Event Timeline and Checklist

Time	Topic	Actions/Tasks	Notes
1 year+	Site Setup	Choose a venue	Any school, manufacturing facility or public space that is interested in hosting the competition and meets the site requirements is acceptable. **Space Requirements and Site Information** *Pit Area* 8000 sq. feet of space total (pits and viewing area) • A table is needed for each team • Need electrical – 110, double receptacle for every two tables; teams will bring their own power strips • Pipe/drapes around pit (or rope/stanchions) • Pit tables – (may be damaged) Non-skirted. If not available from venue can be rented at a party/event store. • Area for 1/2 test cages for fixing/testing robots. 4x4x4' Lexan box, need power for scale (Small competitions may only need 1 test cage. Also need small table for scale and paperwork *General Space Requirements* • Space will get dirty, floors will likely be scratched • Need way to load arena into the space. Be sure the unassembled arena you plan to use can get through the doors/hallways of your chosen venue. • Need way for pit area to be separate from competition area, easily secured but also close enough to competition area for easy team access. This can often be accomplished with Pipe and drape. • Need space for Documentation Judges and Interview judges to work and/or meet with teams. 3 separate classrooms are ideal if you plan to hold interviews. Otherwise, a table in a quiet area for the documentation judges will work. A separate room for Volunteer refreshments/lunch will also be needed. • Need available parking space for competition as well as load/unload space for Bots • Need access to food/concessions for teams and observers most, if not all day.
	Schedule	Determine competition date	Usually a Friday/Saturday in March or April. If you have over 30 teams consider holding safety inspections and interviews the day before the competition.
	Sponsorship	Start recruiting sponsors	Potential sponsors include local manufacturing companies, colleges and universities, and other local businesses. If you are connected to an NTMA Chapter, ask them to share sponsorship requests with their members. If this is not your first competition have volunteers call past sponsors to follow up. SEE FOLLOWING EXAMPLES.
	Site Setup	Program insurance needs	The competition should have a minimum coverage of liability insurance. Insurance can be obtained from the NTMA or contact your local provider. Contact Sarah Brooks (sbrooks@ntma.org) for more information.

National Robotics League

Invest in the Future of Manufacturing

Program Overview

The National Robotics League (NRL) is a manufacturing workforce development program of the National Tooling & Machining Association (NTMA) where students design and build remote controlled robots to face-off in a gladiator-style competition. Through the manufacturing process of robot building, students' imaginations are captured as they design, build and compete with their own robotic creations. Through this hands-on effort along with industry partnerships, students gain practical knowledge of Science, Technology, Engineering, and Math (STEM) - all essential skills for manufacturing.

By formalizing ties between schools or youth organizations and manufacturing partners, students gain a better understanding and become enthusiastic about the career possibilities in manufacturing. Also, manufacturers are able to build valuable industry-school connections and workforce talent pipelines by helping competitors engineer a lean, mean, fighting machine. In other words, everybody wins.

Why is the NRL Unique

The NRL is the only job-driven, project-based STEM learning experience that was created by industry to solve its biggest issue – recruiting a future workforce.

- Designing, building and testing a combat robot is a fascinating real-world professional manufacturing experience.
- Students learn the technical and critical thinking skills needed for the manufacturing jobs of today and tomorrow.
- Participating schools create relationships with local manufacturing companies to serve as their industry advisor.

- The NRL is the smart sport where all participants have the potential for a career in manufacturing.

Why is it Important

- There is a skills and interest gap in manufacturing. Companies cannot find qualified workers to fill their open positions. This problem is compounded by a rapidly aging workforce.
- 40% of the manufacturing workforce will be at retirement age by 2020, 77% by the year 2030.
- 2 million positions in manufacturing will be open within the next 10 years.
- 90% of parents recognize that a strong manufacturing base is critical to the US economy, but only 30% of parents would support their children in pursuing a career in manufacturing.
- The NRL attracts smart, capable students who love to build things and solve problems Exactly the type of people who we hope will make up the next generation of manufacturing leaders.

How does the program work?

The NRL provides a national structure for educational robotics competitions for the purpose of increasing traffic to manufacturing-related career opportunities and to provide NTMA chapters with a program that invigorate and grow the organization. Qualifying robotic programs join the NRL, which offers a fair, safe and cost effective environment from which to build, design and compete.

Student teams compete regionally to be able to test their robotic creations and battle for local supremacy. The NRL National Competition is held in May. Teams not only earn points for their arena battles, they are evaluated by industry experts on their engineering binder. The team's documentation binder and presentation points weigh heavily in the crowning of the National Competition's Grand Champion.

The competitions are something that the students can get excited about, but in actuality, they are developing technical skills in mechanical and electrical engineering, machining and welding along with 21st century skills in critical thinking, project management, communication and teamwork.

The Future and Your Role

The NRL has been successful in our initial mission—raising awareness of manufacturing careers—but there's still work to do. We understand the importance of attracting, preparing and empowering the next generation of manufacturing workers. The simple truth: manufacturing provides rewarding career opportunities and well-staffed companies become thriving companies. That ensures a bright future for American Manufacturing and our national economy.

In order for the NRL to translate its success from isolated regional benefits to a large, nationwide, impact the program needs to grow exponentially. The ultimate goal of the NRL is to have at least one regional program in each of the 48 contiguous states.

Your support gives this program the influx of financial resources it needs to grow.
The National Robotics League is looking for partners who want to strategically align with our efforts to the manufacturing industry with talents students who are the future workforce in a fun and challenging learning environment.

Your Impact as a NRL Partner

- Position your company as a thought leader and supportive of the education that will sustain the U.S. manufacturing resurgence.
- Build and enhance your corporate image in industry while shaping attitudes on the perception of manufacturing.
- Heighten visibility for the need to fill the manufacturing workforce pipeline
- Provide benefits to our mutual stakeholders – pair up industry, educators and students to support the manufacturing workforce pipeline.

- Allow our educators and students to participate in regional and national competitions by supporting the program infrastructure to reduce entry fees.
- Influence the career choices of our youth.
- Make connections to the next generation workforce and educators.
- Assist in building plan to improve the quality of education.

Benefits of Supporting the NRL

As a NRL partner, you'll receive the following:

- Promotion as a NRL partner in solving manufacturing's most critical issue – attracting and recruiting a future workforce.
- VIP invites to regional and national competitions for you and your guests providing you with the opportunity to witness these amazing students in action.
- On-site signage, print and digital exposure and pre and post-event exposure.
- The ability to volunteer at events and network with the manufacturers, students, educators and guests.
- Ability to interact with students by exhibiting at competitions.
- Opportunity to provide scholarships to students / additional award recognition.

Make the Investment

The time is now to make the investment in the NRL to ensure the future of American manufacturing. Support the NTMA's efforts to build a new manufacturing workforce that is technically skilled, enthusiastic and eager to become the next generation of industry leaders. Contact Tiffany Bryson to learn how you can make a difference.

About Us

National Tooling and Machining Association

The National Tooling and Machining Association (NTMA) as a representative of American manufacturing developed the National Robotics League (NRL) in 2009 both as a service to, and a community outreach program of, its member companies. The NTMA is uniquely positioned to manage and grow this program thanks to its existing network of manufacturers and chapter executives "on the ground" across the country.

NTMA's over 1,400 member companies design and manufacture special tools, dies, jigs, fixtures, gages, special machines and precision-machined parts. Some firms specialize in experimental research and development work as well as rapid prototyping. Many NTMA members are privately owned small businesses, yet the industry generates sales in excess of $40 billion a year. NTMA's mission is to help members of the U.S. precision custom manufacturing industry achieve business success in a global economy through advocacy, advice, networking, information, programs and services.

National Tooling and Machining Foundation

The National Tooling and Machining Foundation is a 501(c)3 nonprofit designed to fund manufacturing education—building skills while increasing awareness. Begun some 20 years ago by NTMA and run independently ever since, the foundation has helped create the National Institute of Metalworking Skills (with public partnership), provided the seed funding for the National Robotics League and annually funds NTMA's Brock A. Babb Memorial Scholarship (awarded to deserving high school seniors pursuing manufacturing careers)

As a 501c3 the NTMF serves as fiscal sponsor for the following NRL program elements: curriculum and resource development, regional program growth and support, and the national competition.

Time	Topic	Actions	Notes
9 months	Site Setup	Locate arena to use	If your region does not own an arena, or needs an additional arena contact Sarah Brooks (sbrooks@ntma.org)
	Marketing	Write/Post releases about event	**Write a press release when:** SEE FOLLOWING EXAMPLES • The competition date is set • A month before the competition to highlight work teams are doing • Two weeks before the competition to generate on-site and pre-event publicity
	Marketing	Promote in E-Trends & RECORD, NRL Newsletter	Forward information about your event information to Sarah Brooks (sbrooks@ntma.org) to be shared with the NTMA/NRL community
	Site Setup	Set up Concessions/Catering	Make arrangements for concessions if allowed by venue. Start with venue contract that they either often use or must use. Consider providing lunches to volunteers on Safety Inspection day and on the day of the competition. The venues contact, concessions or other options can be for teams.
	Team Registration	Create/update system for team registration	Team registration can be handled manually or electronically, depending on how many teams expected. SEE FOLLOWING EXAMPLES.
	Team Registration	Email initial registration form to teams	Email competition information concerning registration to all the teachers/coaches in your database. Copy Sarah Brooks (sbrooks@ntma.org) on that email if teams from outside your region are allowed to participate.
	Equipment	Determine rental equipment requirements	**Equipment Needed for Competition:** • Determine what can be provided by the host and what needs to be rented • Get recommendation from host for local vendors for AV and bleacher rental and catering • If tables/chairs are provided by host or rented, can host provide labor for set-up/tear down? • How early can space be set up in advanced of event? • 8′ tables for teams (depends on number teams, 1 table per team) • (6) 8′ skirted tables (team and volunteer registration, judge tables, competition bracket scheduler) • 170 ft of 3′ pipe & drape (depends on layout) • 200 chairs for teams, judges, registration etc. (depends on # of participants) • 5 sets of bleachers, seat 50 each (depends on size of competition) • Electric needed at team tables (each table has to have access to an electrical outlet) • AV and AV labor • Sound system • LCD projector • 9x12 screen • Camera and operator

Key Messages

The Manufacturing Industry Supports STEM Education

Strong STEM education programs in our middle and high schools, as well as colleges and universities, are essential to the future growth of industries like manufacturing. There are several hundred thousand skilled jobs in manufacturing right now that need to be filled. Our company owners know that and want to step up to do their part to make sure those education programs thrive and support our industry in the long run.

