

Celebrate



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OUTREACH

2021-2022



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Society of Women Engineers

Aspire / Advance / Achieve

Celebrate SWE Outreach

A Year in Review: FY22

Letter from the Editor

Our third issue of Celebrate SWE Outreach is in the books! Every fiscal year this publication gets better and better thanks to the hard work of the many SWE and SWENext members participating in outreach.

Our Outreach and SWENext Committees have been growing with more dedicated volunteers each year. As a member of this committee for the past three years, I have seen hundreds of SWE members give their time to develop new webinars, challenges, resources, publications, and events for everyone to utilize. It truly is a joy seeing these people accomplish great things together and pass on SWE's legacy to the future generations of engineers and scientists. This issue focuses on the work each of these individual committee work groups have accomplished during the fiscal year. For many students, our outreach programming can mean a world of difference when choosing a career in STEM, finding the right fit at a university, or meeting a life changing role model.

Life as a committee member is all about balance. We have members from around the world meeting to create the newest outreach resources. Our work happens on weekends, during lunch breaks, between family meals, and even on car rides. The loyalty these members have to the SWE community is a force to be reckoned with.

I am especially grateful to the Special Publications Work Group members who put together all the information you see in these pages. All the art was thoughtfully created by our very own Sara Wheeland, and the helpful resources were compiled by Jacquelynne Hernandez. Hilary

Fiorentino highlighted SWE sections who have planned and coordinated outreach events. The story of Ritu Chakrawarty, who is an excellent example of a role model, was written by Meagan Olsen. Finally, Kerry Moriarty, Elizabeth Brooks, and the rest of the team investigated what all our committee work groups were up to this year. I would like to formally thank you all of you for making this issue of Celebrate SWE Outreach come to life.

With that said, please join us over the next 34 pages to celebrate all things SWE outreach!

Elizabeth Gjini
SWE Outreach Committee
FY22 Special Publications Work Group Lead

Special Publications Work Group Members

Elizabeth Brooks	Kerry Moriarty Lyman
Hilary Fiorentino	Meagan Olsen
Elizabeth Gjini	Sara Wheeland
Jacquelynne Hernandez	



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Special thanks to our SWE
HQ and Leadership Team



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Programs:**
Valerie Bland



**Manager, Outreach &
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Markita Riley



**Coordinator, Student
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Emma Palermo

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Did you like this publication?

[Give us feedback](#) and tell us what you would like to see in the future

New Youth Protection Policy

The Society of Women Engineers (SWE) is committed to providing a safe and secure environment for all participants in SWE- sponsored youth-focused programs throughout the world. In FY22, SWE announced a new [Youth Protection Policy](#) for SWE members and volunteers interacting with youth under age 18.

SWE's Youth Protection Policy and supporting documents ([SWE Advocacy Code of Conduct](#) and [SWE Bullying Prevention Guide](#)) explain requirements and expectations for interacting with youth at SWE-sponsored events and activities across multiple event types and situations.

All SWE members and volunteers are required to complete the [SWE Youth Protection training](#) course in the Advance Learning Center prior to working with youth under age 18 at SWE-sponsored events. The training must be completed every three years. For more information, please visit swe.org/youthprotection.



Wow! That's Engineering

Meet the Outreach Committee

Leadership

The Society Outreach Committee's mission is to empower adult advocates - SWE members, parents, educators, and others - to introduce girls to engineering, cultivate a STEM identity and bring those students into SWENext.

"FY22 has been amazing! We've had a team of over 60 SWE members from across the globe advancing the skills of our thousands of Adult Advocates through the high quality resources, webinars, social media engagements, and newsletters they have developed. My experience as chair has been unforgettable and I will cherish the SWEsters I have made over the last year!"

- Haley Antoine



FY22 Chair:
Haley Antoine



FY22 Chair-Elect:
Swetha Vinjimoor

Meet the Outreach Committee

Invent It. Build It. Work Group

Invent it. Build it. (IIBI) is SWE's annual event for girls in grades 9-12. At this year's IIBI event, hosted at WE21 Indianapolis, girls participated in hands-on engineering activities and learned about how engineers help people and make a difference in the world. They also had an opportunity to talk to real women engineers about their careers.

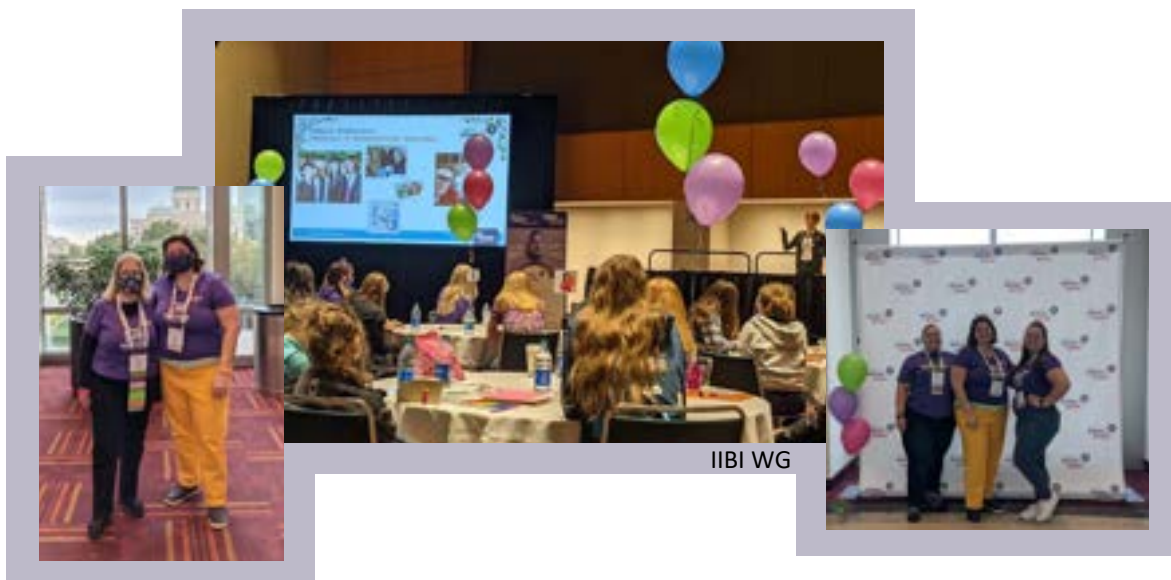
The event includes a parent's and educator's program for information on engineering careers and scholarships, as well as an EXPO featuring engineering clubs, engineering camps, competitions, after-school programs, and more from the local community.



