OUR MISSION:

THE WOMEN IN SCIENCE AND ENGINEERING (WISE) PROGRAM AT THE UNIVERSITY OF ARIZONA IS DEDICATED TO SUPPORTING THE ENTRY, PERSISTENCE, AND SUCCESS OF UNDERREPRESENTED STUDENTS IN SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS. THROUGH A COMBINATION OF LOCAL K-12 OUTREACH PROGRAMS, COLLEGE STUDENT ENGAGEMENT OPPORTUNITIES, AND INSTITUTIONAL RESEARCH AND EVALUATION, WE WORK TO INCREASE DIVERSITY IN STEM AND ADVOCATE FOR GENDER EQUITY ACROSS STEM FIELDS.
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Dear Supporters, Partners, and Friends of WISE,

I am delighted to share our 2024 annual report with you! This report covers WISE 2023-2024 academic year activities and accomplishments. Despite a challenging year amid the university’s financial crisis, WISE continued our diligent work advocating for intersectional gender equity across the STEM pipeline, from early STEM education through higher education and all the way into the STEM workforce.

This year WISE celebrated a number of remarkable achievements including developing new community partnerships within our K-12 educational outreach programs The Bio/Diversity Project, Imagine Your STEM Future Program, and our Girls Who Code Club. We were also successful in expanding our Women in STEM Mentorship Program and the Launching Your Career Symposium to serve more UArizona students across campus. Lastly, we deepened research and evaluation collaborations with units across campus while also launching our very own Gender Equity Research Lab to provide students greater access to research experience within the interdisciplinary, applied, and community-based approaches that emanate out of WISE and our parent unit, the Southwest Institute for Research on Women (SIROW).

None of this could have been achieved without our hardworking staff, student interns, volunteer mentors, as well as our individual donors, and our college, corporate, and foundation sponsors. We send a big thank you to all the individuals and organizations who have supported our work this year!

As you read through this annual report, I invite you to consider how our work might align, overlap, or bear synergy with your own. Whether through financial support, industry or research partnerships, or volunteering time and expertise, your involvement can play a pivotal role in shaping a future STEM workforce that is not only innovative, but also diverse! Together, we can inspire and empower the next generation of leaders, innovators, and changemakers.

As we reflect on the accomplishments of the past year, let us also look ahead with excitement for the year ahead. No doubt, we will face challenges, but much like the students we support, we will continue to rely on our resilience and tenacity to achieve our goals. Thank you for your support in the 2023-2024 academic year, and we look forward to continuing our work in the year ahead!

Sincerely,

Dr. Stephanie Murphy
WISE BY THE NUMBERS
2023-2024 ACADEMIC YEAR

Over $90,000 distributed in wages to 45 UArizona student interns

Over $8,000 in scholarships or stipends distributed to UArizona students

Over 900 local K-12 students directly impacted by WISE youth outreach efforts

Over 400 UArizona students directly participated in WISE professional development opportunities

Over 50 campus, community, and corporate collaborators who partnered on WISE projects

$90,000
$8,000
900
400
50
The WISE Mentorship Program pairs UArizona STEM students with local industry and academic professionals in yearlong mentoring relationships to provide students with much needed career development support. Pairs are matched based on common STEM interests and lived experiences to help foster impactful mentor/mentee relationships.

2023-2024 Program Summary
This year, we matched **55** mentor-mentee pairs from a variety of STEM fields. Pairs met monthly from October to April with a self-chosen agenda and schedule. Over the year, mentors supported mentee driven goals and shared valuable advice on career planning while mentees built confidence through the relationship and pursued early career development opportunities.

Mentors and mentees meet their matches for the first time.

Mentees also participated in supplemental psychoeducational events throughout the year to help them gain mentee skills and build community with their peers. The event series included two interdisciplinary panels on gaining research experience and graduate school admissions, and a series of workshops on financial planning with Take Charge Cats, public speaking with Think Tank staff, holistic wellness with WISE staff member Gaby Perez, LinkedIn networking with Dana Gunn, and navigating difficult conversations in a professional context with Dr. Laura Scaramella (UArizona School of Human Ecology).

