

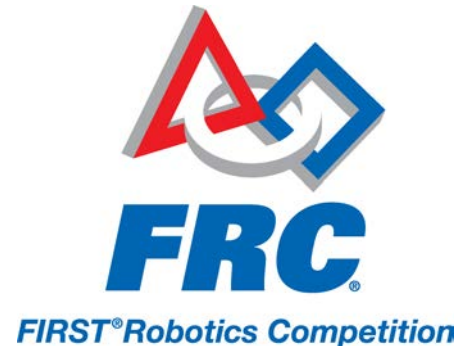
# Robotics: Changing Kids' Lives through STEM Activities



FIRST® Robotics Competition

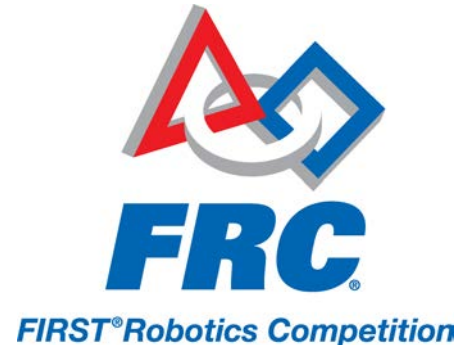
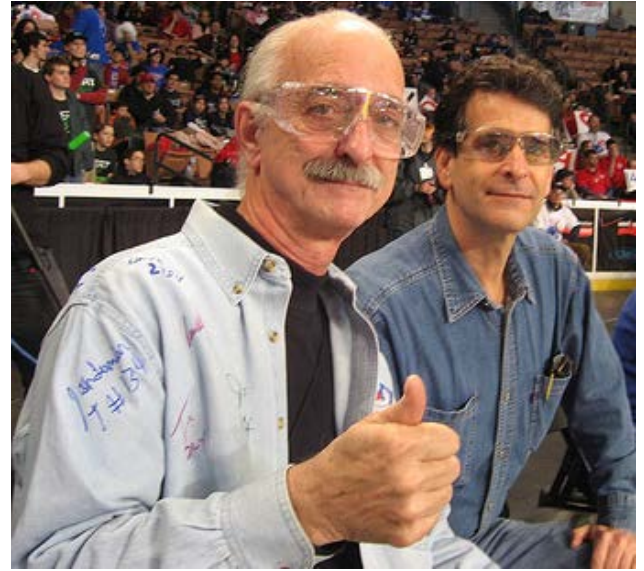
# Robotics: Changing Kids' Lives through STEM Activities

- Team 4125 Confidential, Umatilla HS
- Team 4488, ShockWave, Glencoe HS
- Team 4662 Tribal Tech, Scappoose HS



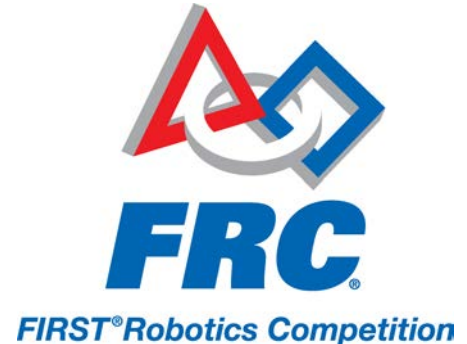
# What is FIRST?

- Our mission is to inspire young people to be science and technology leaders, by engaging them in exciting mentor-based programs that build science, engineering and technology skills, that inspire innovation, and that foster well-rounded life capabilities including self-confidence, communication, and leadership.



