



engineering
4 us all

2024

IMPACT REPORT

OUR STORY

Engineering for US All (e4usa)



Stacy Klein-Gardner, Ph.D.

Executive Director

Engineering for US All (e4usa) began with a bold vision to make engineering education available to all students, regardless of their background or prior experience. This journey started in 2002 when Dr. Leigh Abts and a small team set out to create an effective way to teach and assess engineering in high schools across the nation.

The need for a consistent method of assessing engineering design process portfolios sparked the development of the Engineering Design Process Portfolio Scoring Rubric in 2005. Later rebranded as the MyDesign Scoring Rubric, this tool was designed to measure students' understanding and application of the engineering design process. This work laid the foundation for the MyDesign Learning Management System (LMS), launched in 2015, providing a digital space for students to showcase their engineering work and growth.

Momentum grew in collaboration with the College Board, which explored frameworks for an advanced high school engineering course. Recognizing the importance of national leadership, Dr. Darryll Pines and the American Society for Engineering Education (ASEE) rallied support from over 120 engineering deans across the U.S., underscoring the national demand for a standardized high school engineering curriculum.

Since 2018, e4usa has thrived thanks to the unwavering support of the National Science Foundation (NSF) through multiple grants (#1849430, #2120746, #2323098, and #2323684). This vital funding has transformed e4usa into more than just a curriculum—it's now a dynamic community of practice that includes high schools, community colleges, universities, industry partners, and educators nationwide.



Abubakr Hamid, M.S., PMP
Chief Programs Officer



Jennifer Kouo, Ph.D.
Director of
Professional Learning



Andrew Green, Ph.D., MBA
Director of Partnerships
and Communications



Katie McKeown, Ph.D.
Director of Assessments
and Business Operations
Coordinator



Vedika Vinayak
Operations Assistant



WHERE WE ARE TODAY

Now a fully established 501 (c)(3) nonprofit organization, e4usa has grown to include:

88

**staff, contractors, and
volunteers dedicated to
expanding engineering
education**

7,700+

**students engaged in our
courses**

100+

**high school partners
bringing engineering
design into their
classrooms**

39

**university partners
supporting student
pathways to college
credit and placement**

e4usa is the first-of-its-kind, national initiative designed to introduce engineering design principles to a new generation of students. We invite all schools, teachers, and students to participate, regardless of their technical background or preparation. Our four-course offerings—e4usa Legacy, e4usa+Making, e4usa+Programming, and e4usa+Design—provide flexible entry points for different learners and teaching styles.

With professional development offered both online and in person, e4usa empowers any high school teacher to help students design a better future. Our curriculum engages students in hands-on engineering design experiences, encouraging them to tackle real-world challenges in their communities while building critical engineering and professional skills.



Donate Now

TESTIMONIAL TUESDAY

Our summer *Testimonial Tuesday* social media campaign highlighted inspiring stories from e4usa alumni whose experiences have had lasting impacts on their education and careers.



“ e4usa prepared me for college and my job by familiarizing me with important processes and procedures, like the engineering design process, Gantt chart scheduling and QODs. It also gave me real world experience with meeting a client's needs through the "community based" project! ”

Kate Pezzano



“ e4usa helped confirm an interest in engineering and encouraged me to pursue it as a profession. It helped me understand the broad applications of engineering to improve the lives of people and support communities. Having a taste of the design process gave me a better appreciation for the care and meticulous planning that goes into developing a product. I also got to practice working in a team toward a common goal, resolving conflicts and learning from others' perspectives along the way. ”

Gracie Gore



“ My time with e4usa was instrumental in my college education. Unlike my peers, I came into college with an understanding of many of the key aspects of engineering already understood. Not only was I a capable project solver and contributor, but I learned numerous project management skills. Those greatly contributed to my class work, where I have managed to graduate in the top of my class and earn membership into Alpha-Nu-Sigma, the Nation's Nuclear Engineering Honor Society, while mastering a wide range of technical skills, such as a profound understanding of Neutronics and Thermal Hydraulics. ”

Jacob Davis



[Donate Now](#)

e4usa LIAISONS

e4usa's impact extends beyond students. Our liaisons also share powerful stories of how e4usa has reconnected them with their passion for mentorship and STEM education:

“Acting as an industry liaison with e4usa has been a rewarding opportunity for me to reconnect with my passion for STEM students and grow their interest in STEM degrees and careers. An introduction to engineering during my high school years solidified my confidence and interest in majoring in engineering and being able to have that influence for other students is an opportunity I greatly value. It's also been rewarding to help share this experience with other engineers at my company who have also taken on liaison roles in classrooms in the area. The program is extremely organized and well-run. Highly recommend for other industry liaisons, teachers, and students interested in learning more!

”

Meghan Houghton

“This is my third year serving as a liaison for e4usa, but it feels like I just started as a liaison yesterday. The e4usa leadership team has done a great job creating a support structure and network that makes the liaisons' lives easier, and as a result, the workload is very light. Much more importantly, serving with e4usa is very rewarding. It's a lot of fun to help students see what the engineering discipline is all about and help them take the first steps into the engineering domain.

