

IEEE Region 3 Engaging Members Through Projects

SoutheastCon 2018

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What engages members???

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

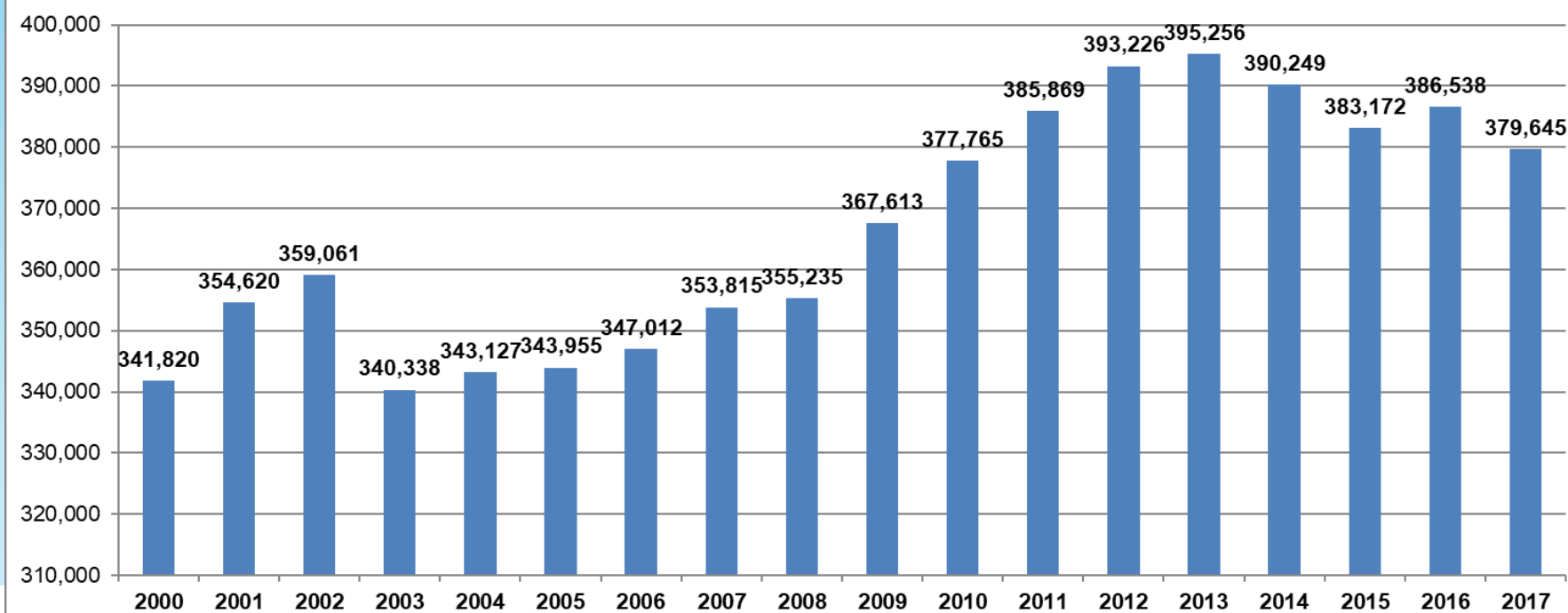
Today, most of that information is all available online...
So what is it that engages IEEE members???

