

IEEE ENCS

Engaging Members through Large Technical Projects



Member Engagement

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FIRST

- Mentored students at magnet high school
 - The program had a 98% success rate for students moving on to college.
 - Won national title in year 4 of the program
 - IBM, Cisco, and IEEE sponsored the team



Take away:

- FIRST and other STEM programs are a great way to encourage students to learn about engineering fields
- These programs always need mentors and sponsors.
- Way to engage industry
- Our largest chapter meeting was on FIRST. We had 130 people attend a chapter meeting to see the student teams present their robots and programs. This included a family of 3 generations.
- Family events have been very popular
- Most engineers enjoy working with the students
- other stem related contests including Future Cities
- <http://www.scienceoc.org/parents/student-competitions/>
- <http://www.sciencethrillers.com/2013/top-20-science-stem-contests-kids/>

DARPA Grand Challenge

- 130 miles through the desert with no driver and no remote control
- Autonomous driving means all decisions made without human intervention
- Team started with section sending me to kick-off meeting
- Core team was previous FIRST students that were at NC State University
- Placed in Finals (11 of 189 teams)

Take Away:

- College students love an opportunity to be involved
- Generated interest from multiple areas: Universities, IEEE, Industry, and the public



DARPA Urban Challenge

- Autonomous operations in urban environment
- route planning, traffic circles, 4 way stop intersections, other traffic
- Engaged 65 people in the project including Lotus USA
- Cover of machine design magazine, front page multiple newspapers, Discovery Channel, BBC, Live TV demo
- Placed in semi-finals

Take Away:

- We engaged members, universities, industry, and the public
- Team was recognized at international level
- As Computer Society Distinguished speaker, did 21 talks representing IEEE
- Program brought significant interest from the public to IEEE





Triangle Amateur Robotics

- TAR started in 1975, oldest robotics club in USA
- Club organization was informal
- When club lost it's meeting location in 2013, I invited the organization of about 50 people to merge with IEEE ENCS R&A
- We gained about half of the club members in the merger.

Take Away:

- Look for other organizations in your area that do similar things
- IEEE organizational structure is far superior to many local organizations
- Get involved with outside organizations to spread the word. Joint meetings with non-IEEE organizations is a great way to meet potential new members.

RoboResearch Seminar

- Our chapter establish a one day robotics seminar to encourage robotics research and development in the state of North Carolina.
- Invited state government, university, and industry speakers as well as exhibitors.
- We had just under 100 people attend and they are looking forward to next year.

Take Away:

- Work with all aspects of robotics: Government, Universities, and Industry
- Program engaged a number of members excited to participate in this event
- IEEE gets a lot of publicity when you engage. Many attendees did not know IEEE
- Next Event May 20-21 in Raleigh – Target 400 people/day

Humanoid Robotics Program

- Started in 2014 to engage chapter members in a challenging technology program
- Created to take into schools and to the public to bring awareness to engineering
- Vision team, AI team, Speech/Hearing team, Structure team, Management team
- 21 people joined the team in the 1st week, got requests from around the state.
- Access to IEEE members around the world with unique skills

Take Away:

- Engineers love a good challenge – creates engagement
- Public interest and demo's create new members
- Great way to engage students to encourage them to pursue STEM fields
- Looking to engage Universities and Community Colleges in development