IIBI High School Program

coordinated by Dana Day and co-lead by Jessica Farmer & Sydney Senger Thompson

It was a big accomplishment to host the High School Program safely during the pandemic. We were able to bring in nearly 40 students for the event. Our High School activity involved a three-part challenge with a lot of room for creative problem solving to design mechanisms and systems for each activity within the challenge. It was our please to welcome back Tamara Robertson as our host to inspire the girls to dream big and build bigger!

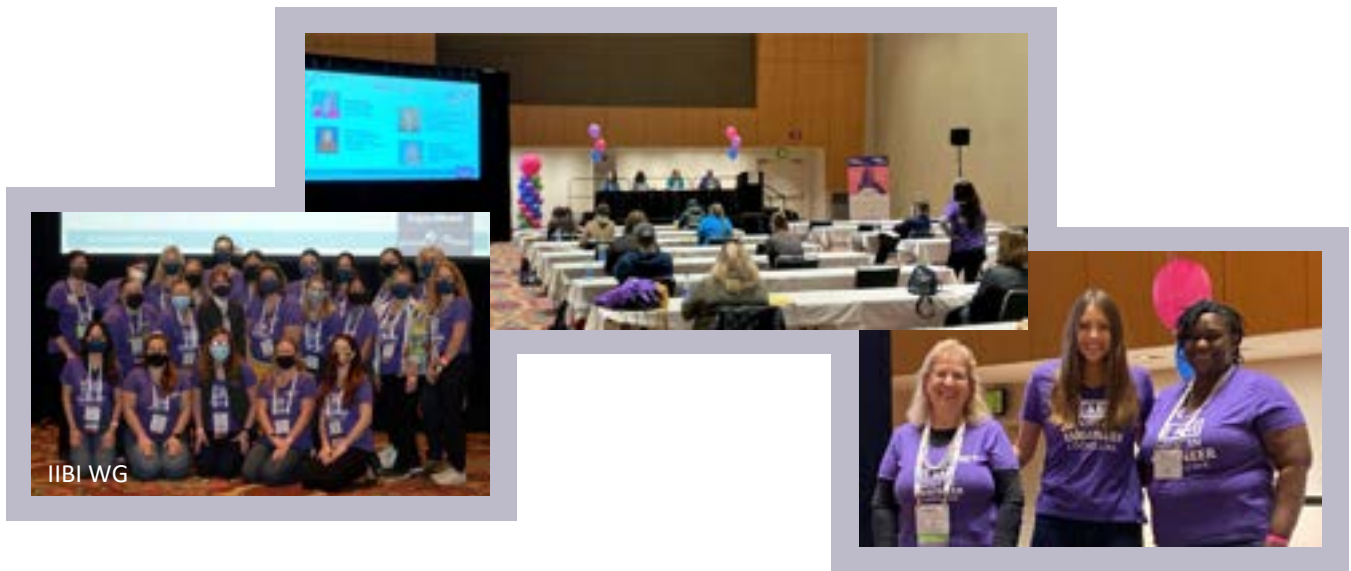


Meet the Outreach Committee

Invent It. Build It. Work Group

The purpose of the **Parents & Educators Program (PEP)** was to share information on why engineering is a great career choice for girls, provide ideas and resources, and answer questions. We had 15 participants. After a brief presentation on engineering, we had an hour-long Q&A session with four women engineers as panelists. Then, participants could choose to learn about the engineering design process by doing a hands-on activity or could go to a separate room for an Educators Round Table discussion. The event ended with final thoughts and a raffle. In the post-event survey, PEP participants rated IIBI a 4.79 out of 5, which is a great score.

—coordinated by Mary Zeis and co-lead by Jess Sorrick & Stella Uzochukwu-Denis



Invent It. Build It. Team (pictured left to right)

Co-Leads: Mary Isaac (MS Program), Mary Zeis (PEP), Dana Day (HS Program) **PEP:** Jess Sorrick, Stella Uzochukwu-Denis **HS Program:** Jessica Farmer, Sydney Senger Thompson **MS Program:** Cindi Reid, Lori Khan **Expo:** Sydney Robinson **Member Showcase:** Sarah Johnson, Tuyet-Hanh Schnell



Meet the Outreach Committee

Introducing Engineering Concepts Work Group

The **Introducing Engineering Concepts (IEC) Work Group** creates webinars to help adult advocates learn best practices to successfully introduce STEM concepts to middle schoolers. The team spent the first portion of the SWE year exploring methodologies and applications that educators and researchers have found to best engage students, specifically girls, in STEM topics. In January, they focused on creating an interactive webinar to share gathered knowledge with any adult advocate interested in encouraging a love of STEM in middle schoolers. The IEC work group successfully presented the webinar in April.



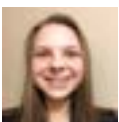
The IEC Work Group is proud to present their newest live webinar, *Sustaining the Spark of STEM (Science, Technology, Engineering, and Math) Interest in Middle School Aged Students* which will be available for viewing on SWE's Advanced Learning Site in the coming months.

Adult advocates will learn how to combat the fear of failure, social stigmas, and gender biases through the power of creating a supportive learning environment, forming connections, and sharing experiences.



IEC Work Group (pictured left to right)

Abigail Mitchell (Lead), Jamie Hamilton, Lindsey Waggoner, Diana Berry, Lisa Cervia, Francesca LaPinta, Judith Kalu-Nchege



Judith Kalu-Nchege

Meet the Outreach Committee

Global Outreach Work Group

Originally named the Global Outreach Research and Development work group, this work group was shortened to the **Global Outreach Work Group** in 2021. Our mission is to provide advisory support to global affiliates who are establishing an in-country SWE pre-college outreach strategy, with emphasis on the adult advocates who conduct such outreach. We work with affiliates, Global Ambassadors, and others to ensure that community outreach initiatives targeting pre-college girls that are led by SWE members or affiliates take full advantage of processes and practices developed by SWE's Outreach Committee, and that they follow the Society's youth protection policy when they do conduct outreach on SWE's behalf.