- * 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

Overall Membership Trend

as of August

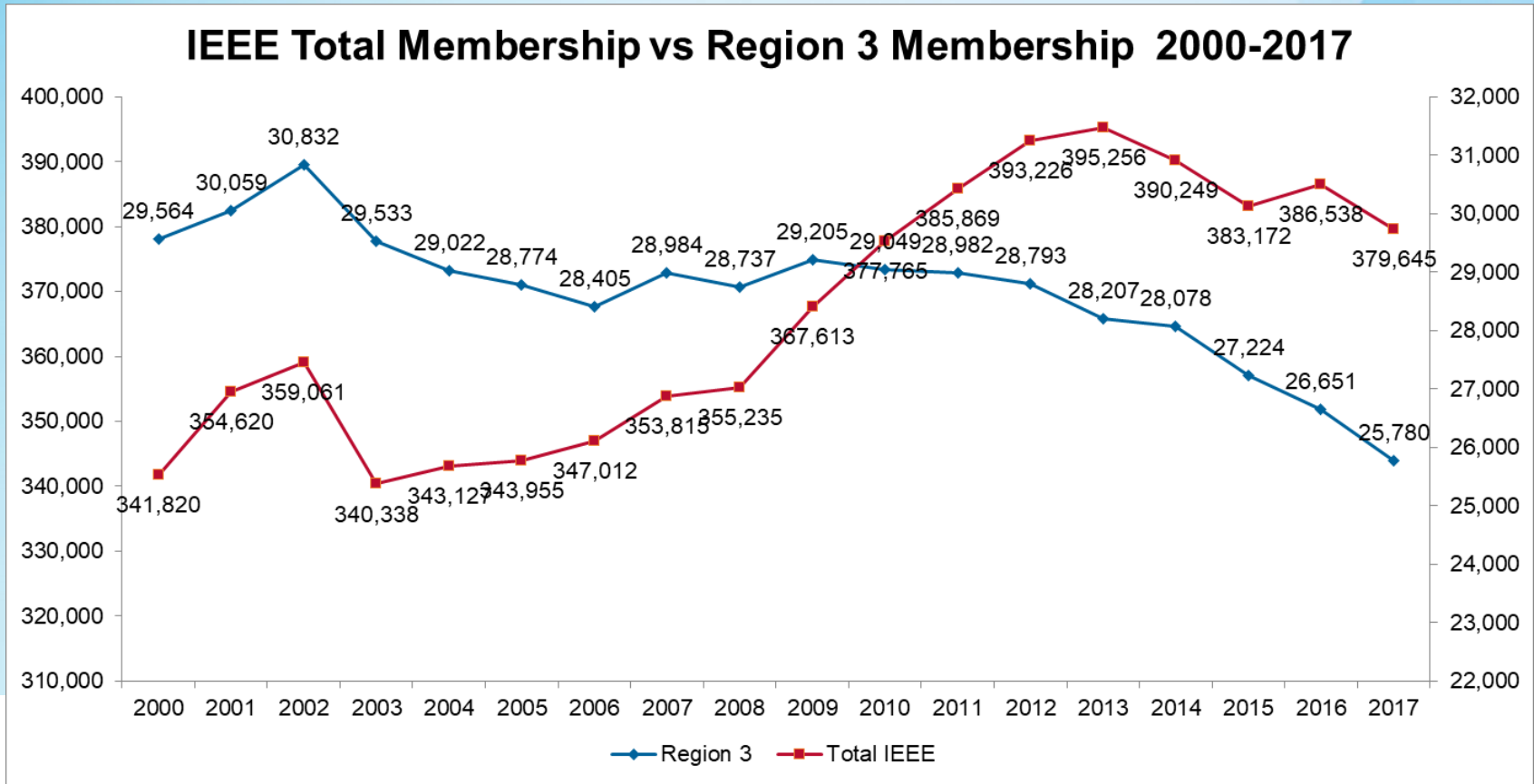
Global IEEE Members 2000-2017



Source: August Membership Stats (Membership Year End)