Mentees attend a supplemental psychoeducation workshop.

We closed the program with a year-end celebration and guest presentation by former Olympian and mentoring expert, Lacey John (Change Process Leader, TEP) who shared insights on how to bolster long-term networking relationships. It was a successful year for the pairs, with mentors and mentees alike reporting satisfaction, gratitude, and professional or personal achievements.

Guest speaker Lacey John presents at the year-end celebration.

We look forward to launching the 2024-2025 WISE Mentorship Program in the Fall 2024 semester!
Mentee Cohort (N=55)

Of the 55 mentees, all identified as cisgender women. The majority (63%) identified as BIPOC students and more than a quarter of mentees (27%) identified as first-generation students.

Most mentees (84%) identified as undergraduate students and almost 44% were enrolled in the College of Science. A sizeable portion of mentees (42%) had not been involved in any STEM student support groups prior to joining the mentorship program.

Mentor Cohort (N=55)

The majority of mentors (85%) identified as cisgender women and just over half (51%) identified as BIPOC. The cohort was almost 60% academic professionals and 40% industry professionals.

Mentors held a variety of professional titles and worked across a variety of STEM fields, including computing/technology, engineering, healthcare, as well as the life and physical sciences.
We surveyed **mentees** immediately before and after participating to learn more about the overall impact of their mentorship experience. Results shown below indicate the experience helped mentees **build confidence, gain knowledge and skills, pursue opportunities, and build community.**

*Percent of mentees who reported the program *directly* helped them to:*

- **36%** participate in a research experience or internship beyond required coursework
- **36%** apply for a scholarship, fellowship, or grant
- **55%** do better in STEM coursework
- **45%** secure a job or internship interview
- **68%** build community with other women in STEM
- **30%** secure an internship or job offer

^n = 28  *n=20
Both mentees and mentors expressed satisfaction with the program with the large majority reporting it met their expectations, helped them to achieve personal or professional goals, and was an enjoyable experience.

"The program met my expectations."  
MENTEES: 84%  
MENTORS: 91%

"The program helped me achieve personal or professional goals."  
MENTEES: 77%  
MENTORS: 91%

What was your greatest success as a mentor or mentee this year?

"I felt like we actually made meaningful improvements to her resume and job hunt. It was fun discussing dream jobs, identifying skill gaps, and coming up with action plans to help her land her first job in industry."

"It was a privilege to get to know my mentor. My greatest success is this year as a graduate student, I could balance my work life and personal life. My mentor helped me through it."

"I was able to confidentially apply to graduate colleges, and I was accepted to one I want to attend."

"I was able to get a job with the help of my mentor and I was really proud of that!"

"I have been in a transition phase with my career during the time I've been meeting with my mentee. I did have some insecurity that this instability wouldn't be ideal for providing career support for her, but her enthusiasm and interest in what I've been doing through the process gave me a lot of support and actually helped renew many of my interests in the field that I had forgotten about. The greatest success has been the mutual support found in our mentorship!"

"I was in a transition phase with my career during the time I've been meeting with my mentee. I did have some insecurity that this instability wasn't ideal for providing career support for her, but her enthusiasm and interest in what I've been doing through the process gave me a lot of support and actually helped renew many of my interests in the field that I had forgotten about. The greatest success has been the mutual support found in our mentorship!"

"Rediscovering the strength that comes from femme networks!"

"My greatest success was watching my mentee hone in her academic and career interests and goals, and turning those interests and goals towards tangible realities."
This year's Launching Your Career Symposium was held on February 8-9, 2024 at the Student Union and featured sessions aimed at helping STEM students and early career professionals gain the knowledge, skills, and relationships necessary to successfully launch their STEM careers.

