CELEBRATING YEARS OF TIVE SITY



The WESE Mission

Syracuse University's Women in Science and Engineering (WiSE) program supports the recruitment, retention, attainment, and advancement of women in STEM at the University and ultimately in the STEM workforce. Since 1999, this successful program has provided diverse opportunities for undergraduate and graduate students, postdoctoral scholars, and faculty through programs and events that facilitate the inclusion and success of STEM women. Fulfillment of the WiSE mission advances the University's prominence as a top-tier research institution deeply rooted in excellence in the student experience.

In 2017, WiSE was integrated into the Office of Provost, Faculty Affairs. WiSE aligns with the priorities of the Academic Strategic Plan and core Invest Syracuse aims of redefining the student experience, advancing discovery and innovation, and expanding opportunities to students from underrepresented and marginalized populations, across the socioeconomic spectrum.

WiSE Goals

- Build a strong community for women in STEM that provides support and access to mentoring, information, and resources
- Energize resiliency by helping to develop strategies that address challenges, bridge differences, and promote self-care
- Accelerate excellence by providing leadership, career and professional development, and other targeted programs that foster professional skills, interpersonal competence, excellence in communicating science, and work-life balance
- Motivate persistence towards degree completion, STEM career launch, or career advancement
- Stand up for equity and inclusion, both interpersonally and across campus

WiSE History

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In 1996, women faculty in the University Senate began to notice the underrepresentation of women in STEM. Women made up only 9% of the science faculty in the College of Arts & Sciences, and 6% of the faculty in the College of Engineering & Computer Science.

Cathryn Newton, Earth Sciences Chair at the time, along with Diane Murphy and Priti Ramamurthy, directors of Women's Studies, submitted a proposal for a women in science and engineering program at Syracuse University. The proposal was not funded, but they continued to advocate.

In late 1997, the Senate Committee on Women's Concerns again called attention to the scarcity of women faculty in the science, mathematics, and engineering disciplines. Deans Bogucz and Jensen appointed Shobha Bhatia, Professor of Civil & Environmental Engineering, and Cathryn Newton to conduct an assessment of the situation and propose a plan. During the next year, the two women researched similar programs at other universities and met with female faculty members. Out of their work and advocacy, WiSE was founded in 1999.

The Growth of WiSE

For 20 years, WiSE has proudly served the women students and faculty in STEM at Syracuse University. The program has grown and evolved to meet participant needs, yet remains a strong, interdisciplinary community led and driven by faculty. The diverse programming and events offer women in STEM a wide variety of networking and learning opportunities, as well as support, encouragement, and inspiration. WiSE now serves a total of 17 STEM departments at the University.

Departments Served

Biology Electrical Engineering & Mathematics Education

Biomedical & Chemical Engineering Computer Science Mechanical & Aerospace

Chemistry Exercise Science Engineering
Civil & Environmental Engineering Forensic Sciences Nutrition Science

Communication Sciences & Disorders Information Studies Physics
Earth & Environmental Sciences Mathematics Psychology

Science Education





1997 Statistics

In Fall of 1997, Shobha Bhatia and Cathryn Newton recorded the number and percentages of women faculty and women undergraduate students by discipline.

Women Faculty and Undergraduate Students in STEM 1997						
College/ Department	# of Women Faculty	% of Women Faculty	% of Women Undergraduates			
Biology	2	4%	50%			
Chemistry	1	6%	49%			
Earth Sciences	1	11%	45%			
Engineering & Computer Science	ees 4	6%	26%			
Mathematics & Math Education	3	6%	33%			
Physics	2	8%	10%			
Psychology	5	19%	71%			

1999

The Women in Science and Engineering program was introduced at Syracuse University.

WiSE emphasized three main components:

- 1. Hiring women faculty in science, mathematics, and engineering
- 2. Offering science and engineering lectures by women scholars
- 3. Advising and mentoring to support research

WiSE launched the 'Lecturer Speaker Series.'

The series introduced Syracuse University and the broader community to scholarly contributions by prominent, internationally renowned women researchers.

2000

The WiSE Learning Community was established, (offered 2000-2013).