Membership Trend: Total IEEE vs. Region 3

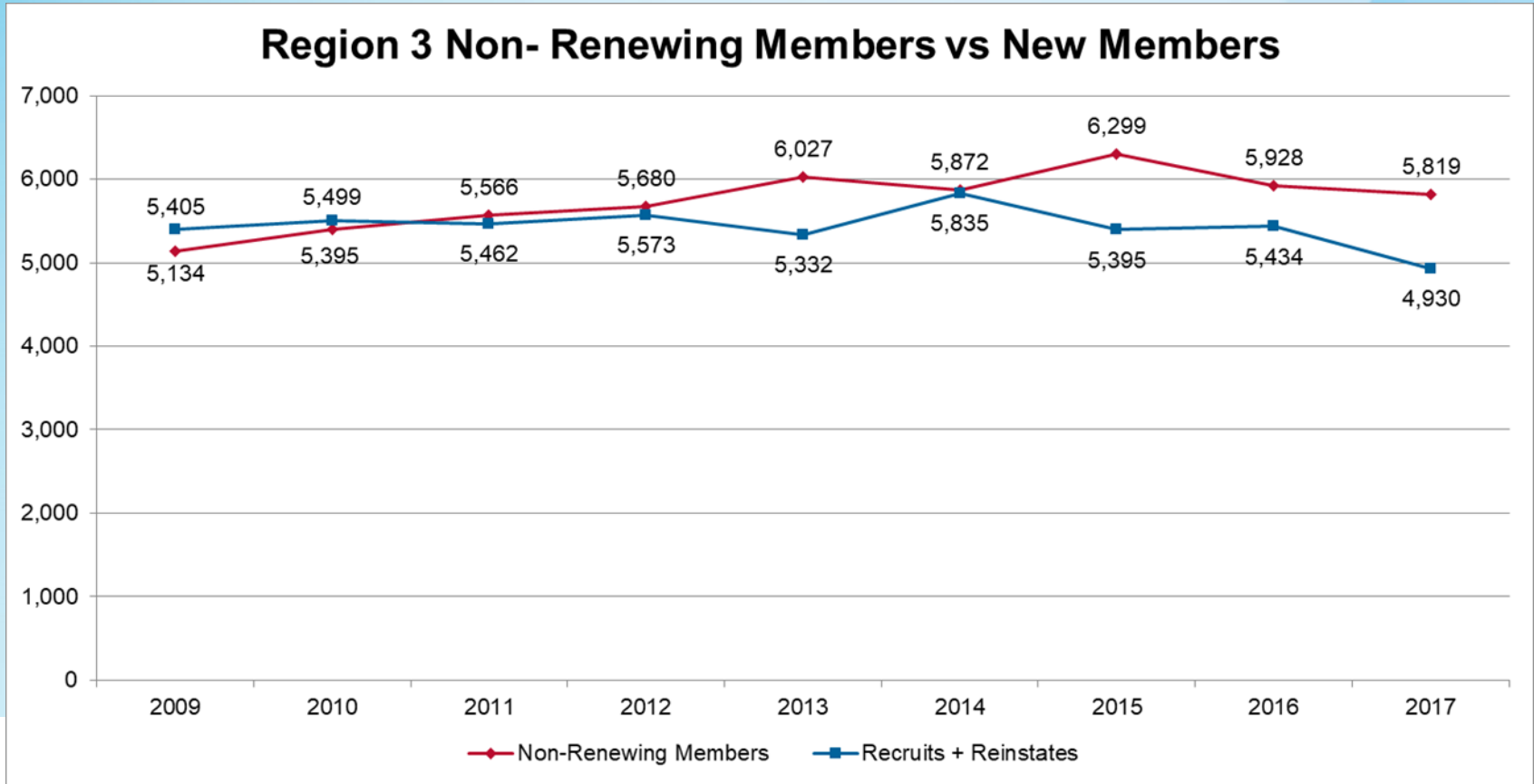
as of August



Source: August Membership Stats (Membership Year End)

Region 3 Membership Statistics

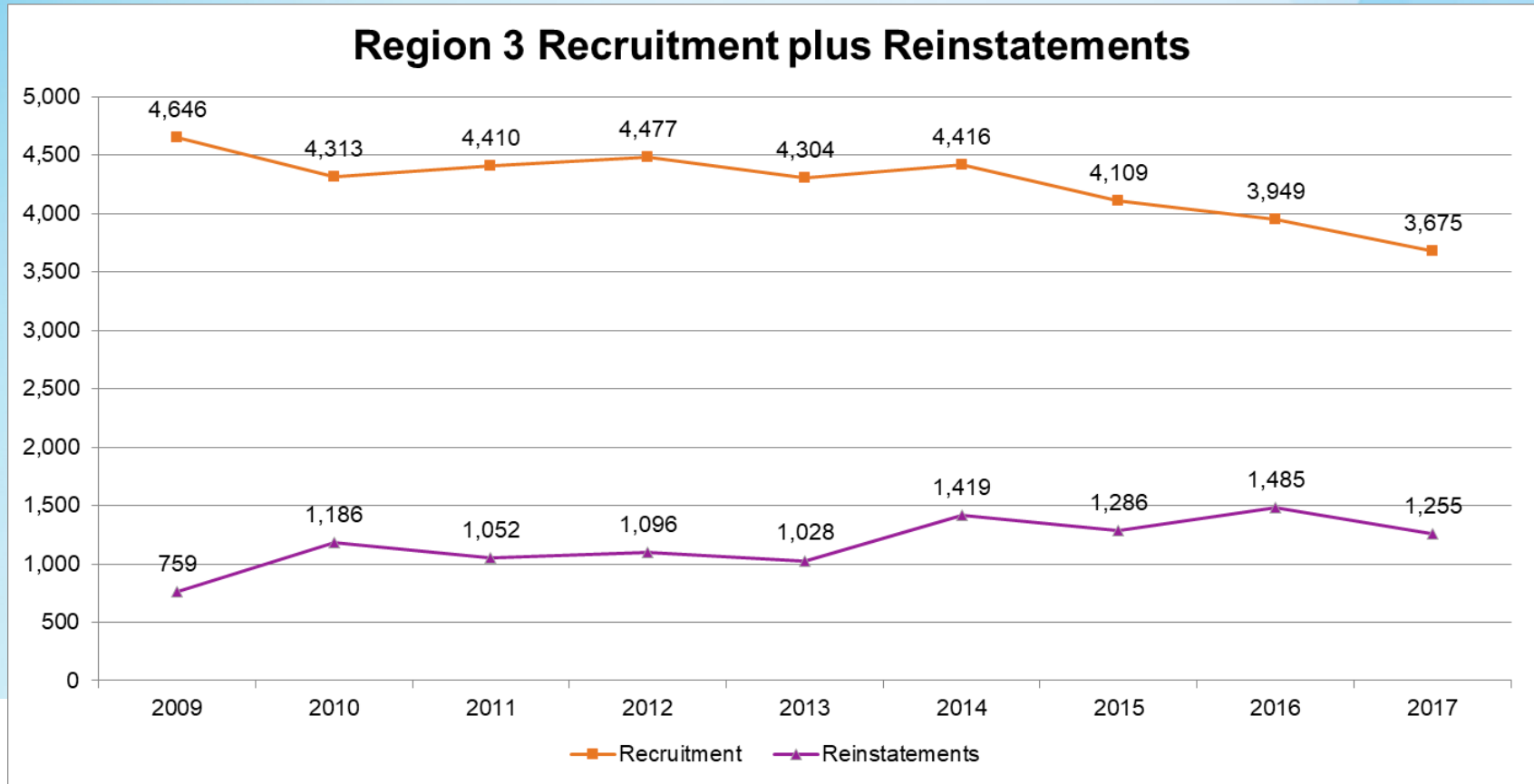
Historical Trends from 2009 through 2017



