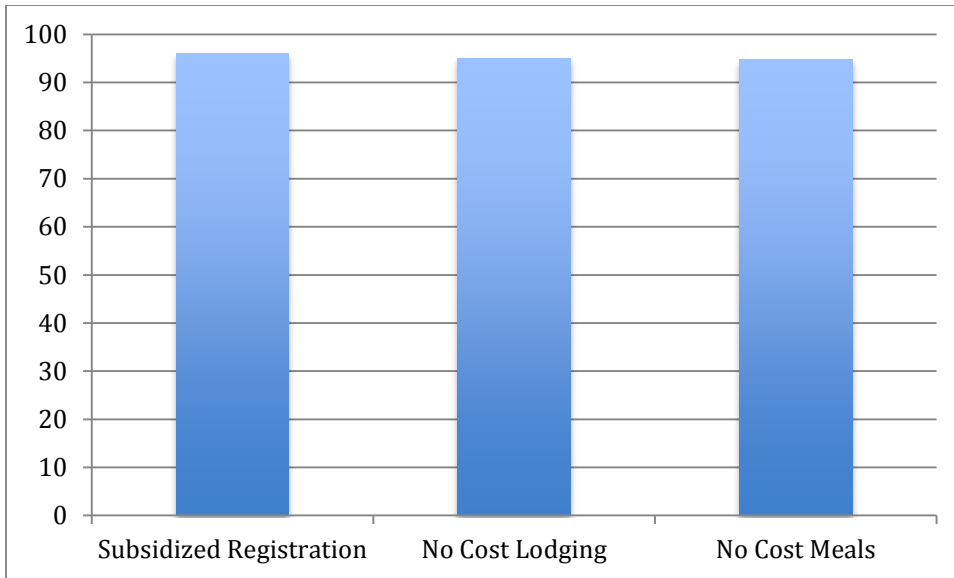
**Figure 21: Percentage of Attendees Who Would Recommend the Conference**



**Figure 22: Percentage of Attendees Who Plan on Attending Next Year**

Funding was crucial for attendance at the conference as evidenced by Figure 23. Of those responding, 96% said that the low cost of the subsidized registration enabled them to attend this conference. Similarly, 95% of respondents said that the no cost for housing allowed them to attend the conference. Likewise, 95% said that no cost for meals allowed them to attend the conference. Therefore, each of these components was essential to the ultimate success of the conference.

Overall, attendees reported a powerful, pervasive impact of the conference. This was true for all types of attendees: students, educators, and other professionals.



**Figure 23: Funding Impact on Attendance**

Representative comments of attendees about the impact of the conference can be found in Table A. In addition, numerous attendees commented on the confidence that they gained from attending the conference.

**Table A**

Representative Comments
As an information security officer for a global company, there are very few women in my peer set. It is exciting to see so many young women passionate about the field, and I believe everyone benefits when women are encouraged to pursue STEM fields as, otherwise, we limit ourselves from an entire pool of potentially successful candidates and peers, simply because, as girls, we are not encouraged to pursue technical careers.
Energized me to continue pursuing my studies and also encourage other women to enter and stay in this field.
I feel like I have gained support from a community I can relate to.
It gave me wonderful information on security and jobs/companies that I can share with my students.
Personally, the networking and info sharing opportunities was a big takeaway! I think worthwhile event/community for funding agencies/sponsors to support because this is a growing and needed field as we move forward in this technologically advanced world. Agencies/sponsors can only benefit from supporting these conferences because they get an opportunity to market/promote their businesses to the smartest and finest and more importantly glean what other private industry and governmental agencies are doing and have on the horizon so they can posture themselves for future.
It made me feel valued as a woman considering a huge career change.
I originally did not know what I would like to do after college, I only knew I wanted to study Computer Science. At my school, there are four concentrations within the

department of Computer Science, one of them is Cyber Security. At the time, I was also shy being in the male-dominated field. After attending Wicys, I figure out what I want to study - Cyber Security! I gained the confidence to study Cyber Security. I learned so much by attending conference and this has been one of the best academic experience so far. It was beneficial to have the support from the sponsor as that not all students would be able to make it to the conference. With the funding from the generous sponsors, everything was made possible!!

As the only female in my research group studying cyber security, I sometimes felt isolated. Despite travelling half way across the world to attend the conference, I left feeling reinvigorated and a new confidence to work with other leaders in the field.