# FIRST Programs

- FIRST Robotics Competition for Grades 9-12
- FIRST Tech Challenge for Grades 7-12
- FIRST LEGO League for Grades 4-8
- Junior FIRST LEGO League for Grades K-3
- [ShockWave's release video](#))



# Connections to CTE & STEM

- Engaging Administration
- Engaging other teachers: Marketing, Drafting, Machine Manufacturing, Programming
- Engaging the community including business and industry

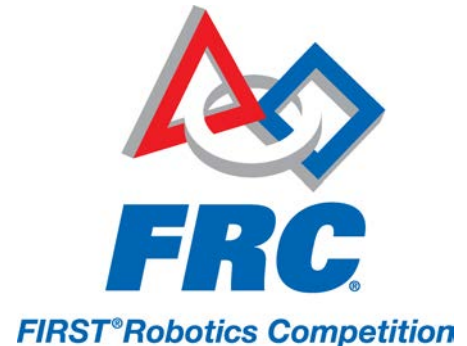


**FRC**

*FIRST® Robotics Competition*

# Students' Benefits

- Real world mentoring
- Technical and social skill development
- A sense of belonging
- Scholarships and job opportunities



# Students' Stories



- How the teams came about
- Challenges
- Benefits to students



**FRC**

FIRST® Robotics Competition



# Team 4488 ShockWave



Glencoe HS  
Coaches  
Chris Steiner and  
Willie Tenca



*FIRST® Robotics Competition*



# How and Why We Started



- My kid got me into it.
- Outstanding mentors were available looking for a new challenge.
- Glencoe HS well-suited



*FIRST® Robotics Competition*

# Outreach Program



Science fairs,  
afterschool Lego  
Robotics, public  
meetings, RoboExpo  
event, FTC and FLL  
tournaments, ...



*FIRST® Robotics Competition*

# Competition Success



- 2013 Rookie All Star: Oregon, Curie Division
- 2014 PNW #1 Team
- 2014 Worlds: Galileo Finalist, among top 20 teams in World