AMERICAN
UNDERGROUND

COOL THINGS
In Town

FIU

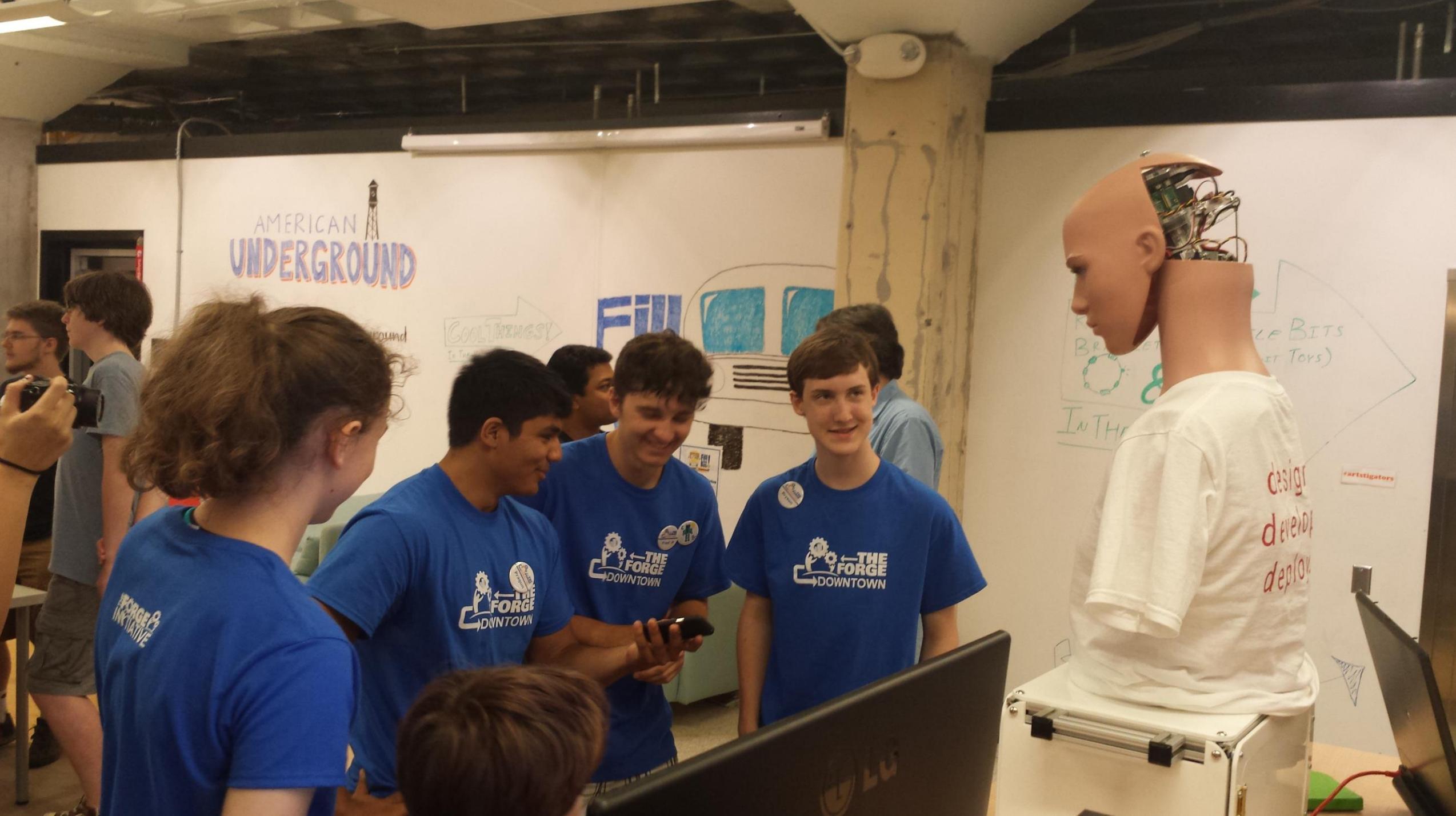


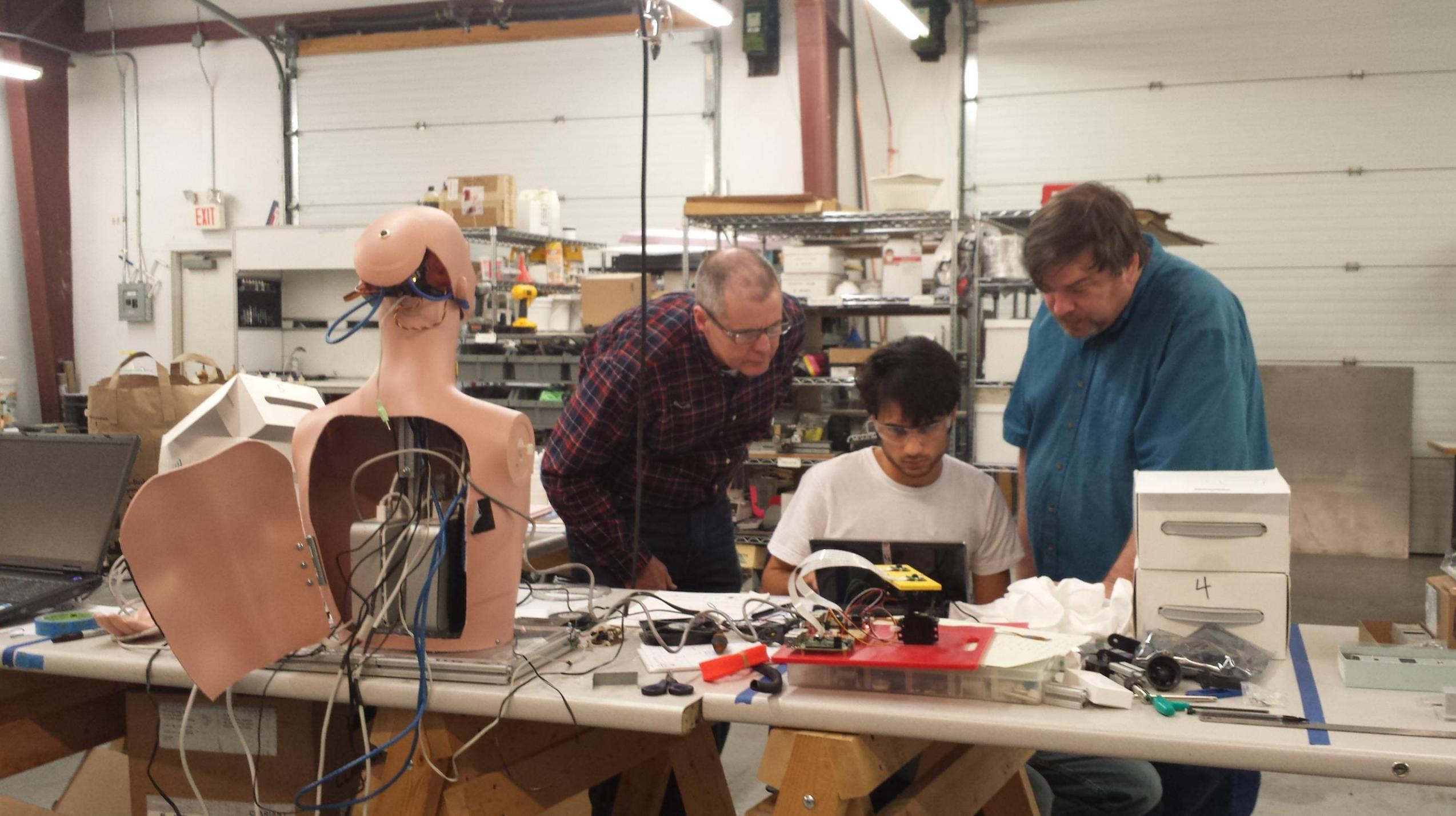