Global Outreach WG

Interested in joining SWE's global community? Consider joining one of SWE's [Global Affiliate Programs](#) and [Subscribe to SWE's Global Newsletter](#) to stay up-to-date on the latest events and workshops



Global Outreach WG

Meet the Outreach Committee

Global Outreach Work Group

Composed of members on several continents and spanning multiple time zones, the ultimate goal of the work group is to facilitate the establishment of in-country satellites of the Outreach Committee who understand SWE's policies, protocols, and practices. This process typically takes several years to take solid root, under the guidance of US-based members familiar with SWE. The local members will then adapt tools and processes as needed to support in-country adult advocates, often in collaboration with either company-based affiliates or local NGOs such as the Association of Professional Women Engineers of Nigeria (APWEN).

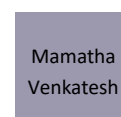
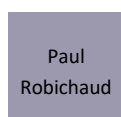
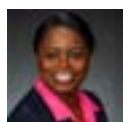
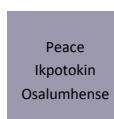
SWE Sister Organizations include:

- **Canada:** [Ontario Society of Professional Engineers](#)
- **Japan:** Japan Women's Innovative Network (JWIN)
- **Korea:** [Women in Science, Engineering and Technology in Korea \(WiTeck\)](#)
- **Nigeria:** [Association of Professional Women Engineers of Nigeria \(APWEN\)](#)



Global Outreach Work Group (pictured left to right)

Mary Isaac (Lead), Sowmya Nagesh, Winifred Ereyi, Peace Ikpotokin Osalumhense, Tracy Nguyen, Inga Urbina, Charity Ikpe, Chetana Gorle, Navreet Saini, Paul Robichaud, Sunayana Reddy, Mulikat A. L. Idris, Mamatha Venkatesh, Sumanlini Jyothi



Meet the Outreach Committee

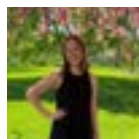
DEI in Outreach Work Group

The **Diversity, Equity, & Inclusion in Outreach Work Group** creates training materials for topics related to performing outreach in underserved communities. For FY22, this team developed a miniseries that covered different underserved communities in detail as well as short videos and resources to regularly engage SWE members with DEI in Outreach topics. The topics covered this fiscal year were underrepresented racial and ethnic minorities, event accessibility, pronouns usage, and DEI for groups.



DEI in Outreach Work Group (pictured left to right)

Samantha Balistreri (Lead), Maddy Best, Tracy Goldman, Maryam Saif, and Caroline Waksmunski



Meet the Outreach Committee

Training for Parents, Educators, and SWENext Club Counselors Work Group

The **Training for Parents, Educators, and SWENext Club Counselors Work Group** creates and provides training materials for a variety of adult advocates. The group consists of adult advocates with diverse backgrounds and unique perspectives and experiences which enriches the materials developed to best educate each of the individual groups. During the first half of FY22, the group focused on the SWENext program.

This spring they created and presented a *SWENext Webinar for Parents and Educators* which will be available for viewing on SWE's Advanced Learning Site in the coming months. There you can also view the Outreach Committee's on-demand [Role Models training](#).

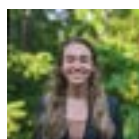
One of the things that makes my group special is the variety of backgrounds they come from and the unique perspectives and experiences they bring to the table - especially with regard to SWENext, which has been a big focus for us during the first half of FY22. They each represent different types of adult advocates, which has been invaluable as we've explored how to best educate each of those individual groups.

- Elizabeth Heyde



Training Work Group (pictured left to right)

Elizabeth Heyde (Lead), Andie Anger, Nicole Wettstein, Kate Nicholl, Niki Foster



Niki Foster

Meet the Outreach Committee

Adult Advocate Publications Work Group

The **Adult Advocacy Work Group** aims to increase STEM awareness and interest by sharing information through the monthly Adult Advocate Newsletter and All Together Blog. The Work Group highlights engineering outreach, famous females in engineering and science, social research, and general STEM resources.



If you are looking for STEM educational tips, workshops, events, and resources to support outreach initiatives for SWENexters in their local STEM Community, you can sign up for the Adult Advocates Newsletter!

In order to receive the newsletters, please fill out this [Adult Advocate Newsletter sign-up form](#)



Meet the Outreach Committee

Adult Advocate Publications Work Group

Visit the [SWENext Publications Page](#) on swe.org to find the previous issues of the Adult Advocate Newsletter

This fiscal year's publications included:

- [Happy Pride Month—June 2022](#)
- [Biomedical Engineering—May 2022](#)
- [Industrial Engineering—Mar 2022](#)
- [Mechanical Engineering—Feb 2022](#)
- [Foundations of Physics—Jan 2022](#)
- [Coding and Computational Thinking—Dec 2021](#)
- [Environmental Engineering—Nov 2021](#)
- [Computer Science and Cybersecurity—Oct 2021](#)
- [Civil Engineering—Sep 2021](#)
- [Music Engineering—Aug 2021](#)



Adult Advocates Publications Work Group (pictured left to right)

Jessica Lunte (Lead), Debra Kimberling, Kristina Phillips



Meet the Outreach Committee

Special Publications Work Group

FY22 has been an exciting year for the **Special Publications Work Group**. This was our first year as an Outreach Committee work group, and there was a lot of space to focus on new projects. This work group was formed to give our volunteers a platform to honor each other and be creative. Each year the publications will reflect the passions of our volunteers. Our main goals for the fiscal year included publishing this issue of Celebrate SWE Outreach and starting a new book!

Every year, this work group will publish the annual issue of Celebrate SWE Outreach



In FY22 we wanted to prominently display the accomplishments of each work group within the Outreach and SWENext Committees

Check out some of our past issues:

- [FY21 Issue](#)
- [FY20 Issue](#)

We are happy to announce the start of a new long term project: a middle-school level children's book that tells the stories of relatable SWE members at various stages of their careers.

Back in October, we put out a call for participation and received 99 submissions from members like you who wanted to be involved in the project. Twenty of those members were selected to be featured in the book.

Stay tuned in the coming years for this new outreach tool!