Source: August Membership Stats (Membership Year End)

Region 3 Membership Statistics

Historical Trends from 2009 through 2017



Source: August Membership Stats (Membership Year End)

Member Retention

How do you get an engineer to solve a difficult problem?

**Tell him it can't be
done!**

Which do you prefer?

- Lecture
- Lab

A hands on, technically challenging, socially meaningful project will engage members !!!

Region 3 is challenging its sections to start a project.

Let's consider some examples of projects a section could do.

Things to look for in the following projects:

- How was the project they started?
- Who did the project interact with?
- Who was engaged by the project?
- How was the project funded?
- Who did the project partner with?

FIRST Robotics

2001 – 2004

- 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
- IEEE/IBM/Cisco 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.**
- **Our largest R&A 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**



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**
- **Topic was of great interest to the general public and we got huge media coverage**
- **Generated interest from multiple 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
- 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**





Robotics and Automation Chapter

- Triangle Amateur Robotics (TAR)
- 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 work well.**
- **This is a great way to meet potential new members.**
- **Won Robotics and Automation Society Chapter of the Year award (2016)**

RoboResearch Seminar

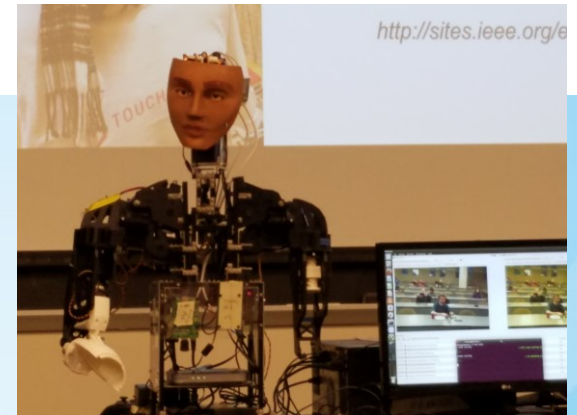


- Our chapter establish a one day robotics seminar to encourage robotics research and development in the state of North Carolina.
- Invited state government, university, and industry speakers as well as exhibitors.
- We had just under 100 people attend

Take Away:

- **Work with all aspects of your topic: Government, Universities, Industry, and public**
- **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**
- **Also a way to make some money**