I really love the opportunities to individually talk to professionals for advice, such as the resume clinic and the mentor/networking activity at night. It really gives a boost of confidence to be able to receive positive feedback from women in IT careers.

It was a great chance to connect with people related to my education. I hope to eventually be able to work for one of the sponsors.

It was great to see other women so passionate about Cyber Security. I am at a University where the Office of Information Security consists of two people. I learned a lot from the Women of Cyberjutsu. In fact, I got approval to join the organization.

This conference inspired me to mentor other young women.

I was able to bring my students who found internships and were very inspired by what they saw

I really loved this conference, and it was, in my opinion, a life-changing experience that opened all kinds of perspectives and options that I didn't know existed with this degree. There is a whole world out there, and these women are changing it for the better by just doing what they love and find interesting.

Personally, I think the conference really helped me to see that there are a lot of other successful women this field, and both allowed me to feel apart of the community and to become more empowered to continue striving for success as those I've meet at WiCyS.

Got motivated and excited about a cyber security career.

Excellent networking opportunity and a great recruiting venue

It helped me to feel less isolated going into this field.

The WiCyS 2015 conference benefited me tremendously because as an educator in the field of cybersecurity where gender gap continues to exist, I was highly impressed to be in the midst of numerous talented females in this interesting field. It renewed my enthusiasm and quest to get more female students to take a second look at cybersecurity.

I am from Jamaica, and we currently do not have this type of conference within Cyber Security. The conference in itself was an experience to be had over and over again. Since those few days, my perspective have been changed in a positive way. Speaking to experience persons in the field gives you an idea as to what you can become and how you can start to impact others to have the said ripple effect on others to give back the life changing experience I myself have encountered.

Made contacts with other students and professionals. Learned the importance of having



a mentor. I will now be more supportive and connected to the women in this field. Learned about various universities and companies as to what they have to offer, which helps in the decision making process in the future. Also, I now want to contribute and give it back to this community.

Prior to conference, I was considering not completing degree program as need for cybersecurity skills/career path was not evident.(did not seem important) I will now complete by current educational cybersecurity Program. My motivation and awareness has greatly increased that this is a very important field that I can hopefully pursue a career path change to. (If not with my current employer, other opportunities exist.)

The conference provided great student commentary and feedback to assist with recruitment and retention efforts.

The contacts, universities, corporations, government entities you get to interact with in one place it what I enjoyed the most. I have gained several mentors and look forward to next year.

I was able to hear from many women in the field who impressed upon me my ability to succeed, especially in the face of "impostor syndrome", which myself and all of the female classmates I work with feel to some degree.

As a female recruiter, I'm constantly on the hunt to add more women to our Information Technology and Cybersecurity positions. I came away from this conference with renewed energy that woman are starting to take a larger hold in the marketplace.

This conference energizes my commitment to stay in the field, to continue educating myself, and to mentor other women to get in and work in this important and growing field.

I was able to network a great deal and meet some really awesome professionals on a more personal level. This enabled me to get some really solid professional advice regarding my resume and other things. It was also inspiring to see that women are doing amazing things in the field. It can be hard being the only girl in a classroom everyday so it's great to see we aren't alone.

I attended along with three of my students. One student decided to accept her SFS offer while there. Another student decided to continue with her application. The third student decided to defer and apply in one year. Furthermore, I recruited two strong SFS student candidates from other schools.

I learned more about the resources that are available and grants that I should apply for. My students enjoyed the workshop also. I learned much more at this conference than from other security conferences I have attended. I made several connections here that I am sure to continue with after the conference.

This is my first conference and I found it magnificent, invigorating. Meeting different women and getting the incentive from the main speakers on how to go about pursuing your dreams no matter how old you are.

It benefited me personally because it renewed my belief that women need to be strong leaders and more visible in the field. I will work at getting more internships and coops for my female students.

