2016 *FIRST*® Championship Conference Session and Workshop Descriptions

WEDNESDAY, APRIL 27	SESSIONS	AMERICA'S CENTER

4:00-5:00 pm	**Spreading the Mission of *FIRST*® to Germany: *FIRST*® + GAPP = A Multi-Dimensional Program to Benefit Students, Teams, Schools, Families, and Communities of Both Nations** John Tilson, Teacher, Hardin Valley Academy Olga Liamkina, Education Liaison, Goethe-Institut New York Hardin Valley Academy's ***FIRST***® Robotics Team #3824, HVA RoHAWKtics has developed a robotics-themed school-to-school exchange concept pairing ***FIRST***® Robotics teams with German High Schools. The program is organized through the German American Partnership Program (GAPP), the largest and most successful bilateral student exchange program in the United States. School-based teams with an existing German language program or a desire to start one, as well as corporate sponsors with ties to both countries will benefit from this session.	AC 265
4:00-5:00 pm	**LabVIEW Programming for Beginners** Doug Norman, Senior Software Engineer, National Instruments If you are about to become the LabVIEW programmer for your team, or your team is thinking of using LabVIEW for FRC, come learn how to get started. Learn the advantages of graphical programming and graphical debugging. We will begin with some LabVIEW programming basics, followed by how to create and understand a simple robot program and how it interacts with the Dashboard.	AC 266
4:00-5:00 pm	**Principles of Effective Student Leadership in FRC** Amr Metwally, Director of Sponsorship, FRC Team 1885, ILITE Robotics Reeya Rabena, Director of Finances and Co-Director of Business and Outreach, FRC Team 1885, ILITE Robotics Justine Suegay, Co-President, FRC Team 1885, ILITE Robotics This session is designed to help teams build effective leadership principles and strategies for their students. It will look at different types of leadership structures within ***FIRST***®, how to work effectively with adults, and how to incorporate different student strengths and mitigate weaknesses. Teams will also learn different skills and gather ideas on a range of topics from how to run team meetings to how to choose their own leaders. This session is discussion and activity-based, allowing participants to practice leadership skills that will help students in the demanding situations that all ***FIRST***® teams can identify with.	AC 275

2016 *FIRST*® Championship Conference Session and Workshop Descriptions

4:00-5:00 pm | **Diversity & Inclusion at *FIRST*®** | AC 276

Shelley Henderson, Diversity and Inclusion Manager, ***FIRST***®

This session provides an opportunity to learn about the ***FIRST***® "race" toward STEM equity, diversity and inclusion. ***FIRST***® will offer its rationale for building organizational capacity to respond to national shifting demographics, embracing diversity as an asset, addressing the need for future STEM professionals, and positioning its programs to be a solution. Attendees will learn about the development and implementation of core strategies: 1) Planning & Capacity, 2) Professional Learning, 2) Partnerships & Alliances, and 3) Pilot Projects.

4:00-5:00 pm | **Look Who's Driving! – Automated Driving and Robotics** | Ferrara Theatre

Dushyant Wadivkar, Manager (Advanced Engineering), Robert Bosch LLC

Of late, the news about Automated Driving/Self-Driving cars has been populating the press. Google, car makers, suppliers, universities, hackers and other key stakeholders are showcasing their capabilities on demonstration vehicles. However, the way to a production ready safe automobile is lined with fascinating technical challenges, strange legal regulations and important ethical questions. As the cars begin to get smarter each day, the interface between the machine and human is constantly changing. The presentation will attempt to highlight some of the technical challenges and explore the connection between Robotics and Automated Driving

5:30-6:30 pm | **Maximizing Facebook and Twitter** | AC 265

Jamee Luce, ***FIRST***® Robotics Competition Team Advocate, ***FIRST***®
Jennifer O'Callaghan, ***FIRST***® **LEGO**® League Community Engagement Manager, ***FIRST***®

Is your team struggling with a Social Media plan? Are you wondering about the value of having a Facebook or Twitter account? This session is for the beginner in the world of Social Media. We will share best practices about how to manage and maintain a Social Media plan for your team, as well as how to effectively find and/or develop content. We will also discuss how to connect with the ***FIRST***® Social Media accounts and connect with our community with common hashtags.

5:30-6:30 pm | **LabVIEW: Command & Control and Advanced Features** | AC 266

Greg McKaskle, Chief Software Architect, National Instruments

The LabVIEW Command and Control framework emphasizes software subsystems that more closely resemble how you think about your robot's capabilities. It is well suited to more complex robots and larger programming teams. Come learn about the details of the Command and Control framework and several other advanced techniques for better LabVIEW programming.

2016 *FIRST*® Championship Conference Session and Workshop Descriptions

5:30-6:30 pm | **Mentoring Techniques for Hands On STEM Learning** | AC 275

Veronica Cavallaro, Chief Operating Officer, Iridescent
Monica Gragg, Mentor Community Manager, Iridescent

This interactive workshop will teach you how to build children's confidence in their ability to learn in STEM disciplines. We will demonstrate best practices for mentoring in both in person and online environments, based on our science and technical education programs, CuriosityMachine.org and TechnovationChallenge.org. You will be able to practice what you've learned using one of our hands on projects (design challenges).

5:30-6:30 pm | **Building and Contributing to WPILib** | AC 276

Peter Johnson, FRC Control Systems Team, Worcester Polytechnic Institute
Brad Miller, Director *FIRST*® / WPI Research Group, Worcester Polytechnic Institute
Fred Silberberg, *FIRST*®/WPI Research Group, Worcester Polytechnic Institute

WPILib C++ and Java, the software library and tools used by most FRC teams has been traditionally developed by a team of students and the advisor at WPI. Over the last few years we have been making the development more transparent and open and we now have a growing number of mentors and students from the FRC community making significant contributions to the project. We will talk about how to build WPILib to extend it for your own use and how you can help all FRC teams by contributing to the software suite as it transitions to a more open source project model.

5:30-6:30 pm | **NASA: Learning about Pluto using Robotic Spacecraft** | Ferrara Theatre

Cathy Olkin, Deputy Project Scientist, NASA's New Horizons Mission to Pluto

Ever have your robot loose communication with the FMS in the middle of a critical match? An analogous problem happened with the New Horizons spacecraft just 10 days before our closest approach to the Pluto system after traveling more than 9 years and 3 billion miles. Come and hear how the team responded and highlights of scientific results about Pluto, Charon and the small moons. Come to this session, if you want to see 3D images of Pluto's surface.