The learning community supported female STEM students academically, emotionally and socially. The goals of the community were to:

- 1. Support students in engineering and sciences
- 2. Strengthen the university experience for students in STEM
- 3. Help women students establish a close-knit network of support, mentorship, and guidance with both peers and STEM professionals

WiSE created the Student Mentoring Program.

Professor Shobha Bhatia developed a professional mentoring program that paired undergraduate women in the College of Engineering & Computer Sciences with professional engineers and scientists at local Syracuse companies. This program has evolved into other WiSE programming over the years.



A Walk w

20 Years of WiSi 1999 -

2008

The WiSE Future Professionals Program was introduced.

WiSE-FPP is a two-year professional development program that offers support for women in STEM at the graduate level.

2009

The WiSE Postdoctoral Mentoring Program was established.

WiSE-PDM is a professional development and mentoring program for postdoctoral scholars.

2004

WiSE introduced the Norma Slepecky Prize and Lecture.

The Norma Slepecky endowment established a prize for undergraduate research and an annual lecture to honor and highlight renowned female scientists.



2010

Syracuse University received a \$3.4 million grant.

With the support of Chancellor Canter, a team of WiSE faculty and allies were awarded a **NSF Institutional** Transformation grant. Its mission was to create a sustainable network that supported the recruitment, retention, and promotion of women faculty in STEM, and to facilitate a more inclusive and equitable institution.

WiSE hosts an international symposium.

WiSE hosted an international symposium focusing on the status of women faculty in STEM. Accomplished presenters from Argentina, Canada, Japan, Mexico and the U.S. spoke at the event.

2014

The WiSE Women of Color in STEM Program was developed.

The program focuses on building community and promoting persistence in STEM. It provides tools for women to succeed while also addressing bias.

2019

Twenty years of WiSE programming at Syracuse University.

2018

WiSE launches the Summer Research Program.

WiSE augmented grants to support STEM research experiences for female undergraduate students.

2018

The WiSE First Year Forum introduced.

First Year Forum welcomes all students interested in learning more about women in STEM. The program is presented over six weeks and connects participants with women faculty, peers, and the campus resources they need to be successful.

WiSE Leadership

From the program's inception, WiSE has been a faculty led and driven organization making its leadership structure unique. WiSE is currently led by two Faculty Co-Directors, Drs. Shobha Bhatia and Katharine Lewis, and Program Director, Sharon Alestalo. In addition, faculty from across multiple departments serve as volunteer advisors to each program that WiSE operates. This faculty leadership allows WiSE to be highly responsive to emerging needs. The Program Director and Program Support Coordinator take ideas, and plan and implement them, with the support of graduate and undergraduate student assistants.

The Original Seven

WiSE was founded in 1999 with the help of five additional faculty members. Three remain active researchers – Drs. Marina Artuso, Eleanor Maine, and M. Cristina Marchetti. Two original members, Drs. Norma Slepecky and Karen Hiiemae, have passed away leaving incredible research and teaching legacies.



Shobha Bhatia
Professor, Civil &
Environmental Engineering



Cathryn Newton
Professor, Earth &
Environmental Sciences



Eleanor Maine Professor, Biology



Marina Artuso
Professor, Physics



M. Cristina Marchetti
Professor, Physics



Norma Slepecky
(1944-2001)

Late Professor Norma
Slepecky taught within the department of Bioengineering

and Neuroscience



(1941-2007)

Late Professor Karen Hiieman taught within the College of Engineering & Computer Sciences



Women Faculty Success

In a review of sponsored projects led by Syracuse University, women in 2009 represented 23% of lead investigators (STEM departments) generating \$4.8 million or 16% of annual grant funds. In 2019, women faculty represented 32% of lead STEM investigators and generated \$11 million or 37% of annual grant funds.

Building Faculty Networks

WiSE faculty programs focus on building a strong community and professional network that fosters peer mentorship and provides professional and leadership development opportunities to women faculty in STEM. Faculty largely design their own programs with WiSE support. One example is the peer mentoring circles. Peer mentoring networks are an evidence-based practice for professional development. They can be structured by the organization or, as is the case at Syracuse University, be self-initiated and maintained by the group.

