

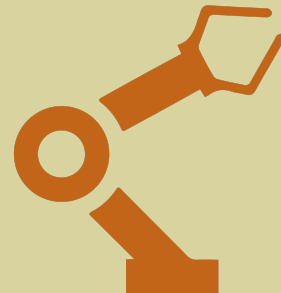
Robotics Research Experiences for Middle School Teachers

a 6+ week summer research experience at the GRASP Lab,
University of Pennsylvania



- 10 middle school math/science teachers per year
- 2 teachers per school
- Teachers may apply to repeat program
- \$8,000 stipend per teacher for year of effort
- 66 Act 48 hours

- Conduct robotics research in collaboration with graduate students, industry mentors and faculty
- Research in computer vision, human-robot interaction, bio-inspired robotics, multi-robot systems, and robot locomotion



- Develop modules/lessons tied to curriculum
- Complete engineering research coursework
- Penn students and industry visit classroom
- Receive \$2000 material support for classroom



More information: <https://www.grasp.upenn.edu/programs/research-experience-teachers-ret>
Contact: Daniel Ueda <danueda@seas.upenn.edu> for more information

RET Schedule*

The summer program will run July 10 through August 18, 2017, and again in 2018.

Overall Schedule		Pre-Summer and Summer Program	
2017		June	
Jan 1	Teacher application opens	5	Lecture 1: What to Read Exercise 1: Source Acquisition and Literature Review
March 20	Teacher application closes	19	Lecture 2: How to Read & Formulate Exercise 2a: Introductory Problem Formulation
April 5	Announce teacher selection	July	
May 3	Complete Teacher Pre-Survey	Week 1: Graduate students introduce research teachers; teachers study background math and science, applications, and simplified examples; teachers focus on particular aspect of research that will tie to curriculum	
May 5	Teachers matched with students	Introduction Engineering Classes	
May 9	Teacher Orientation	Meeting with industry	
May 1	Group Orientation	Week 2: Teachers develop research topic, begin research and begin identifying curricular connections	
May 27	Confirm matches with teachers	Lecture 3: How to Pitch Exercise 3a: Review of Problem Formulation	
June 5	Begin Pre-Summer Classes	17-21	Exercise 3b: Development of Pitch Presentation
July 10	RET begins	19	Focus group check-in
August 18	Summer Research Symposium	21	Exercise 3c: Pitch Presentation
August 18	RET ends	Week 3: Teachers continue research and develop methods paper; formalize curricular connections with industry and graduate students	
Sept. - May	Assessment in classrooms	24	Lecture 4: How to Plan
	4 classroom visits by graduate students	24-28	Exercise 4: Methods Paper
	2 classroom visits by industry	Week 4: Teachers continue research following methods paper; identify applications of research; begin developing lessons that connects with research	
2018		August	
March	Begin cycle 3 with 10 teachers, including repeat teachers	Week 5: Teachers continue research and develop posters; develop curriculum units that incorporate research, classroom content, and technology	
June	Post lessons on GRASP site and teachengineering.org	7	Lecture 5: How to Present – Posters and Oral
November	Regional professional development	7-11	Exercise 5: Design and Construction of Poster
November	Regional professional development	Week 6: Teachers prepare for research symposium presentation; finish curriculum units	
		14-17	Exercise 6a: Development of Symposium Presentation
		18	Exercise 6b: Research Symposium Presentation

*The program will also involve voluntary completion of evaluation materials intended to gather information on the effectiveness of the program. We will be studying the effects of the experience on your pedagogical practices and perceptions of engineering. Participation in this study has no effect on your participation in the RET experience, the stipend, or future work.