

PURDUE UNIVERSITY
WOMEN
IN ENGINEERING PROGRAM

NATION'S FIRST
WOMEN
IN ENGINEERING PROGRAM



#ILookLikeAnEngineer

**MAKE
YOUR MARK**

DREAM IT. DESIGN IT.
BUILD IT. CREATE IT.
THAT'S WHAT
**PURDUE
ENGINEERING**
IS ALL ABOUT.



MISSION AND OBJECTIVES

Since 1969, Purdue's Women in Engineering Program has been committed to increasing the recruitment, retention, and graduation of women engineering students. Each year, we reach out to support and inform more than 4,000 girls and young women - from elementary school through graduate school.

MISSION:

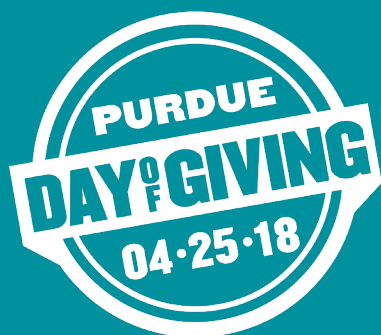
The Women in Engineering Program (WIEP) at Purdue University is dedicated to enriching the profession of engineering through the full participation of women. We develop and direct activities that provide:

- encouragement for girls and young women to study engineering
- information about careers and companies
- an environment conducive to the successful completion of students' studies

We also strive to maintain strong relationships with alumnae, friends, corporations and foundations who generously support our program.

OBJECTIVES:

- To provide career information and encouragement to pre-college girls and young women to continue achievement in math and science and consider engineering as an appropriate career choice.
- Encourage women to matriculate at Purdue University in the College of Engineering.
- Ensure a climate in the College of Engineering that allows young women to reach their full potential.
- Provide opportunities for women engineering students to develop leadership skills that can be utilized in their future lives.
- Encourage women to consider graduate education and academia among their options upon graduation.
- Maintain open communication with alumnae and their employers to encourage their continued participation in and support of WIEP.



WIEP could not achieve its mission to enrich the profession of engineering through the full participation of women without the generous support of our donors. We are taking part in **Purdue Day of Giving on April 25, 2018**. This 24-hour event is an exciting endeavor where the Purdue community comes together to support higher education at the highest proven value. It is made possible both by the generosity of our alumni and friends and by the commitment of our faculty, staff, and students. If you would like to make a contribution to WIEP on April 25, please go to dayofgiving.purdue.edu or contact Hadley Thomas at 765.496.6035 or hbthomas@prf.org

CHANGE THE CONVERSATION

If you spend any time looking at the Purdue 'Majors and Minors' page and peruse the descriptions of potential careers in each engineering discipline, you will very quickly notice there is an amazing amount of crossover. Increasingly, a student's chosen discipline can be applied to a multitude of career opportunities. A degree in Materials Engineering can lead you to a career in the high tech industry or manufacturing. Graduate with a Mechanical Engineering degree and work in... the high tech industry or manufacturing. We've seen companies with job openings for a manufacturing engineer with a requirement of a degree in mechanical, electrical, industrial or chemical engineering. Of course, they will also consider other degrees such as aero, environmental, or civil for the same job. We've also seen job postings that simply require a "Bachelor of Science" degree from an accredited engineering school.'

Part of changing the conversation is to talk about the way in which an engineering degree in any of the disciplines can lead students to career opportunities across a multitude of industries, including opportunities they never even imagines. Companies need engineers. They want people who are educated to 'think' like an engineer to solve complex, high impact problems, many times regardless of the particular engineering discipline. We all need to do a better job in dispelling the myth that X engineers work in Y industry, and Z engineers work in B industry. The reality is that all types of engineers work in all types of industries, so the choice of an engineering major should have less to do with industry-related career goals, and more to do with interest.

As Sue Abreu so eloquently stated in the last issue of WiE Connect, "If a student can find what captivates her, she can then look for how engineering can be integrated with her interests."