In 2012, the Norma Slepecky Lecturer, Dr. Mimi Koehl, a professor of Marine Biology at UC Berkeley, shared her experiences participating in a peer mentoring circle that she and her colleagues started as early career scientists. It was commonly called: Every Other Thursday (EOTH). One member of the group, Ellen Daniell, wrote a book about their experiences. After attending the Slepecky luncheon, one junior faculty member connected with other women on campus and formed a group following the structure of EOTH. Today, the University has four active groups. STEM women faculty largely populate these four circles, but each has several faculty from outside STEM disciplines as well as librarians.

Peer mentoring circles positively impact the professional development, promotion, collaboration, research and teaching excellence, and retention of women faculty in STEM. Mentoring circles are a strategy to help women faculty succeed.

Peer Mentoring Circles Address



Professor Lisa Manning is an Associate Professor of Physics. In support of the SU Advance mission of recruitment of women faculty in STEM, Professor Manning was hired in 2011. Professor Manning has contributed to a variety of WiSE programming as a participant, advisor, and presenter. Her partner is also a professor at Syracuse University in Mathematics, and they have spoken on several dual-career panels. She has been involved in peer mentoring circles for seven years. As a result, Professor Manning has been able to strategize teaching and mentoring techniques, as well as build a supportive community of friends and co-workers. As a professor, she encourages all of her students to join the WiSE program.

"Having a network of other women to go to and learn from has proved to be very valuable in times of crisis and in times of success.

Being a part of a network and supporting the success of your peers is equally as rewarding as your own success."

-Professor Lisa Manning



Lisa Manning
Professor
Syracuse University

POSTDOC OPPORTUNITIES

WiSE piloted a professional development and mentoring program for postdoctoral scholars in 2009-2010 called the Postdoctoral Mentoring Program (WiSE-PDM). The program focuses on persistence in science and engineering. WiSE supports and equips postdoctoral scholars to persist in STEM careers by building community, and providing information and developmental opportunities. Programming addresses work-life balance at the systems and personal level and promotes professional and interpersonal excellence.

WiSE-PDM is uniquely designed to be collaborative, interdisciplinary, and self-directed with postdoctoral scholars taking a lead role in developing and organizing programming and events. This methodology is predicated on the belief that professional women who are proactive can facilitate and maximize the terms of their professional success, especially in a challenging climate, throughout their careers. Programs and services are designed to meet the challenges faced by women and to maximize their individual strengths.





Samantha England

Research Assistant Professor and WiSE Postdoctoral Advisor

Professor Samantha England is a Research Assistant Professor in Biology and former postdoctoral scholar at Syracuse University. Professor England came to Syracuse in 2011 for her second postdoctoral program alongside WiSE Co-Director and Biology Professor, Katharine Lewis. Professor England earned her undergraduate and Ph.D. in the United Kingdom. During her first postdoc and research fellowship at the University of Cambridge, Professor England was involved in a WiSE program that offered diverse personal and professional development events and networking opportunities with other women in STEM disciplines. She believes the postdoc programming teaches women not only how to be better teachers, researchers, and mentors, but equally how to communicate effectively and how to maintain a healthy work-life balance. Using her experiences, Professor England has been key to the success of the WiSE program.

"These experiences and mentorship by Professor Lewis have contributed to my determination to help other women get access to the resources and information that they need to make informed and empowered choices for their futures."

-Professor Samantha England



Huan Gu

Research Assistant Professor and WiSE Postdoctoral Advisor

Professor Huan Gu is a Research Assistant Professor in Chemical Engineering and an Alfred P. Sloan MoBE Postdoc Fellow at Syracuse University. She completed her bachelor's and master's degree in applied chemistry at the China University of Mining and Technology. In 2009, she pursued her Ph.D. at Syracuse University. Professor Gu joined WiSE-FPP, which motivated her to think about how she can help other women in their career development. Following her Ph.D. program, she was awarded a national fellowship with Dr. Dacheng Ren. In addition, her experience with Graduate Women in Science enlightened her on the importance of scientific writing skills and was inspired to collaborate with Professor Samantha England to create a peer-review writing group for graduate and postdoc students. Last year, Huan launched WiSE programming focused on written communication, where graduate and postdoc students can work together to strengthen their science writing.