The symposium opened on Thursday night with a keynote speech by IBM Vice President Calline Sanchez. Her talk was followed by a professional mixer that brought together UA students, faculty, and local professionals for an evening of networking.

Friday was packed full of workshops on salary negotiation, financial planning, and countering imposter syndrome as well as career pathway panels where attendees heard from women across a number of industries share how they forged their career paths. For more details on the event, visit the LYC Symposium site.

WISE’s Launching Your Career (LYC) Symposium is the only professional development symposium specifically targeting women across STEM fields at UArizona.
We surveyed symposium attendees upon exit to learn more about the impact of the event on their professional development attitudes, knowledge, and behaviors. Below are some insights*. 

- **91%** reported the symposium was an **effective** professional development event and they would recommend it to others.
- **88%** reported the symposium made them feel **more connected** to other women in STEM and they would participate again.
- **92%** agreed the symposium made them feel **more motivated** and **more confident** in their ability to succeed in STEM.
- **80%** agreed the symposium helped them to **gain skills and knowledge** that will be useful for their career development.
- **75%** agreed the symposium helped them to **develop relationships** that will be useful for their career development.
- **84%** agreed the symposium increased the likelihood that they will **pursue more career development opportunities**.

**Attendee Testimonials:**

- “**REALIZING THAT EMPOWERED AND SUCCESSFUL WOMEN WERE NOT ALWAYS THIS WAY; SEEING THEIR ROOTS MADE ME REALIZE THAT I'M NOT SO DIFFERENT THAN THEM. IT WAS EMPOWERING TO REALIZE THEIR ACHIEVEMENTS ARE REALISTIC GOALS FOR ME**”
- “The topics covered were so much more interesting than I would’ve imagined. Especially seeing women CEOs”
- “The workshops, discussions and loved how it felt like a safe space”
- “The ability for STEM community members of different disciplines to congregate in one space and share ideas, opportunities, successes. It’s very energizing to work with students who are eager to get involved, and with faculty that are leading the charge, especially in local STEM initiatives”
- “I was able to attend the mentor workshop and mixer on Thursday and working through the scenarios with peers about supporting mentees was very useful. I thought the examples were realistic and it is helpful to bounce ideas about how to support with others.”

*data collected from attendees who completed exit survey (n= 52)*
In the 2023-2024 academic year, we welcomed 45 students to serve as K-12 STEM Outreach Interns within our three K-12 outreach programs. Intern teams worked diligently to develop and deliver culturally-relevant curriculum, facilitate hands-on STEM activities, and practice translational science communication while mentoring local underserved youth.

2023-2024 INTERN COHORT PROFILE (N =45):
Almost all interns identified as cis-gender women (98%). BIPOC (58%) and first-generation (33%) college-going students were well represented within the cohort. Interns were enrolled in a variety of UArizona colleges with the majority split between the College of Science and the College of Agriculture, Life, and Environmental Sciences.

**ETHNICITY: BIPOC**
- 58%

**COLLEGE-GOING: FIRST-GENERATION**
- 33%

**HONORS ENROLLED**
- 20%

We surveyed students after their internship to learn more about the impact of the experience on their academic and career trajectory.

- **64%** reported their internship would **definitely help** them to achieve academic or career goals.
- **47%** strongly agreed that their internship made them feel more confident in their academic abilities.

**K-12 STEM OUTREACH INTERNSHIP TRACKS:**
- **The Bio/Diversity Project**
  - POPULATION: 6TH-9TH GRADE
  - FOCUS: ENVIRONMENTAL EDUCATION
- **girls who code**
  - POPULATION: 6TH-12TH GRADE
  - FOCUS: COMPUTER SCIENCE
- **Imagine STEM**
  - POPULATION: 9TH-12TH GRADE
  - FOCUS: ENGINEERING
We extend enormous gratitude to our 2023-2024 Lead Interns who diligently worked to lead their internship teams this year. Without their peer leadership and mentorship, WISE would not be able to make the impact we have achieved on campus and throughout our local community.