FIRST® Robotics Competition



# Learning with Adults

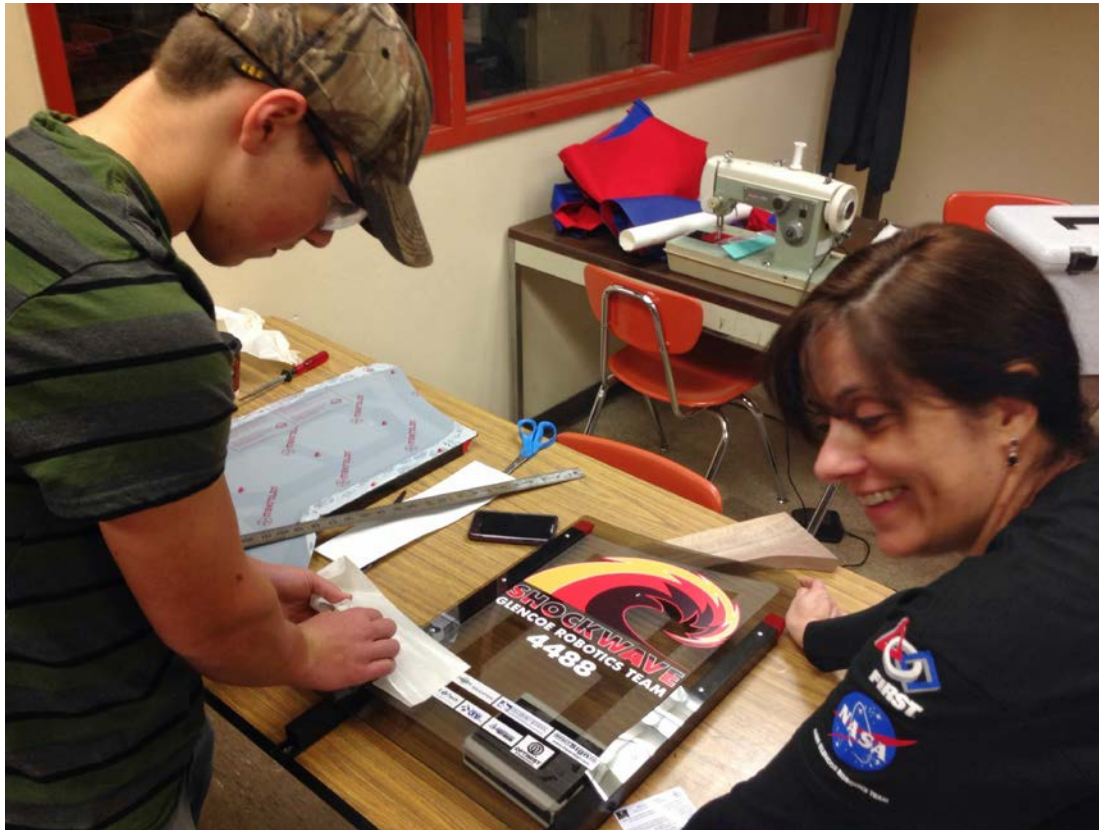


- Business-Education Partnerships
- Local industry mentors
- Community support



*FIRST*® Robotics Competition

# Student Success

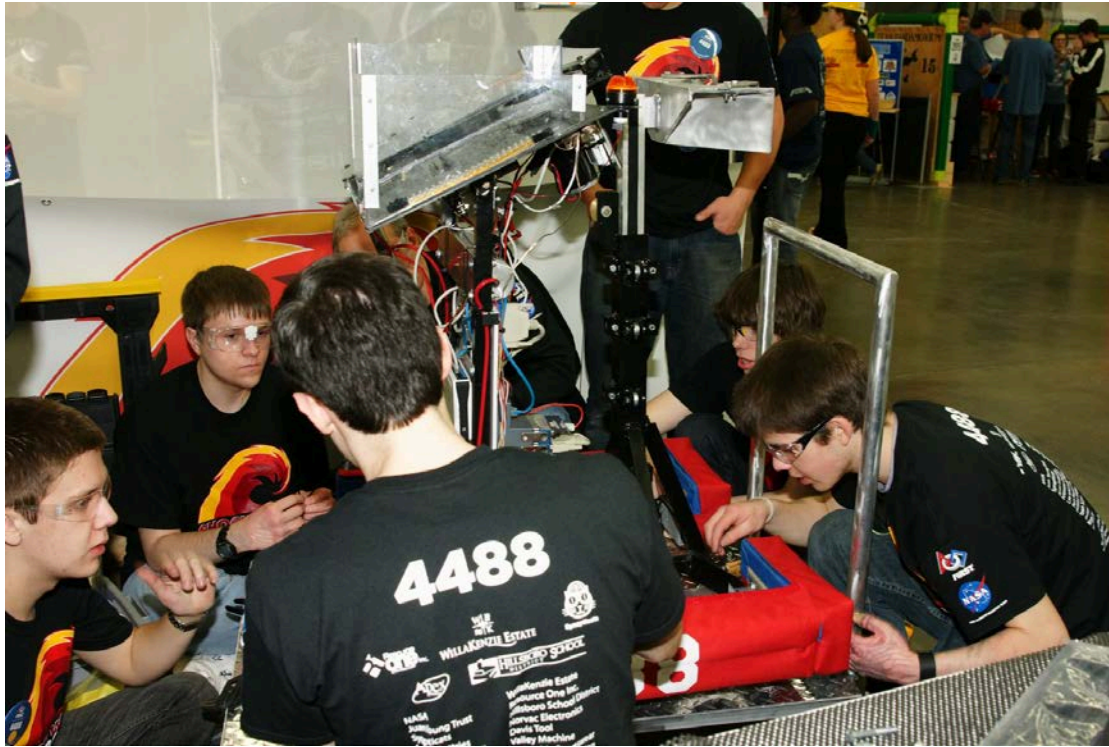


Many technical and social skills are taught and modeled by the mentors.