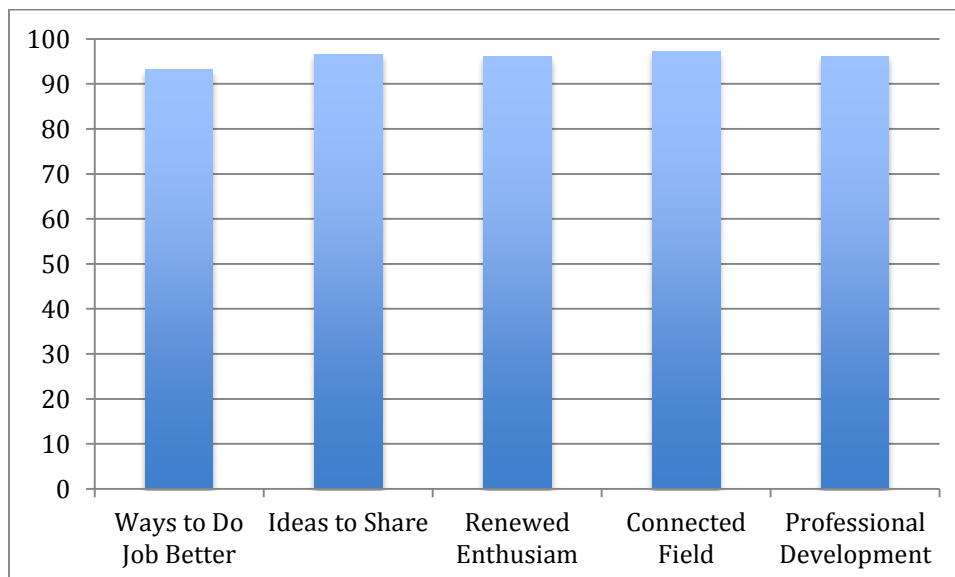
It gave me great connections to expand our cyber security program as a Girl Scout council. It also helped me understand the industry better to pair it with things we already do well.

Builds a community of practice. Absolutely needed for underrepresented groups.

This conference allowed me and my female students to meet and build relationships with other women in the computing and cyber security fields. These relationships are vital to increase the number of women who continue in this field.

### **Educators and Professionals**

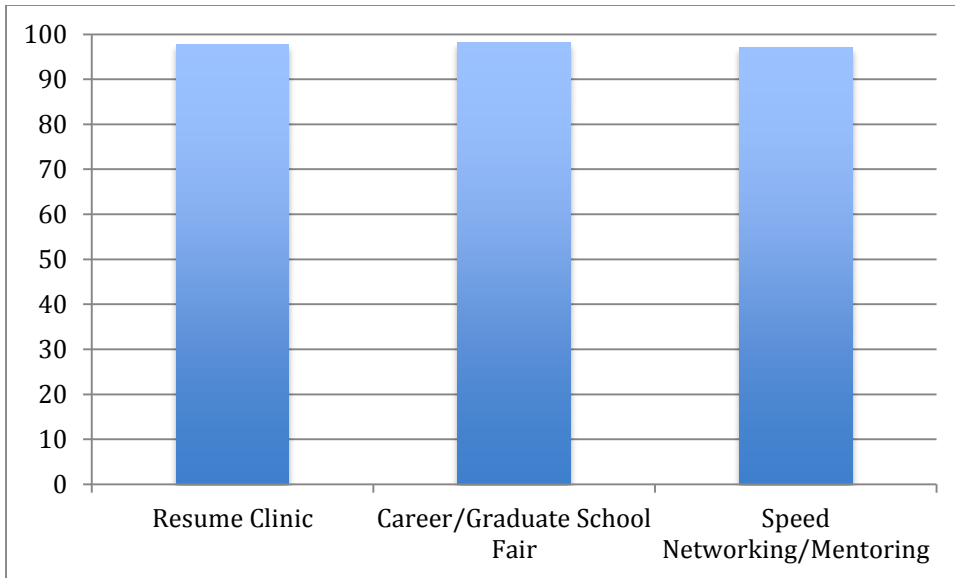
Some of the questions on the survey were aimed specifically at the educators and professionals. It was important to evaluate what these educators and professionals were taking away from the conference to help them succeed in field. Of the responding educators and professionals, 93.3% reported that the conference gave them ideas to do their job better. In addition, 96.6% reported that the conference gave them ideas to share with their colleagues back home while 96.1% helped them face work with renewed enthusiasm. Likewise, 97.2% agreed that the conference helped them feel more connected to others in the field. Correspondingly, 96.0% reported that the conference had a positive impact on their professional development. See Figure 24.