”

Hosam K. Fathy



Liaison Gregory Butler with e4usa teacher Abigail Greer



62

Teacher-Liaison
pairs



29

Liaisons from
Higher Education



33

Liaisons from
Industry



Donate Now



WORKFORCE DEVELOPMENT

Building the Future Workforce

At e4usa, we're focused on equipping students with the tools, skills, and confidence they need to enter the engineering workforce. By providing a rigorous, crossdisciplinary curriculum that emphasizes real-world problem-solving, technical expertise, and professional skills, we help students build the foundational knowledge and practical experience needed to thrive in today's engineering profession. With industry-recognized credentials, partnerships with leading companies, and hands-on learning experiences, e4usa ensures that students are not just prepared for the future— they are ready to lead it.

Industry Partners



FOCUSED
ULTRASOUND
FOUNDATION



Standards &
Engagement



Zipline



Donate Now

PARTNERSHIPS



- * Currently, we collaborate with 25 active teacher partners across 13 schools in the state and maintain strong connections with faculty at the University of Maryland College Park, University of Maryland Baltimore County, and Towson University.
- * Support from the Maryland State Department of Education has totaled \$1.5M over a two year period.



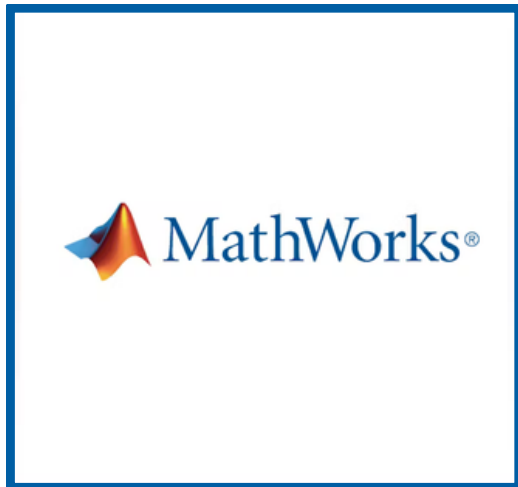
- * TSIN is sponsoring 10 teachers for summer professional development in-person at the Smyrna Event Center in Tennessee as part of their CS Accelerator Week June 9 - June 13
- * Total funding for the grant is \$30,000



- * e4usa has partnered with TeachEngineering.org to house its curriculum, ensuring educators have access to standards-aligned, design-rich engineering lessons.
- * The e4usa curriculum on TeachEngineering features hands-on activities low-cost materials, making engineering education more engaging and practical for all learners.



PARTNERSHIPS



- * The e4usa+Programming course is now being implemented in four schools by four dedicated teachers, with 55 students enrolled and actively engaging in programming and engineering design activities.
- * e4usa utilizes MathWorks tools, including MATLAB, to introduce students to programming as a problem-solving tool in engineering design. Students use computational thinking to model, analyze, and optimize solutions to real-world engineering challenges, reinforcing mathematical concepts and data-driven decision-making.
- * Total funding for the grant is \$84,500



- * This fall, OnShape became the first corporate sponsor of e4usa's Launch Conference.
- * In e4usa+Making, students use OnShape, a cloud-based CAD platform, to develop and refine their engineering design solutions. Through hands-on modeling, they learn to create, test, and iterate digital prototypes, gaining industry-relevant skills in 3D design and preparing for the OnShape Associate Exam, an industry-recognized credential.
- * After hosting a workshop, OnShape provided attendees with waivers to sit for the OnShape Associate Exam.



FUNDRAISING CAMPAIGN

This year, e4usa developed a comprehensive fundraising case statement, "Engineering Access for Everyone." This impactful document highlights e4usa's mission to expand opportunities in engineering education, keeping it affordable and open to all students, regardless of their prior technical experience or background. It showcases our innovative course offerings and their role in empowering students and educators through hands-on learning and industry-relevant skills.

As of January 24, 2025:



We've raised **\$28,638.98**
of our \$25,000 goal!



Donate Now

RESEARCH PUBLICATIONS

6

Total Publications

4

Conference Papers

1

Journal Article

1

Book Chapter

Key Topics Explored:

- Blended implementation of existing pre-college engineering programs and teacher perspectives on program impact.
- Development of a summative assessment for high school engineering courses.
- High school students' perspectives on mathematical modeling in the engineering design process.
- Student reflections on pre-college engineering education experiences.



GRANT FUNDING

Since 2018, e4usa has secured more than \$15.9 million in funding from a wide range of partners, including the National Science Foundation (NSF), private foundations, state departments of education, corporate sponsors, and university collaborators. These investments have been instrumental in expanding e4usa's reach, enhancing professional development for educators, supporting industry-recognized credentials, and ensuring that students from all backgrounds are exposed to high-quality engineering education.

\$15.9M

Total funding

15

of awards

6

of unique funders



National
Science
Foundation



A. JAMES & ALICE B.
CLARK FOUNDATION



Maryland

STATE DEPARTMENT OF EDUCATION



Donate Now



engineering
4 us all



LET'S WORK TOGETHER



**e4usa needs your support to grow
throughout the US and beyond!**

240-623-0053

e4usa.org

info@e4usa.org

7761 Diamondback Drive, College Park, MD 20740