*FIRST*® Robotics Competition

# Belonging to a Team



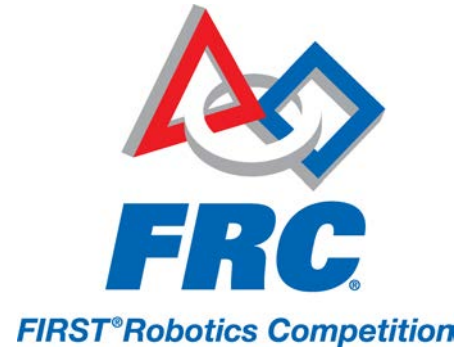
FIRST® Robotics Competition



# Team 4125 Confidential



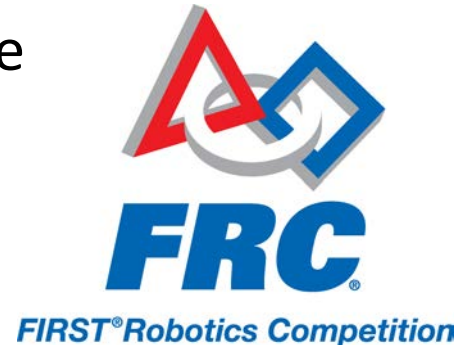
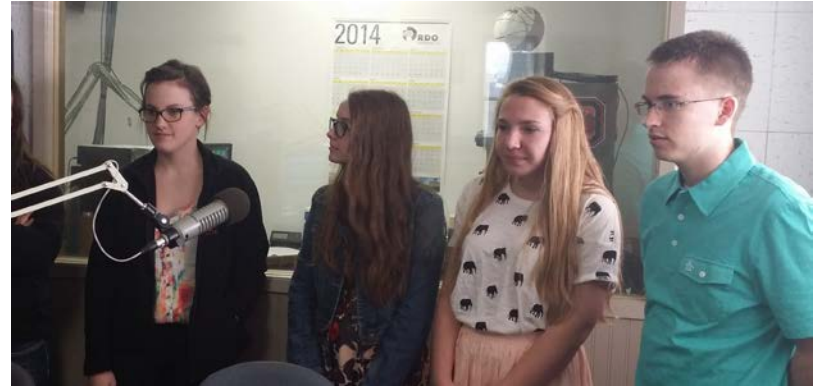
Umatilla HS  
Coach Kyle Sipe



# Preparing Students for the Future

- Our FIRST alumni study in medical, engineering and computer science fields.
- We have gained confidence, speaking skills,

creativity, budgeting and the chance to make connections with STEM professionals and expand our career thoughts.



# Outreach

We teach the younger students and coach their FIRST teams.

We coach Jr. FLL, FLL and FTC teams

Also, “Donor Days”  
and “Landing Days”  
and the fair.

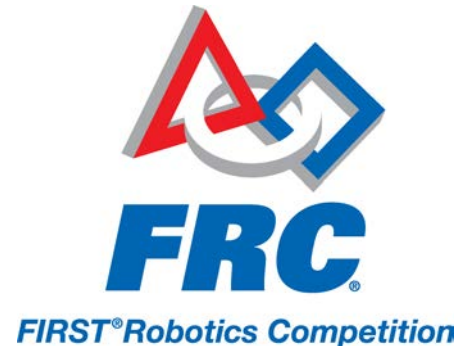


*FIRST® Robotics Competition*

# What Does it Cost?

- Our first year, we spent roughly \$20,000.
- This year, we've spent nearly \$60,000 to fully fund our team.

Travel costs and registration fees take up the majority of our budget. We have no “close” events and must travel and provide lodging for all our events.

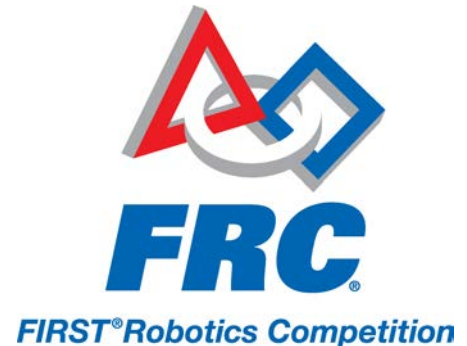


# Recruiting and Retaining Team Members



Robo Bootcamp- Week of classes taught by veteran members to interested students.

Retaining- This is the easy part. Once a student is through his/her first build season, they're hooked for life.





