



# IMPACT REPORT

e4usa | A Year in Review

**2025 Edition**



# From the Executive Director

The past year marked an important chapter in the continued growth of Engineering for US All. Built on more than two decades of engineering education research, e4usa entered 2025 with a strong foundation and a growing national community committed to preparing students for the future engineering workforce.



Stacy Klein-Gardner, Ph.D.  
Executive Director

In 2025, e4usa reached several significant milestones. We convened our first in-person national conference and winter professional development at the University of Maryland, strengthening connections among teachers, liaisons, partners, and staff. We secured dedicated National Science Foundation funding, expanded high school partnerships in key regions, increased pathways for students to earn college credit, and deepened collaborations with industry partners including PTC Onshape and MathWorks. National visibility through features in the ASEE Mindset Report and an NSF Science Matters article further affirmed the impact and relevance of our work.

This year also brought a moment of reflection with the passing of Dr. Leigh Abts, a founding visionary of e4usa. His belief in teachers and in hands-on engineering learning shaped the program from its earliest days. In his honor, we established the Leigh Abts Legacy in Engineering Education Scholarship to support future educators who share his commitment.

These accomplishments reflect the strength of our community. Support from donors, partners, educators, and institutions continues to reinforce the roots of e4usa and extend its reach to more classrooms and students nationwide. As this report illustrates, the work ahead builds directly on that shared investment, and I am deeply grateful to all who help make it possible.

*Stacy Klein-Gardner, Ph.D.*

# Vision & Mission



## → Mission & Vision

Engineering for US All (e4usa™) is a nonprofit high school engineering program that opens engineering to a new generation of students and educators. Core to the e4usa mission is the nationwide expansion of student and teacher engagement with engineering, with a focus on reaching all communities and preparing students for success in the field. To date, e4usa involves more than 100 participating high schools with over 10,000 students. e4usa students explore engineering in society, develop professional skills, and engage in community-focused engineering design experiences, all aimed at helping them see themselves as engineers.

Our students explore the impact of engineering on society, build professional skills that will serve them well in their future careers, and engage in hands-on design experiences that focus on addressing real-world problems in their communities. These experiences are designed to help our students see themselves as engineers and to give them the confidence and skills they need to succeed in this exciting and rewarding field.

At e4usa, we believe that engineering has the power to shape a better future for us all. By empowering a new generation of engineers, we are creating a workforce equipped to drive breakthrough innovations and solve some of the world's most pressing problems. Join us in this journey and discover the power of engineering for yourself.

## → Meet Our Team



**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

# In Memorium: Leigh Abts



This year, the e4usa community experienced a profound loss with the passing of **Dr. Leigh Abts**, one of the founding visionaries whose work helped shape Engineering for US All from its earliest days. Leigh's influence on pre-college engineering education, and on e4usa in particular, was both foundational and enduring.

Leigh was uniquely positioned at the intersection of entrepreneurship and academia. He helped launch innovative companies before turning his focus to higher education, holding roles at Johns Hopkins University and later at the University of Maryland, College Park. There, he emerged as a national leader in engineering education, advancing new approaches to teaching, learning, and assessment that emphasized authentic engineering practice in high school settings.

For more than 25 years, Leigh dedicated his energy, intellect, and leadership to expanding opportunities for students to encounter engineering early in their academic journeys. He was a driving force behind the original vision for e4usa, helping to establish the principles that continue to guide the program today: rigorous engineering content, meaningful assessment, and a belief that high school students can engage deeply with engineering design when given the right structures and support.

To honor Leigh's legacy, e4usa established the **Leigh Abts Legacy in Engineering Education Scholarship**, supporting future educators who share his commitment to strengthening engineering education at the pre-college level. In its inaugural year, the e4usa community met and exceeded its fundraising goal, raising **\$6,250** in support of this effort.

Dr. Abts will be remembered for his boundless energy, intellectual curiosity, and unwavering belief in the potential of engineering education to shape the future. His vision lives on through e4usa's work and through the educators and students who continue to benefit from the foundation he helped build.

# Launch Conference

## Advancing the Future of Engineering Education

In January, Engineering for US All (e4usa) convened educators, university leaders, industry partners, and supporters for its Launch Conference at the University of Maryland's A. James Clark School of Engineering. The event provided an opportunity for the community to reflect on progress, share practice, and plan for continued growth. e4usa is grateful to the University of Maryland College Park for its partnership and for hosting the conference.

