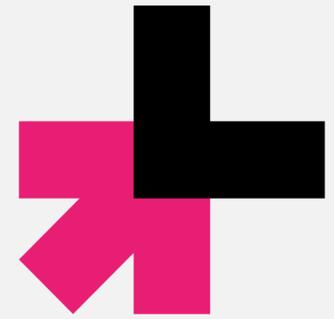


**Proven  
Solution**

Future Leaders



**HeForShe**

# **Stony Brook University**

## **Promoting success for women in STEM**



## Global Context

**The diversification of the STEM (Science, Technology, Engineering, Math) workforce is of national and global importance. Women who initially select STEM majors may experience several factors early in their academic careers which cause them to shift paths and pursue non-STEM majors.**

Worldwide, there is a gender gap in STEM. According to UNESCO Institute for Statistics, just under 30% of women comprise the world's scientific workforce. According to the U.S. Department of Education, approximately 57% of all postsecondary degrees awarded go to women, whereas just 34% of STEM degrees go to women. According to the U.S. Bureau of Labor Statistics, women represent only about 25% of workers in computer science and math related fields, and roughly 17% of workers in engineering and architectural fields. STEM workers earn higher wages, and when more women enter STEM fields, parity in the STEM workforce is achievable.

Stony Brook University has expanded our Women in Science and Engineering (WISE) program to address the gap between women and men in STEM. By offering a recruitment, retention and partnership plan, WISE promotes the success of women in STEM. In the last academic year alone WISE has expanded the number of women in its incoming cohort by 25%.

“Programs like WISE are a critical step in achieving gender parity in STEM. Now is the time when young women and girls need to see themselves in STEM—to see a career that will foster their own personal and professional growth, a space that will welcome their skills and perspectives, and a trajectory for them to become the next generations of leaders. Promoting and supporting gender equality in STEM benefits all of us for years to come, and WISE effectively leverages Stony Brook University's dedication to academic excellence and inclusion in order to build a more sustainable and equitable future.”

**Maurie McInnis**  
President, Stony Brook University



34%

Approximately 57% of all postsecondary degrees are awarded go to women, whereas just 34% of STEM degrees go to women

## Key Stages of Implementation



### Step 1 Foster and develop excitement and interest for women to enter STEM majors in college

The first step to promote success for women in STEM is to recruit talented young women to pursue STEM. STEM jobs are projected to increase more rapidly over the next decade, and consequently retaining and graduating students of all genders with STEM degrees is a vital goal.

Recruitment of K-12 students into pipeline programs such as after school activities and summer camps allow them to be introduced at a young age to opportunities in STEM. Participation strengthens their sense of belonging and accomplishment in STEM.

Middle school and high school programs in which students engage in hands-on STEM activities led by mentors who serve as role models guide young women towards STEM career paths. Pipeline programs give young women the confidence to enter STEM majors in college. Situating the WISE Honors Program at an elite institution such as Stony Brook University attracts academically talented women to pursue STEM majors in a small, welcoming, supportive community within the larger research university.

This past school year, the Middle School and High School WISE Program welcomed more than 130 participants from various schools in the community to engage in hands on activities led by about 20 STEM role models. Students learned computer science and electrical engineering and they designed and built LED smart lights and circuit boards and wrote computer algorithms.

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### Step 2 Provide support structures for women to gain a sense of identity in STEM and achieve success in their coursework.

Support structures such as mentoring, curriculum, and professional development promote STEM degree completion and STEM careers.

Matching students with mentors promotes their academic and professional success. Mentoring for first-year WISE students supports transitioning and acclimating to college life. Mentoring for upper level WISE students focuses on guidance for career path, discovery and participation in leadership experiences and transitioning to the workforce or graduate school. Mentored students have shown to have better academic outcomes than non-mentored students. Students who receive mentoring have higher grades semester to semester, and are retained in their majors at higher rates than their non-mentored counterparts. Mentors serve as positive role models, allowing mentees to build their STEM identities and thrive in academia and beyond. In the current academic year, 25 undergraduate women in STEM mentor 125 first year WISE students, and additional 75 other undergraduate WISE students are mentored by more than 60 graduate WISE mentors.

In addition, dozens more WISE students are matched with industry mentors through the Career Center Industry Connections mentoring program.

Offering a curriculum strategically designed to address important factors impacting the success of women in STEM majors uncover the challenges and opportunities that face students. Research has shown that women who are outnumbered by male counterparts in STEM classes are less likely to participate in classroom discussion, doubt their ability, and develop lower self-confidence to succeed in STEM. The curriculum serves to create a sense of belonging in STEM by encouraging interdisciplinary collaboration among like-minded women.



### Developing strong professional skills position women toward assuming leadership roles in industry and academia.

This past academic year, students engaged in 26 unique research projects in diverse STEM fields, including biochemistry, civil engineering, computer science, electrical engineering, marine science, and more.

Developing strong professional skills position women toward assuming leadership roles in industry and academia. Research has shown that an increase of STEM degrees for women has not correlated to the number of STEM leadership positions for women. A professional development program empowers female scientists, engineers, mathematicians, and health professionals to pursue leadership level positions. By developing their skills and understanding of topics ranging from interviewing, financial management, and salary negotiation to stereotype threat and communicating science, women equip themselves with the insight to become leaders.



This past academic year, undergraduate students were introduced to 40 women faculty and industry professionals in a series of roundtable discussions called “Wonder Women in STEM.” Students learned about the challenges and successes of women in STEM from leaders in their respective fields. These conversations fostered appreciation and understanding of building a future in STEM. In addition, the WISE Leadership Workshop Series is offered to graduate women in STEM and covers topics ranging from achieving career aspirations, understanding diversity and inclusion, building skills in financial management, networking, and more.

**Strengthening women’s competencies across social, academic and professional spheres today positions them to be successful leaders in the STEM workforce of the future.**

### **Step 3 Partner with faculty, campus offices, professional agencies, and industry to enrich course offerings and develop new initiatives.**

Collaborating with members of the university and off-campus community and industry partners enhance and expand the reach and impact of the program. The partnership program encourages and collaborates with faculty, other campus members, and students to enrich course offerings and develop new initiatives. WISE facilitates and collaborates in interdisciplinary proposals, assists students and postdocs to prepare competitive fellowship proposals, and works with industry representatives to establish funding mechanisms to sustain the program. Industry partners offer internship experiences to students.

## **Resources**

 [www.stonybrook.edu/wise](http://www.stonybrook.edu/wise)

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