Special Publications Work Group (pictured left to right)

Elizabeth Gjini (Lead), Sara Wheeland, Hilary Fiorentino, Elizabeth Brooks, Jaquelynne Hernandez, Meagan Olsen, Kerry Moriarty



Meet the Outreach Committee

Outreach Challenges Work Group

The **Outreach Challenge Work Group** promotes and awards best practices in outreach through outreach challenges. Each challenge asks sections, Members-at-Large (MALs), and affiliates to submit best practices and other helpful resources based around the challenge theme. The winning submission receives \$1,000 towards outreach activities.

This year, the Work Group presented the Outreach Playbook Challenge (previously known as the Wow! Innovation Challenge). Hosting a K-12 outreach event can be so rewarding, but sometimes the hardest part of planning is coming up with an activity that will engage and excite students. Entrants were asked to submit an outreach playbook that covers the planning and implementation of a chosen K-12 outreach activity. Through these playbooks, best ideas can be replicated by other sections, allowing more students to benefit from outreach.



Keep an eye out for access to all the outreach playbook submissions on the SWE website!

Top Professional Sections



1st Place SWE Houston Area Section



2nd Place SWE Boston Section

Top Collegiate Sections



1st Place Cal Poly San Luis Obispo SWE Section



2nd Place Georgia Institute of Technology SWE Section

Outreach Challenges Work Group (pictured left to right)

Lucy Kurtz (Lead), Erika Yegerlehner, Kaylee J Smith, Kaelee Mader, Syndey Valiska



Meet the SWENext Committee

Leadership

The SWENext Committee's mission is to expand and implement resources to support SWE's pre-collegiate programs, with a focus on establishing a rich community experience locally and Society-wide. The SWENext Committee is composed of seven work groups: Publications, Awards, SWENext Clubs, New Benefits, Recruitment Resources & Strategies, Transitions, and Programming.

"The SWENext Committee had a successful FY22 and worked to add SWENext programming and recruit more SWENexters and SWENext clubs. The SWENext Committee Youth Protection Task Force created a policy and training that will be rolled out this year, led programs targeting underserved youth, and transitioned the SWENext awards process into the society Awards Committee."

- Sahara Becker



FY22 Chair:
Jill Murfin



FY22 Chair-Elect:
Sahara Becker

Meet the SWENext Committee

Publications Work Group

Each month, women engineers serving on the **SWENext Publications Work Group** send newsletters directly to our SWENexters, adult advocates, and educators. Specific to students' grade level, the K-8 and 9-12 newsletters contain STEM career and education advice.

In order to receive the newsletters, please make sure you have signed up. Depending on your student's age, you can sign up for either of the following newsletters. If you are an adult advocate, parent/guardian, educator, counselor, or outreach practitioner, we encourage you to sign up for both!

- [SWENext program \(13 and over\)](#)
- [SWENext program \(13 and under parent's\)](#)

SWENext also publishes roadmaps on key milestones to college for current high school [freshmen](#), [sophomores](#), [juniors](#), and [seniors](#).



Publications Work Group (pictured left to right)

Michelle Scott, Coleste Huggins, Amar Dabaja, Kristine Loh, Allison Osmanson, Heather Sheridan, Nikitha Rao



Coleste
Huggins

Amar
Dabaja



Meet the SWENext Committee

Awards Work Group

The Society of Women Engineers strives to recognize the successes of SWENext students and SWENext Clubs that do exceptional work in developing a community for students to explore engineering and other STEM fields. The **SWENext Awards Work Group** manages the awards process to identify and develop “the catalysts for change” who will imagine a better world for us. The team develops the award prompts, identifies and trains volunteer judges, and makes the final award recipient decisions. Through these activities, this Work Group helps empower, engage, and expand opportunities for girls to design the future.

For the FY22 Annual SWENext Awards, there are two awards for individual SWENext students (SWENext Community Award and SWENext Local Innovator Award), and two awards for SWENext clubs (SWENext Clubs Best Practices Award and SWENext Clubs Inspiration Award). Award applications may include a poster, a video, an essay, or any combination thereof.



Check out the [2022 WE Local Award recipients](#) and keep an eye out for an announcement with the rest of the FY22 Annual SWENext Awards recipients.



Awards Work Group (pictured left to right)

Erin Sawyer (Lead), Courtney Keiser, Neethu Elizabeth Simon, Caroline Klein, Atlanta Geleta, Coral Jean Cotterell

Erin
Sawyer

Courtney
Keiser



Caroline
Klein



Meet the SWENext Committee

SWENext Clubs Work Group

SWENext Clubs are a way to connect with SWE members and other SWENexters in your area! The **SWENext Clubs Work Group** helps to support new clubs and guide the development of established clubs.

Below are a few common things clubs do:

- Work on projects that use engineering to help people in your community
- Compete in SWENext Club Challenges, Future City Competition, or FIRST Robotics
- Gain leadership experience
- Host outreach events for younger students in your community
- Attend outreach events hosted by SWE sections in your area
- Explore college and career options



sweNEXT



Meet the SWENext Committee

SWENext Clubs Work Group



If participating in SWENext sounds like a good outreach opportunity for you and you are ready to take the next step, find one of the 375+ SWENext clubs around the world using the [interactive map](#), [register a SWENext Club](#), or [request a Club Counselor](#) for your club!

There are plenty of resources to help you get started like [Club 101 Guide for SWENexters](#), [Club 101 Guide for Adult Advocates](#), and the [Club Activity Guide](#).

SWENext Clubs Work Group (pictured left to right)

Elizabeth Heyde (Lead), Bekah Travis (Sub– WG Lead), Vidhya Thiyagarajan (Sub-WG Lead), Marie Laplante, Melissa House, Anushka Pathak, Cassidy Elwell, Jenna Williams, Samantha Galicinao, Shivani Desai, Gianina Ndiaye



Cassidy
Elwell



Jenna
Williams



Samantha
Galicinao



Shivani
Desai



Gianina
Ndiaye



Meet the SWENext Committee

New Benefits Work Group

The SWENext Programs **New Benefits Work Group** highlights valuable opportunities to SWENexters. Currently, they bring internship opportunities to high school students. Many high schoolers are unaware that they are eligible for certain internship programs. Even those who are aware may not look for or take advantage of available opportunities because an internship seems unattainable to them.