The conference opened with the **e4usa Visionary Reunion Dinner**, celebrating the relationships that have shaped the program. Executive Director Stacy Klein-Gardner served as emcee and welcomed remarks from University of Maryland President Darryll Pines, Chair of the e4usa Board of Directors, and Clark School of Engineering Dean Samuel Graham. Both reflected on the origins of e4usa, its national expansion, and the importance of high school engineering in strengthening pathways to college and the workforce.

The second day featured a keynote address by Dr. Shruti Ghanekar, Research Engineer at the Fire Safety Research Institute under UL Research Institutes. Her remarks focused on workforce development and the value of connecting classroom learning to engineering research and practice. She also highlighted opportunities for students to explore engineering pathways early in their education.



# Launch Conference

## Advancing the Future of Engineering Education

A highlight of the conference was the Impact by Design: e4usa Showcase, which featured work from teachers and students across the e4usa network. Educators shared classroom projects, instructional strategies, and examples of adapting e4usa lessons to local contexts. Attendees engaged in discussion, offered feedback, and reflected on the instructional impact of engineering design experiences.

The conference also included professional learning workshops for educators and liaisons. Sessions addressed engineering assessment, reflective teaching practice, CAD integration and preparation for industry-recognized credentials, project management strategies, and writing in engineering contexts. Experienced teachers also led conversations about extending e4usa beyond the introductory course.

The final day focused on reflection and planning, with teacher partners providing feedback on curriculum, professional learning, and program supports. Their input continues to guide e4usa's ongoing development.

e4usa thanks its conference sponsors, the National Science Foundation, Onshape, and MathWorks, for their support and engagement. The Launch Conference reinforced the strength of the e4usa community and set the stage for continued collaboration and growth.



# In-person PD and Summer Outreach

## In-Person Professional Development and National Engagement (Summer 2025)



In summer 2025, e4usa continued in-person engagement, pairing regional professional development with a strong national conference presence.

e4usa hosted in-person professional development sessions in **Nashville, Tennessee, and Miami, Florida**, alongside multiple online offerings, including training for e4usa+Making, e4usa+Programming, and Liaison Professional Development. Together, these sessions supported both new and returning educators with curriculum guidance, instructional strategies, and opportunities for peer connection.

Throughout the year, e4usa staff also engaged with educators and partners at national and regional conferences, including the **ASEE Annual Conference, NAF Next, Arizona's Summer CTE Conference, the Arkansas Department of Education Summit, and ASEE's First-Year Engineering Experience (FYEE) Conference**. These engagements strengthened partnerships and reinforced e4usa's growing national presence in engineering education.



# Fundraising

Thanks to the generosity of our community, the 2025 Friends & Family Campaign surpassed its \$40,000 goal, raising **\$42,637.44 from 115 donors**.

This represents a nearly **50% increase** over last year's total of \$28,638.98. Each contribution strengthened the foundation of e4usa, allowing our work to continue growing into more classrooms, schools, and communities.



**DEEP ROOTS.**  
**GROWING**  
**STRONG.**



115 donors



50% growth



campaign goal surpassed

# Partnerships



## New Partnerships



### → Tennessee STEM Innovation Network (TSIN)

Through a new partnership with TSIN, e4usa expanded its presence in Tennessee by providing scholarships and professional development opportunities for high school educators. TSIN support enabled teachers to participate in in-person summer training, strengthening statewide capacity for implementing yearlong, hands-on engineering courses.



### → Al & Jane Nahmad Family Foundation (AJNFF)

In Miami, e4usa partnered with the Al & Jane Nahmad Family Foundation to support teacher scholarships and professional development. This partnership contributed to the expansion of e4usa course offerings at Hialeah Gardens High School and added an engineering course at 5 new schools.



### → Jack Kent Cooke Foundation (JKCF)

With support from the Jack Kent Cooke Foundation, e4usa was awarded a \$100,000 grant to expand high school engineering opportunities. The funding supports program growth, educator participation, and student access to rigorous, project-based engineering coursework in new and existing partner schools.