The NRL grabs the attention of students in ways other "career readiness" programs cannot.

Teenagers have a lot going on, and so it can be hard to allocate time and energy to learning the skills needed for a successful career. Combat robotics programs like the National Robotics League get around that problem by hooking young people with the fun, creativity and wow factor of designing their own sophisticated machine, and then following up with challenges that force them to expand their knowledge and skills. It just so happens that the knowledge and skills required to build a successful combat robot are the same ones required for a successful career in engineering or manufacturing.

Welcome to the new world of Manufacturing

One of the side benefits of this program is it gives students and their parents a chance to see what modern manufacturing looks like from the inside. Once people see what really happens inside today's manufacturing facilities, old views of what it means to work in manufacturing fade away and a whole new world of possibilities opens up for them. That's not only good for our companies, but for our economy as a whole.

National Robotics League Program Overview

What is it?

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Why is it unique?

- Designing, building and testing a combat robot is a fascinating real-world professional manufacturing experience
- Students learn the technical and critical thinking skills needed for the STEM jobs of today and tomorrow
- Participating schools create relationships with local manufacturing companies to serve as their industry advisor
- The NRL is the smart sport where all participants have the potential for a career in manufacturing

Why is it important?

- There is a skills and interest gap in manufacturing. Companies cannot find qualified workers to fill their open positions. This problem is compounded by a rapidly aging workforce.
- 40% of the manufacturing workforce will be at retirement age by 2020, 77% by the year 2030
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NRL SCHOOL RECRUITMENT FLYER

Are you looking for a fun, job-driven, hands-on experience to get your students excited about learning STEM skills that will lead to the careers of tomorrow?

Here it is.

National Robotics League
Integrating Robotic & STEM Initiatives in and out of the Classroom

Preparing Students for the Workforce

- Energizing students to learn about the manufacturing process and the technical skills needed for design and fabrication.
- Building partnerships and mentoring opportunities with local industry and post-secondary institutions.
- Providing direct application of classroom concepts to real world situations.
- Endowing students with the 21st century skills needed by industry including project management, teamwork and problem solving.
- Discovering the excitement and rewards of a career in manufacturing.

What Students Learn

Many core STEM skills are utilized and developed using the NRL initiatives in the classroom or in after-school programs.

Applied Academics: Math, Science, Engineering/Documentation, Technology and Research

Manufacturing Skills: Drafting/CAD, Machining, Electronics, Welding/Joining and Safety

Business Knowledge: Purchasing, Budgeting, Marketing, Fundraising, and Project and Time Management

21st Century Skills: Teamwork, Problem Solving, Communication, Leadership, Interviewing, Public Speaking and Critical Thinking

How do you Start a Program at Your School

Obtain Support

- Another teacher/volunteer with a different focus/interest. For example…
    - Tech Education, Robotics
    - English, Writing Specialist
    - Physics, Biology
    - Gifted Coordinator
    - Machining/Welding
- Another teacher/volunteer with the same focus/interest

Obtain Students ~ Need at least 3 to compete, 8-10 depending on student interest

- After school club
- As an in-class project
- As a focus for an entire classes curriculum

Contact veteran NRL teachers

- Contact a number of teachers located close to you/team (Have a list of go-tos)
    - Consider meeting one-on-one
    - Email/phone contact

Schedule Regular Meeting Time and Delegate Jobs

- In and outside of class

Use resource page on the NRL website

- Have students research Bot parts and designs
- Have students watch videos (YouTube, SWPA BotsIQ and NRL websites)

Meet with Industry Advisor

- Schedule regular meetings with the team
- What can the advisor provide in terms of time, material, funding etc.?
- Depending on advisors capabilities, when do they need materials/documents by?
- Schedule an industry tour
    - If that is not allowed due to company policy please indicate this in your team's documentation and contact Sarah Brooks (brooks@ncsquared.com)

Start Fundraising Efforts (Continuous)

- Team can host car washes, sell snacks, solicit area business

Obtain Tools

- Hand and power tools, Machining

NRL MANUFACTURING COMPANY FLYER

National Robotics League
NTMA's Workforce Development Program to Close the Skills Gap

Our education system is falling to keep pace with our economy and manufacturing companies are struggling to find skilled workers who can contribute to their growth. Rather than relying on traditional methods of recruitment, the most effective strategy to ensure your company's workforce is to take more control over your own labor supply for the future because you control the greatest currency in the marketplace – jobs.

The Time is Now to Invest in the NRL and the Future of Your Company

Why Should a Manufacturing Company Get Involved in the NRL?

- NRL is developing talented young people with a passion for innovation and technology combined with a sense of how they apply it in the manufacturing process.
- Mentoring is one of the most effective methods of attracting, retaining and developing talent.
- Leverages your institutional knowledge to ensure a strong base for years to come. Bridges the skills gap and builds a future workforce pipeline.
- Renews inspiration and positive feelings to company employees. Provides employee team building and training opportunities.
- Strengthens company reputation in the community. Provides rich and fun employee volunteer opportunities

What's in it for you?

- For those that participate, it is rewarding to get involved in the community and help prepare our students for the future.

- But this isn't about community service. You would be part of changing the culture, dispelling the myths and building a labor base for the future. We need to act now or all of our manufacturing companies will be in trouble down the road. It is – very simply – about sustainability of the labor supply.
- You would build out your network for the future. Most of all you will get employees out of this program if you work at it.

So what would your company have to do?

Each school is partnered with a local manufacturing company to serve as a technical advisor and as mentors. Being a technical advisor is a great way to get to know the team members, who might become future employees.

As a participant, your company would designate one or more of your employees to be technical advisors. The duties of a technical advisor include:

- Meet with the team when needed to assist with the design and planning. The frequency of the meetings can be determined by the faculty advisor and the technical advisor.
- Assist the tem with the process of building the bot. This could include machining parts, welding, etc. It can also include introducing the team to vendors.
- Provide a company tour so students can learn more about your facility and the benefits of working there.
- Some supply the team with resources.
- Time commitment – 40 to 60 hours, which can be spread out among several people.

Media Contact: Diane Wuycheck, 412-310-4151

Record 78 teams to compete in 10th Annual BotsIQ finals at CAL U April 24-25

Decade of building workforce development program based on collaboration

Pittsburgh, PA – Apr. 9, 2015 – A record number of 78 teams , 60 high schools and 1,000 students will compete in the tenth annual Southwestern Pennsylvania BotsIQ finals on Friday and Saturday, April 24-25, from 9 a.m. – 6:30 p.m., at the California University of Pennsylvania (Cal U) Convocation Center, with the awards ceremony after the bouts on Saturday. The event is free and open to the public. Butler County Community College and Westmoreland County Community College hosted March preliminaries.

In the ten years since the Pittsburgh Chapter National Tooling & Machining Association (NTMA) and a committed group of manufacturers and educators brought BotsIQ to southwestern Pennsylvania, the high-tech robotics competition has evolved into a manufacturing workforce development program.

The gladiator-style bouts of student-made, remote-controlled robots that began with six teams has sparked the interest of over 4,000 high school students in pursuing educational and direct pathways to a manufacturing career.

"BotsIQ is unique in that it focuses on the engineering design and manufacturing process, not just the battling competition," said Bill Padnos, executive director, Southwestern Pennsylvania BotsIQ. "The Pittsburgh Chapter NTMA and its dedicated partners recognized a decade ago the need to connect schools to manufacturing training and careers. Their support of BotsIQ has done that ever since."

BotsIQ enables schools that may not have the resources to compete. A BotsIQ 101 class and a professional development day help new teachers and teams get started. Experienced teams mentor new teams. Bots also provides CAD software to design robots. Prism Engineering provides a student version of SOLIDWORKS software to all schools.

Teams from across the region work for months, coached and supported by educators and manufacturers. BotsIQ draws on the student's knowledge of math, science, engineering and even public speaking. Organizers find that the technical and soft skills students learn through BotsIQ can directly lead to broad career options – direct to industry, technical school certificates, associate's or bachelor's degrees, and a career track with family-wage earnings.

"BotsIQ is the perfect complement to the increasing emphasis on STEM (science, technology, engineering and math) skills in schools, adding appeal for students, teachers and industry alike. This interest in how things are made supports the future of high-tech manufacturing. These students make up a job-ready trained workforce pipeline," explained Padnos.

Collaboration has been the key to BotsIQ's growth over the years. CTC and community college curriculum advisors work alongside volunteer industry advisors offering technical support. Working with Cal U, a detailed outline and rubric for the required engineering documentation was developed.