In response, the group worked on developing three initiatives:

1. A resource guide of existing high school internship programs
2. A panel of previous high school interns and their mentors for an upcoming SWENext High School Leadership Academy Networking Pod session
3. High school internship spotlights in SWENext newsletters

Through these initiatives, the team aimed to raise awareness of internships for high school students and to encourage the students to pursue opportunities. In the future, the team hopes to further grow their impact and establish an internship program with SWE's corporate partners!



In FY22, the New Benefits Work Group primarily focused on the High School Internship Pilot. The completed activities include:

- Publishing the **"SWENext High School Internship Resource Guide"** on the SWENext Publications page
- Creating an internship survey for SWENexters to better serve their interests.



New Benefits Work Group (pictured left to right)

Stephanie Tu (Lead), Sara Morey, Victoria Lee, Jillian Maling, Vimala Satish, Aminata Ndiaye



Jillian
Maling

Vimala
Satish

Aminata
Ndiaye

Meet the SWENext Committee

Recruitment Resources and Strategies Work Group

The **Recruitment Resources and Strategies Work Group** brainstorms new ways to encourage students to sign up for the SWENext program, keeps recruitment material up to date, and coordinates the [Annual SWENext Recruitment Challenge](#). With only 13% of engineers being women, increasing female participation in engineering is a critical need. The team serves SWENexters by establishing a rich community experience, encouraging STEAM identity, and providing leadership training and college preparation. More SWENexters means a richer community experience now and more women engineers in the future!



We are proud to report that we currently have **6,269** SWENexters



The SWENext Recruitment Challenge is open to SWE collegiate and professional sections, Members-at-Large, SWE Affiliates, SWE Affinity Groups, and SWENext Clubs. Each participant group creates a unique “event code” throughout the challenge to determine how many new SWENexters that group has recruited to SWENext.

Meet the SWENext Committee

Recruitment Resources and Strategies Work Group

Congratulations to the SWENext Recruitment Challenge Winners

Top Sections, Affiliates, and MALs



1st Place

SWE Member at Large
Emerald Akhaumere



2nd Place

Pittsburgh SWE Section



3rd Place

Cal Poly San Luis Obispo
SWE Section

Top SWENext Clubs



1st Place

Neering Diva SWENext Club



2nd Place

Broncos SWENext Club



3rd Place

Emma Willard High School
SWENext Club

Recruitment Resources & Strategies Work Group (pictured left to right)

Kristin Abele (Co-Lead), Karina Cuadrado (Co-Lead), Bridget Heiland, Sara Weeland



Karina
Cuadrado

Bridget
Heiland



Meet the SWENext Committee

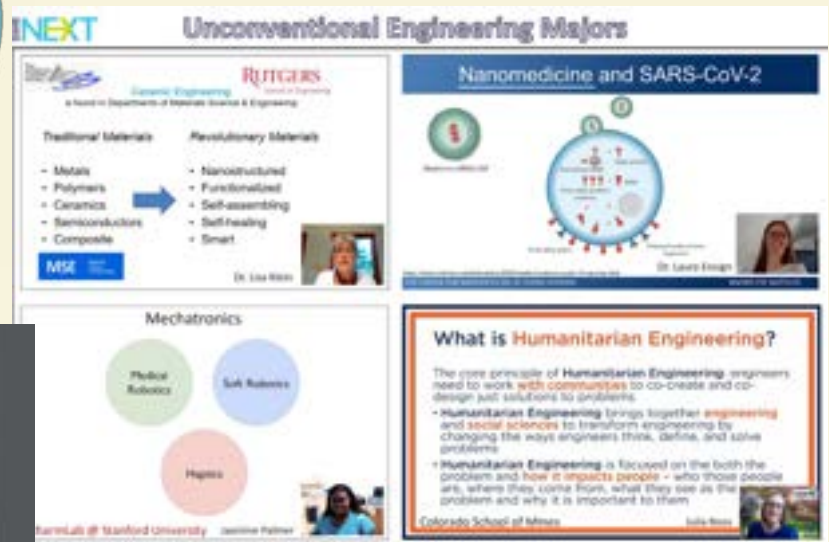
Transitions Work Group

The **Transitions Work** Group creates content and provides benefits to help guide students through major transitions in their STEM journey. These include from middle school to high school and from high school to college. They send out Scholarship Tips that help SWENexters apply for SWE scholarships, Transitions Tips that help graduating high school SWENexters with their transition into college, and annually-updated Milestones to College documents that provide useful tips and tricks to help guide SWENexters through their high school path towards a STEM future.

In FY22, the Work Group put together its first Unconventional Engineering Majors webinar, which pulled together female experts in several lesser-known engineering fields to share their life and work experiences with SWENexters who might be interested in pursuing an unconventional career path through STEM.

In 2021, SWE disbursed 290 scholarships valued at more than \$1,220,000!

Share these [scholarship opportunities](#) with your students



Meet the SWENext Committee

Transitions Work Group

Congratulations to the SWENext Collegiate Video Challenge Winners

1st Place



Southern University and
A&M College

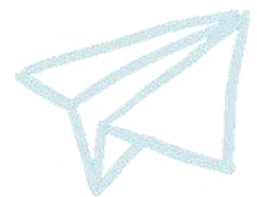
\$500 to be used for future
K-12 outreach events

This spring Transitions Work Group brought back its annual Collegiate Video Challenge with a renewed spotlight on diversity and inclusion.

SWE collegiate sections were encouraged to create a three-minute video about what makes their college and SWE section great, along with information about their school's engineering department. Schools were also asked to highlight their efforts pertaining to diversity and inclusion.

This challenge gave collegiate SWE sections a chance to showcase their school directly to SWENexters looking for their ideal college.

SWENext students can watch these [videos](#) to learn about colleges across the country and about why being a SWE member in college is a great experience!



2nd Place



Texas A&M University

\$300 to be used for future
K-12 outreach events

3rd Place



Colorado State University

\$200 to be used for future
K-12 outreach events

Transitions Work Group (pictured left to right)

Annie Ding (Lead), Julia Hines, Dani Walters, Christiana Aguirre, Gayatri Pahapale, Aishwarya Balaji



Dani
Walters



Meet the SWENext Committee

SWENext Programming Work Group

The **SWENext Programming Work Group** strives to create programming and resources that inspire SWENexters to pursue engineering and prepare them for the journey.