# Partnerships



## Strengthened Partnerships



### MathWorks

e4usa strengthened its partnership with MathWorks to expand the e4usa+Programming course. Through grant support and continued collaboration, students use MATLAB as a computational tool for modeling, analysis, and optimization, reinforcing computational thinking as a core engineering skill tied to real-world problem solving.



### PTC / Onshape

e4usa was selected as a FY25 PTC Impact Grant recipient, further deepening its partnership with PTC and Onshape. Many e4usa partner schools use Onshape's cloud-based CAD platform in e4usa courses, where students develop digital prototypes and are eligible to earn an industry-recognized CAD credential.



### National Science Foundation (NSF)

e4usa strengthened its long-standing partnership with the National Science Foundation through a new award issued directly to the organization (NSF Award No. 2525989). Over the past eight years, NSF support has been foundational to e4usa's research, curriculum development, professional learning model, and national scale. This continued investment reinforces e4usa's role as a research-informed leader in high school engineering education.

# Partnerships



## New Strategic Partnerships



### ➔ National Academy Foundation (NAF)

e4usa established a new strategic partnership with the National Academy Foundation to explore aligned pathways between high school engineering coursework and career-focused academies. This collaboration supports shared goals around workforce preparation and employer-connected learning experiences.



### ➔ National Coalition of Science and Technology School Systems (NCSS)

Through a new strategic partnership with NCSS, e4usa expanded its engagement with district and school system leaders nationwide. This partnership strengthens visibility, collaboration, and adoption of high-quality engineering education models across member school systems.



# Workforce Development

Building the Future Workforce



e4usa prepares students for the engineering workforce by embedding real-world practice directly into the high school experience. Across the network, students apply the engineering design process to authentic problems posed by industry and community partners, ranging from long-term design collaborations with organizations like the Nashville Zoo to classroom-based projects that require client communication, iterative prototyping, and technical documentation.

Students develop workforce-relevant skills in computer-aided design and computational problem solving. In e4usa+Making, students use Onshape to model, test, and refine design solutions and are eligible to earn the Onshape Associate Exam, an industry-recognized credential. In e4usa+Programming, students use MathWorks tools, MATLAB, to analyze data and optimize engineering solutions, with the opportunity to earn a MATLAB industry-recognized credential. Together, these experiences mirror professional engineering practice and build technical fluency, teamwork skills, and confidence aligned with college and career pathways.





# Research

e4usa is built on a research-to-practice model: curriculum design, teacher professional learning, and assessment tools are developed, tested, and refined using evidence from implementation and formal study. This commitment to peer-reviewed scholarship, **2 journal articles and 6 conference papers (8 total)**, distinguishes e4usa in the curriculum provider and teacher professional learning space, where products are often disseminated without comparable research validation.

Two national features underscore this standing: **NSF highlighted e4usa in its Science Matters feature (June 24, 2025)**, noting NSF's investment in e4usa's research-based approach to developing engineering learning experiences in high schools, and **e4usa was featured in The Engineering Mindset - Blueprint for Change, Volume 1 (June 6, 2025)** with a dedicated section describing e4usa's long-running research foundation, NSF-supported development, and sustained professional development/community-of-practice model.

**8**

**Peer-reviewed publications**  
2 journal + 6 conference

**2**

**National features**  
NSF + ASEE

**National recognition:** NSF profiled e4usa in Science Matters (June 24, 2025), and ASEE included e4usa in The Engineering Mindset - Blueprint for Change, Volume 1 (June 6, 2025).

# Contact Information

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# Donate



## Give now to support



Teacher professional learning



Students developing engineering literacy and skills



Collaborations between universities and high school classrooms



Collaborations between industry and high school classrooms



Operational costs

## Engineering for US All needs your support to grow throughout the US and beyond!

Because of you, students can be empowered to engage in authentic engineering practices by solving an engineering problem at their school or in their community.

Your gift will create a lasting impact for teachers through support of a yearlong community of practice that increases their own engineering teaching self-efficacy and classroom effectiveness.





# Thank You

We extend our sincere thanks to the teachers, students, university partners, industry liaisons, funders, and collaborators who contribute to e4usa's continued growth. Your dedication and partnership are central to advancing high-quality engineering learning and building meaningful pathways from the classroom to higher education and the workforce.



**engineering  
4 us all**