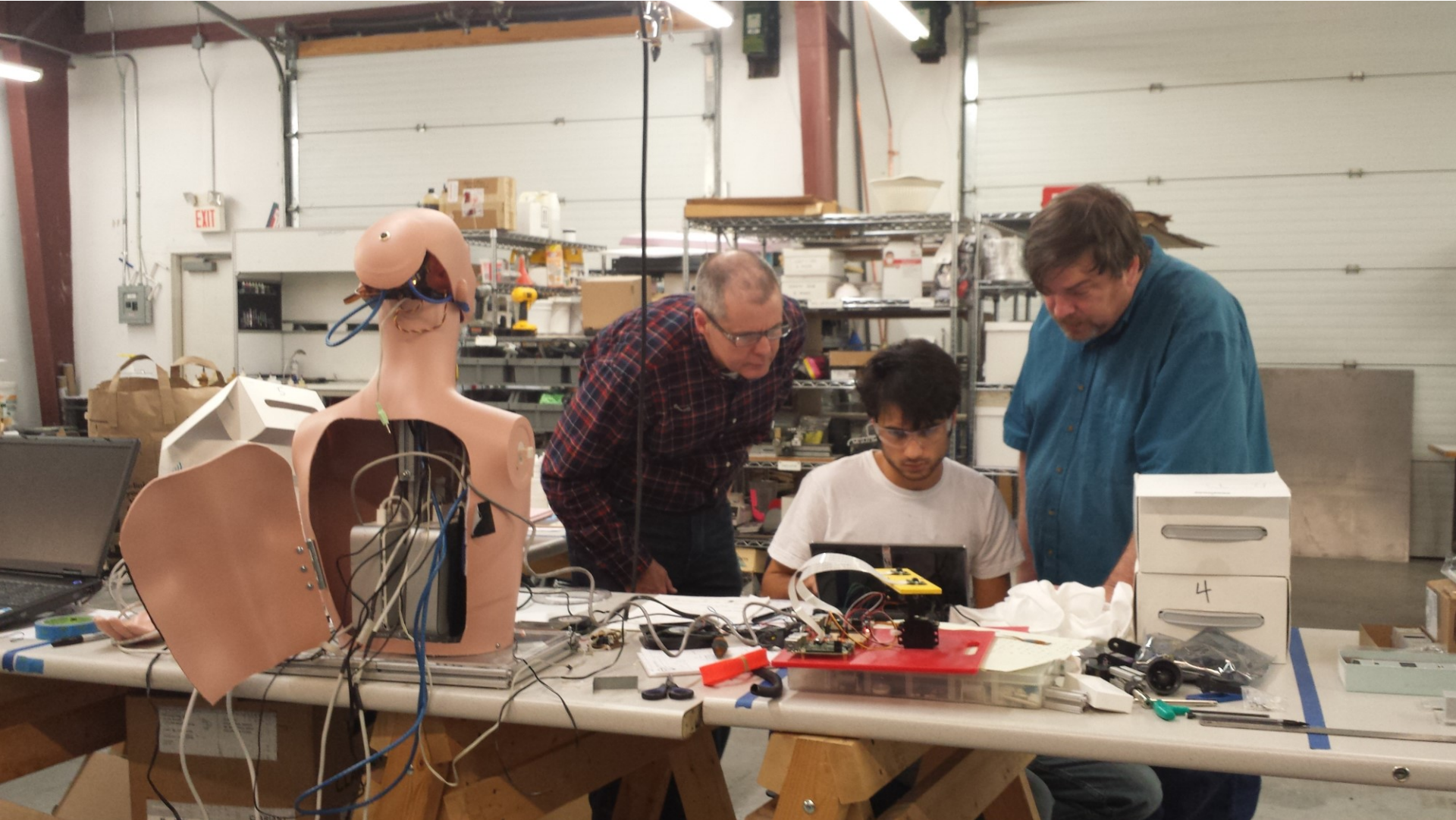
Humanoid Robotics Program

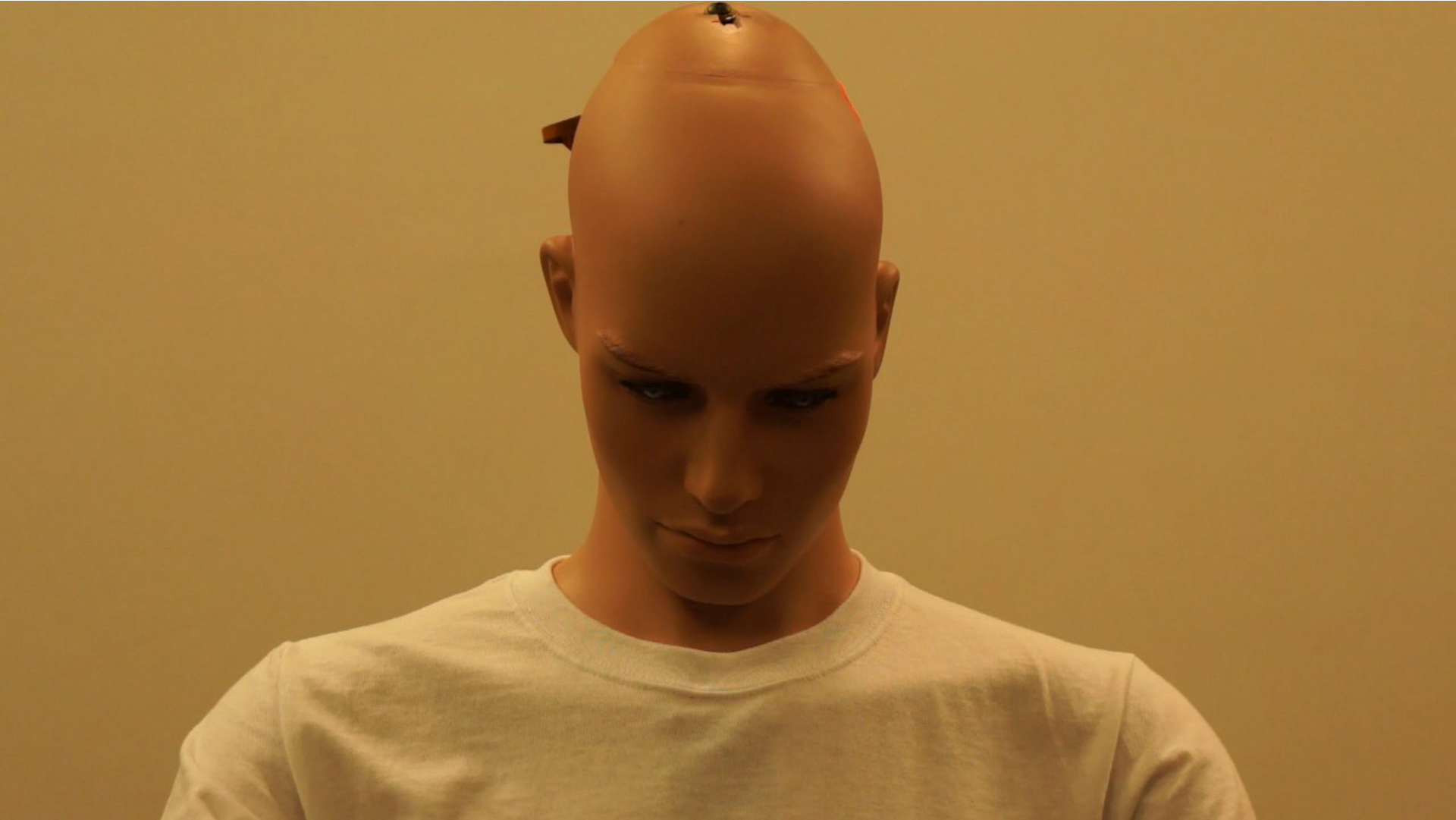


- Started in 2013 to engage chapter members in a challenging technology program
- Created to take into schools and to the public to bring awareness to engineering
- Vision team, AI team, Speech/Hearing team, Structure team, Management team
- 21 people joined the team in the 1st week, got requests from around the state.
- Access to IEEE members around the world with unique skills
- Currently in 5th year
- Received IEEE Foundation Award

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**
- **Look to engage Universities and Community Colleges in development**
- **Engage other local organizations to work with you**







IEEE Foundation Grant 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
- Reached 6000 students with Humanoid Robot demonstrations

Take Away:

- **Money available from section, council, society, region, Foundation, corporate sponsors**
- **K-12 students, University students, Professors, Parents, IEEE Mentors all working together**