7:00-8:00 pm | **Integrating Computer Vision with Motion Control** | AC 265

Jared Russell, Software Engineer, X (formerly called Google [x]), Mentor FRC Team 254, The Cheesy Poofs
Tom Bottiglieri, Software Engineer, Cisco Meraki, Mentor FRC Team 254, The Cheesy Poofs

Often the hardest part of solving an FRC computer vision challenge is figuring out how to integrate a camera-based vision algorithm with closed-loop control to automatically point, steer, or drive your robot. This presentation walks through techniques and best practices that can be employed to mitigate issues like latency, imperfect cameras, and simplified vision algorithms to achieve lightning-fast, precise, and robust control that works in any lighting conditions. In the process, we will discuss real-world concepts like camera calibration, kinematics, rigid transformations, and data structures to support efficient processing as well as procedures for calibrating your vision algorithm so that you tune once and then never touch it again.

2016 *FIRST*® Championship Conference Session and Workshop Descriptions

7:00-8:00 pm | **How I Used *FIRST*® Robotics to Start a Business, Meet Celebrities, and Launch a Satellite - and How You Can Too** | AC 266

Erik Finman, President of Finman, LLC

Come and learn how ***FIRST***® Robotics can help you launch a successful career, and make great connections with unique individuals. Erik will share his story of dropping out at 15, starting his business, and how he made $100,000 just 3 months later.

7:00-8:00 pm | **Make a Custom Joystick Using Arduino Leonardo Microcontroller** | AC 275

Ross (KWOL) Kowalski, Teacher, Norwell High School

This session will explain the entire process of making, programming, and using custom joysticks and control panels for your driver station using Arduino Leonardo microcontrollers. The session is designed for someone with no knowledge of Arduinos to be able to make a custom joystick.

7:00-8:00 pm | **College Admissions 101** | AC 276

Crystal Cobb, Assistant Director of Admissions, Embry-Riddle Aeronautical University
Adam Epstein, Associate Director of Admissions, Worcester Polytechnic Institute
Jane Franko, Admissions Counselor, Lawrence Technological University
Chrissy Grotzke, Regional Admissions Manager, Michigan Technological University
David Harrison, International Regional Manager, Macquarie University
Misa Kabashima, Assistant Director of Admissions, Harvey Mudd College
Michelle Long, Alumni Programs Manager, ***FIRST***®
John Mann, Commander, US Navy
Kelly Meyer, Assistant Director of Admissions, Rose-Hulman Institute of Technology
Trisha Stommel, Associate Director of Admissions, Kettering University
Davinci Wallace, Associate Director of Traditional Admissions/Assistant Men's Basketball Coach, Milwaukee School of Engineering
George Walls, Senior Director of Admissions, Capitol College

Join Admissions professionals from several institutions that provide ***FIRST***® Scholarships. They will discuss the college application process and transition from high school to college. There will be time for questions and answers from the audience.

2016 *FIRST*® Championship Conference Session and Workshop Descriptions

WEDNESDAY, APRIL 27 | WORKSHOPS | AMERICA'S CENTER

4:00-8:00 pm

Looking for a Solution to Help You and Your Students to Better Manage the Competitive Process?
(Limited Space Available, Pre-Registration Required)

AC 274

Diane Fromm, Programs Manager, PMI Educational Foundation
Bernie Trilling, CEO and Founder, 21st Century Learning Advisors

The solution is here: project management skills and tools.

Student competitions can be a powerful learning method. Competition are wonderful way to teach students how to collaborate, be creative and develop great presentation skills, but every competition contain many moving parts. When students plan and organize their competitive projects and they define deadlines, responsibilities and outcomes – all of sudden all these moving parts come together in the form of a wonderful project. Probably a really spectacular robot!

How do you acquire the skills to guide and manage learning competitions and where can you find the resources to make all this easier and more enjoyable for everyone?

This hands-on project management workshop will:

- Provide a basic introduction to project management
- Show the connections between project management, STEM and competitions as a way to build career and college ready students
- Demonstrate the value that project management adds to STEM competitions
- Show you where to find high value, no or low cost resources and training in managing learning projects
- Provide examples of other competitions that have integrated project management

Participants will leave with a certificate of completion in Project Management.

REGISTER

2016 *FIRST*® Championship Conference Session and Workshop Descriptions

7:00–8:30 pm

Effective *FIRST*® Strategies

Ferrara Theatre

Karthik Kanagasabapathy, Global Competition Manager, Innovation First International, FRC Team 1114

This presentation focuses on three major areas, Strategic Design, Match Planning/Execution, and Scouting. Rather than spending time on equations and detailed calculations, the Strategic Design gives a more high-level overview of how to design an FRC robot. This portion of the presentation includes sections on such often neglected strategic design areas such as Game Analysis, Chokehold Strategies, Cost-Benefit Analysis, Task Prioritization, and Tradeoffs using case studies from past games. The Match Planning/Execution section of the presentation discusses effective habits and strategies that will help lead a team to victory. This is a must for those who enjoy the strategic aspects of ***FIRST***®. The Scouting section deals with effective techniques to collect information on your partners/opponents, and how to make the most of this data. Advanced statistical metrics analogous to "Sabremetrics" in baseball will also be discussed. The presentation is filled with entertaining and insightful historical ***FIRST***® anecdotes from the past 18 years. With the information in this presentation, you can turn your team from a mere competitor to a perennial powerhouse!

2016 *FIRST*® Championship Conference Session and Workshop Descriptions

THURSDAY, APRIL 28	SESSIONS	AMERICA'S CENTER UNION STATION

9:00-10:00 am

Findings from Three Years of the *FIRST*® Longitudinal Study — AC 265/6

Nancy Boyer, Director of Research & Evaluation, ***FIRST***®
Cathy Burack, Associate Director, Senior Fellow for Higher Education, Center for Youth and Communities, Heller School for Social Policy and Management, Brandeis University
Alan Melchior, Associate Director and a Senior Fellow at the Center for Youth and Communities, Brandeis University

This presentation covers the findings from the first three years of the ***FIRST***® Longitudinal Study. Staff from ***FIRST***® and Brandeis University will present the results from the study which assesses the impact of the FLL, FTC, and FRC programs on team member attitudes and interests.

9:00-10:00 am

STEM Connection - Girls Mentoring Girls Mentoring Girls — AC 276

FRC Team 1710, Ravonics Revolution

Through grant funding, FRC Team 1710 started a mentoring program for middle school girls who are under-represented in STEM careers. We did this because so many girls enter middle school loving math and science, but leave middle school with a different perception, believing they are not cut out to study STEM in high school. Our program, STEM Connection, brings middle school and high school girls together with college and professional women for active STEM mentoring and rich, hands on STEM activities. This program complements You Go Girl!, designed to increase the number of girls in STEM and ultimately change the face of engineering.

