

# WASHINGTON STEM | ENGINEERING FELLOWS PROGRAM

## WHY ENGINEERING?

Engineering is essential to solving Washington's most complex challenges, including efficient transportation, environmental sustainability, affordable housing, and economic security. Engineering fuels our local job creation across every industry - tech, aerospace, manufacturing, clean energy, health and life sciences, agriculture and food manufacturing, construction, and retail.

Yet most of our K-12 students don't learn about engineering. Today's youth, especially in underserved communities, don't have the opportunity to know what engineers do; how engineering is relevant to their everyday life and community, and they rarely see engineering as an accessible or desirable career option.



**We need to give students a fighting chance at academic success and great career opportunities by empowering teachers to teach engineering with excitement and confidence. And we can.**

## ENTER ENGINEERING FELLOWS

On a warm summer day on the beautiful University of Washington campus, twenty nine fifth-grade teachers and thirteen engineers huddle together in small, animated groups in a fluorescent-lit classroom that usually houses undergrad lectures.



Teachers and engineers discuss engineering at the Summer Design Institute

They're here today - and for the whole week - to think about how to integrate engineering, or designing solutions to real-world human problems, into some of the most diverse classrooms in Washington with students eager to solve problems relevant to their communities.

They're part of a new program called Engineering Fellows that Washington STEM and Washington MESA co-developed through a competitive national program design experience. Engineering Fellows is an innovative program that brings engineering expertise directly into fifth grade classrooms around the state by partnering teachers with professional engineers and college students studying engineering.



Our team aims to ensure that over the coming year, 30 fifth grade teachers are equipped, empowered, and well-supported to deliver exceptional engineering curricula based on real-world challenges to their 750 students.

## HOW IT WORKS

**THE TEAMS:** Each year, teachers, engineers, and engineering college students apply to take part in the Engineering Fellows program. A cohort of each is chosen (the Engineering Fellows), and they begin their activities with an intensive Summer Design Institute (the Institute), an immersive experience orienting the Engineering Fellows to the project and charging them to develop design challenges that can be integrated with their existing curricula

**THE CLASSROOM CHALLENGES:** By the end of the Institute, participants, with the help of expert facilitators, have developed a menu of engineering design challenges and related teaching plans to implement throughout the school year. The Engineering Fellows then work together to teach the chosen challenges in thirty classrooms located in two diverse regions of the state with ongoing wrap-around supports from Washington STEM and Washington MESA.

**THE PLAYBOOK:** At the end of the project we will have an Engineering Fellows Playbook, including an in-depth how-to guide to launching the program, two to three case studies of diverse classroom implementation, and up to eight real-world Design Challenges with related teaching plans that can be implemented across the state.



“Just the connections for our students to see themselves represented in this field (by engineers of color) and the possibility that they’ll come into our classroom is really exciting,” said one 2016 Institute participant.

## ENGINEERING FELLOWS BY THE NUMBERS - PILOT YEAR (2016-2017)

30 fifth grade teachers who are excited to learn and grow	2 diverse and poverty-impacted regions building a network of world-class educators
13 engineers and engineering college students lending expertise, leadership, and co-crafting the future of education	1 amazing resource that other organizations can use to replicate the program across Washington and beyond



750 students from underserved regions and diverse backgrounds engage in inspiring, empowering education that prepares them for lives of opportunity and success.

## VISION FOR THE FUTURE

**Washington STEM is always on the hunt for the very best solutions to our education system’s most pressing problems. Our goal with every program we take on is to see it grow, replicate, and scale so we can help prepare all kids for great STEM futures.**

### HERE’S HOW YOU CAN HELP:

- **VOLUNTEER:** Washington STEM is looking for **professional engineers and upper level college students in engineering in Yakima, Washington** who work in electrical, mechanical, civil, and environmental engineering to help teachers throughout the school year. Know somebody? Send them our way! Contact Tana Peterman, Program Officer, at [tana@washingtonstem.org](mailto:tana@washingtonstem.org).
- **SPREAD THE WORD:** Our goal is to make this program freely available to anyone who wants to pick it up, so learn more and share out. Read more about the program on our website (and check back often!) at [www.washingtonstem.org/engineering](http://www.washingtonstem.org/engineering).
- **DONATE:** Are you passionate about engineering and want it to thrive in Washington state? Give to Washington STEM today at [www.washingtonstem.org](http://www.washingtonstem.org) or reach out to the development team to learn more. Contact Alex Johnston, Chief Development Officer, at [alex@washingtonstem.org](mailto:alex@washingtonstem.org).