**Figure 24: Impact of the Conference on Educators and Professionals**

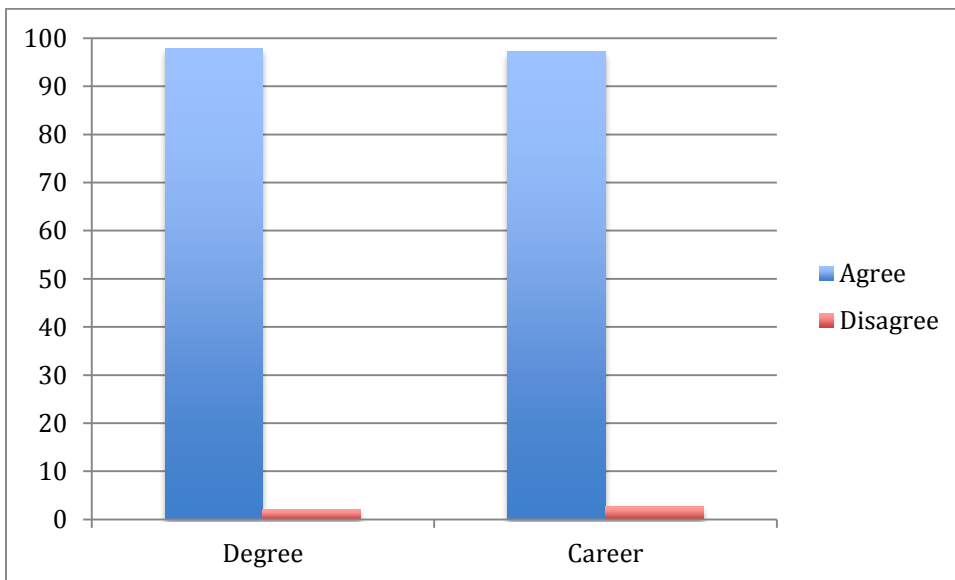
### **Students**

Some of the activities at the conference were specifically aimed at a student audience such as the resume clinic, the career fair, and the graduate school fair. See Figure 25. Students were very pleased with these activities, 97.8% found the resume clinic to be valuable, 98.2% found the career/graduate school fair to be valuable, and 97.1% found the speed networking/mentoring to be valuable.



**Figure 25: Students Finding Components of Conference Valuable**

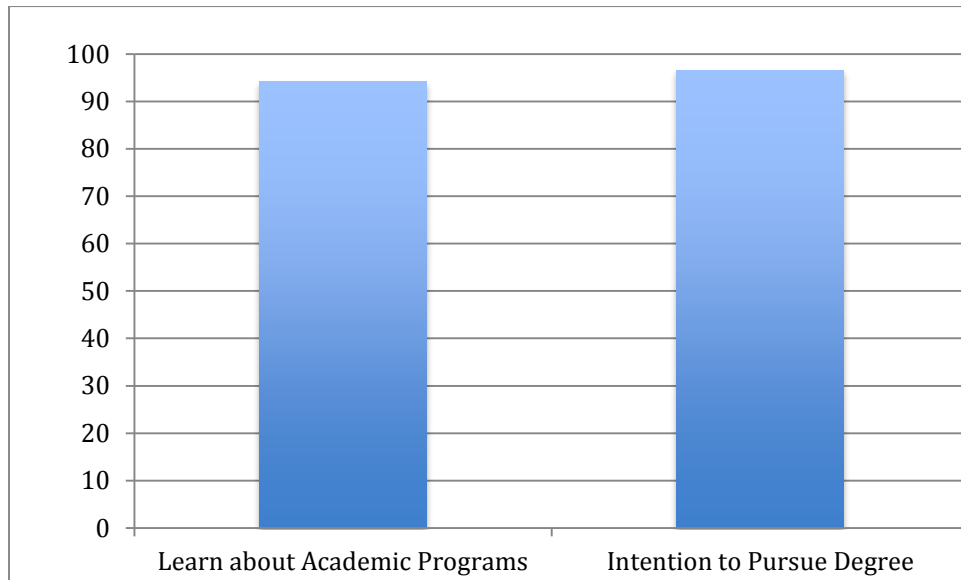
Since the impact on students was a crucial component of the workshop, a separate part of the survey was answered only by students. A total of 154 students completed the survey. Figure 25 captures the impact of the conference on the students' commitment to current degree and commitment to career in computer security. As we can see in this figure, 97.9% said that the conference increased their commitment to complete their current degree program and 97.3% reported the conference increased their commitment to pursue a career related to information/computer/cyber security.