2016 *FIRST*® Championship Conference Session and Workshop Descriptions

9:00-10:00 am

How to Make *FIRST*® a Lettered Sport in your State

Ferrara Theatre

Ray Almgren, Chairman, ***FIRST***® in Texas
Don Bossi, President, ***FIRST***®
Sherry Comer, Director of Afterschool Services/ ***FIRST***® Robotics, Camdenton R-III Schools
Amy Doherty, Program Specialist, Minnesota State High School League
Mark Lawrence, Chairman, Minnesota ***FIRST***® Regional Planning Committee
Carol Scully, Regional Director, Connecticut for NE ***FIRST***®
Laurie Shimizu, Minnesota Senior Mentor, ***FIRST***®

Wikipedia describes a varsity letter as ...”an award earned in the United States for excellence in school activities. A varsity letter signifies that its winner was a qualified varsity team member awarded after a certain standard was met.” Today’s panel believes that ***FIRST***®, as Sport for the Mind™, does qualify as a varsity sport and can meet the standard required. State representatives who have done so or are in process (Connecticut, Minnesota, Missouri and Texas) will share what they’ve learned to help your team do the same. While there are variables in each state, the panel will tell of their individual experiences, offer tips and provide easy to follow instructions.

9:00-10:00 am

Think Outside the KOP: Building FTC Robots Using Alternative Materials

US New York

Gaige Moore, Primary Builder, Programmer and Driver, FTC Team 247
J. Stephen Pendergrast, Teacher, Pope John XXIII High School

The FTC robot rules have broadened in the past few years, making it possible to use a very wide range of materials not in the standard kits. Some teams are using virtually no Matrix or Tetrix structural elements at all on their robots, and reaping some advantages. This session will explore the use of extrusions, plastics (including 3D printed, CNC router cut, and manually fabricated), and some more exotic materials that are all FTC legal and can give teams not only advantages on the field, but also expose students to real world fabrication techniques that go beyond the kit of parts. Hands on activities include plastic bending and bonding, using t-slot extrusions to mount motors and create drive trains and chassis elements, building mechanisms such as rack and pinion drives entirely from HDPE plastic.

10:30-11:30 am

Creating and Managing Explosive Growth on your FRC Team

AC 265/6

FRC Team 1325, Inverse Paradox

Do you have a large FRC team? Do your resources not correspond to the size of your team? Ditto! FRC Team 1325 Inverse Paradox has been there and faced the difficulties of having to manage a team that experiences growth past what we were usually capable of handling. In this presentation we will go over ways our team handled growth and implemented measures for sustainability and inclusion of all team members. We'll help teams create a general model so that they may take this knowledge and apply it to their situation.

2016 *FIRST*® Championship Conference Session and Workshop Descriptions

10:30-11:30 am	**FRC Vision: Tips and Tools for Success** Greg McKaskle, Chief Software Architect, National Instruments Brad Miller, Director *FIRST*® / WPI Research Group, Worcester Polytechnic Institute Computer vision is a hard problem, but there are many ways to increase your chances of success. The presenters will demonstrate a number of hardware and software tools and techniques to help your team find the best way for your team to accomplish its vision goals. Content will cover camera and processing choices, and a review of GRIP development and goals.	AC 275
10:30-11:30 am	**How to Get Certified as a Java Programmer** Jeanne Boyarsky, Java Developer, Author and Technical Mentor to FRC Team 694 This session will cover how to get certified as a Java Programmer which helps with internships/getting a job. It also helps with gaining a deeper understanding of Java. Participants will learn about Oracle's Certification program including the relationships between exams and versions of Java. The main focus will be techniques and examples for becoming a better programmer and learning Java on a deeper level. You can even win a free autographed copy of the book!	AC 276
10:30-11:30 am	**Anything But Ordinary: Harness Your Creativity to Drive Innovation and Expression in the Real World** Saura Naderi, Staff Career Development Specialist, Qualcomm Technologies, Inc. In this session, Robot Saura will explore the many faces of engineering and in particular how creativity influences innovation across many disciplines. She'll share examples of her own personal story and how you can get inspired to use your creativity and technical talents to make a positive impact in the world.	Ferrara Theatre
10:30-11:30 am	**Re-Engineering the Classroom with *FIRST*® Tech Challenge** Drew McConnell, Digital Learning Manager, *FIRST*® No matter how far teams get in competition, ***FIRST***® Tech Challenge is an extraordinary learning experience - one that is not always rivaled by traditional classroom instruction. So why not bring ***FIRST***® Tech Challenge into the classroom? This workshop will show and discuss the free project-based curriculum ***FIRST***® has created around ***FIRST***® Tech Challenge to help teachers and administrators provide more authentic, real-world learning to their students.	US New York
12:00-1:00 pm	**Knowing Your Opponent: Learn Scouting Strategies and How to Use Tableau for Improved Decision-Making** Andrew Raine, Manager, Fiat Chrysler Automobiles and coach, FRC Team 2834 Kevin Zheng, Chief Strategist and Tactician, FRC Team 2834 This session will explain how any team can create powerful metrics for scouting, how to make better and faster decisions using Tableau, and how to effectively use scouting data for alliance strategy. It will include an overview of data collection methods, how to import data to create basic visualizations in Tableau, and how to apply this information in the competition.	AC 265/6

2016 *FIRST*® Championship Conference Session and Workshop Descriptions

12:00-1:00 pm	**Walt's STEM Toolbox: Using "Outreach in a Box" and "Camp in a Can" to Inspire Any Community** Ashley Gravlee, Manager, Corporate Responsibility, Novelis Inc. Ria Raj, FRC Team 2974, Walton Robotics Khyati Shah, FRC Team 2974, Walton Robotics Planning and hosting outreach activities seems overwhelming to many *FIRST*® Teams. Team 2974 has a solution to this dilemma: Walt's STEM Toolbox, a free line of outreach and camp kits available to FTC and FRC teams. We will show how all teams -- even rookies -- can use these kits to quickly and cost effectively host educational outreach events and camps, demonstrate STEM leadership, and raise funds for their teams with minimal planning and expertise. Teams can order Toolbox kits at the session.	AC 275
12:00-1:00 pm	**Dumpster Diving: How to Get Stuff for Your Team for Free or at Little Cost** Kathie Kentfield, Director, NEMO (Non-Engineering Mentor Organization) Dumpster diving is but one of many ways for your team to acquire free materials! In this session I'll share tips for how to obtain low-cost or free items for your team as well as some pitfalls to avoid.	AC 276
12:00-1:00 pm	**A New Currency for Winning Friends & Influencing People in the World** Vikrum D. Aiyer, Chief of Staff, United States Patent and Trademark Office The currency that runs the world has fast transitioned from money and things, and moved to ideas. Ideas that spark technologies & invention not only re-imagine the way we interact with the world, but now they can be digital transmitted to any corner of the world – sparking curiosity among those we've never met; and empowering someone of any age or background to build on those ideas and unleash even newer innovations. Now more than ever, harnessing your mastery of science & technology can make you an entrepreneur who builds the next great company before you even have your first job. It can change the way the world looks, and change the makeup of what the people look like who change the world. It can position you to alter the way the White House or the United Nations think about the laws that spark science. And it can position you to be more than you or your friends ever imagined a robotics expert, or a scientist was "supposed to be."	Ferrara Theatre
12:00-1:00 pm	**Building a Test Bed for FTC Robot Components** Sig Johnson, FTC Team 8923, Perpetual Velocity With the initial goal of testing battery health, Swerve Robotics Club created a multi-component test bed that can be used for a variety of purposes including battery health testing, off-robot substitution testing of components, and more. This presentation will cover design, construction, uses, and findings of the test bed.	US New York