> "WiSE allows women to bond with each other, and when we come together, we can create more opportunities for others." -Professor Huan Gu

FUTURE PROFESSIONALS PROGRAM

269 total students have benefited from this two-year program. The WiSE Future Professionals Program (WiSE-FPP) is a two-year professional development and support program for women in STEM at the graduate level. WiSE-FPP facilitates masters and doctoral student career development, planning, and preparation, and addresses career resilience, productivity, and key strategies of successful, professional women.

In 2012, 93% of Associates persisted to degree vs 81% of STEM graduates overall.



Rajani Muraleedharan G'10



Associate Professor at Saginaw Valley State University

Rajani Muraleedharan first worked as a research assistant at Syracuse University in 2002, and obtained her master's degree in computer engineering and Ph.D. in electrical and computer engineering by 2010. She was also a member of the first WiSE-FPP cohort in 2008-2009. The program offered Muraleedharan an opportunity to learn about different perspectives and areas within the STEM fields. Her continuous research involves children with autism and studying how special needs children can be most independent. Muraleedharan serves as a faculty advisor of women in electrical and mechanical engineering, plans STEM field trips for female high school students, and she remains a big advocate for underrepresented communities.

"One thing I took away from WiSE is that you have to reach out to people and give back to the community." -Professor Rajani Muraleedharan

Caroline Rufo G'15



Investor Relations Consultant at MacDougall

Caroline Rufo obtained her Ph.D. in chemistry from Syracuse University in 2015, and she currently works on the investor relations team at MacDougall. Rufo's day-to-day tasks often involve client research, problem-solving, and storytelling focusing on the investor audience. Rufo was a WiSE member from 2013-2015. She attended several seminars and networking opportunities that helped her learn about a variety of career options. Rufo continues to pass it forward working with Women in the Enterprise of Science and Technology in Boston, an organization that helps women in STEM.

"The FPP program was a good resource to help students connect to alumni and professors in other departments." -Caroline Rufo

Amanda Hoffman G'14



Lawyer at O'Melveny & Myers LLP

Amanda Hoffman obtained her Ph.D. in medicinal and pharmaceutical chemistry from Syracuse University in 2014 and is an associate in the litigation practice of O'Melveny & Myers LLP, based in the firm's New York office. Hoffman joined WiSE-FPP during her second year at Syracuse University. Following her Ph.D. program, Hoffman attended St. John's University School of Law to pursue her J.D. As a patent litigator, Hoffman has found her science degree and research to be extremely useful in her career. As a female lawyer, Hoffman found her experience with WiSE-FPP, where she learned to build strong networks, to be helpful when persisting in the field of law.

"I found WiSE to be a safe space to socialize with like-minded students, as well as an avenue for female students in STEM to have their voices heard." -Amanda Hoffman

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GRADUATE & UNDERGRADUATE

General Graduate Opportunities

General Graduate Programs are offered periodically by WiSE for the larger population of STEM graduate students, often in collaboration with Syracuse University's Graduate School, Graduate Student Organization, and various STEM departments. Examples include sessions on scientific writing, practical strategies for addressing bias, dual-career challenges, and using social media to communicate science.



Mary Taylor G'09 Systems Engineering Project Supervisor at SCR, Inc.

"The WiSE program offered many opportunities for me to meet and learn from amazing women studying and working in technical fields. As a graduate student at Syracuse University, I enjoyed attending WiSE events and as a working engineer, I enjoy continuing to participate. WiSE enriched my student life and my professional career."

-Mary Taylor

Mary Taylor was a student at Syracuse University when the WiSE program was in the beginning stages in 1996. Taylor earned her master's degree and Ph.D. in electrical engineering from the University in 2009.

In 2000, WiSE established the professional mentoring program which paired undergraduate women with professional engineers and scientists at local Syracuse companies. At that time, Taylor was working at Phillips Broadband Networks and became involved with WiSE serving as an industry mentor for undergraduate students in STEM majors. Taylor was able to offer support and encourage female students to persist in their fields.

Mary returned to the University as a full-time graduate student in 2004 and participated in many WiSE programs. She stayed for two years beyond graduation to lead a research contract. Mary remained involved in WiSE graduate and doctoral programs even as she returned to industry.

