WINS Abstract and Outcomes

ABSTRACT

The Women in IT (Information Technology) Networking at SuperComputing (SC) (WINS) program seeks to address the prevalent gender gap that exists in IT, particularly in the fields of network engineering and high performance computing (HPC). The project's goal is to establish a sustainable workforce development program giving U.S. women professionals in the network and software engineering fields the opportunity to gain substantial hands-on expertise while developing business and mentoring relationships with global leaders in the field. The project provides travel support for a total of fifteen qualified female U.S. candidates - five early to mid-career participants per year for three years. The support allows the participants to join the SCinet workforce for the conference years SC16, SC17, and SC18 as well as attend a follow-on meeting to further expand their professional network, raise awareness of the WINS program and diversity issues, and report on their experiences resulting from participating in the program. The program builds upon the success of the Women in IT Networking at SC (WINS) pilot program introduced in November 2015 at the SC15 conference in Austin, Texas. WINS is a joint effort between the Energy Sciences Network (ESnet), the Keystone Initiative for Network Based Education and Research (KINBER), and University Corporation for Atmospheric Research (UCAR).

From the intellectual merit perspective, the WINS program is a concentrated effort to create a highly impactful training and solution for female participants who have the desire to build expertise and continue their education and careers in network and computer systems. By working with SCinet and the SC conference, WINS is taking advantage of a well-established community event with a 25+ year track record of helping networking and HPC professionals build their careers. WINS allows more women to tap into this deep well of resources in a very deliberate, outcome-oriented fashion.

The broader impact of the program is to help build a more diverse workforce by providing growth opportunities for women in Science, Technology, Engineering, and Mathematics (STEM) career areas and to retain qualified women in the IT field while growing mentors and role models for future generations. The cross-organizational collaboration including DOE, NSF, and the Regional Optical Networks (RONs) will provide a broad and expansive platform for a national impact. This program is a critical component to providing a strong and diverse IT workforce to bolster U.S. international competitiveness.

OUTCOMES

Disclaimer

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The Women in IT Networking at SC (WINS) program was developed in 2015 as a means for addressing the prevalent gender gap that exists in Information Technology (IT), particularly in the fields of network engineering and high performance computing (HPC). Since its inception the WINS program has enabled 45 women to participate in SCinet, which has evolved into a small community that supports each other at the conference and post-conference. As a result, the percentage of women participating in SCinet has nearly tripled since the WINS program started in 2015.

In developing the program, the WINS management team focused on developing a rigorous and respected application review and finalist selection process. This process included defining protocols for SCinet mentor and team assignments, managing and supporting WINS recipients' participation in SCinet and report-outs, refining the program based on each year's experience, and collecting information and metrics in order to assess the program. By SC18, the WINS program had settled into a smooth routine, providing a solid framework that could be replicated each year.

The percentage of women participating in SCinet has increased significantly since the WINS program started in 2015, both in the number of women participating and the percentage of women on the SCinet committee in general. The percentage increase in women participating in SCinet reached a high of 36%, compared to 14% participation the year the program started. WINS participants have a similar return rate as other SCinet volunteers. Using SCinet volunteer information for SC06 through SC19, roughly 53% of SCinet volunteers participate in SCinet at least twice. During the same period, 15 of the 24 awardees, or 62%, have participated in SCinet at least twice.

Many WINS participants have taken on leadership roles: 1 in SC17, 4 in SC18, 6 in SC19, 10 in SC20, and 8 in SC21. Angie Asmus, who joined WINS in 2016, was recently appointed the SCinet Vice Chair in 2023 and SCinet Chair in 2024, only the fourth woman to hold this position since SCinet's debut in 1991. Since 2016, Ms. Asmus has taken on increasingly larger SCinet leadership roles, and has grown in her professional career at Colorado State University, recently being promoted to the Manager of Network & Security Operations.

The WINS Advisory Committee, consisting of nine WINS stakeholders, was established in 2022 to provide advice on program content and expansion, maintain a strong professional network for WINS participants, assess the organizational structure, and seek sustainable funding opportunities.

The WINS program has been highly successful in its primary goals of increasing the number of women participants in SCinet, in providing technical and professional skill development for the WINS volunteers, and in increasing awareness in the community regarding the gender gap in the fields of network engineering and high-performance computing. By SC21, women accounted

for 28.5% of the SCinet volunteers, an increase of more than 100% compared to when the program started in 2015. WINS is not a one-time opportunity, but rather part of long-term career development providing activities outside of SC to enhance skills and professional development. Activities have included presentations at regional and national conferences as well as monthly, virtual, WINS alumni meetings. Career development opportunities are cited by Awardees, their managers, SCinet Mentors and SCinet Leadership as one of the most significant benefits of the program.