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





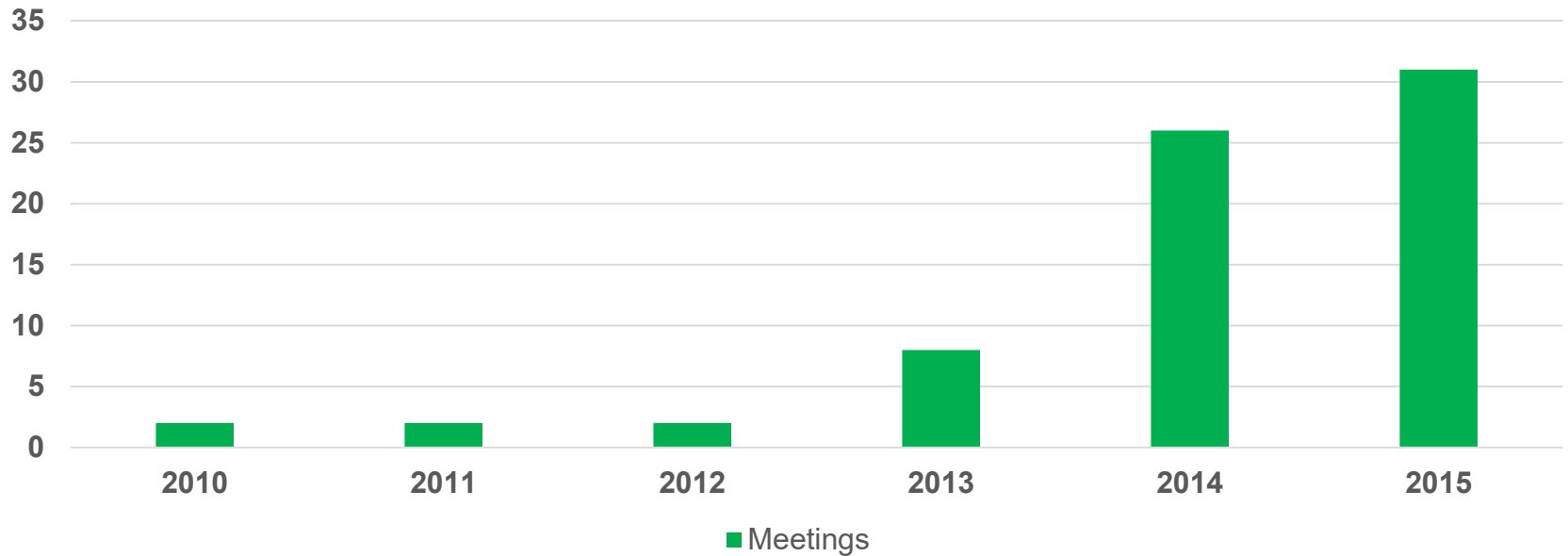
MOVE Community Outreach Program

Brief History

- Truck delivered to IEEE March 2016, based in North Carolina
- Deployed by Red Cross to:
 - 2016 - West Virginia flooding
 - 2016 - Louisiana flooding
 - 2016 – Hurricane Hermine NC
 - 2016 - Hurricane Matthew
 - Tallahassee/Orlando, FL
 - Ft. Bragg/Greenville, NC
 - 2016 - Gatlinburg, TN wildfires
 - 2016/2017 – 3 Home Fire Campaigns
 - 2017/2018 - ENC Disaster Institute
 - 2017 – Missouri Flooding
 - 2017 – Hurricane Harvey
 - 2017 – Hurricane Irma
 - 2017 – Hurricane Marie
- Public Visibility events (examples, many not listed)
 - 2016-2017 IEEE SoutheastCon Conferences
 - 2016 IEEE Board of Directors meeting
 - 2017-2018 Atlanta Science Festival (apx 25,000 attendees)
 - 2017 National Scout Jamboree (apx 40,000 attendees)
 - 2017 Future Leaders Conference Forum

Do projects work??