**Name:** Portia Cooper  
**Major:** Computer Science  
**WISE Project:** Girls Who Code

**Name:** Auditi Bhowmick  
**Major:** Physiology  
**WISE Project:** Wise Communications

**Name:** Catherine Broski  
**Major:** Sociology & Geography  
**WISE Project:** The Bio/Diversity Project

**Name:** Lexis Meza  
**Major:** Ecology & Evolutionary Biology  
**WISE Project:** The Bio/Diversity Project

**Name:** Tashina Farr  
**Major:** Molecular & Cellular Biology  
**WISE Project:** The Bio/Diversity Project

**Name:** Karla Paredes Aguilar  
**Major:** Planetary Geoscience  
**WISE Project:** Imagine Your STEM Future

**Name:** Gabriella Ramos  
**Major:** Psychology & Spanish  
**WISE Project:** Wise Communications

**Name:** Karla Togawa  
**Major:** Mining Engineering  
**WISE Project:** Imagine Your STEM Future

**Name:** Audrey Manning  
**Major:** Natural Resources  
**WISE Project:** The Bio/Diversity Project

**Name:** Nic Sidhum  
**Major:** Veterinary Science  
**WISE Project:** The Bio/Diversity Project

**Name:** Auditi Bhowmick  
**Major:** Physiology  
**WISE Project:** Wise Communications

Best of luck to our graduating seniors: Auditi Bhowmick, Catherine Broski, Tashina Farr, Audrey Manning and Gabriella Ramos  
We know you will thrive in all your future endeavors!
WISE's Bio/Diversity Project aims to increase access to innovative environmental science education opportunities and training, mentoring, and work experience along the K-16+ educational pipeline.

2023-2024 Program Summary
In the 2023-2024 academic year, The Bio/Diversity Project hosted 35 undergraduate students from 14 different majors across 7 colleges. UArizona students dedicated 10 hours per week each semester, totaling 5,120 hours to serving our local Tucson community!

Outreach during the Fall semester focused on essential environmental science topics, including species diversity, adaptations of desert plants and animals, causes and consequences of biodiversity decline. In the Spring semester, youth applied these concepts to develop pollinator conservation projects at their schools. Projects included building bird feeders, planting pollinator-friendly plants and seeds, installing wildlife cameras, and conducting data analysis and data visualizations.

The Bio/Diversity Project launched a new data science track of our environmental science outreach internship program. Led by PI Dr. Katy Prudic and coordinated by Dr. Ellen Bledsoe and Elena Greenberg, the new data science outreach is an NSF-funded collaborative research opportunity. "Building Capacity in Data Science through Biodiversity, Conservation, and General Education" provides outreach interns robust training and mentorship from local experts and pairs interns with high school teachers to facilitate data science curriculum through the lens of biodiversity conservation.

Visit https://biodiversityproject.arizona.edu/ to learn more!
The Bio/Diversity Project 2023-2024 Impact Summary

In the 2023-2024 academic year:

- **700+** 6th-9th grade participants
- **30+** UArizona outreach interns
- **7** TUSD & FWUSD partner teachers
- **400+** hours of classroom instruction

More than half (57%) of partner teachers had 2 or more years of experience as a mentor with the program.

All 6th-9th grade participants attended Title 1 schools in metro Tucson.

More than half (70%) of the 6th-9th grade participants were BIPOC youth.

Through hands-on, place-based, culturally responsive science activities, youth developed a sense of belonging in environmental science.