Grants and the manufacturing industry itself help finance the program. A state grant covered half the cost of the first competition arena. Cal U funded the second arena to accommodate program growth. Grant funding added staff to expand industry contacts, track participants, increase school participation and manage growth and career development aspects of the program.

A grant from the Chevron Corporation (NYSE: CVX) to enhance the Bots IQ program for additional regional schools is part of Chevron's Appalachia Partnership Initiative, a $20 million commitment to developing workforce training and education programs to help meet the needs of growing energy and manufacturing industries across southwestern Pennsylvania, northern West Virginia and eastern Ohio.

The BotsIQ website lists information about workforce and education pathways. Student tracking over the years shows 85% of those participating in BotsIQ plan a STEM career and an Increasing

number have completed their education and have been hired by local manufacturing companies such as Composidie, ExOne, Femco, Hamill Manufacturing Company, Keystone Manufacturing, L & S Machine, Oberg Industries, and RoPro Design.

"We encourage local manufacturers and recruiters to attend the competition to observe students' technical skills, teamwork and detailed project documentation. Some companies have hired trainees directly from BotsIQ," Padnos said. "That's our end goal – workforce development!" For additional information, go to www.botsiqpa.org or contact Padnos, 412-258-6629.

##

NOTE: Access Apr. 24-25 BotsIQ finals competition brackets at: http://challonge.com/CalUFinals

List of participating schools follows:

Admiral Peary AVTS
Albert Gallatin HS
Baldwin HS
Beaver County CTC
Bedford HS
Brownsville HS
Burgettstown HS
Butler Intermediate
Butler Senior HS
California HS
Canon-McMillan HS
Carmichaels HS
Central Valley HS
Charleroi HS
Chartiers Houston HS
Clairton HS
Connellsville HS
Deer Lakes HS
Derry HS
E. Westmoreland CTC
Elizabeth Forward HS
Forbes Road CTC
Fox Chapel HS
Frazier HS
Freedom Area HS
Greene County CTC
Greensburg Salem HS
Greater Latrobe HS
Hempfield HS
Highlands HS
Jeannette HS
Keystone Oaks HS
Kiski Area HS
The Kiski School
Mt. Pleasant HS
Norwin HS
Penn Hills HS
Penn-Trafford HS
Penns Manor HS
Pitt SciTech Academy
Plum HS
Punxsutawney HS
Ringgold HS
Riverview HS
Seneca Valley HS
Serra Catholic HS
Sharpsville HS
South Allegheny HS
South Fayette HS
South Park HS
Southmoreland HS
Union HS
United HS
Western Area CTC
W.PA School for the Deaf
West Greene HS
West Mifflin HS
Windber HS
Woodland Hills HS
Yough HS

Media Contact: Diane Wuycheck, 412-310-4151

Dayton's Ponitz CTC takes
National Robotics League Grand Championship
Plum Borough School District in First Place

Cleveland, OH – May 18, 2015 – Ponitz CTC of Dayton, Ohio, took Grand Championship and third place honors at the National Robotics League (NRL) national competition at Baldwin Wallace University, in Berea, OH, May 15-16.

In addition to double elimination bouts, teams complete stringent engineering and detailed documentation requirements and face-to-face interviews with NRL officials to determine points toward the Grand Champion title. The Grand Champion Award and $500 prize go to the team with the highest combined score. Other winners receive an award or certificate.

The lineup of awardees includes:

- Grand Champion -- Ponitz CTC, Dayton, OH Robot: R.O.N.
- First Place-- Plum Borough School District, Pittsburgh, PA Robot: Knockout
- Second Place-- North High School, North St. Paul, MN Robot: Final Cut
- Third Place-- Ponitz CTC, Dayton, OH Robot: R.O.N.
- Best Engineered Bot (tie) - Beaumont School, Cleveland Hgts., OH - Robot: Beaumonster and Dunwoody College of Technology, Minneapolis, MN Robot: Wedgey
- Best Documentation -- Ringgold High School, Monongahela, PA Robot: Mark 42
- Coolest Bot (tie) -- Admiral Peary AVTS, Ebensburg, PA Robot: TOXIC and Punxsutawney (PA) Area High School Robot: The Mystery Bot
- Sportsmanship -- Punxsutawney Area High School

Months of work by a record number of 65 teams and nearly 300 student participants from eight states and Puerto Rico were on display this year. Student teams competed in NRL sanctioned regionals to prepare for the national competition.

The NRL, a program of the National Tooling and Machining Association (NTMA), provides a national structure for job-driven, STEM (science, technology, engineering and math) focused educational robotics where students design and build remote controlled robots to face off in a gladiator-style competition.

Manufacturers support the National Robotics League because its' "wow" factor helps to overcome two of the industry's greatest challenges -- to attract the best and brightest into a variety of manufacturing careers and to align public perception of manufacturing with today's clean, high-tech, advanced facilities. The technical and soft skills students learn can directly lead to broad career options – direct to industry, technical school certificates, associate's or bachelor's degrees, and a career track with family-wage earnings.

"The NRL is the only combat robotics league that formalizes ties with middle to post-secondary school teams, teachers and manufacturing partners, introducing them to real-world manufacturing experiences," said Bill Padnos, NRL director of youth engagement.

Industry sponsors supporting the competition were: NTMA Akron Chapter -- Premier Competition Awards Sponsor; Boston Centerless and Voss Industries -- Pit Sponsors ; and +GF+ and MPM (Moseys' Production Machinists) -- Bleacher Sponsor s. Other company sponsors are Homeyer Precision Manufacturing, Grainger, and Gears. T-shirt sponsors are Royal Product, PartnerShip LLC, and the NTMA Training Centers.

For additional information about the NRL, industry sponsorships and participation in 2016 regional and national competitions, contact Bill Padnos, 412-258-6629, bpadnos@ntma.org, or visit www.gonrl.org.

##

Editor's Note: A complete list of participating schools is at http://gonrl.org/press-room/
Competition photos available upon request.

***About NTMA**: NTMA's 1,400 member companies design and manufacture special tools, dies, jigs, fixtures, gages, special machines and precision-machined parts. Some firms specialize in experimental research and development work as well as rapid prototyping. Many NTMA members are privately owned small businesses, yet the industry generates sales in excess of $40 billion a year. NTMA's mission is to help members of the U.S. precision custom manufacturing industry achieve business success in a global economy through advocacy, advice, networking, information, programs and services.*

Xtreme BOTS Competition
Team Registration: October 25, 2012 Competition

Want to get your students excited about math and science or about engineering and manufacturing? Do so by forming a Bots team(s)! Through the process of robot building, student's imaginations are captured as they design, build and compete with their own robotic creations; and through this hands-on effort, students gain practical knowledge of **S**cience, **T**echnology, **E**ngineering, and **M**ath – all essential skills for manufacturing. The Fall 2012 competition will be held on October 25 at the Dayton Airport Expo Center as a part of the Advanced Manufacturing Technology Show.

Schools can have multiple teams. A **minimum of three students per team is required** with no maximum, but four to six students per team at the competition is recommended. Each student may participate on only one team. Each team may enter one robot in the competition.

Prizes will be awarded for first, second, and third place along with special awards including Best Documentation, Best Engineered Robot, Best Sportsmanship, and The People's Choice.

Your commitment:

- Each team will attend the competition on October 25th with a working robot.
- Each team will be made up of at least 3 students, at least 2 of which are able to attend the competition
- Each team will follow the Xtreme BOTS technical guidelines, including a safety inspection, as posted on the DRMA website: Xtreme BOTS. ***Please note that changes have been made to the rules!***
- Each team will provide technical documentation of their build process.
- Each team will pay a $25 entrance fee for the competition, due by Friday, September 21.

Team Registration Form

School/ Organization: _____ # of teams? _____

Contact Name: _____

Phone: _____ Email: _____

Technical Advisor Company:_____

Company Team Advisor:_____ Email: _____

If your teams have multiple technical advisor companies, please attach a complete list of them, with advisor e-mail addresses.

Entrance fee: $25 x _____ teams = $_____

☐ Check enclosed ☐ Credit card payment ☐ Please invoice - P.O. #_____ *Payable to: DRMA Foundation*

Credit Card # (Visa/MasterCard) _____ Expiration date _____

Please fax or email to the DRMA office at (937) 512-3224 or BOTS@DaytonRMA.org
or mail to DRMA, 240 W. 5th Street, Room 13-125, Dayton, OH 45402
Questions? Call (937) 512-3862
Xtreme BOTS is a Manufacturing Now! LLC program

Xtreme BOTS Team Details

Instructions: This form must be filled out for each team. Everyone (students and adult advisors) who participates on the team should be listed on the form. To submit your team's information, click "file, save as" and name it after your team. Return it via e-mail as an attachment to BOTS@DaytonRMA.org or print and fax it to me at (937) 512-3224.

Team Name: _____ Robot Name: _____
School/Organization Name: _____ City: _____
Sch/Org Emergency Contact Name (other than coach): _____
Sch/Org Emergency Contact Phone (other than coach): _____
Coach/Teacher - Primary Adult Supervisor: _____
Secondary Adult Supervisor: _____
Technical Advisor Company: _____
Company Advisor (Individuals): _____

Team Member Names:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

Safety inspections will be held at 20-minute intervals from 12 - 4:20 p.m. on the afternoon before the competition (Wednesday, 10/24). Please request an inspection time for this robot from the times below:

☐ 12:00	☐ 1:00	☐ 2:00	☐ 3:00	☐ 4:00
☐ 12:20	☐ 1:20	☐ 2:20	☐ 3:20	☐ 4:20
☐ 12:40	☐ 1:40	☐ 2:40	☐ 3:40	☐ 4:40

The following adult supervisor will attend safety inspections for this robot: _____
The following student(s) will attend safety inspections for this robot:

_____
_____
_____

The following information will be used by the competition announcer – make it fun!
Robot Description: _____
Team Description: _____
Team Strategy Description/Motto: _____
_____

Complete and return this form to DRMA by Tuesday, October 9.
Questions? Email: BOTS@DaytonRMA.org Phone: (937) 512-3862

Xtreme BOTS is a Manufacturing Now! LLC program

2015 – 2016 SWPA BotsIQ Program Application Form

Please complete the required information and submit the completed application form by June 22, 2015 to SWPA BotsIQ, Attn: Sarah Brooks, 305 E. Carson Street, Pittsburgh, PA 15219 or fax to 412-258-6625. You may also complete the form electronically and forward it to brooks@ncsquared.com. If you have any questions regarding the program, please email or contact Sarah Brooks at (412) 258-6676.