Undergraduate Opportunities

WiSE First Year Forum was created in the Fall of 2018 to support women undergraduates' persistence toward a STEM major, addressing the consequences of bias early by increasing understanding and building resiliency among all students. The College of Arts & Sciences offers an annual fall six-week freshman experience, which allowed WiSE to offer this program taught by faculty.

WiSE Women of Color in STEM (WWoCS)

was initiated during the fall of 2014 at the urging of Jasmine Johnson, a chemistry undergraduate, who wanted to connect with other women of color in science to expand her access to information, support, and other resources that would help her thrive and achieve her goals. With an advisory group of women of color at the faculty, postdoc and student level, WWoCS was formed with a mission to empower women through community building, fostering a sense of belonging in STEM, and promoting academic, professional, and interpersonal excellence.

WiSE Research provides grants to women undergraduate students that augment other grant funds received to conduct research. The funds support student involvement in STEM research projects, giving participants an early introduction to the research process and providing necessary experience for academic and career advancement.



WiSE Learning Community

Nat Tangpipth '13, Sales Manager at PepsiCo, Inc.

Nat Tangpipth attended Syracuse University in 2009-2013 and obtained her bachelor's degree in civil engineering. Tangpipth is the Associate Sales Manager for Commercial Planning at PepsiCo. She first became involved in WiSE through WiSE's Learning Community and later as a workstudy assistant. The Learning Community was a housing option specifically for women in STEM majors. Through her involvement in WiSE, Tangpipth attended programs and networking opportunities with alumni, which offered her many opportunities after college.

"During my freshman year at Syracuse, I found a supportive group of friends. WiSE encouraged me to build personal and professional relationships with peers, professors, and mentors."

-Nat Tangpipth

WISE WOMEN_{OF} COLOR_{IN} STEM

WWoCS brings women students of color together, fostering community and a sense of belonging. Programs provide useful information and promote skill-building, helping participants to successfully navigate their undergraduate experience and challenges created by bias.



WWoCS Alumni

Treasure Bellamy graduated from Syracuse University in 2017 and is now a Cosmetic Chemist at Barnet Products in Englewood Cliffs, NJ. In this role, Bellamy spends her days in the lab researching, testing stability, developing customer projects, and creating formulation guidelines. Treasure is a first-generation college student, and she majored in chemical engineering and minored in African American studies. She also served as a program assistant for WWoCS from 2016-2017. Bellamy helped facilitate workshops, created meeting presentations, and supported the recruitment and retention of members. Bellamy continues to advocate for diversity in STEM, and she volunteers for programs like the National Society of Black Engineers.

"WiSE taught me to ask for what I want, ask for what I need, explore all my resources, and to put myself out there."

-Treasure Bellamy



Treasure Bellamy '17 Cosmetic Chemist at Barnet Product Companies



Ariel Ash-Shakoor G'17 Biomedical Engineer at The Food & Drug Administration

Ariel Ash-Shakoor obtained her Ph.D. in biomedical engineering at Syracuse University in 2017. She is an engineer at the Food and Drug Administration where she reviews devices that assist heart and artery functions. She was an Associate in the WiSE-FPP program as well as one of the founding graduate mentors for WWoCS. Currently, Ash-Shakoor volunteers through the National Society of Black Engineers, and she participates in panels and mentor-matching programs supporting high school students.

"My WiSE involvement helped me prepare for the next step in my career, and WWoCS helped me find a community in Syracuse."

-Ariel Ash-Shakoor

Tonya Wilson is a mathematics education Ph.D. candidate, undergraduate instructor, and WWoCS graduate mentor at Syracuse University. Tonya's STEM career journey can be described as nontraditional. She returned to college after 20 years to earn her associate's, bachelor's, master's, and now doctoral degree. After her bachelor's degree, Tonya became a certified NYS teacher of 7th-12th grade mathematics. Tonya taught for 1.5 years, and then she took a leave of absence to further her education. During her master's degree at SUNY Oswego, her academic advisor insisted that her position as a woman of color in mathematics education would be more influential as a professor. Tonya applied and was accepted into the doctoral mathmatics program at Syracuse University in 2015. Tonya strives to offer support and encouragement to female students who follow a nontraditional academic and career path.