"So when choosing that one particular discipline that speaks to her for her undergraduate degree, she can be assured there will be a multitude of opportunities, and possibly ones she never dreamed an engineering degree would allow her. "



WIEP TRAVEL AWARD PROGRAM

**“Impassioned. Invigorated. Inspired.
In three words, that was my conference experience, and I cannot express how grateful I am to have been given such an incredible opportunity to learn and grow.”**

To see these words from a student is the motivation behind the WIEP Travel Award program. Since Fall 2015, WIEP has sent more than 80 graduate and undergraduate female engineering students to professional development conferences across the country. Through this competitive travel award program, students are able to:

- Attend seminars to gain professional development strategies.
- Participate in workshops to grow their professional skills.
- Network with other like-minded students and professionals to build their professional community.

We all know that importance of professional development, and being able to build those skills as a student is vital to future success as an engineer! The students say it best, “I met so many powerful women who inspired me to create the next generation of change. They showed me that yes, college is difficult, but the difference you can make as a practicing engineer is what really matters.

“It is rare to find a female engineer in the Marine Corps who also happens to fly tactical aircraft. It is important to me to represent my very small subset to a much larger community of people.”

Kristine Hall

Airborne Systems Instructor

Pursuing an online Masters, Expected Graduation 2020



“Junior year in any engineering major is challenging and the conference was just the confidence boost I needed to say motivated throughout my studies.”



Kristine Martini (BSEE 2017) & Monica Salunkhe (BSAAE 2017)
SWE National 2015



ALUMNA FEATURE



Julie Kramer White

Education

BS Aeronautical and Astronautical Engineering
Purdue University, 1990

MS Mechanical Engineering
University of Utah, 1995

Current Position

Deputy Director of Engineering at the NASA
Johnson Space Center in Houston Texas

I knew as a child that fixing things, and building this, had a certain satisfaction that was different from other kids. I always asked for tools for Christmas and birthdays. I kept a neat toolbox, and was always fixing things for my mom around the house, and doing projects with my dad. So, when teachers noted my aptitude for math in the 70's growing up, they suggested that this thing called "engineering" might be the right career for me. I didn't grow up knowing any engineers, so, after expressing curiosity, my parent sent me to a week-long summer program at Purdue to introduce early high school age kids to the various engineering disciplines. It was there that I realized I wasn't just interested in any engineering, I was interested in building systems and vehicles to explore space.

I had a lot of support from my family, especially my mom, grandmother, and great aunt, who thought I could do anything I set my mind to. By high school graduation, I had set my sights on NASA. I applied all over the country to some of the most prestigious aerospace engineering universities, but realistically, I was headed to the local in-state school for financial reasons...luckily, that meant I was going to Purdue. Honestly, as an incoming freshman engineering student, in 1986, I had no idea how well that situated me for my final goal.

As a freshman, I investigated the cooperative engineering program (Co-Op). Not only to get a foot in the door for a future job, but to learn more about what engineers did day-to-day, and to break up the academic workload. NASA has a long standing relationship with Purdue, including a robust Co-Op education program, so when the NASA recruiter came on campus, I made sure to get on his list.

I was offered a Co-Op position at Johnson Space Center (JSC), and since then, it's been a whirlwind of 30 years at NASA. Working my way up thru my technical domain in the Structures and Mechanics Division, as a stress and loads engineer, and on to supporting systems engineering and technical leadership roles all of NASA's Human Space Flight programs for the last 3 decades. I was a structural systems engineer on the Space Shuttle Orbiter, specializing in the wings, tail and control surfaces. I worked on International Space Station (ISS) pressurized modules, structural verification of the X-38 spacecraft, Space Shuttle System Engineering and eventually helped stand up the NASA Engineering and Safety Center (NESC) after the space shuttle Columbia accident in 2003.

For the last 11 years, I was the Chief Engineers for NASA's Orion Program. This is the capsule under development to be used for deep space exploration. Because of my broad human spaceflight and technical leadership experience, I was recently offered the opportunity to become Deputy Director of Johnson Space Center's engineering directorate. In this role, I am responsible for not only Orion, but all JSC engineering initiatives such as our support to ISS, Commercial Crew Program, advanced exploration initiatives, such as the newly proposed Lunar Orbiting Platform, and all the technology development done by our engineering team.