**Figure 27: Students' Increased Commitment**

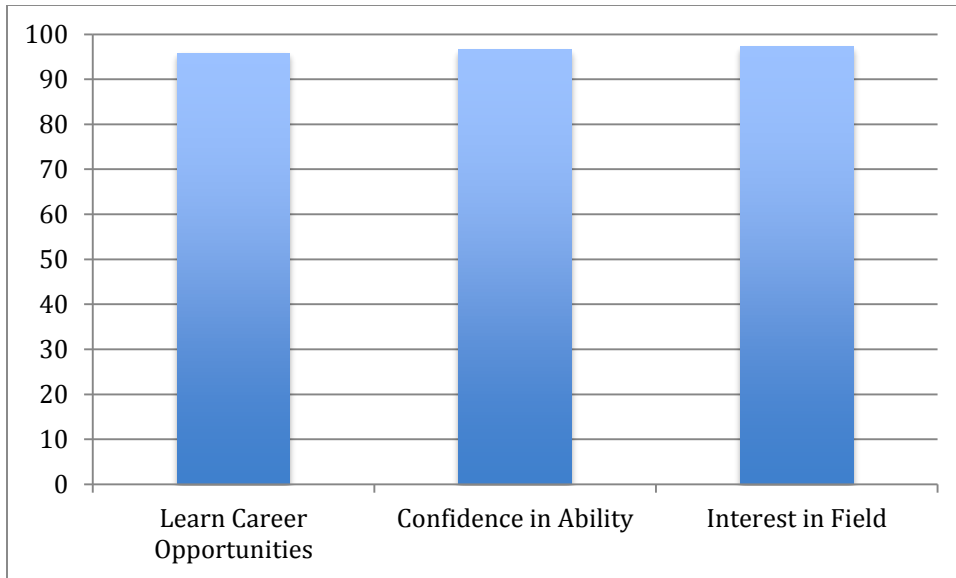
The conference also helped 94.3% of students learn about academic programs in information/computer/cyber security. An amazing 96.6% of students reported that the

conference increased their intention to pursue an undergraduate or graduate degree in a related field. See Figure 28.

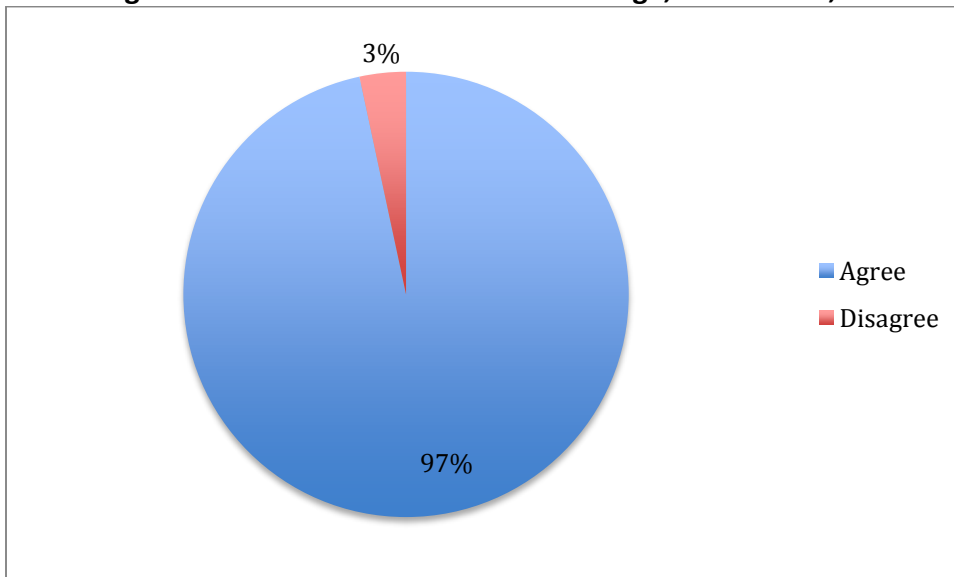


**Figure 28: Students' Increased Knowledge and Interest in Degrees**

The conference provided opportunities for students to increase their knowledge of career opportunities, confidence in their abilities, and interest in pursuing a career in the field. Figure 29 contains the results of the survey questions regarding these issues. An increase awareness of job opportunities in security was reported by 95.9% of the students. Many women leave the field because of their lack of confidence. The conference worked to reduce the lack of confidence in women students and succeeded with 96.6% of students reporting an increase in confidence in their ability to succeed in a job in information/computer/cyber security. Importantly, 97.3% of the women reported an increased interest in information/computer/cyber security. Most (97%) of the female students found the role models at the conference to be an inspiration. See Figure 30.