2016 *FIRST*® Championship Conference Session and Workshop Descriptions

1:30-2:30 pm

eLearning Resources for CAD Software & 3D Printing — AC 265/6

Chad Makings, Education Team, SolidProfessor
Matt May, Education Team, SolidProfessor
Rei Rivera, Education Team, SolidProfessor

This session will discuss the role of ongoing training and on-demand educational resources as they relate to software and hardware during ***FIRST***® competitions. Many teams struggle with using the resources available to them due to lack of skills or experience. A resource like SolidProfessor can help.

1:30-2:30 pm

FRC Robot Simulation using Gazebo and SolidWorks — AC 275

Justin Manzo, Ph.D., Manager, Center for Robotic Systems and Simulation, Booz Allen Hamilton, Strategic Innovation Group
Brad Miller, Director ***FIRST***® / WPI Research Group, Worcester Polytechnic Institute
Peter Mitrano, ***FIRST***® / WPI Research Group, Worcester Polytechnic Institute
Logan Tutt, ***FIRST***® / WPI Research Group, Worcester Polytechnic Institute

Simulation has been used by robotics researchers for years as a way of testing algorithms and verifying designs. Gazebo, one of the most used simulation programs for robotics and the tool used for the DARPA Robotics Challenge was chosen for this project. Teams can import CAD models directly into simulation and run the same code in the simulator as teams would use for the actual robot. We will show the steps required to get your robot models into simulation and write programs to operate the robot and get feedback from the sensors. Then we'll discuss future directions that the project might be going.

1:30-2:30 pm

From Inventing to Reality – The Journey of Making Your Invention Real with Global Innovation Award Winning Team Storm — AC 276

Caleb Boutell, Elise Boutell, Devon Langley, Lori Langley (coach), Tom Langley (coach), Trevor Langley, Kira Lenderman, Aidan Truby--FLL Team 100, Team Storm

Global Innovation Award Winners Team Storm will share the journey they have taken since first inventing their ROY.G.BIV math App—discover how they designed this totally innovative tool to help teach math to dyslexic children and how they have adapted their invention after doing user testing. They'll discuss how they use the engineering design process to innovatively approach their ***FIRST***® **LEGO**® League Project each season and give tips for how you can too. They'll share examples of how they applied this process for each step of their successful App invention. You'll leave feeling ready to take your new found knowledge home and start inventing today! Stop by the ***FIRST***® booth outside the Innovation Faire to see their App in action.

2016 *FIRST*® Championship Conference Session and Workshop Descriptions

1:30-2:30 pm — **Networking & Collaboration: Kicking Up FTC Team Culture** — US Illinois

Bob Payne, Mechanical Engineering Instructor, SUNY Polytechnic Institute
Lisa Marie Payne, Business Consultant & Founder FTC TEC Network
FTC Team 4082,The RoboSpartans Team Members: Timothy Ha, Douglas Hotvedt, Oscar Klempay, Gwyneth LaMarche, Daniel Michaels, Ryan Payne, Matthew Strachen, Kevin Valete

RoboSpartans 4082 coaches and team members will share how social media networking has played an important role in connecting teams, spreading knowledge, forming collaborative partnerships and creating lifelong friendships in the ***FIRST***® Tech Challenge community. Learn how developing collaborative peer groups can improve student confidence and knowledge while creating long term alumni networks.

3:00-4:00 pm — **Utilizing Agile in a *FIRST*® Team Environment** — AC 265/6

Robyn Stephens, Study Manager, Social and Scientific Systems
Chris Wilkes, Project Manager, Lockheed Martin

Agile methodology is typically used in software development in a corporate environment. In our presentation we will explore ways to apply Agile methods to any ***FIRST***® team's typical season and the direct benefits of early adoption. It is likely as ***FIRST***® students "go pro" they will encounter the use of Agile methodology and will need enough introduction and practice to feel confident as they enter the workforce. This session is ideal for coaches, mentors, FLL, FTC, and FRC team members.

3:00-4:00 pm — **What's So Special about *FIRST*®?** — AC 275

Cathy Burack, Associate Director, Senior Fellow for Higher Education, Center for Youth and Communities, Heller School for Social Policy and Management, Brandeis University
Alan Melchior, Associate Director and a Senior Fellow at the Center for Youth and Communities, Brandeis University

This is a focused discussion about what makes ***FIRST***® a unique experience for team members, their families and coaches as compared to lots of other extracurricular and school activities that include team work or group projects. The discussion will be facilitated by members of the Brandeis University evaluation team, and will assist them in better understanding the impact of ***FIRST***®. Team members, families and coaches who participate will gain a deeper understanding of the benefits of participating in ***FIRST***® and the ways in which program elements make a difference.

3:00-4:00 pm — **Taking Your *FIRST*® Steps Into FLL and FLL Jr.** — AC 276

Drew McConnell, Digital Learning Manager, ***FIRST***®

Contrary to popular belief, not everyone jumps at the challenge of building a robot - or coaching a group of kids to build a robot. Those of us already participating in ***FIRST***® often forget how complex and intimidating these programs are. Many people have been dissuaded from starting a team because of the difficulty and lack of guidance. Not anymore! This session will debut a new step-by-step guide ***FIRST***® has created for first-time coaches. This guide will help even the busiest, non-technical coach walk into each practice prepared and confident.