School		**County**	
Street Address	**City**		**Zip**
Director/Principal Name		**Title**	
Phone Number	**Fax Number**		**Email**
Primary Contact or Primary Advisor for BotsIQ		**Title**	
Phone Number	**Fax Number**		**Email**
Additional Teacher Advisors		***Projected Number of Teams: 1 or 2***	
Name **Title**		**Phone Number**	**Email**
1.			
2.			
3.			

1.) By signing this application, we are committed to:

- **Forming a BotsIQ (BIQ) team and participating in the 2016 SWPA BotsIQ Preliminary (March 2016) and Finals (April 8 - 9, 2016) Competitions**
- **Sending at least one instructor to the teacher professional development day (early October 2015). Any new instructors must attend a new teacher orientation session (early September 2015).**
- **Providing information promptly to the Southwestern PA BotsIQ Staff when requested.**

_____

(Signature of Director/Principal) (Title) (Date)

2.) We are not planning to participate this year and please keep us informed of future events.
Reason for not participating:_____

_____

Please fax your response to (412) 258-6625, mail to the address listed above, or email it to brooks@ncsquared.com.

The SWPA BotsIQ Management Team will make every effort to meet the needs of participants requiring special accommodations, provided the Committee is informed prior to the event with sufficient time to make needed arrangements.

SWPA BotsIQ Team Member's Names, T-Shirt Size and Emails 2015

School								
Robot Name								
		T-Shirt Size						
		S	M	L	XL	XXL	3X	
School Advisor(s)								
Industry Advisor(s)								
Company Name								

(First, Last) Alphabetized by Last		T-Shirt Size						Email Address
Team Captain(s)		S	M	L	X	XXL	3X	
Team Members								

Strategy Paragraph:

Time	Topic	Actions	Notes
6 months	Forms/ Printed Materials	Update and print promotional materials	Go to www.gonrl.org to view examples of promotional materials
	Marketing	Develop media plan	Facebook, Twitter etc. Press releases should be sent to regional newspapers after the competition announcing winners. Also send them to the teachers of the winning teams as they may have their own media contacts. • 3 weeks prior – Prepare press release, fact sheet, FAQ document for the media • 1 month prior – Get notice in newspaper calendar of events, TV interviews, other media pieces to drive attendance at the competition • 1 week – Send thank you letters to media
	Marketing	Develop T-shirt design	Consider taking pre-orders from participants to get an idea of how many to buy
	Site Setup	Find event photographer and videographer	High school and/or college photography students can be good volunteers. Get photo release form from participants in advance. • Film competition to use as promo for next year • Recruitment tool for schools to use to get students in their programs • Recruitment tool for us to get sponsors, schools interested • Historical purposes • Filming to show on Jumbo-Tron on day of event
3-4 months	Team Registration	Pre-registration Reminder	Pre-registration reminder to all educational organizations and chapter execs
	Volunteer Registration	Develop Volunteer Recruitment List	Send volunteer recruitment email to past/present/prospective volunteers. Make sure volunteer list is up-to-date and includes • Local NTMA chapter members • College engineering departments • Members of local maker spaces Keep track of yes, no and no-response email so you can send emails to no-response people only.
	Awards	Order Trophies/Awards	Trophies/awards for 1st-3rd place, plus any other special awards (Coolest Bot, Best Documentation, Best Engineered). It is recommended an actual trophy for 1st place, depending on budget. Others awards can be done at certifications. SEE FOLLOWING EXAMPLES.
	Forms/ Printed Materials	Before You Go Checklist	Send to coaches/advisors and students along with any additional information, updates etc.
	Schedule	Set up Interview Schedule	A time frame of 20 minutes intervals
	Site Setup	Clear directions for parking	Need parking space for participants and load/upload space for Bots

Time	Topic	Actions	Notes
	Site Setup	Fire Extinguishers	May be provided by venue. If not, contact local fire department
	Site Setup	Lighting	Additional lighting in arena, pit area and safety inspection might be needed
3-4 months	Volunteer Registration	Send Volunteer Recruitment Email	**Sample recruitment email:** Our next Xtreme Bots competition is right around the corner, which means it's time to start lining up the volunteers that make the whole thing possible! The spring event takes place on Saturday March 31st (with safety inspections and documentation judging to take place on Friday, March 30th) at the Miami Valley Career Technology Center in Clayton, Ohio. You are receiving this email because you have volunteered at a previous event or have indicated interest in volunteering at future events. If you know others who might be interested in volunteering, please feel free to forward this message! Starting with set-up, documentation judging and safety inspections on Friday, all the way through tear-down in the evening of Saturday, this competition is a volunteer run event – so if you have some time to join us on either day, at least 2-4 hours, please let us know! Volunteers are needed to fill the following roles: • Registration/Info Table (Fri/Sat) • Announcer (Sat) • Announcer Helper (Sat) • Documentation Judge (Fri) • Competition Judge (Sat) • Referee (Sat) • Safety Inspector (Fri/Sat) • Set-up/Take-down (Fri/Sat) Let us know the following: • Are you available/interested in volunteering for the event? • What day/times are you available to help? • What "job" are you most interested in? What is your back-up preference? • What size t-shirt do you wear?

Time	Topic	Actions	Notes
2 months	Forms/ Printed Materials	Send Banners, Signs & Programs to printer	Signs/Banners may include: Sponsor recognition, Safety reminders (1 in pits, 1 near the arena) "Safety glasses required beyond this point" for in front of the pit area. Try to print these items locally.
	Marketing	Email asking NTMA members to bring their kids and invite kid's teachers	If you are connected to a NTMA chapter ask the Chapter Exec to send an email to all members inviting them to attend the competition, and to bring their children and children's teachers.
	Marketing	Invite Governor etc.	Invite Governor, Congressmen and Senators so that state funding doors might be opened. For help reaching out to your elected representatives, contact Sarah Brooks (sbrooks@ntma.org)
	Site Setup	Set plan for arena/test cage delivery date and arrange transport	Make arrangements to move an arena to the event location. (Insert requirements for your region's specific needs here).
	Forms/ Printed Materials	Update pre-competition packet	As the Team Registration forms come in, prepare the Pre-Competition Packet to be sent out to each of the responding teams. In this packet you will find a few documents that need to be updated for each competition, according to the dates, the place of the competition and maps. Make sure to edit each of these forms, including getting a map of the school where the competition is to be held. Forms to include: • Information to Teachers • Parking Map • Team Registration Form • Participant Liability Release & Consent Form • Documentation Guidelines • Safety Reminders 7 weeks prior – Update Pre-Competition packet documents from previous competition. Go to www.gonrl.org to view examples of documents included in the Pre-Competition.
	Forms/ Printed Materials	Update competition agreement-waiver form	Students/parents should sign a waiver form to compete. SEE FOLLOWING EXAMPLES
	Forms/ Printed Materials	Design participant certificates for all participants	Depending on budget, could purchase trophies/plaques. Go to www.gonrl.org to view an example of participation certificates.
	Marketing	Order volunteer t-shirts	Determine total volunteer t-shirt sizes. Do not put the competition dates on the shirt so extras can be used over again. T-shirts should be bright and different colors from those t-shirts given/sold to teams.

NATIONAL ROBOTICS LEAGUE NATIONAL COMPETITION 2013
COMPETITOR AGREEMENT

THIS COMPETITOR AGREEMENT ("Agreement") is entered into by and between the National Robotics League and the National Tooling and Machining Association hereafter referred to collectively as "Producers", on the one hand, and the combatant and all associated team members and affiliates set forth below (collectively, "Competitor"), on the other hand. The Producers and Competitor shall sometimes collectively be referred to as the "Parties."

The Producers intend to present a robotics combat tournament ("Tournament") on May 18-19, 2012 at the IUPUI Campus Center, 420 University Blvd, Indianapolis, IN 46202. The Tournament will feature the radio-controlled robots of Competitor and other competitors in one-on-one combat, as well as other forms of competition and demonstration. It is the purpose of this Agreement to set forth the terms and conditions of Competitor's participation in the Tournament. Accordingly, in consideration of the Producers' promotion of, and Competitor's desire to compete in, the Tournament, the Parties agree as follows:

1. Nature of the Tournament

Competitor acknowledges that the Tournament will involve physical combat between robots operated by Competitor and other contestants. Such combat may result in significant damage to, or the complete destruction of, Competitors' robot(s). Competitor acknowledges and expressly accepts the risk of loss of any robot(s) and property that Competitor uses to compete in the Tournament. Competitor shall not assert any claims for property loss against the Producers or any other person or entity that arise out of or are related to the Tournament.

2. Compliance with Rules, Regulations, and Instructions

Competitor agrees to comply with all of the Producers' written and oral rules and regulations relating to the Tournament. To the extent that Competitor fails to comply with any of the Producers' written or oral rules or regulations, the Producers may (in its sole discretion) disqualify that Competitor and/or the Competitor's robot(s) from the Tournament.