In FY22, the team supported 13 SHLA (SWENext High School Leadership Academy) sessions, including designing and running one on “Why Engineering is a Great Career Choice.” The group created interactive content for SWE role models to use during the two SWENext Connect sessions and helped train four SHLA Ambassadors who led two SWENext Networking Pod sessions. The Work Group also reviewed and gave feedback on six STEM Pathway courses created by SWE HQ and selected hands-on activities for each engineering discipline for the SWENext website to expand the content for Middle School students.



Programming Work Group (pictured left to right)

Mary Zeis (Lead), Monika Chauhan, Lily Delmonico, Markita Riley (HQ)



No Longer “The Only One” - Guiding the Next Generation of Women in STEM

By Meagan Olsen



Ritu Chakrawarty is a fan of Madonna and Michael Jackson. However, when she first heard their music, she did not understand the lyrics crooning in a foreign language. Chakrawarty became determined to learn English and spent a summer immersing herself in the language, working to make sense of the music. Decades later, she now shares the songs with her daughter. Those 1980s songs have come to represent a larger story of perseverance which is now an anecdote she often shares with young girls during outreach and mentorship events in an effort to demonstrate that it is okay to fail.

Chakrawarty first got involved with outreach after being one of six girls at the Indian Institute of Technology Roorke, where she earned her degree in Engineering, Electronics, and Communication. As she navigated her career in both India and the United States, the need for increased visibility and mentorship for women in STEM remained clear. Chakrawarty became determined to help fill this void.

“I came from a town where I was ‘the only one,’ and I needed to find role models,” said Chakrawarty. “Now, I need to give it back so these young kids can see role models.”

Over the last decade, Chakrawarty has participated in middle school and high school outreach programs, mentored an Army Educational Outreach Program (AEOP) team that won state-level awards for an IoT project, and advised several hackathons. She emphasizes that technology is continually evolving, meaning that there will always be opportunities within STEM fields for future generations. The resources supplied by SWE enable volunteers like Chakrawarty to illustrate clear paths forward for young girls and provide visibility crucial to retaining women in STEM.

One key aspect of outreach is to provide mentorship to the next generation. SWE and SWENext work to reach young girls and inspire them to continue their exploration of STEM. Chakrawarty views mentorship as a way to help women define their own journey and learn how to navigate their life.

One of Chakrawarty’s most rewarding mentorship experiences occurred soon after she began her career. She connected with her then-high-school-aged cousin, who had been told to focus on her looks and find a good husband. Rather than feeding this narrative, Chakrawarty demonstrated to her cousin the financial freedom, independence, purpose, and ability to explore the world that a STEM career afforded her. This mentorship encouraged her cousin to explore engineering, and she is now recognized as one of the top Indian women in artificial intelligence.

“Every time I meet her,” Chakrawarty noted, “[my cousin] says ‘I’m glad I could meet you because my trajectory, my life journey could have been completely different ... I may have been living a very lavish life, but I would have not explored my own potential.’”

cont. on next page

No Longer “The Only One” - Guiding the Next Generation of Women in STEM

A key lesson in all her mentorship advice is to “never be afraid to try anything.” Chakrawarty therefore encourages her mentees to look at challenges from different perspectives and find their niche. She emphasizes the freedom and excitement a career in STEM can provide and points young women towards resources, such as those found on page 34, to help in their journey.

Volunteering has also enabled Chakrawarty to build her own network and make connections with others.



“Outreach helped me to find my clan, my village, and to learn and be inspired by them”

- Ritu Chakrawarty

A village of support has become essential as Chakrawarty navigates the process of entrepreneurship. Drawing from her own balancing act of raising a daughter and pursuing her career and Executive MBA at the University of Chicago, Chakrawarty started Graaphene in 2021. This social network app enables parents to develop trusted relationships so that they can get help with childcare without sacrificing their careers. Graaphene also seeks to address the inequities mothers and other caregivers face in the STEM field.

“Alone, you cannot achieve everything,” said Chakrawarty. “You need to have a team. You need to have a larger network.”

This sentiment holds across all areas of outreach. The goal of every outreach event varies with the people involved; the needs of a high school hackathon team are different from those of Chakrawarty’s cousin or parents in search of childcare. Building a network of support and mentorship can enable volunteers to navigate these experiences while giving back to younger generations. Sincere mentorship has lasting effects at all levels, strengthening the bonds of women in STEM.



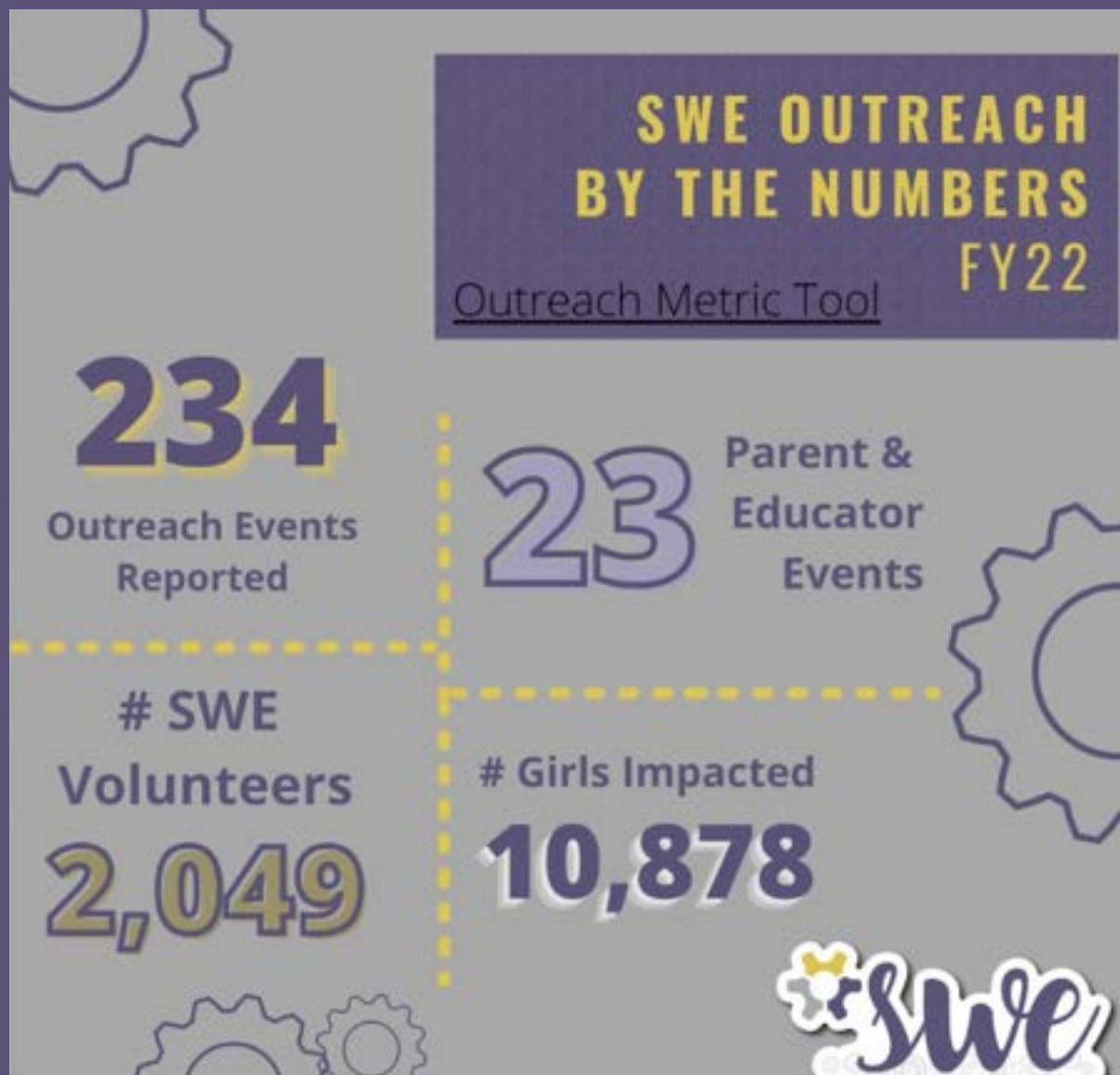
Outreach Metric Tool (OMT)