2016 *FIRST*® Championship Conference Session and Workshop Descriptions

THURSDAY, APRIL 28 | WORKSHOPS | AMERICA'S CENTER UNION STATION

8:30-10:30 am	**Broadening Your *FIRST*® Innovation Skills Workshop** Yvonne Cooper, Senior Director of Marketing & Communications, XPRIZE® Eric Druker, Director of NextGen Analytics Solutions, Booz Allen Hamilton Juan Valentin, Education Program Advisor, Office of Education and Outreach (OEO), United States Patent and Trademark Office (USPTO) Representatives from Rockwell Collins, John Deere, NRG Energy Learn from the Global Innovation Award sponsoring organizations how their companies foster innovation and invention. What are the skills that each of these companies looks for when they are hiring inventors and innovators? Through stories of what innovation skills real-world companies are looking for, you'll leave inspired and ready to focus on your own innovative thinking within ***FIRST***®.	AC 274
8:30-10:00 am	**Big Bacon Theory of Image and Marketing, Branding and Marketing your Team** Elise Cronin-Hurley (coach), Jordan Godwin, Sarah Holman, Ruhi Lankalapalli, Dominic Canora and Sebastian Hedge--FRC Team 1902, Exploding Bacon Whether you are a veteran team looking to rebrand or a rookie team finding your niche, a marketing strategy provides greater sustainability of ***FIRST***® teams for recruiting and retaining students, mentors and sponsors. We will give you the tools to evaluate where you are and how to develop a strong marketing and image foundation to reach your target audiences.	AC 275
8:30-10:30 am	**WeDo 2.0 Hands-on Training** Alisha MacIntyre, International Competitions Manger, **LEGO**® Education Breigh Rhodes, LEAP Teacher & Educational Source Specialist for the WeDo 2.0 curriculum Come build and explore **LEGO**® Education's recently launched WeDo 2.0. WeDo 2.0 will become the platform for ***FIRST***® **LEGO**® League Jr. teams, and will help the young students begin to innovate, program, build, and learn about the engineering design process. This session will give an introduction to WeDo 2.0 and show how it will be used in the ***FIRST***® **LEGO**® League Jr. program.	US Illinois

2016 *FIRST*® Championship Conference Session and Workshop Descriptions

11:00-1:00 pm | **Best Practices Workshop: School Engagement & Adoption** | AC 274

Mark Greenlaw, Vice President of Strategy and Impact, *FIRST*®

Mark Greenlaw, VP of Strategy & Impact at *FIRST*®, will facilitate a workshop to gather best practices from experienced educators on how they've successfully grown *FIRST*® in their schools and districts. Mark will provide a 20 minute overview of the *FIRST*® School Engagement Strategy, including the findings from interviews he conducted this past year with over 20 teachers and administrators running *FIRST*® programs in their districts. He will then facilitate a session in which he will gather best practices from the workshop attendees. If you have best practices to share on *FIRST*® adoption, or want to learn from other educators who've been successful in growing *FIRST*® in their districts, this is a session you won't want to miss.

11:00-1:00 pm | **Crowdfunding a Robotics Team, One Sprocket (or LEGO®) at a Time** | US Illinois

Monique Dituri, Teacher, Clifton High School, FRC Team 3314, The Mechanical Mustangs
Additional Panelists from other FRC Teams

Crowdfunding is the raising of funds from many small sources (ranging from $10 to $100) typically utilizing the Internet and social media. Over the last 5 years, crowdfunding has become almost commonplace for raising money for new inventions, projects, artists, etc. Many crowdfunding sites have different purposes and each site has its own unique characteristics and followings. The three major crowdfunding sites: Kickstarter, Indiegogo, and GoFundMe have been used to raise over a billion dollars for many projects over the last 3 years. Donorschoose.org, a crowdfunding platform for teachers, has currently funded over 600,000 classroom projects - over $421 million dollars. The panel of presenters will discuss their experiences on each site and the pros and cons of the sites. Teachers will be able to set up a Donorschoose.org account and create their first project. Please bring your laptop!

1:30-3:30 pm | **Advocacy and *FIRST*®: Learning How to Build a *FIRST*® Movement with Elected Officials** | AC 274

Don Bossi, President, *FIRST*®
Jim Burger, *FIRST*® Government Relations Council, Partner, Thompson Coburn LLP
Steve Hyer, President and Founder, IGD Solutions Corporation
Erin McCallum, President, Washington *FIRST*® Robotics.

Hear from the President of *FIRST*®, Don Bossi, *FIRST*®'s Lobbyist Jim Burger, Founder of *FIRST*®'s National Advocacy Conference Steve Hyer and Team RUSH FRC Team 27, and founder of *FIRST*® Day at the State Capitol Washington *FIRST*® and Skunkworks FRC Team 1983.

Learn how to start a local advocacy program and grow it to achieve statewide recognition and funding of *FIRST*® and then expand your efforts nationally. Hear success stories from mentors and students from Washington, Michigan, and other states as well as from our nation's capital! We need your help to make sure *FIRST*® is on the map and partnering with our elected officials from coast to coast.

2016 *FIRST*® Championship Conference Session and Workshop Descriptions

1:30-3:30 pm | **Chairman's Chat** | Ferrara Theatre

John Larock, Coordinator, FRC Team 365, The Miracle Workerz
FIRST® Hall of Fame Teams
Championship Chairman's Award Judges

The annual Chairman's Chat at the *FIRST*® World Championship is a panel discussion with representatives from *FIRST*® Hall of Fame Teams, who have previously earned the top award in *FIRST*® Robotics Competition. The panel will also include at least one Championship Chairman's Award judge. Come and hear personal team journeys to achieve the *FIRST*® Chairman's Award.
The format is an open Q&A.

1:30-3:30 pm | **_FIRST_® Tech Challenge Technology Forum** | US New York

Bob Atkinson, Bioengineering Graduate Student, University of Washington
Andy Baker, President and Owner, AndyMark
Steve Barker, Co-Founder, Modern Robotics
Danny Blau, Design Engineer, AndyMark
Jonathan Berling, Software Engineer, Qualcomm Technologies, Inc.
Thomas Eng, *FIRST*® Tech Challenge Engineer, *FIRST*®
Tim Lankford, Robotics Application Specialist, Pitsco Education
David Levy, Technology Director, American Association for the Advancement of Science
Liz Looney, Senior Software Engineer, Google
Craig MacFarlane, Technical Leader, Cisco Systems
Phil Malone, Founding Director, GEARS, Inc.
Justin Mathews, Electronics Engineer, Modern Robotics
Colton Mehlhoff, Engineer, Modern Robotics
Molly Nicholas, Engineer, Qualcomm Technologies, Inc.
Mark Stults, Director of Operations, AndyMark
Paul Uttley, Engineer and R&D Manager, Pitsco

This session will provide participants with an opportunity to talk with the *FIRST*® Tech Challenge technology volunteers and vendors about hardware, electronics, and software used for the *FIRST*® Tech Challenge competition. Participants will have the opportunity to provide feedback, ask questions, and talk directly with the engineers and developers who provide the technology used for competition.