3. Safety

It is essential that all robots competing in the Tournament operate safely. Competitor expressly warrants and represents that Competitor's robot(s) complies with all of the Producers' rules and regulations relating to design, construction, and safe operation. If, at any time, Competitor believes that a robot poses a risk of danger or injury to any person, Competitor shall immediately cease all operation of that robot. The Producers shall have unlimited discretion to disqualify a robot or an individual from competing in the Tournament for any reason.

Release of Liability and Indemnity

Notwithstanding the various efforts that will be made to ensure that the Tournament is safe, Competitor acknowledges that robotic combat is inherently dangerous and involves the risk of serious injury to competitors and spectators. Competitor expressly waives, releases, and holds harmless the Producers from all claims, demands, causes of action, damages, and/or liabilities that may arise from the Tournament and any preparations for the Tournament. Competitor expressly agrees to indemnify and hold harmless the Producers from all claims, demands, causes of action, damages and/or liabilities which may be suffered or incurred arising out of the design, maintenance, appearance, and/or operation of Competitor's robot, including any intellectual property rights associated with the robot.

4. Grant of Rights

Except as set forth expressly in paragraph 6 below, Competitor agrees that the Producers shall have the perpetual non-exclusive right to display, use, and otherwise exploit all rights Competitor may hold in the following: (a) Competitor's name, voice, likeness, biographical data, and identity: (b) the design and appearance of Competitor's robot(s). It is agreed that the Producers shall have the right, but not the obligation, to film, photograph, and/or videotape the Tournament, including without limitation, events taking place prior to, during, and after the Tournament, in whole or in part, by means of any media and to commercially exploit the resulting product in perpetuity, by any means. The Producers shall have the sole and exclusive right to distribute, sell, license, exhibit, and in any other manner exploit all derivative works resulting from the Tournament and the filming, photographing, and videotaping thereof.

5. Warranties

Competitor warrants that he/she/it owns or controls the robot entered pursuant to this Agreement and has the right to enter this Agreement and to grant to the Producers all of the rights, licenses, and privileged set forth above.

6. Miscellaneous

(a) Compliance with Rules, Laws, and Statutes. In addition to the terms set forth in this Agreement, Competitor agrees to be bound by and comply with any other requirements of the IUPUI Campus Center and to abide by all other laws, statues, ordinances, and regulations which may be imposed by the Federal, State, or local governments.

(b) Waiver, Amendment, Modification. Except as otherwise provided above, any waiver, amendment or other modification of this Agreement will not be effective unless in writing and signed by the party against whom enforcement is sought. The waiver by either party of any of its rights or remedies in a particular instance will not be construed as a waiver of the same or different right or remedy in other instances.

(c) Severability. If any provision of this Agreement is held to be unenforceable, in whole or in part, such holding will not affect the validity of the other provisions of this Agreement.

(d) Assignment. Competitor may not assign or delegate any rights or duties of Competitor under this Agreement without the prior written consent of the Producers. The obligations and duties of this Agreement shall be binding upon the Parties and their successors and permitted assigns, and the rights of this Agreement shall inure to the benefit of permitted successors and assigns. The Parties expressly agree that the Producers shall be permitted to assign, transfer, and/or encumber this Agreement in whole or in part in its sole discretion.

(e) No Consequential Damages. Under no circumstances will the Producers be liable to Competitor for any lost profits or any indirect, special, consequential, or punitive damages.

(f) Further Assurances. The Parties hereby agree to perform such acts and to prepare, execute, and file all documents or stipulations reasonably required to perform the covenants, to satisfy the conditions herein contained, or to give full force and effect to this Agreement.

(g) No Obligation to Exercise. The Producers shall not be obligated to exercise any right granted to it under this Agreement, and the Producers shall in no event incur any liability for failure to exercise any such right. The Producers may exercise, or decline to exercise, any right granted or created by this Agreement in the Producers' sole and complete discretion.

(h) Notices. All notices shall be in writing and shall be delivered personally by hand delivery or by United States Postal Service, certified, return receipt requested, Federal Express or other internationally recognized receipted overnight or courier service, postage prepaid to the intended Party at the following addresses: (1) If to NRL: The National Robotics League, 1357 Rockside Road, Cleveland, OH 44134; (2) If to Competitor or a team member or affiliate: the Addresses listed on the signature pages of this Agreement.

(i) Independent Status. For the purposes of this Agreement, Competitor shall be deemed to be an independent contractor and not an agent or employee of the Producers. Competitor shall not have authority to make any statements, representations or commitments of any kind, or to take any action, which shall be binding on the Producers.

(j) Governing Law. The validity and interpretation of this Agreement and the legal relations of the Parties to it shall be governed by the laws of the State of Ohio. Any lawsuit arising out of or relating to this Agreement or the Tournament shall be filed in the Superior Court of Cuyahoga County. In any such lawsuit, the Parties expressly waive their right to a trial by jury.

(k) Entire Agreement. This Agreement constitutes the complete and entire statement of all terms, conditions and representations of the agreement between the NRL and Competitor with respect to its subject matter, and supersedes all prior agreements, writings or understandings, whether oral or in writing.

(l) Team Captain or Coach

a. A single member of Competitor's team shall be selected by Competitor as the Team Captain or Coach. The Team Captain or Coach shall be clearly identified on the signature page of this Agreement.
b. It is understood by all parties that the Team Captain or Coach shall be responsible for all members of Competitor's team. Should any matter regarding lack of compliance to the Rules, conduct, behavior, etc. as described in this Agreement be brought to the attention of the Producers, the Team Captain or Coach will be responsible to remedy the situation.
c. A Team Captain or Coach may not be younger than 18 years of age at the date/time of signing of this Agreement.

SIGNATURE OF TEAM CAPTAIN OR COACH

Name _____

Address _____

_____

City _____

Phone (_____) _____ Mobile (_____) _____

E-Mail _____

Signature _____ Date _____

SIGNATURES OF TEAM MEMBERS AND AFFILIATES

Name _____ Age _____

Signature _____ Date _____

Parent/Guardian Name _____

Parent/Guardian Signature _____ Date _____

Name _____ Age _____

Signature _____ Date _____

Parent/Guardian Name _____

Parent/Guardian Signature _____ Date _____

Name ____ Age __________

Signature ____ Date _________

Parent/Guardian Name ____

Parent/Guardian Signature ____________________________ Date _________

Name ____ Age __________

Signature ____ Date _________

Parent/Guardian Name ____

Parent/Guardian Signature ____________________________ Date _________

Name ____ Age __________

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Signature ____ Date _________

Parent/Guardian Name ____

Parent/Guardian Signature ____________________________ Date _________

Name _____ Age _____

Signature _____ Date _____

Parent/Guardian Name _____

Parent/Guardian Signature _____ Date _____

Name _____ Age _____

Signature _____ Date _____

Parent/Guardian Name _____

Parent/Guardian Signature _____ Date _____

If additional space is required, please reproduce this page and attach to this Agreement.

Please bring this signed document to the competition and turn in at Registration.

SPWA BotsIQ Event Agreement and Liability Release

This Agreement is a binding contract, covering the robotic prelim competitions ("Event") held at Butler County Community College (BCCC), Butler, PA on March 6th, 2015 and at Westmoreland County Community College (WCCC), Youngwood, PA, on March 13th & 14th, 2015. This Agreement also covers the finals competition ("Event") held at California University of PA (CALU), California, PA on April 24th & 25th, 2015, including any activities relating to it ("the Event"): set-up and tear down activities at BCCC and WCCC on March 5th, 6th, 12th and 14th, 2015 and at CALU on April 23th & 25th, 2015.

RELEASE OF LIABILITY: The Event participant or audience member (hereafter "Grantor") named below acknowledges that among other things the Event involves mechanical robots engaged in combat, and that such an activity involves risks of injury to Grantor, competitors, and others attending the Event. In consideration for being permitted to attend or participate in the Event, Grantor and Grantor's assignees, heirs, guardians, next of kin, spouse and legal representatives expressly release, waive, discharge, and hold harmless the Event Organizers and Sponsor, **SWPA BotsIQ, New Century Careers and the Pittsburgh Chapter National Tooling and Machining Foundation** and their officers, directors, agents employees and assigns from any and all claims, demands, causes of action, damages and/or liabilities ("Claims") that may now or hereafter exist, arise or be caused, whether negligently or otherwise, in connection with the Event and/or Grantor's attendance at the Event, including, but without limitation, Claims related to death, personal injury, bodily injury, and/or property damage or destruction.

Grantor is aware that the Event involves hazardous activities, and voluntarily participates in or attends these activities with the knowledge of the danger involved, and agrees to assume any and all risks of bodily injury, death, and/ or property damage.

Grantor, if an Event participant, has read and agrees to comply with all rules and regulations as posted on the website or as distributed by the Event Committee.

Grantor hereby agrees that Grantor and Grantor's assignees, heirs, distributees, guardians, next of kin, spouse and legal representatives will not make a claim, sue, or attach the property of Event Sponsor or **SWPA BotsIQ, New Century Careers and the Pittsburgh Chapter National Tooling and Machining Foundation** or any other sponsoring, licensing, or associated organization, for injury or damage resulting from the Event and/or any act or omission of said parties.

PLEASE READ THIS FORM CAREFULLY BEFORE SIGNING: I, the Grantor, have read and understand the above agreement and release and agree to the terms hereof.