The **Outreach Metric Tool (OMT)** is the best way to report your outreach events to SWE. You can enter outreach events that you have participated in that directly impact any K-12 student, parent, or educator, to help students understand and explore engineering careers and disciplines. At the end of each fiscal year the outreach committee reports the findings to our members.



[Upload your events to the OMT now!](#) For a list of information requested on the OMT, check out the [PDF Version](#).

FY22 Results



Outreach Event Highlights

By Hilary Fiorentino

Events planned and coordinated by Abigail Rizzo, Evelyn Cook, Kimberly Munder, and Azlan Tubbs

Colorado School of Mines SWE host many outreach events throughout the year.

In September 2021, the section put on Girls on the Rise, a one-day event that hosted 98 middle school girls and introduced them to engineering, as well as the degrees and career paths that can be obtained at Colorado School of Mines. The students also participated in panel discussions and hands-on workshops. The participants rotated through six different activities: Bristle Bots (robots made from toothbrushes), Density Columns (to show densities of materials), Harmonica (to demonstrate sound waves), Robot Hands (to show biomechanical movement), Sand Avalanche (sand was used to demonstrate how rock formations change over time), and Whirling Watcher (a mirror and paper was used to demonstrate how our brains can fill in gaps that our eyes cannot see).

SWE member and Colorado School of Mines junior Abigail Rizzo planned, directed, and coordinated the entire event. The planning began in June and consisted of selecting age-appropriate STEM activities, contacting middle schools for participants (in July-August), and obtaining volunteers (September). The event was funded by the entrance fee of participants, which was \$20. A challenge that Abigail and the event faced was not finding enough volunteers. To help combat this, the volunteers were split into activity and group



leaders. Activity leaders would demonstrate the activity and its underlying science to a group of about 10-12 girls, and group leaders would help direct the participants and escort them where they needed to go while providing support to the activity leaders. As an activity leader volunteer, Abigail loved getting to know the middle school girls better and teaching them what she knew about neurochemistry while explaining the science behind the Whirling Watcher.

Outreach Event Highlights

Another event the Mines SWE section put on focused on introducing high school girls to college life as an engineering student. Girls Lead the Way was held in February 2022 and included a breakfast, a panel discussion about the academic majors offered at the school, a session that included information about financial aid and admissions, various activities of the participants' choice, a keynote speaker



from PDC Energy during lunch, and an optional campus tour. Volunteers and 14 different departments at Mines conducted activities and helped the students learn about STEM and how to become an engineer, scientist, or mathematician. Some students already knew they wanted to be engineers, but they did not necessarily know what steps to take. The Mines SWE's Girls Lead the Way event helped give students an avenue to ask questions and learn more about potential career paths.

Colorado School of Mines SWE also hosted other events throughout the year, including Girl Scout Engineering Day and the Girls are S.M.A.R.T (Studious, Mighty, Amazing, Resilient, and Talented) conference. Girl Scout Engineering Day was a workshop event that reached 250 elementary-aged girls; the theme for 2022 was "Waving Hello to STEM." Participants completed activities that each related to waves, including sound waves, light waves, seismic waves, shock waves, and ocean waves. The first annual Girls are S.M.A.R.T. conference was sponsored by Chevron Phillips Chemical and brought 59 girls in grades 1-5 on the Mines campus to do STEM activities and explore what it means to be an engineer and scientist. The younger group (grades 1-2) focused more on art-based engineering, such as designing their own constellation, making a cotton ball catapult, and creating slime, while the older group (grades 3-5) learned more about chemistry and material properties through chromatography and baking soda/vinegar experiments. At the end of the activity rotations, everyone reconvened to talk about what they learned and ask questions.

Outreach Event Highlights

By Elizabeth Gjini

Events planned and coordinated by Ashley Kellogg



This fiscal year marked the 12th Annual outreach event called Wow! That's Engineering, organized and executed by MAL member, Ashley Kellogg. Year after year, local families in the community join this SWE event as participants and volunteers. For this iteration of the event, 135 girls participated in three hands-on workshops. The Great Paper Tower had the girls building a tall yet sturdy tower using only paper and tape. The



tower had to support textbooks or a canned food item in order to complete the challenge. The next activity, Illumination Station, allowed the students to combine art and engineering. They learned how to build circuits in series and parallel using Play Doh as a conductor, and then using the lights from those circuits, the students illuminated their own original artwork. The third workshop was called Cybersquad Girl where the students had to solve the mystery of a cyber hacker using various clues. The goal of this activity was to teach the students how to stay safe online and avoid becoming the victim of a hacker. This event was sponsored by Jacobs, GHD, REU, PEGC, and PACE Engineering.

