



# Creating On-Ramps for Middle and High School Students Towards Rewarding Careers in Engineering

## Purpose

The “Creating On-Ramps” engineering outreach project is designed to increase the interest of underrepresented youth in engineering by (a) providing teachers pre-engineering professional development, and (b) disseminating pre-engineering design challenge materials to K-12 educators and volunteers in Ohio and throughout the US. The project aims to help classroom teachers become effective STEM career ambassadors who introduce middle and high school students to the engineering design process, a core skillset of the engineering profession.

## Impact

**K-12 Students:** Approximately 150 students from KIPP Academy after-school program will be exposed to the engineering design process over a 6-week period.

**Classroom Teachers and Engineering Students:** Seven teachers and 18 engineering students will participate in summer research and the subsequent creation and delivery of pre-engineering design challenges.

**Informal Engineering Education:** Eighteen classroom-tested pre-engineering design challenges will be developed and hosted on a website for access by K-12 educators and volunteers.



THE OHIO STATE  
UNIVERSITY

## Ohio State Colleges/Units Involved

College of Engineering  
Department of Teaching and Learning, College of Education and Human Ecology  
Department of Educational Studies, College of Education and Human Ecology  
Kirwan Institute for the Study of Race and Ethnicity  
Ohio Resource Center, College of Education and Human Ecology

## Community Partners Involved

KIPP Columbus Middle School  
The Boys & Girls Club of Columbus  
The Metro School  
Reynoldsburg City Schools  
Worthington City Schools

## How you can get involved:

- Funding to support teacher professional development
- Referrals of K-12 educators and community organizations interested in learning more about this project
- Industry and community partners to extend STEM learning opportunities
- Web development resources to share pre-engineering design challenges with K-12 educators and volunteers

## To get involved, contact:

Howard Greene  
Director of K-12 Education Outreach  
College of Engineering  
[greene.8@osu.edu](mailto:greene.8@osu.edu)