Meet and Greet the Vendors
Pitsco (Tetrix)
AndyMark
Modern Robotics

Meet and Greet the Developers
QualComm Technologies, Inc.
FTC SDK development volunteers
MIT App Inventor development volunteer

2016 *FIRST*® Championship Conference Session and Workshop Descriptions

FRIDAY, APRIL 29	SESSIONS	AMERICA'S CENTER UNION STATION

9:00-10:00 am	**Innovation Challenges Focus Group (open only to FTC/FRC Team members)** Sarah Stray, Innovation Awards Manager, *FIRST*® *FIRST*® wants to hear from you! We are conducting focus groups around the topic of Award/Challenge Competitions for innovation. What kinds of innovation awards/challenges/competitions would interest you? If you're interested in inventing and innovation, come share your creativity with us and let your blue sky ideas soar. *Please note: Focus group opinions and information is always kept strictly confidential.*	AC 265/6
9:00-10:00 am	**Students with Learning Differences Can Succeed in *FIRST*®** Kenny Bae, Teacher, The Wolcott School Ella DeCastro, Ben Ginsberg, Victor Odelbo, Kylie Palles, Tyler Radoha, Diego Sanchez, FTC Team 8728 Wolcott School is Chicago's premier independent college prep high school dedicated to students with learning differences. Advances in technology offer new opportunities to change the lives of children who struggle with learning differences that include dyslexia and ADHD. Children with intellectual differences often struggle with traditional educational tools. The experiences through *FIRST*® helped provide students with more confidence in STEM and careers in STEM. Engagement was significantly higher in the classroom. This presentation led by students with learning differences, will discuss experiences and challenges of participating in *FIRST*® through interactive/hands on activities.	AC 276
10:30-11:30 am	**Getting into Grantworld - Resource Development for Robotics** Melody Ricci, Regional Director, Wisconsin *FIRST*® Grants can be a daunting and time consuming endeavor. This presentation will provide information for those who have wondered how to "Get into Grantworld" and provide practical techniques on where to search for grants and the next steps once you find the perfect grant opportunity. Grant elements that are common to most proposals will be reviewed including the needs statement, program goals, objectives, evaluation plan, and project sustainability. Writing a grant is just the first step. Stages of the grant application process will be explored along with how to take the extra steps of forming purposeful partnerships, and responding effectively to each unique funding opportunity. Resources will also be shared utilizing the *FIRST*® Fundraising Toolkit for proposal & program success.	AC 265/6

2016 *FIRST*® Championship Conference Session and Workshop Descriptions

10:30-11:30 am | AC 276

Unified Robotics™: Empowering Students with Special Needs through Robotics

Delaney Foster, Founder and CEO, FRC Team 4911, CyberKnights
Noelle Foster, Digital Media and Public Relations, Reign Sports Management
Eva Lu, FRC Team 4911, CyberKnights
Tammy Nguyen, FRC Team 4911, CyberKnights
Lauren Stroemel, Lead Engineer, FRC Team 4911, CyberKnights
Mikel Thompson, Teacher, King's High School
Daniel Wang, FRC Team 4911, CyberKnights

Unified Robotics™ brings the sport of robotics to high school students with special needs by partnering students of diverse populations and abilities as teammates and competitors on the field of play – providing leadership opportunities and paving the way for community-wide social inclusion. Our panel will discuss the tremendous impact this program has had on our team and the students we work with, and provide tools for teams to adopt this program at their school. Through experiences like Unified Robotics, we will break down stereotypes around individuals with intellectual disabilities, autism, and behavioral challenges.

10:30-11:30 am | Ferrara Theatre

MIT Launch: Top Myths of Entrepreneurship

Laurie Stach, Founder and Executive Director, MIT Launch

Becoming an entrepreneur is hard, but what makes it even more difficult is navigating the myths about the startup world. This session will debunk some of those myths, while sharing stories of high school entrepreneurs who have been through the MIT Launch program.

10:30-11:30 am | US New York

FIRST® **in Class: Learn How You Can Bring *FIRST*® Tech Challenge to the Classroom**

Adam Martin, Senior Technical Support and Special Projects Engineer, Intelitek
Justin Stephens, Global Product Manager, Intelitek
Rebecca Whitaker, ***FIRST***® Tech Challenge Affiliate Partner, University of Iowa

The presentation will focus on the educational benefits & impact of bringing ***FIRST***® Tech Challenge into the classroom using a comprehensive Project Based Learning curriculum. The session will provide a hands-on peek into a soon to be introduced curriculum program, developed through a collaboration between education industry leaders ***FIRST***®, Intelitek and Pitsco. Topics covered will include the on-line learning portal and curriculum, virtual programming software 'Coderz' and supporting Professional Development.

2016 *FIRST*® Championship Conference Session and Workshop Descriptions

10:30-11:30 am

The All-Plastic FTC Robot: A Case Study in Organizing a Team around CAD/CAM/CNC

US Illinois

Gaige Moore, Primary Builder, Programmer and Driver, FTC Team 247
J. Stephen Pendergrast, Teacher, Pope John XXIII High School

In this presentation, Gaige will discuss the pros and cons for using an all-plastic robot. She will explain the cost, fabrication and assembly time, the tools needed, the life span of the plastic, and the ability to make custom parts. Gaige and her team, 247, built an all-plastic robot this season, which will be used for demonstration purposes. At the end of this presentation, the viewers will leave with new ideas on how to build their robots in future seasons.

12:00-1:00 pm

Not Just ALoTO Talking: Engaging Diversity and Inclusion

AC 265/6

FTC Team 10107, A League of Their Own

This presentation will define both Diversity and Inclusion and ideas to implement them into teams of all sizes. We will break down and reconnect the core of both topics. Our team of 11 students will present by using Powerpoint, Lecture, Survey Results, Live Performance, Music, ALoTO Humor, & Handouts.

12:00-1:00 pm

Beyond Advocacy: Growing *FIRST*® in a New 21st Century Education Model

AC 276

FRC Team 1311, Kell Robotics

Tackling the challenge of giving every student access to ***FIRST***® and fixing STEM education is just like the game of ***FIRST***® Stronghold. Obstacles and challenges exist everywhere and at every turn. This presentation will explain how to advance past advocacy and help political and educational policy makers define and embrace and support ***FIRST***® programs as part of the movement toward a new 21st Century Education Model. Our discussion will focus on the development of the model, its benefits to STEM education, and implementation requirements. We will provide a strategy for bringing political, educational (including Colleges and Universities), and business leaders together to obtain the support needed for success.