2023-2024 Program Expansions:

1. Spanish language curriculum development and instruction for bilingual classrooms
2. Data science modules and introductory coding lessons for high school classrooms

Participation by Grade Level:

- 8th Grade: 36%
- 7th Grade: 23%
- 6th Grade: 23%
- 9th Grade: 18%

Pollinator Conservation Projects by Type:

- Bird Feeders: 40%
- Pollinator Plant or Seed Parcel Planting: 44%
- Wildlife Cameras: 16%
2023-2024 Program Summary

In the 2023-2024 academic year, the Imagine Your STEM Future (IYSF) program included 1) hands-on STEM activities, 2) workshops on STEM college and career pathways, and 3) supplemental events featuring inspiring STEM role models. This year’s program was led by 8 UArizona student interns who successfully led classroom activities, facilitated workshops, hosted classroom visitors and provided near peer mentorship.

Desert View High School students participated in 20 different hands-on engineering activities such as designing straw roller coasters, building hydraulic arms, and soldering solar powered cell phone chargers. Junior and senior classes participated in classroom workshops on financial planning, interview strategies, and building LinkedIn profiles. All classes also received tailored presentations intended to demystify the college application, admissions, and selection process.

In addition, a number of local STEM professionals visited, including Annissa Lopez (Permit Engineer, Arizona Department of Environmental Quality), Denise Renteria (Construction Engineer, Kiewit), Dr. Becca Levy (NSF Astronomy & Astrophysics Postdoctoral Fellow) and a number UArizona engineering students. IYSF participants also enjoyed three field trips to the UArizona campus to visit the College of Engineering faculty labs, WISE’s Launching Your Career Symposium event, and to Pima Community College for the SheTech Explorer Day Conference.

Visit wise.arizona.edu/imagine-your-stem-future for more info!
In the 2023-2024 academic year:

- 9th-12th grade participants: 53
- UArizona student mentors: 8
- Raytheon mentors: 5
- Hours of classroom instruction: 80+

The majority (93%) of IYSF participants were BIPOC girls and over half (56%) will be first-generation college goers.

All IYSF activities focused on the engineering design protocol: Define, Ask, Imagine, Plan, Prototype, Test, Improve, Share

We surveyed youth before and after participating to learn more about IYSF’s impact on their academic confidence, STEM interests, career goals, and their overall satisfaction with the experience.

Post-participation (n=23)

- 95% “I enjoyed participating in IYSF.”
- 91% “I would participate in IYSF again.”
- 87% “I would recommend IYSF to others.”

“Pre-participation (n=27) Post-participation (n=23)

- 78% “I feel like I can overcome challenges in my classes.”
- 87% +9%
2023-2024 Program Summary
In the 2023-2024 academic year, our UArizona facilitation team was comprised of undergraduate and graduate women from a range of computing and engineering majors who served as excellent class facilitators and club mentors throughout the entire year. They shared about their own STEM journeys, delivered short biographical presentations on famous women in tech, facilitated coding lessons and team building activities, helped troubleshoot and guide coding projects, among other duties!

This year, youth participants received introductory Python lessons on the "core 4" concepts (loops, variables, conditionals, and functions) throughout the Fall semester. In the Spring semester, youth applied these concepts to coding projects in one of four areas (A.I., Web Development, Game Development, and Robotics).

Throughout the year, supplemental activities like the UArizona Women’s Hackathon and an Intro to Arduino workshop at the Engineering Design Center gave youth greater access to intergenerational mentorship opportunities on campus.

Our year culminated in a project showcase and celebration where students shared the outcome of many weeks of hard work. The showcase featured fully functional video games, A.I. image classifiers, choreographed robot dances, and even personal websites!

Visit wise.arizona.edu/girls-who-code to learn more!
Two thirds (66%) of participants were in 6th-8th graders and over half (50%) were BIPOC youth.

Participants primarily learned Python, but gained exposure to 3 other languages: HTML, CSS, and JavaScript.

Before participating, only 45% knew other girls who were also interested in coding. Through our club, youth built community with other girls and women coders.

All participants reported that they enjoyed the experience, would participate again, and would recommend the club to other girls.

We surveyed youth immediately before and after participating in the club to learn more about the overall impact. Results indicate the experience helped youth build confidence, skills, and self-efficacy.