# Recruiting Mentors

We do not have professional STEM mentors, only interested adults willing to learn right alongside our students.



**FRC**

FIRST® Robotics Competition



# Team 4662 Tribal Tech



Scappoose HS  
Coach Tina Bliss



FIRST® Robotics Competition

# Tribal Tech

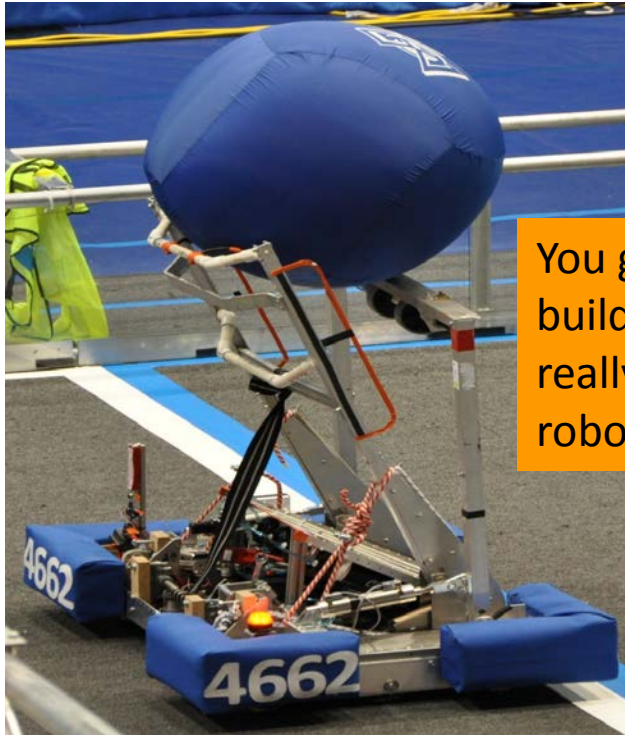
## What is FIRST Robotics?

- First Robotics Competition (FRC) is a hands-on, engineering project in which students design, construct and market a robot to play a specific game.
- FRC provides the opportunity to learn real world skills.



# Tribal Tech

What do you do on a robotics team?



You get to build a really cool robot!



You get to drive a really cool robot!



# Tribal Tech

## What do you do on a robotics team?

You make new friends



You learn new skills



# Tribal Tech

What do you do on a robotics team?



You get to dance!



You have a lot of FUN!!!

# Tribal Tech



Talking to  
the judge at  
OSU

Competition Videos

<https://www.youtube.com/watch?v=VEIX2spdZvg>

<https://www.youtube.com/watch?v=UFQqwCHYjlk>

<https://www.youtube.com/watch?v=fKd7wSWykBs>



**SHS** INDIANS  
Scappoose High School





# Starting a Team

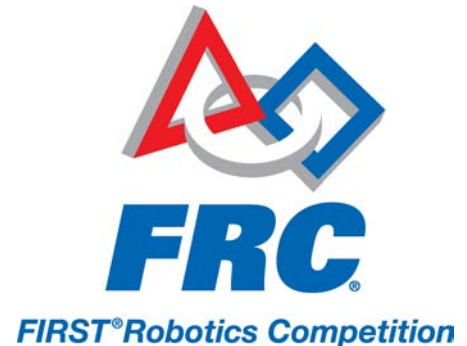
Google: [how to start an frc team](#)

Regional Director Cindy Lebeau

360-901-1738

[clebeau@usfirst.org](mailto:clebeau@usfirst.org)

<http://oregonfirst.org/>



# Starting a Team

- Recruit students and mentors
- Fundraising
  - Grants: ODE, NASA, Boeing
  - Sponsorships
  - Traditional and New Fundraisers
  - Participation Fees

Google: [how to start an frc team](#)



# Sample Budget

- \$6000 Rookie Team Registration and Kit of Parts
- \$4000 Materials and Supplies
- \$100-1000 Travel, depending upon location and available resources
- \$100-500 Marketing material, apparel