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“The Orion Program has been, by far, the most challenging and rewarding project I’ve worked on at Nasa. It has required all my technical experience, as well as requiring me to grow significantly from a leadership perspective. The opportunity to work with a fantastic team of government and contractor engineers from around the country, around the world, to leave a legacy of a deep space exploration capability is and amazing, once in a lifetime opportunity.”
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-Julie Kramer White, NASA Johnson Space Center
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ALUMNA FEATURE

Who has been most influential in your career?

I have had several very influential mentors in my time at NASA. You cannot ever overestimate the value that mentors, both formal and informal, bring to your career. The lessons they have learned, and the networks they have already established, can become an invaluable spring board for your own career.

As an intern, I was assigned to an old Apollo engineer, Stanley Weiss, with the intent that when he retired, I would replace him. I traveled with him all over the country, learning about the space shuttle orbiter, and the engineering teams that supported NASA. This early career phase is really about developing your bedrock technical skills, and earning your technical stripes.

Mid-career, my skills development became more about teamwork. So, my mentors were people with the ability to solve complex problems, across systems, with diverse teams of people. People like Ralph Roe, the Orbiter Program managers, and founder of the NESC. In this phase of my career, I was really focused on learning systems engineering and integration, as well as establishing my reputation in leading cross discipline, geographically diverse teams.

As Orion Chief Engineer, I was in a position where I had lots of experts, so I certainly wasn't the smartest person in the room, my value was in influencing and leading this large engineering staff. So I sought mentors to help with my leadership development. People like Mark Geyer (also a Purdue Graduate!), and my Program Manager in the Orion Program from 2007-2015. People with amazing strategic vision, and lots of patience with people, helped me learn to get above the tactical execution of problem solving that many engineers are so good at, and think bigger picture. Where do we need to go? How do we align key people and resources and make them successful in execution of these goals?



Why are you involved with WIEP and supporting and encouraging women in engineering?

My involvement at Purdue was really rekindled in 2015, when I was asked to return as a part of the Old Masters Program. I had not been on campus in decades, and had left after my undergraduate degree with no intention of ever coming back. As your readers will appreciate, engineering at Purdue is hard, and finally after surviving 5 years, I was done with engineering school. As I spent more and more time in the professional workforce, I really began to appreciate the foundation that Purdue had given me. Not just the technical engineering coursework, but the problem solving, and persistence, required to achieve an engineering degree at Purdue really does leave you well positioned in the workforce. I met and worked with other Purdue alumni in critical leadership positions at NASA, such as Bill Gerstenmaier, the current Associate Administrator for Human Space Flight, Dan Dumbacher, who was the Director of Exploration Systems before his tenure teaching at Purdue, and Mark Geyer the previous Program Manager for Orion.

When I returned in 2015, I found the energy, enthusiasm and curiosity of the students infectious. They allowed me to see, in retrospect, many of the wonderful things I had forgotten about my time at Purdue. And interactions with the other Old Masters allowed me to better appreciate the influence that Purdue graduates have across the globe. During that visit, I had the opportunity for some speaking engagements, including students activities with WIEP. Since then, I've embraced any opportunity to work with engineers, and I know, from experience that it can be particularly challenging finding women mentors. In my current position, I make it a priority to spend a significant amount of time mentoring young engineers and students, particularly other women. Sometimes it just takes seeing someone more like yourself, to be able to envision yourself achieving a similar reality. That's my goal when I talk to girls and young women about a career in engineering.

WE NEED YOU!



WiECoNEXTions

Looking for ways to share your experience with students?
Would you like to be a mentor for a current student?
Want to reconnect with your college classmates?
Does your company hold events that you'd like to invite students to?

Join WiECoNEXTions. Creating a profile is easy.
Go to <http://tinyurl.com/WiECoNEXTions>



Download on the
App Store



Available on the Android
App Store

OPPORTUNITIES FOR ALUMNAE ENGAGEMENT

There are many ways for you to get involved with WIEP. Listed below are some volunteer opportunities. If you have an interest, please complete this online form. The form will provide us with information for our database.

These opportunities are open to everyone and unlimited in number. Let us know you are interested, and we will get you set up.