2016 *FIRST*® Championship Conference Session and Workshop Descriptions

12:00-1:00 pm

Make the Future with Software + Data

Ferrara Theatre

Sky Matthews, IBM Distinguished Engineer and Chief Technology Officer, IBM's Watson Internet of Things

The availability of cheap sensors, easy connectivity and vast compute power in the cloud have triggered the most rapid period of invention we have seen in our lifetimes. The internet of things will add massively to our understanding and our ability to control the world around us. Some of the exciting changes are enabled by new ways of interacting with our things. We no longer need keyboards and advanced degrees to control our devices. Sky will give some examples of how thinking machines like IBM's Watson will make the benefits of technology more accessible to a much broader range of people, and how you yourselves can easily make use of these technologies. Sky will also give examples of the value of data and how you can combine simple sensor data inputs to develop amazing new capabilities. The possibilities for innovation are now truly limited only by … your mind!

Use The Force - Move a BB-8 with Your Mind
Hilton and IBM Pilot "Connie," The World's First Watson-Enabled Hotel Concierge

12:00-1:00 pm

Taking Your *FIRST*® Steps Into FLL and FLL Jr.

US Illinois

Drew McConnell, Digital Learning Manager, *FIRST*®

Contrary to popular belief, not everyone jumps at the challenge of building a robot - or coaching a group of kids to build a robot. Those of us already participating in *FIRST*® often forget how complex and intimidating these programs are. Many people have been dissuaded from starting a team because of the difficulty and lack of guidance. Not anymore! This session will debut a new step-by-step guide *FIRST*® has created for first-time coaches. This guide will help even the busiest, non-technical coach walk into each practice prepared and confident.

1:30-2:30 pm

Forget the Flying Car: The Future is So Much Better

AC 265/6

Alexandra Heckler, Lead Associate, Booz Allen Hamilton
Steven Miller, Senior Lead Engineer, Booz Allen Hamilton

Car connectivity and autonomy are paving the way for an entirely new definition of vehicle. You need to know what's coming—and what's already out there on the road! Learn how data analytics, cyber security, robotics, engineering—and skills learned through *FIRST*®—are changing the driving experience and auto manufacturing. Content presented by *FIRST*® Strategic Partner Booz Allen Hamilton.

2016 *FIRST*® Championship Conference Session and Workshop Descriptions

1:30-2:30 pm	**Focus Group: Building Inclusive Teams (open only to FTC/FRC Team members)** Michelle Brown, Project Manager and Subject Matter Expert, National Alliance for Partnerships in Equity (NAPE) Through three online courses set to launch by early 2017, ***FIRST***® will be able to train coaches to implement specific strategies for improving equity, access, and diversity among the teams, to ultimately expand opportunities for every student to see a future in STEM. We need coaches, team members and mentors to join us for a focus group to better understand your needs. Your voice is critical to help us create courses optimized to build ***FIRST***®'s capacity to build inclusive teams that support student access and success. *Please note: Focus group opinions and information is always kept strictly confidential.*	US Illinois
3:00-4:00 pm	**Robots in the Outback** Tyler Evans, Engineer, NASA Andy Marshall, Iowa Senior Mentor, ***FIRST***® James McArthur, RoboCamps Coordinator, Australia Building ***FIRST***® communities while traveling the Australian Outback, we mentored amazing team development with a 2 day visit and virtual (remote) support. Review the “Robots in the Outback” RITO 2.0 playbook and hear the mentors/students stories from this year’s 2 week journey of 3,100 miles and starting 9 teams. Inspire large sponsors to empower your jump-starting new teams that are remote and/or socio-economically disadvantaged. Be the catalyst for successfully launching the student owned business of robotics.	AC 265/6
3:00-4:00 pm	**Inspiring Women in STEM** Aaron Willcock, Computer Science Student, Wayne State University This session will provide a presentation and discussion of the creation and maintenance of environments that actively support women in STEM, close the gender gap, and provide top-down support for equality initiatives. The problems of inadequate support of women in STEM and the gender gap will be defined and analyzed. The session will identify challenges faced by women in STEM and the forms of resistance adopted by women as countermeasures. Methods of instruction, leadership, and construction of supportive environments will be discussed including the Kolb Learning Cycle, Participative Leadership, and Empowered Leadership. Tools for engaging and understanding the challenges of maintaining supportive environments will be presented including Shame Resilience Theory and Imposter Syndrome. The session will also contain a question, answer, and discussion segment for participants.	US Illinois

2016 *FIRST*® Championship Conference Session and Workshop Descriptions

FRIDAY, APRIL 29 | WORKSHOPS | AMERICA'S CENTER UNION STATION

8:30-10:30 am	**Project Management & Team Logistics** Clayton Ou, Student, University of California-Davis, Mentor, FRC Teams 115, 1678, 3501 Novia Wong, Student, San Jose State University, Mentor, FRC Teams 604 and 846, FLL Teams 16333 and 17419 Participants will get an in-depth presentation on techniques of self and team management to keep their teams organized and sustainable in the long term. In a guided environment, participants will also practice what they learned by addressing real scenarios that teams may encounter during the year through a hands-on board game activity.	AC 274
8:30-10:30 am	**WeDo 2.0 Hands-on Training** Alisha MacIntyre, International Competitions Manger, **LEGO**® Education Breigh Rhodes, LEAP Teacher & Educational Source Specialist for the WeDo 2.0 curriculum Come build and explore **LEGO**® Education's recently launched WeDo 2.0. WeDo 2.0 will become the platform for ***FIRST***® **LEGO**® League Jr. teams, and will help the young students begin to innovate, program, build, and learn about the engineering design process. This session will give an introduction to WeDo 2.0 and show how it will be used in the ***FIRST***® **LEGO**® League Jr. program.	AC 275
8:30-10:00 am	**Women in STEM: Things We Want You to Know** Nicki Bonczyk, Machine Designer, JR Automation Alissa delSol, Transmission Wholesale Services Manager, Florida Power and Light Company Sophie Hoge, Production Supervisor, John Deere Seeding Group Jennifer J. (JJ) Klenke, Business Analyst, North America Commercial IT, Monsanto Linda Maulding, Mechanical Engineer and Entrepreneur Kate Nolan, Materials/Process Engineer, The Boeing Company Carla Proulx, Alliances Manager, ***FIRST***® Archana Saxena, Software Quality Engineer, UL M. Dianne Simmons, IT Director, FEDEX Brigid Toner, Liners Machining Supervisor, Caterpillar, Inc. Sam Viron, SELF Fellow, University of Kansas Elaine Wilder, IT Project Manager, UL Prominent career women working in technology fields and ***FIRST***® Alum pursuing STEM related degrees will candidly share their experiences, challenges and earned wisdom with girls considering industry careers. They will cover subjects like changing careers; how men and women think differently; the importance of confidence; ways for women to be recognized as key contributors in the male dominated STEM arena and will answer questions about everything and anything YOU want to know.	Ferrara Theatre