Robotics & Automation Chapter meetings per year



* 2015 R&A Chapter of the Year

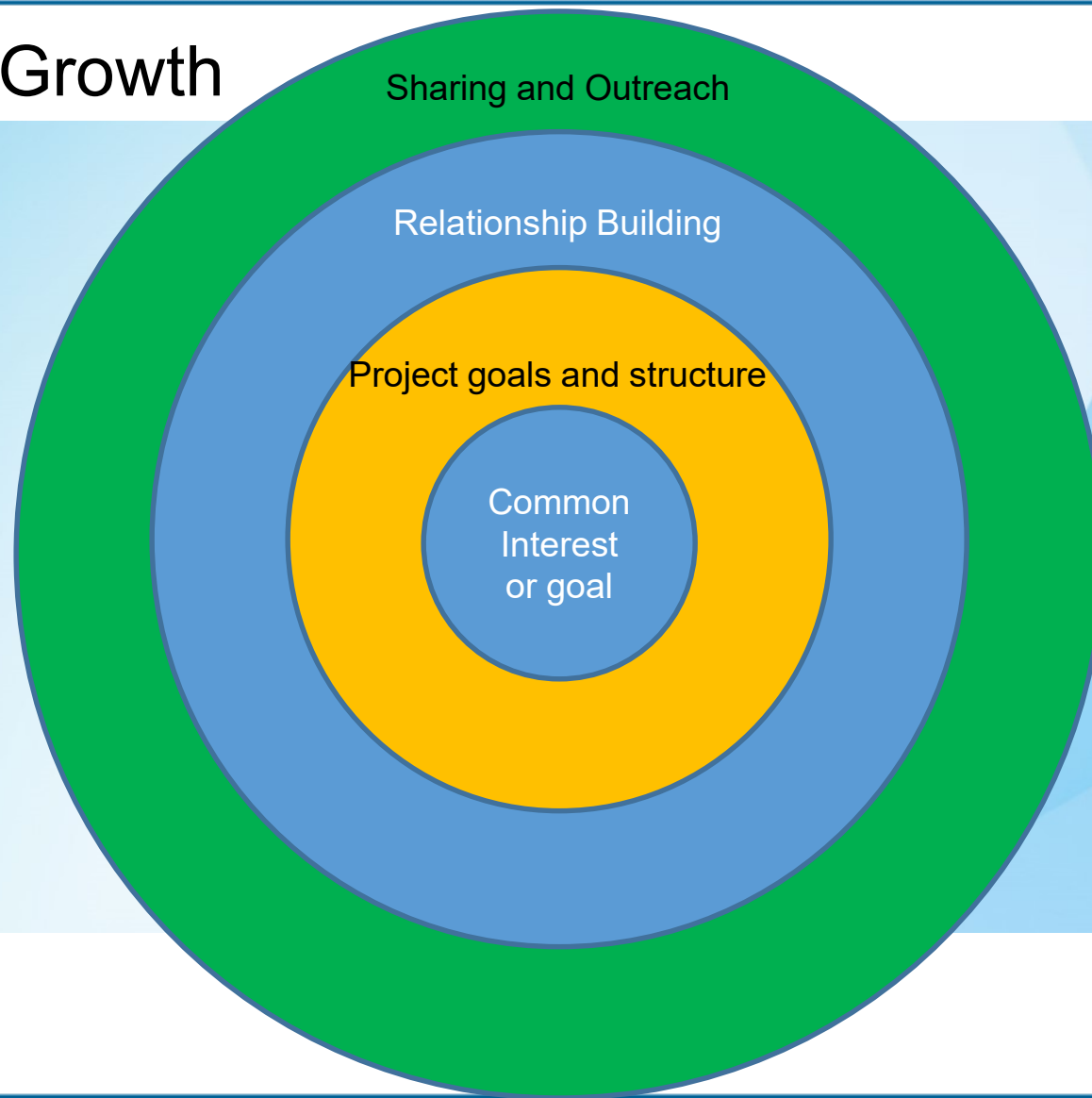
What is required to do a project?

- Person(s) who are passionate about a specific goal
- A stretch goal that is 5 to 10 years out
- A plan that shows incremental steps to a final goal
- A goal that is technically challenging and full of unknowns
- A goal that supports the interests of the people involved
- A goal that will support Government/Universities/Industry/schools/maker spaces/STEM in your immediate area

How to get started

- Brain storm some ideas in a small group of passionate people
- Have a presentation night(s) where people come and propose ideas
- Find a core team (1-3) people who are passionate and visionary
- Introduce the concept to a wider audience (section members) to discuss
- Build a prototype to show the group can accomplish tasks
- Develop a short term (1 year) plan with specific goals
- Develop a long term (multi-year) plan and funding model
- Show the world what you can accomplish

Project Growth



As Region 3 Project Coordinator How can I help you?

- Can support you in developing a project concept
- Can assist you in developing a project plan
- Can assist you in connecting you with funding opportunities
- Can assist you in finding technical skills you may not have
- Can connect you to other people doing similar projects
- Can answer questions you may have on setting up and running a project
- Can help you get coverage and visibility for your projects

What I cannot do:

- Help run your project – it needs to be a local project
- Provide Funding – I have no funding to support project operations
but can provide assistance on where to find it

If your Section is doing a project or wants to start a project,
Please send me the following at g.randall@ieee.org :

- Section Name
- Contact Person
- Contact info (email, phone, mail,)
- Name of project (If known)
- Current Status

Meeting Tips

- 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, makers ...
- 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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