"I love this event because I love watching the girls learn from engineering professionals and getting excited about engineering. We are seeing past participants obtain engineering degrees and return to volunteer at the event, which is an amazing reward. My 11-year old daughter was born the day before our 2nd Annual event and I was finalizing plans from the hospital in 2011. She has literally been waiting her whole life to be old enough to participate. After having to skip last year due to Covid, she was very excited to get to attend as a 5th grader this year. I hope she sees how much I enjoy sharing my passion with others and is inspired to do the same." - Ashley Kellogg



Outreach Event Highlights

By Hilary Fiorentino

Events planned and coordinated by Simona Liao



The members of the University of Washington (UW) SWE section hosted their Summer Leadership Conference (SLC) on May 27 at the UW Seattle, WA campus. The one-day event is an opportunity for high school girls to grow their interest in engineering. 60 high school girls spent the day doing hands-on workshops, touring the lab facilities, experiencing a UW Engineering club demo & fair, networking with SWE members, and connecting with their peers on the UW campus. The day's activities included an egg drop challenge, resume workshop, design workshop, a networking lunch, and opportunities for students to learn about UW student organizations. Many organizations contributed to the success of this event including UW SWE, GradSWE, engineering ambassadors, and various student organizations. For the volunteers, it was valuable to interact with the students in person and hear their stories of how far students have come from their non-traditional backgrounds, including those who were first-generation or who immigrated to the US. Hearing the students' inspiring stories and interests in engineering motivated UW SWE to continue their outreach efforts. Volunteers formed great friendships and a community of people passionate about outreach, and developed leadership, management, and communication skills through their work on this endeavor.



Helpful Resources

Mentoring

Role Models

[Role Models Matter 101](#)

[Role Models Matter: Bias Literacy](#)

[SWE Youth Protection](#): Code of Conduct & Standards for Interacting with Youth

Undergrad and Graduate

[SWE Mentor Network](#)

Various non-profit organizations on college campuses have established their own mentoring programs to encourage and support women as they pursue careers as engineers. Check out your college's website to find internal mentoring programs.



Funding

Scholarships

[ABET](#) – accredited bachelor's degree or graduate school program for majors in engineering, technology, computer science.

[SWE Scholarships](#) by Section

Grants

[Program Development Grants](#) to support SWE strategic activities.



Media & Networking

Professional Partnerships

The [Corporate Partnership Council \(CPC\)](#), focuses on sharing best practices, addressing retention and advancement issues, and partnering on diversity initiatives.

Conferences

SWE is dedicated to helping women engineering students' transition into the corporate world by providing training, guidance and access to career opportunities both in academia and industry through [conference outreach opportunities](#) through. Check out the WE22 event: [Invent It. Build It.](#)

Blogs

The [All Together blog](#) has up-to-date information and news about the Society and how our members are making a difference every day.

Podcasts

Listen to your friends and colleagues talk about the important issues and events relevant to members of SWE. [SWE's Diverse podcasts](#) are all about you and what matters to women in engineering and technology.

Helpful Resources

Technical Presentations

- Meyers, K., Goodrich, V. E., Maida, T., Moolchandaney, S., Tanjuatco, G., & Lubbe, C. (2021, July). The Benefits of an Engineering Field Trip for Women Students. In *2021 ASEE Virtual Annual Conference Content Access*.
- Arthur, B., & Guy, B. (2020). "No, I'm Not the Secretary": Using Participatory Methods to Explore Women Engineering Students Experiences on Co-Op. *International Journal of Work-Integrated Learning*, 21(3), 211-222.
- Moxley-Kelly, S. (2020). *"We're Still Writing that Story": How Successful Women Engineers Use Narrative Rhetoric to Open Possibilities for Change* (Doctoral dissertation, Arizona State University).
- Rincon, R. (2021, July). The Impact of COVID-19 on Women Engineers in Academia. In *2021 ASEE Virtual Annual Conference Content Access*.
- Thenmozhi, G., & Cherian, M. (2020). Role and Contribution of Indian Women Engineers to the Society. *Clear Roads will not teach you to handle hurdles only rugged road teaches you to overcome hurdles after then you will become Clear*, 92.
- Ozoude, I. L. (2020). *Exploring the Career Experiences of Immigrant Nigerian Women Engineers* (Doctoral dissertation, Walden University).

Journals

[*SWE Magazine*](#), the magazine of the Society of Women Engineers, is published five times per year. Reaching more than 40,000 members, stakeholders, and supporters, the magazine provides authoritative information on women's status and challenges in engineering.

[*IEEE Women in Engineering Magazine*](#) focuses on issues facing women who study or work in IEEE's fields of interest. The premiere issue, published in 2008, featured articles covering the political and international issues surrounding technology, including cultural differences in the workplace.

Books (K-12)

Check these [engineering books](#)

A list of titles for 2021-2022

- Rosie Revere, Engineer by Andrea Beaty
- Gutsy Girls Go for Science: Engineers by Diane C. Taylor
- Audrey the Amazing Inventory by Rachel Valentine
- Classified: The Secret Career of Mary Golda Ross, Cherokee Aerospace Engineer by Traci Sorrell
- Elements of Genius: Nikki Tesla and the Ferret-Proof Death Ray by Jess Keating



University of Washington SWE

Helpful Resources



Outreach Metric Tool (OMT)

Do not forget to submit your events to the [OMT](#). Preview the OMT [here](#)

Newsletters

Adult Advocate: A SWE [adult advocate](#) is an adult who engages with and empowers girls and young women to prepare for engineering careers.

Release Forms

[Adult Form](#)

[Minor Form](#)

[SWE Minor Permission Form](#)

Use the **Volunteer Forms** tab in the [Resource Center](#) to find other outreach related paperwork that is necessary when hosting an event.

Contact

Need more information? **Email us:**

outreach-chair@swe.org

swenext-chair@swe.org

Did you like this publication? Give us feedback and tell us what you would like to see in the future: <https://forms.gle/K1YXYdxedN6xdZbU6>