Tonya Wilson G'21 Mathemathics Instructor at Syracuse University

"I never thought I would be where I am now, not because I didn't think I could do it, but because I never thought about it."
-Professor Tonya Wilson



"I love how this program brings us all together to get a chance to build a community of support. It's hard to find women of color in STEM so to have a space where all of them can be in the same space at the same time is great!
-WWoCS participant



The Norma Slepecky Undergraduate Research Prize and Memorial Lecture

Norma Slepecky was a Syracuse University professor and one of the original faculty members involved in the WiSE program. Dr. Slepecky was a distinguished auditory neuroanatomist and also a member of the Institute for Sensory Research at Syracuse University.

Dr. Slepecky earned her bachelor's degree in 1965, her master's degree from Syracuse University in 1968, followed by her Ph.D. from Upstate Medical University in 1985.

Dr. Slepecky was a passionate researcher and an advocate for undergraduate student research. She frequently mentored undergraduate students seeking research experience. She also strongly supported efforts to increase the number of women in science and engineering.

Dr. Slepecky hoped that her legacy, with the support of the endowment, would continue to encourage young women to conduct research. With her enthusiastic approval, her family, friends, and colleagues, upon her passing in 2001, endowed the Norma Slepecky Undergraduate Research Prize and Memorial Lecture.

WiSE was appointed as the steward for the Slepecky Prize and is honored to annually coordinate the Slepecky ceremony and lecture held each spring since 2003.



Norma Slepecky (1944-2001)



Norma Slepecky Award Ceremony Winners Over the Years

17 Years of The Norma Slepecky Ceremony Speakers and First Place Awardees



The WiSE Vision

The Women in Science and Engineering program at Syracuse University helps women from all career stages, undergraduates to full-time professors, thrive at the University and beyond. In doing so, the program also enables Syracuse University to continue to benefit from the profound talents and accomplishments of women in STEM.

Going forward, WiSE will continue to play an essential role, while supporting the recruitment, persistence, and advancement of women in STEM at Syracuse University. While progress has been made in some fields, women are still under-represented in many STEM areas, particularly at higher levels of education and career pipeline. It is WiSE's mission to continue implementing programming to support women as they advance beyond the University.

2019-2020 WiSE Leadership Team



"Each of us has a responsibility to reach back to help others, not just blazing the trail." -Professor Bhatia, Co-Director

"WiSE supports women at all stages of the STEM pipeline, enabling Syracuse University to benefit from the profound talents of women in STEM."

-Professor Lewis, Co-Director



"WiSE works to build and sustain a strong community for women in STEM and their allies as a foundation for equity and inclusion." -Sharon Alestalo, Program Director

> "When women in STEM come together across the University to learn, connect, and share, the benefits are great and lasting. WiSE strives to provide the support women faculty and students need to succeed." -Amanda Latreille, Program Support Coordinator



Co-Directors:Shobha Bhatia Katharine Lewis

Professional Staff:

Sharon Alestalo,
Program Director
Amanda Latreille,
Program Support Coordinator
Isabel Munoz,
Graduate Program Assistant
Kate Kemnitz and Joselyn Vidaca,
Undergraduate Program Assistants

WiSE 20-Year History Booklet Developed by Morgan Foss, WiSE Intern

Faculty Mentoring:

Suzanne Baldwin Melissa Green

Leadership Development:

Eleanor Maine Amy Criss Qinru Qiu

Postdoctoral Mentoring:

Susan Parks Samantha England Huan Gu

Future Professionals Program:

Shikha Nangia Heather Coleman Brittany Jakubiak Sucheta Soundarajan

WWoCS:

Dawn Johnson Michelle Blum Ruth Phillips Eve Humphrey

Graduate Mentors:

Ashley Douglass Fran Silva-Genier Isabel Munoz Tonya Wilson

General Undergraduate Programs:

Kate Becklin Rachel Steinhardt

First Year Forum Instructors:

Katie Becklin Catherine Cornwell Steluta Dinca Nicole Fonger Moira McDermott Ruth Phillips Jessica Redmond

Norma Slepecky Undergraduate Research Prize and Lecture:

Natalie Russo



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