Girls Who Code alumni are 7x more likely to major in a computing field.*
This year, WISE proudly distributed $8,000 in undergraduate scholarship awards to STEM students who have demonstrated academic excellence alongside a commitment to fostering greater gender equity within their respective fields. These annual awards provide much needed tuition and fees support to high achieving STEM students who most embody the values and legacy of feminist trailblazers Helen Schaefer, JoAnn Troutman, and Harriet Silverman.

### Helen S. Schaefer Scholarship
For undergraduate students majoring in science or math and entering their sophomore, junior, or senior year.

### 2023-2024 Awardees
- Valentina Ayala-Dean, Psychology
- Portia Cooper, Computer Science
- Trisha Jean Lane, Environmental Engineering
- Esperanza Ruelas, Biology

### JoAnn Troutman Scholarship
For undergraduate students majoring in science, engineering or math (or STEM education) who are juniors or seniors.

### 2023-2024 Awardees
- Amanda Adams, Molecular & Cellular Biology
- Jaqueline Diaz, Environmental Engineering
- Mercedes Ortiz, Computer Science

### Harriet Silverman Scholarship
For first year undergraduate students majoring in science or math who attended an Arizona high school.

### 2023-2024 Awardee
- Angelina Nediyathu, Applied Biotechnology

Visit wise.arizona.edu/scholarships for more information on these annual competitions!
This year, WISE Director Dr. Stephanie Murphy (Associate Research Professor, UArizona Southwest Institute for Research on Women) launched a new research lab to guide the research and evaluation work emanating out of WISE. The **Gender Equity Research Lab (GERL)** utilizes intersectional feminist and community-based research methods to conduct research and evaluation focused on the theme of gender equity in STEM.

Using large national and regional datasets from a variety of sources, GERL researchers undertake gender-based analysis of U.S. higher education and the U.S. workforce to determine the extent to which equity-based metrics have been achieved within and across various STEM fields. In addition, GERL researchers conduct program evaluation to assess the effectiveness of promising local interventions along the K-16 STEM pipeline that seek to increase the number of girls and women in the STEM workforce. Through these combined efforts, GERL seeks to assess current progress toward achieving gender equity goals and to develop evidence-based recommendations for future policy and programming interventions.

One of the first completed GERL projects is the **U.S. STEM Occupation Projections Dashboard**. This public dashboard synthesizes data from the U.S. Bureau of Labor Employment Projections Program to provide college students with an up-to-date resource on the national labor market, including current (2022) median wages by occupation and 10-year (2032) occupational outlook data. This interactive dashboard allows users to select specific STEM occupations or survey STEM occupations by type to better inform their academic and career planning process.

GERL is a member of the **UArizona VIP Program** and is currently accepting students to join the research lab on a rolling basis. Interested students can email Dr. Murphy to learn more.

Visit wise.arizona.edu/gender-equity-research-lab-0 to learn more about GERL!
THANK YOU TO OUR 2023-2024 SPONSORS!

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College of Science

College of Agriculture, Life & Environmental Sciences

College of Social & Behavioral Sciences

School of Information

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Raytheon
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ASML

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STEM PUSH NETWORK
1. **DONATE**

Financial support is critical to maintaining our impact on campus and within the local community.

If you are interested in making a tax-deductible financial contribution, please visit: give.uafoundation.org/sbs-WISE or scan the QR code on the right to donate electronically.

2. **VOLUNTEER**

WISE relies on the support of individuals to sustain our work.

If you are interested in giving your time to support our mission, contact WISE Director, Dr. Stephanie Murphy, at sumurphy@arizona.edu to learn about opportunities for involvement as a mentor, guest speaker, or volunteer.

3. **FOLLOW US**

Are you interested in receiving regular updates from WISE?

Stay up to date on WISE activities and projects by visiting wise.arizona.edu or by signing up for our monthly community newsletter using the QR code to the right.