- **Access Alum** – *informal chats with current students while on campus visiting, recruiting, etc.* Needed: alumni to inform us when they'll be on campus and available for an event.
- **WE Link** – *connecting with high school seniors as they apply and ultimately decide whether Purdue engineering is the place for them.* Needed: guest bloggers sharing experiences that encourage and inspire. Visit The Engineering Experience Blog.
- **WIECoNEXTions** – Needed: engineering graduates in industry, academia, government, non-profit, medicine, law, and business to act as an online mentor or coach to students. ***This one-on-one connection is facilitated through our NEW WIECoNEXTIONS online platform.***

These programs are looking for recent alumnae (within the last 10 years). If you meet that criteria, let us know you are interested, and we will invite you!

- **Exploring Engineering at Purdue days** – *one day on-campus recruiting programs for high school juniors and seniors.* Needed: panels of engineering professionals less than 10 years from graduation to talk about what they do in the “real world”

These programs need inspirational and engaging speakers whose talks are interactive with a message aligned to course/program objectives. There are a limited number of openings. If you let us know you are interested, we will be in touch if we find a good fit.

- **ENGR 194** – *Women in Engineering Seminar for first year students.* Needed: motivational alumnae who share college experiences and relate those to where they are now and what they do in their positions.
- **ENGR 494** – *Women in Engineering Seminar: Gender in the Workplace.* Needed: motivational speakers to share experiences and solutions for internal and external barriers which can prevent women from reaching their greatest potential in the workforce
- **Mentors & Mentees (M&M)/Graduate Women in Engineering Network (GWEN)** – *Undergraduate and Graduate student mentoring programs.* Needed: facilitators of interactive/workshop style topics including but not limited to: life skills, engineering roles, non-traditional paths, life/work balance, finances, Entrepreneurship, global etiquette.

If you are interested in doing outreach programming near where you live, let's talk to see if becoming an Engineering Outreach Partner is right for you!

- **Engineering Outreach Partner (EOP) Initiative** – *sharing our outreach model, best practices, training, and other resources nationally.* Needed: alumnae partners who can help share WIEP's vision and passion for advancing youth education by leading precollege students in hands on engineering activities and/or interactive discussions.

VALUED VOLUNTEERS - ALUMNI& CORPORATE PARTNERS

ALUMNI AND CORPORATE PARTNERS

PROGRAM

AA; ENGR 194
AA; ENGR 194
SEE PU
ENGR 194
AA
SEE PU
AA
SEE PU
AA
AA; ENGR 194
ENGR 194
ENGR 194
SEE PU
AA; ENGR 194
ENGR 194
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SEE PU
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ENGR 194
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AA; ENGR 194
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AA; ENGR 194
AA
AA
ENGR 194

NAME

Sue Abreu
Edith Boiquaye
Tracy Chariton
Stefanie Darlington
Jill Derise
Natalie Dietz
Teegan Eckes
Erika Fotsch
Paula Gartner
Janet Goings
Cree Harris
Domenica Hartman
Ipek Hill
Sara Hoffman
Sarah Jaderlund
Rachael Janney
Julie Kramer White
Rita Lane
Brittany Leigh
Melissa Marcum
Jordyn McCord
Beverly Mentzer
Taylor Mowery
Erin Murphy
Corttney Mushrush
Josephine Peterson
Jessica Pilotte
Kelsey Rieger
Jennifer Roach
Jackie Shao
Emily Soltys
Beata Strubel
Andrea Taylor
Krista Toler
Elizabeth Tomczak
Missy Ullmer
Kim Underhill
Jenny Wiseman
Ashley Yelpo

DEGREES

BS IDE
BS CE
BS CE

BS CE
BS IE
BS BME
BS ME

BS EE
BS IE
BS MSE
BS IE
BS CE
BS IE
BS ME
BS AAE
MS EE
BS ME
BS CHE
BS ABE; BS PS

BS CHE
BS ME
BS CHE
BS CHE
BS CE
BS CHE
BS CHE
BS ME
BS MSE
BS CHE
BS ABE
BS ME; MS BME
BS CHE
BS BME
BS CHE
BS IE
BS ME

COMPANIES

US Nuclear Regulatory Commission
Woolpert
JPS Consulting Engineers
GE Aviation
Shell Pipeline Company LP
Purdue University
US Marine Corp
Allison Transmission
EMH&T
General Motors Company
Clif Bar Baking Company
Hartman and Hartman, P.C.
Mars Wrigley Confectionery
GE Transportation