_____ I am / am not over the age of 18.
Name (Printed)

_____ _____
Signature Date

IF YOU ARE UNDER 18 YEARS OF AGE, YOU AND YOUR GUARDIAN MUST SIGN THIS FORM WHERE INDICATED.

Parent/Guardian: I understand and approve this agreement and release on behalf of the above signed minor.

_____ _____
Signature Relationship

SWPA BotsIQ Social Media and Photo/Video Consent

Social Media (e.g., Facebook, Twitter) is a powerful communication tool. **Southwest Pennsylvania BotsIQ ("SWPA BotsIQ")** expects all employees, volunteers and students to abide by its social media policy in all their communications on any social media site.

SWPA BotsIQ employees, volunteers and students must communicate on social media sites professionally and respectfully, just as **SWPA BotsIQ** would expect them to communicate were they present in person. All communications with young people must be appropriate, both in terms of the student's age and the relationship between the adult and student. Profanity, sexualized language or jokes, images of a sexual nature, or similar communications involving adult topics, drugs or alcohol, are never appropriate around students, no matter if they occur in person, in an email or text message, or on a social media site.

SWPA BotsIQ employees, volunteers and students must keep separate any social media communications that implicate **SWPA BotsIQ** from their own personal communications. Young people may have difficulty distinguishing among an adult's different roles. Therefore, **SWPA BotsIQ** employees and volunteers must presume that any communications with a **SWPA BotsIQ** student will be perceived by the student as relating to **SWPA BotsIQ** business and must act accordingly.

SWPA BotsIQ employees and volunteers should carefully consider the implications of becoming "friends" with **SWPA BotsIQ** students on social media sites. This is strongly discouraged, due to how dynamic social media sites are and the different maturity levels of adults and youth. If a volunteer must engage with students via social media or other online channels to facilitate delivery of a **SWPA BotsIQ** program, it will be in accordance with the rules and privacy policies of those sites and only during his or her participation in **SWPA BotsIQ** programs which contain a component of direct volunteer-student interaction, such as **SWPA BotsIQ** Preliminary and Final Competitions.

Photo/Video Consent: I give **SWPA BotsIQ** and its partner organizations and companies (list of partner organizations available upon request) permission to use my name and any photo and/or video in which I appear to promote the **SWPA BotsIQ** program without further compensation or permission, except where prohibited by law. I understand also that photos and/or video may be made available to print, video, internet and other media.
I understand that photos and/or video clips may be captioned and that the caption may include, when appropriate, my first and last name, employer or school. No student's personally identifiable information will be published by **SWPA BotsIQ** or its partner organizations or shared with third parties unless a parent or guardian has provided written authorization.

Therefore, I release **SWPA BotsIQ** from any liability or claimed liability in connection with the release of photos and video which I appear in and I understand and will adhere to **SWPA BotsIQ** Social Media Policy.

_____	_____	_____
Volunteer's Name (Print Name)	Volunteer's Signature	Date

_____
Student's Name (Print Name)

_____	_____	_____
Parent/Guardian (Print Name)	Parent/Guardian Signature	Date

Time	Topic	Actions	Notes
2 months	Site Setup	Check nametag supplies	Order badge materials. Stick on nametags work well for one day events or use pins/clips. For safety reasons do not use badges on lanyards. Nametags should have Student Name, Robot Name and School Name and are created via mail merge. If all participants are receiving nametags, be sure to distinguish between students, teachers, volunteers, VIPs etc. using color codes or other markings. SEE FOLLOWING EXAMPLES.
	Site Setup	Safety glasses	Everyone (students, teachers, volunteers, judges, guests) must wear safety glasses at all times. Team members should bring their own but you will need to provide extras. Ask a supplier will provide them as part of a sponsorship.
	Site Setup	Arrange for set-up and tear-down crews	4-6 people will work for 4-5 hours for set-up and 2-3 hours for tear-down. One person must be experienced with set-up. An additional 2-3 people may also be required to set up the pit and competition area depending on the size of the competition and venue.
	Site Setup	Confirm Emcee	The emcee welcomes the crowd and can act as an announcer, officiate the closing ceremony. Can also introduce dignitaries/special guests as well.
	Team Registration	Finish entering teams into teams committed spreadsheets	Depending on the size of your event, having everyone registered at least 2 weeks before the event is important. Be prepared for late registrations and keep a firm deadline.
	Team Registration	Email pre-competition packets to registered teams	
	Equipment	Pallet Jack	Might be needed depending on teams and volunteers
1 month	Marketing	Press release on Schools/Teams attending	
	Site Setup	Create detailed layout of venue	Diagram of pit area, test box arena, safety inspection area, welding/grinding area, bleachers, signage, registration/volunteer registration table, storage area, team photo
	Team Registration	Registration Deadline	
	Volunteer Registration	Volunteer List w/assignments, days, times	Create volunteer schedule/spreadsheet with names/times/assignments for volunteers. Include volunteer job descriptions. SEE FOLLOWING EXAMPLES.
	Forms/ Printed Materials	Send invite flyer to advisor companies	Go to www.gonrl.org to view examples of documents included in the Pre-Competition.
	Forms/ Printed Materials	Send invite to sponsors and donors	Send personal (individual) email or paper invitations to everyone who donates money to the event.
	Marketing	Get event listed on local event calendars	

Alec Jeske WINDBER AREA HS Hutch	Briana Sheehan WINDBER AREA HS Starsky
Jeff Dagosinto WINDBER AREA HS Hutch	Matt Barkley WINDBER AREA HS Starsky

Volunteer Roster Example

First Name	Last Name	Company	Schedule	Position	Responsibility
Bryan	Jackson	MVCTC	Sat/Sun	Event Supervisor	Oversee Event
Maureen	Carruthers	NTMA	Fri 8-3	Event Set up	Prepare Site
Kristen	Reitz	NTMA	Fri 8-3	Event Set up	Prepare Site
Darin	Martinez	ATR Sales Inc.	Fri 8-11	Event Set up	Prepare Site
Jeffrey	Roos	IUPUI Eng. Dept.	Fri 9-3	Event Set up	Prepare Site

SWPA BotsIQ Volunteer Descriptions

Safety Judge	Ensures a team's robot meets safety guidelines for weaponry, assembly, and electrical systems. These guidelines will be provided on the day of the competition, in the form of a checklist so that no safety aspect is forgotten. One safety judge is usually responsible for reviewing 2 to 3 robots for the entirety of the competition.
Documentation Reviewer - Technical	JOB START TIME CHANGE: PLEASE DOUBLE CHECK YOUR ASSIGNED START TIME IF YOU HAVE BEEN ASSIGNED TO THIS JOB. THIS JOB NOW STARTS AT 8:30 AM. // Evaluates notebooks which teams are required to produce, documenting the steps that were taken during building the robot. A technical reviewer should be familiar with structural analysis, engineering drawings, assembly models, and/or wiring schematics in order to evaluate the quality of the work produced by the teams in these areas. If you have expertise in only one of these areas, you can be assigned to review only those sections that fall within your area of expertise (at your request).
Interviewer	Interviews team members about the safety procedures that were followed, teamwork displayed, and skills developed during the design and construction of the robot.
Team Registration	Records those team members and faculty sponsor present on the day of competition, hands out badges to allow access to pit, collects release forms, and scans documentation to ensure it is complete before the team is allowed access to the pit area for competition. Will also provide BotsIQ T-shirts to the teams in the proper sizes as listed on entrance forms.
Arena Assembler	Assembles the arena in which the competition will occur. The following tools will be needed: 7/16-inch and 9/16-inch socket set. We have a limited number of these tools so if you are able to bring your own, it is very much appreciated. Be sure to mark them in some way so that we can ensure that your tools are returned to you if they get misplaced. You may wish to bring protective work gloves, as some pieces may have burrs or sharp edges. We ask that only those who are mechanically inclined and able to lift up to 75 pounds sign up for this job.
Materials Handler	Carries large, heavy pieces of the arena and equipment from the storage area to the assembly floor, or from the assembly floor to the storage area. You should be able to lift up to 75 pounds to do this job. You may wish to bring protective work gloves, as some pieces may have burrs or sharp edges.
Arena Disassembler	Disassembles the arena immediately after the conclusion of the competition. The following tools will be needed: 7/16-inch and 9/16-inch socket set. We have a limited number of these tools so if you are able to bring your own, it is very much appreciated. Be sure to mark them in some way so that we can ensure that your tools are returned to you if they get misplaced. You may wish to bring protective work gloves, as some pieces may have burrs or sharp edges. We ask that only those who are mechanically inclined and able to lift up to 75 pounds sign up or this job.
Wherever Needed	Use this job designation if you are willing to volunteer your time in almost any capacity at the competitions, set-ups, and/or tear-downs. Please note any restrictions or preferences in the My Note box of the form and we will do our best to accommodate your request.
Team Registration Lead	Coordinates the team registration volunteers by assigning several teams to each volunteer, explaining the duties of the position, and resolving any questions or disputes that may arise during the registration process.
Head Safety Judge	Coordinates the safety judge volunteers by assigning teams to each volunteer, explaining the duties of the position, and resolving any questions or disputes that may arise during the judging process.
Timer	Signals the start of a match and monitors the timer during each battle, stopping the timer as required by the rules of the competition, and ends the match when the allotted time for the match has expired.