2016 *FIRST*® Championship Conference Session and Workshop Descriptions

11:00-1:00 pm — **Go Ahead, Be Disruptive** — AC 274

Keith Gargiulo, VP Global Services, PTC

When the world changes, it changes in a hurry. However what looks like overnight success is almost always the product of many years of steady, incremental work that has suddenly hit the bend in an exponential curve. See Slingshot, for one of many examples. This can be seen all around the world of technology in topics such as the Internet of Things, augmented reality, robotics, autonomous systems, 3D printing, drones, sensor technology, hyperconnectivity, and more. In this workshop we will discuss how these technologies are exponential, the ways in which ***FIRST***® has been ahead of the curve on many of them, use a real-life example to illustrate how convergence of these technologies will accelerate during the first career of today's ***FIRST***® students (you didn't think you would only have one, did you?), and challenge ***FIRST***® to stay ahead of the curve in the latest industrial revolution of the Internet of Things.

11:00-1:00 pm — **Equity, Diversity & Inclusion Messaging Workshop** — AC 275

Shelley Henderson, Diversity and Inclusion Manager, ***FIRST***®

This session will equip participants with essential information to help ***FIRST***® achieve its strategic objective of making itself more inclusive and better representative of the communities where teams are located. In order for ***FIRST***® to move to greater consciousness and competence together, we must establish a common understanding of equity, diversity, and inclusion concepts. Participants will walk away with an understanding of key concepts and common mistakes.

1:30-3:30 pm — **College Students as *FIRST*® Robotics Mentors** — AC 274

Steve Florence, Technical Services Manager, Purdue University School of Mechanical Engineering
Daniel Green, President, Purdue ***FIRST***® programs
Brad Miller, Director ***FIRST***®/ WPI Research Group, Worcester Polytechnic Institute

The goal of this workshop is to develop a collaborative vehicle for current college mentor programs that serve the ***FIRST***® Community and provide an implementation framework for new college based groups to. It will have four main goals: To identify colleges and college students currently mentoring ***FIRST***® team, develop a vehicle for collegiate program collaboration, develop a strategic plan for alumni outreach and involvement, and provide a framework for new or emerging college student mentor groups. The workshop will include a presentation by a group of existing collegiate organizations, followed by an open panel discussion and brainstorming of new approaches.

2016 *FIRST*® Championship Conference Session and Workshop Descriptions

1:30-3:30 pm | **Raising Innovators** | AC 275

Sarah Stray, Innovation Awards Manager, *FIRST*®
Parents of the *FIRST*® Future Innovator Award finalists sponsored by the Abbott Fund

Please join other parents and coaches (sorry no team members!) for an informal roundtable discussion on how you can best support your tinker-er, maker, divergent thinker? How do you create a culture of innovation at home? Whether you have a 6 year old bursting at the seams to take stuff apart and put it back together again or a full-fledged inventor in your machine shop basement, let's discuss how we can cultivate and support this type of innovative thinking. Come ready to share your own thoughts on how we can further encourage the next generation of STEM leaders to keep innovating.

1:30-3:30 pm | **Build a Booster Club to Sustain Your Team** | AC 276

Joe Baker, Parent and Booster Club Member, FRC Team 1671
Steve Canty, Boosters Club C-Founder and Vice President, FRC Team 4176
Callie Carbajal, alumna, 2015 CEO, and 2014 Dean's List Winner, FRC Team 1671
Joe Markee, Original Team Mentor, FRC Team 4176
Paul Lake, Teacher Advisor and team founder, 2015 Woodie Flowers Finalist, FRC Team 1671
Angie Person, Parent and Booster Club Member, FRC Team 1671
Paul Protentis, Booster President and Mentor, FRC Team 4176

Learn how two teams have created thriving Booster Clubs that include parents, community organizations and businesses. The Booster Clubs support their respective teams in many ways: raising money, feeding the teams during the build and competitions seasons, and mentoring students. These Booster Clubs are a big part of the success of these teams. Every team should have one! Hear from teacher advisors, former students, and parents.

2016 *FIRST*® Championship Conference Session and Workshop Descriptions

1:00-3:00 pm

FIRST® Tech Challenge Technology Forum

US New York

Bob Atkinson, Bioengineering Graduate Student, University of Washington
Andy Baker, President and Owner, AndyMark
Steve Barker, Co-Founder, Modern Robotics
Danny Blau, Design Engineer, AndyMark
Jonathan Berling, Software Engineer, Qualcomm Technologies, Inc.
Thomas Eng, ***FIRST***® Tech Challenge Engineer, ***FIRST***®
Tim Lankford, Robotics Application Specialist, Pitsco Education
David Levy, Technology Director, American Association for the Advancement of Science
Liz Looney, Senior Software Engineer, Google
Craig MacFarlane, Technical Leader, Cisco Systems
Phil Malone, Founding Director, GEARS, Inc.
Justin Mathews, Electronics Engineer, Modern Robotics
Colton Mehlhoff, Engineer, Modern Robotics
Molly Nicholas, Engineer, Qualcomm Technologies, Inc.
Mark Stults, Director of Operations, AndyMark
Paul Uttley, Engineer and R&D Manager, Pitsco

This session will provide participants with an opportunity to talk with the ***FIRST***® Tech Challenge technology volunteers and vendors about hardware, electronics, and software used for the ***FIRST***® Tech Challenge competition. Participants will have the opportunity to provide feedback, ask questions, and talk directly with the engineers and developers who provide the technology used for competition.

Meet and Greet the Vendors
Modern Robotics
AndyMark
Pitsco (Tetrix)

Meet and Greet the Developers
QualComm Technologies, Inc.
FTC SDK development volunteers
MIT App Inventor development volunteer

1:30-4:00 pm

***Most Likely to Succeed* Movie Screening and Discussion with Producer and Author, Ted Dintersmith**

Ferrara Theatre

Ted Dintersmith, Executive Producer and Change Agent

Most Likely To Succeed is the best film ever done on the topic of school — both its past and its future. The film immerses you in the lives of students and teachers at one school, then tells you not to copy them. Instead, each school is encouraged to create its own learning environment, leveraging the passions, expertise, and aspirations of its community. It inspires its audiences with a sense of purpose and possibility, and is bringing school communities together in re-imagining what our students and teachers are capable of doing. After seeing this film, you'll never look at school the same way again.
Discussion will begin immediately after the conclusion of the movie.