General Motors
NASA/Johnson Space Center
Apple Inc.
Dickinson-Wright PLLC
Eli Lilly and Company
Eli Lilly

Honda Manufacturing of Indiana
3M Corporation
PepsiCO
Procter & Gamble
TranSystems
Eli Lilly
Procter & Gamble
Microsoft
3M Corporation
Eli Lilly
Colorcon, Inc.
Zimmer Biomet
Shell
Eli Lilly & Company
Kimberly-Clark
Eli Lilly & Company
Newell Brands

VALUED VOLUNTEERS - PURDUE FACULTY, STAFF & STUDENTS

PURDUE FACULTY, STAFF AND STUDENTS

PROGRAM	NAME	SCHOOL/DEPARTMENT
SEE PU	Sarah Allard	School of Aeronautics & Astronautics
SEE PU	Patrick Brunese	School of Industrial Engineering
ENGR 194	Amy Childress	Office of Undergraduate Research
GWEN	Chelsea Davis	School of Materials Engineering
SEE PU	Kristin Deckard Dawson	School of Mechanical Engineering
SEE PU	Anne Dransfield DeLion	School of Engineering Education
ENGR 194	Kendra Erk	School of Materials Engineering
GWEN; M&M	Will Evans	Recreation & Wellness
SEE PU	Molly Gilbert	School of Aeronautics & Astronautics
SEE PU	Jeff Gray	School of Electrical & Computer Engineering
GWEN	Soo Jung Ha	School of Agricultural & Biological Engineering
SEE PU	Sarah Hedberg	School of Construction Engineering Management
GWEN	Anruta Inamdar	Center for Career Opportunities
SEE PU	Chad Jafvert	School of Civil Engineering
SEE PU	Susan Khalifah	School of Civil Engineering
SEE PU	Corey Linkel	School of Biomedical Engineering
M&M	Ray Mentzer	School of Chemical Engineering
SEE PU	Jeff Miller	School of Chemical Engineering
SEE PU	Lauren Miller	School of Agricultural & Biological Engineering
GWEN	Amy Moors	College of Engineering
GWEN	Erin Oliver	Office of Institutional Equity
ENGR 194	Abby Osborn	School of Chemical Engineering
SEE PU	Mary Pilotte	School of Engineering Education
ENGR 194	Jennifer Pouplin	School of Aeronautics and Astronautics
M&M	Darshini Render	College of Engineering
GWEN	Bhavini Singh	School of Aeronautics and Astronautics
SEE PU	Caitlin Anne Surakitbanharn	Policy Research Institute
SEE PU	Ken Thomson	School of Chemical Engineering
SEE PU	Nancy Vestal	School of Nuclear Engineering
ENGR 194	Stephen Wanders	Office of Professional Practice
SEE PU	Venecia Wilson	Industrial and Physical Pharmacy
SEE PU	Zhi (George) Zhou	School of Civil Engineering

Abbreviations & Acronyms Dictionary

WIEP Programs

AA- Access Alum
 ENGR 194- Women in Engineering Seminar
 GWEN - Graduate Women in Engineering Network
 M&M- Mentors and Mentees
 SEE PU- Seniors Exploring Engineering at Purdue

Degree

BS- Bachelor of Science
 MS- Master of Science

Program

AAE- Aeronautics and Astronautics Engineering
 ABE- Agricultural and Biological Engineering
 BME- Biomedical Engineering
 CE- Civil Engineering
 CHE- Chemical Engineering
 EE- Electrical Engineering
 IDE- Interdisciplinary Engineering
 IE- Industrial Engineering
 ME- Mechanical Engineering
 MSE- Materials Science Engineering
 PS- Pharmaceutical Science



Thank you to all of our valued volunteers. The success of our programming from August - December 2017 wouldn't have been possible without the outstanding support from the listed alumni, faculty, staff, students, and friends who graciously volunteered their assistance to WIEP.



Women in Engineering Program

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