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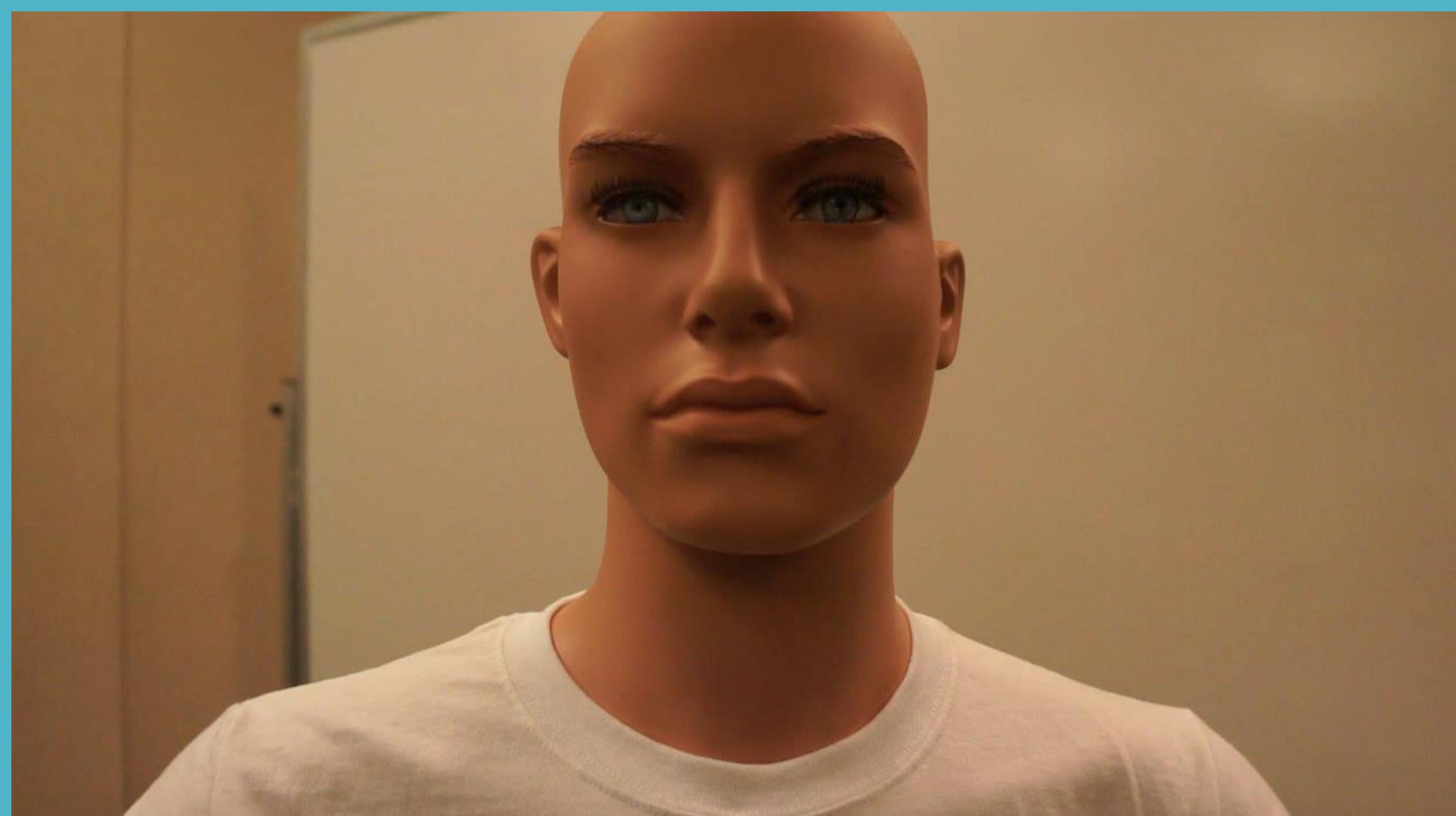
In The