**Figure 29: Students' Increased Knowledge, Confidence, and Interest**



**Figure 30: Inspired by Role Models**

### *Strengths of the Conference*

All of the interviewees felt that the conference was valuable and made an important contribution. When attendees were asked to write a single word that best described their personal feelings after attending the conference, their words were overwhelming positive. The three most frequent responses were inspired, motivated, and excited. See Table B for the most common words. One of the most valuable parts of the conference from the perspective of the interviewees was the networking opportunity.

**Table B: Feelings about the Conference**

Feelings about the Conference
1. Inspired (21.43%)
2. Motivated (6.49%)
3. Excited (5.84%)
4. Awesome (5.19%)
5. Empowered (3.25%)
5. Enlightened (3.25%)

**Feedback from Last Year Incorporated Into WiCyS 2015**

Several items from last year’s feedback were incorporated into this year’s conference for example, more speakers and panels about technical skills and resources, start the conference earlier on the first day and finish the first day earlier, more hands on activities, move the graduate school/career fair to earlier in the and conference speed networking event, and more workshops were incorporated into this year’s conference.

**Useful Recommendations from Surveys**

Participants were asked how frequently should the conference occur, either every year or every other year. The overwhelming response 91% said every year while 9% said every other year. As a matter of fact, in the semi-structured interviews several interviewees indicated that they would love to see this conference occur more often or to be supplemented with smaller regional conferences in between the national WiCyS Conference. Eighty percent of attendees felt that the conference should be longer.

Many participants shared useful recommendations for next year’s conference. These can be found in Table C.

**Table C**

Useful Recommendations for Next Year’s Conference
More workshops
Additional technical presentations
Encourage more overseas applicants.
Larger space, it felt rather crowded during meals and in the hallways.
Provide more time in between sessions to relocate.
Given that the workshop seating is so limited, it would be great to have the presentation streamed so anyone could follow along with the activities from anywhere (even if it is the hotel restaurant).
Tours of neighboring institutions; more group activities ie capture the flag; larger mentoring session
Ice-cream social. Learn-how-to-be-interviewed session. Capture The Flag. Pentest demo. recordings, so we can see what we missed

A large session lecture on What is Cyber Security (101 in a nutshell) for those new to the field.
Student research presentations in addition to the poster sessions might be nice.
Digital copies of slide presentations on a CD or password protected location to download them from. Increase graphics on slides to help tell the story of what you are trying to teach.
It would be nice for students, if the lodging could be paid for 2 nights, that way if there is a problem with flights.
More sessions in the professional category. This may also attract more attendees in the work force.
Adopt a no discrimination policy for companies attending the conference.
It would be nice to have a social gathering with activities that encourage people to mingle with people outside of the group with which they came.
Please do not have the speakers talking the entire meal times. We had no time to talk to the people at our tables and we missed much of what the speakers had to say. At least wait till the meal was served, because of the clattering of the plates.
A session geared at the freshmen/sophomores who might be attending WiCyS. Geared at giving them all a chance to meet up and exposing them to opportunities aimed at them. Also access to resources they can peruse on their own time to gain the technical proficiency that they will need.
Larger area for career fair

### **In-depth Interviews**

In addition to the overall conference survey, observations at the conference in depth semi-structured interviews were conducted with 10 attendees. Four of these attendees were from industry, three were students, and three were educators. The in depth interviewees were selected to have different interests and perspectives. All of those interviewed felt that the conference was worthwhile and played an important role. They used words such as fabulous and outstanding to describe the conference and its opportunities. An attendee said that the conference was all about “inclusiveness...it is about the workforce, make sure men and women are engaged in STEM”. One attendee said WiCyS was “the most organized and well planned conference that I have ever gone to”. They all felt that there were benefits to attending the conference. One attendee felt that WiCyS can be the umbrella organization and resource that serves as the go to place for posting jobs, internships, assistantships, etc. Many of these attendees volunteered to play a larger role in the next WiCyS conference because they felt it was making such a valuable contribution.