Referee	Observes matches to determine the presence of any rules violations which may occur in the course of the match.
On-Deck Lead	Determines which teams will compete in the next match and assigns colors to the teams. Keeps track of the progress of teams through the brackets as the competition continues.
On-Deck Assistant	Assists with determining which teams will compete in the next match and assigns colors to the teams. Helps to track the progress of teams through the brackets as the competition continues. Provides guidance to the pit runners about which teams should be escorted to the arena area.
Documentation Reviewer - Non-technical	JOB START TIME CHANGE: PLEASE DOUBLE CHECK YOUR ASSIGNED START TIME IF YOU HAVE BEEN ASSIGNED TO THIS JOB. THIS JOB NOW STARTS AT 8:30 AM. // Evaluates notebooks which teams are required to produce, documenting the steps that were taken during building the robot. A non-technical documentation reviewer will evaluate the quality of student compositions, competition strategies, and funding, time, and data management plans.
Volunteer Registration	Records those volunteers present on the day of competition, collects release forms, provides name badges, and directs volunteers to the Volunteer Scheduling Lead or Assistant for further direction and confirmation of their assignments. Will also provide a BotsIQ T-shirt to each volunteer that has requested one.
Competition Judge	Watches the matches and assigns points to each team's robot during the match. Based on the score, signals the winning robot of the match.
Light-Duty Worker	Carries supplies, completes forms, fills in for volunteers who need a break, helps set up food in the volunteer lounge, and assists with a variety of tasks throughout the event.
Awards Presenter	Coordinates the final awards ceremony at the conclusion of the competition, and presents the awards to the winning teams.
Clean Up/Shut Down	Ensures all supplies and documents are secured after the conclusion of the first day of competition, and knows the location of supplies and documents in preparation for setting up the second day of competition.
Arena Sweeper	Removes any debris generated during a match from the arena before the next match may begin.
Master of Ceremonies	Provides "color commentary" for the day's events by announcing the competing teams, describing the matches for the audience, and filling in the time between matches with interesting dialogue.
Score Keeper	Records and tracks all points earned by teams as a result of competing in matches, forfeits, interviews, and documentation during the course of the competition. This score is used to determine the winner in most award categories. Proficiency with Excel 2010 is required.
Event Coordinator	Acts as the liaison between the hosting institution and the BotsIQ Executive Committee. Should be able to answer questions about facilities and personnel available at the location, assist with set-up, the actual competition, and tear-down.
Expo Area Lead	Coordinates the organizations involved in the Expo Area, from recruiting and initial registration to final closing of the area. Arranges the tables and exhibition space required by the participating organizations in accordance with the official floor plan for the event, and addresses any concerns raised by the Expo organizations during the event.
Head Competition Judge	Watches the matches and assigns points to each team's robot during the match. Based on the score, signals the winning robot of the match. Settles any disputes by teams resulting from a match.
Event Photographer	Takes pictures of the event and the participants to document the proceedings of the competition. May post photographs to the BotsIQ website or other online sites, or post videos to YouTube.

Pit Entrance Monitor	Restricts access to the pit area to those with the proper badges to allow entrance and with appropriate safety glasses.
Pit Perimeter Security	Monitors the perimeter of the pit area to ensure that no unauthorized individuals or those who lack the appropriate safety goggles and/or name badge enter the pit area.
Pit Monitor	Patrols the pit area to ensure all safety procedures regarding work performed on the robots are followed, including the wearing of proper safety eyewear at all times. Ensures that only those people with properly marked name badges are in the pit area. Ensures that no more than 8 students from any one team are present in the pit area at any given time.
Pit Runner	Enters the pit area to inform teams that their match will begin next, and escorts the teams to the arena area in time for the start of the match. Conveys any messages from the BotsIQ committee to the teams, and vice versa.
Press Contact	Communicates and coordinates with newspapers, TV, radio, and other media outlets to promote the competition before, during, and after the event. Addresses any concerns raised by media representatives.
Test Box Monitor	Observes and monitors testing of a robot's weapon and drive systems in the box designed for safety during this procedure.
BotsIQ Sales Clerk	Sells BotsIQ-related items, such as shirts, hats, and safety glasses, to team members and the general audience.
Student Surveys	Monitors the banks of computers utilized during the collection of data of students' opinions about the competition, the process of building a robot, their plans after high school, and their overall BotsIQ experience.
Team Photographer	Takes photographs of each team involved in the competition, to be given to the team's school or team members for display. May post photos to the BotsIQ website.
Team Escort	Guides teams as they progress through completing interviews, team photographs, and student surveys.
Volunteer Lounge Monitor	Ensures that only BotsIQ volunteers enter the lounge area, and adequate quantities of food, beverage, ice, and paper products are available, replenishing as needed.
Welder/Grinder	Controls access to the welding and grinding area, and performs any permitted modifications through welding or grinding of parts for robots at the request of a team.
Team Escort Lead	Coordinates the team escort volunteers by explaining the position, showing the volunteers where each area the teams are required to visit is located, and providing an orderly schedule for the team escorts to follow to avoid backlogs at any particular area.
Volunteer Scheduling Lead	Maintains the volunteer scheduling website, assigns volunteers to needed positions, and notifies volunteers about their assigned positions and the time, date, and location of their position. On the days of the competition, addresses any questions or conflicts with volunteer schedules, directs volunteers to the correct location that they are needed, assigns walk-in volunteers to a position, and reassigns volunteers to additional/other jobs if required.
Volunteer Registration Lead	Coordinates those involved in volunteer registration. Addresses any concerns or questions that volunteers may have upon their arrival.
Volunteer Scheduling Assistant	Works with the Volunteer Scheduling Lead to escort volunteers to needed positions, and answers any questions from the volunteers about the job to which they have been assigned.

Documentation Review Lead	JOB START TIME CHANGE: PLEASE DOUBLE CHECK YOUR ASSIGNED START TIME IF YOU HAVE BEEN ASSIGNED TO THIS JOB. THIS JOB NOW STARTS AT 8:30 AM. // Coordinates the documentation review volunteers by explaining the position, assigning volunteers to specific areas of evaluation, and answering any questions which may arise regarding documentation review. Collects the notebooks, numbers them, and records the time received and the time completed. After completion, returns the notebooks to the teams.
Site Coordinator	Acts as the liaison between the hosting institution and the BotsIQ Executive Committee. Should be able to answer questions about facilities and personnel available at the location, assist with set-up, the actual competition, and tear-down.
Facilities Lead	WCCC - Pete Hanchar // CalU – Lindsay Bullis
Master of Ceremonies	The master of ceremonies is the voice of BotsIQ during the competitions. If you are an entertaining public speaker, know a lot about the teams and BotsIQ, and want to get on the fast track to big-time sports broadcasting, this job is for you!
Guest	This "job" is reserved for dignitaries, the media, and other non-volunteers. It is managed by the BotsIQ management team. It is not meant for general volunteer use. Thank you for understanding. (This will allow us to create name tags for everyone.)
Speaker	This job category is reserved for invited speakers.
Electronic Brackets Lead	Manage the web-based bracket system for on-line access.
Expo Participant	These are company representatives that will be manning tables at the Expo at the finals. This category is not open to the general volunteer.
National Anthem	Assists with any and all aspects of the singing and/or playing of our national anthem during opening ceremonies.

Time	Topic	Actions	Notes
1 month	Schedule	Develop Safety Appointment and interview schedule from registrations	Safety inspection appointments are requested on a first come first serve basis. Develop roster of inspection appointments for inspectors sorted by inspection time, then pit #. Make sure to print copies. Most teams will get their first choice. If they do not, contact the team to arrange an alternative time. 1 week prior – Make enough copies for each team plus 30 copies (2 sided) of Internal Inspection Form and Functional Test Form. Place in files marked "Internal Inspection" and "Functional Test". Go to www.gonrl.org to view documents. The same process can be used to schedule team interviews. Order is not important.
	Event & Technical Rules	Send out Judging Guidelines	Provide to judges and teams in advance. SEE FOLLOWING EXAMPLES
	Forms/ Printed Materials	Update Competition Packet Documents	**Competition Packet:** Post Registration info to be distributed at Competition. The competition packet needs to be put in order for each team participating at the competition. This should be prepared at least 3 weeks in advance. **Supplies:** 10x13 envelopes – enough for each team 2 (second envelope is used to mail certificates after the competition) Plain white paper Lunch tickets (if needed) Name badges – Avery 5395
	Volunteer Registration	Send Volunteer Confirmation Emails	SEE FOLLOWING EXAMPLES
	Forms/ Printed Materials	Send Registration Confirmation packets	All items for packet need to be updated with current year information. Makes updates in Word docs and save as PDF. Compile all PDFs into one "Confirmation Package". Go to www.gonrl.org to view the Registration Confirmation information.
	Forms/ Printed Materials	Write Script for Announcer	SEE FOLLOWING EXAMPLES
	Forms/ Printed Materials	Deadline for Program Booklet Info	Go to www.gonrl.org to view an example of a Program Booklet.

Basic NRL Safety Rules

- Students should never touch the weapon while the battery is connected.
- Adults should never work on the bot.
- Everyone must wear safety glasses at all times while in the pits.
- At least one team member must remain in close proximity to their work station so that inspectors and pit runners can find them.
- All power to the bot should remain off if the bot is not in the test box or arena.

General Safety Inspection

- Inspect and check off all items on the inspection sheet that are applicable.
- Bypass the Radio Control Equipment section on the checklist.
- Know how to use, and make good use of the Voltmeter in the inspection process.
- Verify the battery type through "Purchase Receipt" or other documentation.
- The internal inspection should be completed prior to all other safety inspections.
- Remain with the team and complete the entire inspection process before beginning the inspection for the next team.
- Weigh the Bot, and then proceed to the text box. Sequence (Guard – Receiver Power On – Bot Power On – Restraint – Power off)

Between Battle Inspection

- Weigh the bot
- Look for new components that may have been added between events.
- Re-inspect the electrical system (Use the Voltmeter)
- New components that were added between events should be re-inspected in the test box.