design
develop
deploy

partstigators









IEEE Foundation

Stem Outreach using Student-built Humanoid Robots

- IEEE Foundation provided a grant to build 4 additional Humanoid Robots
- Partnership with local 501 C3 working with students ages 7 to 18
- Students are building the Humanoid robots with IEEE mentors
- Separate team of University students and professors working with IEEE on next generation robot
- Goal to reach 4000 students with Humanoid Robot demonstrations

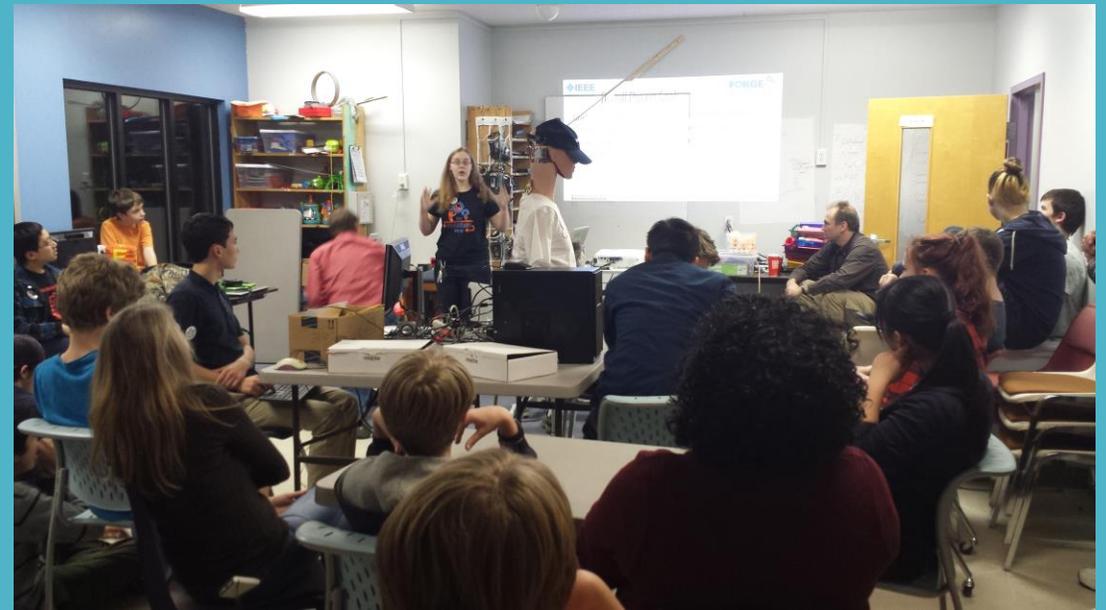


IEEE / TFI Humanoid Robot Project

Joint project funded by IEEE Foundation

Goal:

- TFI members work with IEEE engineers to replicate Ken 1.0 and help with Ken 2.0.
- Students and IEEE members will take Ken to over 4000 people in our community in the next few months