According to these interviewees, WiCyS has made a tremendous impact on attendees. This impact includes attendees making more of an effort to network and provide professional opportunities for other women including getting more women involved at an earlier age. Attendees have even been volunteering at local high schools and camps to attract more interest in cyber security since the conference. Attendees are sharing the information obtained at WiCyS at their home institutions and

organizations. One attendee has set up cyber security week where all computer classes at their institution will engage in cyber security for a week each semester.

One student attending WiCyS received two internship offers. Another student said that they met someone from the company that they now work for at the conference. They said that as a result of attending WiCyS, they have “an internship at a company that I enjoy working for” and “would like more people from my school to be able to attend”. One student stated that WiCyS “eradicated any insecurities that I had”. A student said that attending WiCyS “cemented my interests in cyber security” while another student said that WiCyS “confirmed that this was the right career path”.

Many of the recommendations from the interviewees (See Table D) could be a separate NSF proposal around mentoring and networking. The professional interviewed felt that students overestimated their ability to network and to follow up with mentors after the conference. One recommended that surveys be sent to students before the conference to pair them with a mentor before the conference and that this mentor would work with them for two years. This could be paired with the recommendation of another interviewee that felt that students needed more training on networking and follow up. Another interviewee also suggested matching mentors and those being mentored based upon career and interests. They felt these matched individuals could meet an additional time either annually or quarterly depending on geographical location to keep the momentum going.

**Table D.**

WiCyS Additional Recommendations from Interviewees
Assist the students with follow up networking skills.
Boost the professional aspects of the conference.
Have a session for new PhD’s about reality check (may get no’s before a yes).
Pairing students with mentors before the conference
Get mentors to agree to a two-year commitment and pairing with students at critical decision making points such as seniors in high school or college.
Pairing industry professionals with teachers to figure out where kids that are graduating are struggling.
Keep the conference national but incorporate technology to bring it to people who can’t travel. Set up technology on campuses around the country so that people may go to those campuses to participate.
Have a session debunking the stereotypes of what is cyber security.
Additional separate mentoring sessions to keep momentum going.
More on global job opportunities.
Have workshops with role models showing women how to be successful in cyber careers.
In addition to WiCyS have regional mini-conferences.
Add a track for high school and middle school teachers.
Have a session on what is cybersecurity.



More interactive sessions.
More on certifications.
Have opportunity for women to interview for internships at the conference.
Have the conference for more days and end earlier.
Expand to 2 ½ days.
Expand internationally.
The conference should be the pinnacle of the year with ongoing conversations in between.
Create an ongoing classroom with WiCyS members.

### **Summary**

Overall this was an immensely successful conference by any standard. The conference was evaluated by personal observations of the evaluator, a survey and semi-structured interviews of diverse participants. All indications are that participants found the conference well organized, meaningful, engaging, and a great networking opportunity. Participants' individual needs were accommodated.

#### *Intellectual Merit*

The conference was well organized, well conceived and addressed an important need. Cyber security is a growing field in which women are drastically underrepresented. This conference is the first national women in cyber security conference. The conference provided an opportunity for students, educators, and professionals in this field to both network and to develop new skills. The conference had over three times the number of attendees as was funded by the NSF grant. Additional attendees were funded through sponsorships.

#### *Broader Impact*

The conference meets several criterion of broader impact. The conference provided learning and mentoring opportunities for high school, college, graduate and postdoctoral students, as well as junior faculty. It stimulated the interest of students in research experiences and provided a professional development opportunity for computer science teachers. It broadened the participation of women and minorities in computer security through both recruiting new women and minorities into the field and helped to maintain those already in the pipeline through support and mentoring systems. The conference helped to enhance the infrastructure for research and education by establishing collaborations between researchers in industry and academic institutions. The conference also provided an opportunity for other NSF projects such as the Faculty Secure Coding Project to broaden their dissemination to teachers and industry. Through strengthening the pipeline for computer security the conference also provides benefits to society by enhancing national security through strengthening cyber security.