MOVE COMMUNITY OUTREACH

AN IEEE★USA INITIATIVE

 **IEEE**
Advancing Technology
for Humanity

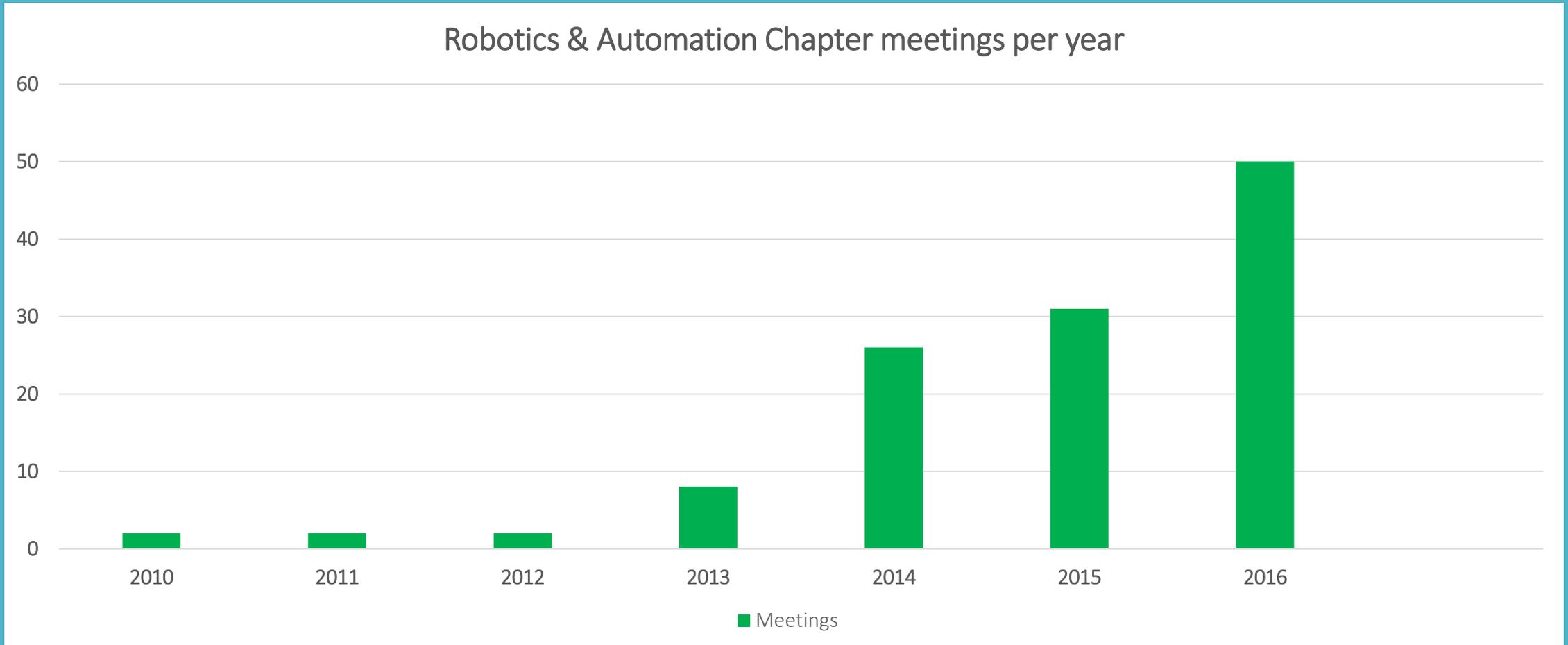
-  ideas
-  power
-  charge
-  respond

move.ieeeusa.org

IEEE★USA



Do projects work?



* 2015 R&A Chapter of the Year

What engages members???

In the “Old” days (before internet),
people came to the IEEE for information.

Today, that information is all available online...
So what is it that engages IEEE members???

- * Ability to network and meet new people
- * Ways to discover what is happening in their community that is not online
- * Ability to use, learn, apply skills that they do not use in the regular day job
- * Working on projects that have social meaning and technical challenges

Conclusion

- Provide networking time before each meeting
- Have everyone introduce themselves at the beginning of each meeting
 - *Name, where they work, what they do*
- Meet with other organizations in your community
 - find out what they do
- Address all aspects of your member backgrounds:
 - *academic, industry, government, defense, ...*
- Start some projects that connect you to the community
- Make your organization/projects known to the public
- Do projects that challenge engineers

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