Safety Inspection Procedure

Preliminary Safety and Operation Check

1. Teams arrive for their safety inspections based on pre-set inspection appointments.

2. Each team checks in at registration table and then goes to its assigned pit table and unloads/sets up bot.

3. First available safety inspector goes to team's pit table to begin the inspection.

4. The Inspector examines the robot starting with the Internal Inspection Checklist, checking each box as the specific area passes inspection. Any area not passing inspection is noted at the bottom of the Internal Inspection Request Form.

5. If all areas pass the Internal Inspection, the inspector continues with the Functional Test Request Form.

6. An Inspector reviews the Functional Test Request form with the team representative and performs the inspections specified on the Function Test Checklist (on back of form), beginning with weighing the Bot, checking each box as the specific area passes inspection. This is followed by Pneumatics Check, Activation of Bot, and Motion System Fail-Safe. If the bot has a powered weapon, the bot must be placed in a test cage prior to performing the remaining tests, including the Powered Weapon Systems Testing, Spring Arming/Disarming, Autonomous Features (if applicable), and Deactivation of Bot. Any area not passing inspection is noted on the bottom of the Functional Test Request Form.

7. If all areas pass the Functional Test, the Inspector signs off on the Functional Test Request Form and retains the form. To prevent modifications, the bot then remains in the pit area for the duration of the competition. Robots that are required to remain overnight may be moved to a secured location only when accompanied by a safety inspector.

8. Inspectors submit both request forms to the registration desk where the robot will be marked as "passed" on the master inspection form.

9. If all areas do not pass the Internal Inspection or the Functional Test: the team representative is provided the corresponding request form with the failed items listed. After the team addresses the areas of concern the team alerts their initial inspector and the inspection process continues.

NRL Scoring Criteria

Scoring: Based on 3 levels: Documentation, Engineering & Design, Competition

Documentation: Establish points per criteria for a total to equal 10 points. For example if the scoring criteria were: Complete Financials, Team Bios, Mechanical Drawings, Wiring Diagrams, and Neatness, then you would score 2 points for each criteria (0 for not included, 1 for partial, 2 for complete).

Design: Same process as documentation, however these are subjective and would include: Design, Versatility, Control, Combat Effectiveness, and etc. Again total points given can only reach a maximum of 10. This can be scored at judging by demonstration of criteria (0 for not weakly demonstrated, 1 for demonstrated satisfactorily, 2 demonstrated flawlessly).

Competition: This would be rated on a 10 point must system per match and the average would be taken at the end of the Tournament. In any given competition a team must receive a 10 point score and a defeated team would receive a 9 or an 8 depending on whether they lost by judges decision or TKO respectively.

Upon completion of Tournament, the scores for each team would be added together to establish total Tournament Score and would look like the following:

Team	Documentation	Engineering	Competition	Total
A	10	7	8.5	25.5
B	8	8	10	28
C	9	9	9	27
D	7	9	9.5	25.5
E	10	10	9	29
F	7	7	9	25

In the event of a tied total score, the tie-breaker could go to the highest Competition Score, followed by the highest Engineering Score, then Documentation.

Coolest Bot or Team Favorite would need to be a separate award and not included in the National Champion due to the complexity of tracking, variance team members, etc.

Scorecard Instructions

Before the Match:

- Write the Match # in the upper left corner of the score card
- Write each robot's name or pit number in the appropriate space

Battle:

- For each of the battle criteria put a check in the box next to the robot you feel was more successful.
- At the end of the match give the winning robot a score of 10, and the losing robot a score of 9 if the loss was by decision and an 8 if the robot tapped out or was knocked out.
- Write the winning robot's name/pit number on the "battle winner" line.

Engineering:

- Award each robot up to 2 points for each of the Engineering categories listed on the scorecard. 0 points for no evidence, 1 point for partial evidence, 2 points for full evidence.
- Total the Engineering score for each robot.

After the Match:

- Paperclip all three judge's scorecards together and drop in the clipped stack in the box provided.

NRL Documentation Details

While taking time to put together a documentation binder is not nearly as exciting as building the robot itself, the documentation process is an important part of manufacturing and today's marketplace.

Keeping accurate records of an engineering project is a necessary skill. Records serve not only as a communication device between group members, but as legal media proving design ideas. In industry, inventions without dated and signed documents that show the process followed rarely get patents. Poor documentation can lead to critical mistakes on jobs, potentially costing companies great expense in repairs on the job. NRL's goal is to create a well-educated and technologically skilled workforce.

Each documentation binder has the potential to earn a total of 10 points. Here are some items that will help your documentation receive high marks:

- Professionally presented in a neat and orderly fashion
- Followed the rubric and addressed each industry skill/category
- Provided supporting documentation (i.e., spreadsheets, drawings, specs, etc.)
- Used correct and specific technical terms as found in industry
- All documentation labeled clearly
- All drawings, specs and diagrams labeled clearly
- Used original writing specific to the team's current robot
- Included team members' names throughout documentation to show individual contributions.

The reason you want to take your time to do this is to learn and prepare yourself for the position you will be hired for in today's job market. Learning to be clear, concise and specific in your communication is a necessary skill to be successful in the work place.

NRL recognizes the importance of documentation and has instituted the mandatory presentation of team documentation for the upcoming competition. Each robot project should have its own unique documentation binder. There will be an award for the team that provides the Best Documentation overall and for Best Engineering Documentation at the event.

What should a Robot Project Portfolio entail?

A portfolio is a collection of material assembled over a period of time by a learner to provide evidence … of his/her competence, knowledge, skills, abilities, dispositions, and improvements toward a project or life goal in the area in which the learner is preparing (i.e., Engineering).

The Robot Project Portfolio should show evidence of:

- Design Motivation
- Team Procedures
    - Team Management
    - Material Management
    - Accounting/Budget
    - Time Management
    - Data Management
    - Promotional/Fundraising
- Strategy
    - Offensive
    - Defensive
    - Winning
- Design Process
    - Research Methods
    - CAD Models
    - Refinement
    - Structural Analysis
    - Engineering Drawings Set
    - Material Selection
    - Manufacturing Plans
    - Assembly Models
    - Weapon System Details
    - Drive System Details
    - Power System Details
    - Wiring Schematic
    - Testing Results

The Robot Project Portfolio should be a 3-ring binder that shows evidence of the above information. The judges will spend approximately 15 minutes with each team's portfolio so it is important to take this into consideration when creating the portfolios.

Bot Documentation Binder Rubric

Criteria	All/Excellent	Some/Good	None/Poor
Design Motivation			
Influences			
Team Procedures			
Team Management			
Material Management			
Accounting/Budget			
Time Management			
Data Management			
Promotional/Fundraising			
Design Process			
Research Methods			
CAD Models			
Refinement			
Structural Analysis			
Engineering Drawing Set			
Material Selection			
Manufacturing Plans			
Assembly Models			
Weapon System Details			
Drive System Details			
Power System Details			
Wiring Schematic			
Testing Results			
Strategy			
Offensive			
Defensive			
Winning			

Announcer Script Example

(Repeat the messages below throughout the day)

Thank Competition Sponsors—The NRL National Competition would not be possible without the generous support of our sponsors. Those sponsors include:

- DEPCO, LLC
- Grainger
- Boston Centerless
- Overton Industries
- Sandvik Coromant
- Ivy Tech Community College
- Mosey Production Machinists
- Big Kaiser
- PartnerShip

Thank NTMF —In addition to competition sponsors, the National Robotics League is supported by a generous grant from the National Tooling and Machining Foundation.

Additional Acknowledgments: The National Robotics League wishes to thank:

- All of our sponsors and volunteers
- The XtremeBots program of Dayton OH for the use of their test cages
- RoboBots, a program of the NWPA NTMA for the use of the arena lights and timer
- Assebet Valley Technical High School for the use of their arena
- The INTMA Chapter of the NTMA, Club Cyberia, and the IUPUI Engineering Department for helping to recruit volunteers
- PartnerShip, "Your Shipping Connection" for shipping the arena and all of our program materials to Indiana.

Thank technical advisors—Local companies have put in many hours and $$ to sponsor and advise students. This is very important! It helps us to achieve our goal of career awareness.

Regional Programs--The National Robotics League is made up of independently managed combat robotics programs all over the country, many of whom are affiliated with NTMA Chapters. We are pleased to have representatives from the following programs competing at Nationals this year.

- AWT RobotBots in Mentor, OH
- The Midwest Robotics League in Minneapolis, MN
- SWPA BOTS IQ in Pittsburgh, PA
- RoboBots of NWPA in Meadville, PA
- Robot Warriors in Bloomsburg, PA
- XtremeBots in Dayton, OH.
- NRL Regional Program of Greater Boston

Regional NRL programs are also active in Wisconsin and Arizona, and new programs are forming in Southern California and Utah.

If you would like more information about starting a regional program where you live, please leave your name and e-mail address at the NRL Info Booth.

Awards of Distinction-- Remember, we will present three awards of distinction, sponsored by Sandvik Coromant, in addition to the competition awards. So, even after you've been eliminated from the competition, you still have a chance of winning!

The awards of Distinction are:

Best Documentation: Awarded to the team who kept the best records of their engineering process, and best explains that process in their documentation interview.

Best Engineered: Chosen by our match judges, this award is given to the bot that best uses engineering principals to build an amazing fighting machine.

Coolest Bot--Students-- cast your vote for the coolest robot! Ballots are in your registration packet, and can be turned in at the registration table. Remember, Coolest Bot is the award chosen by you, so make sure your voice is heard!

Buy a T-shirt—What better way to commemorate your experience this weekend than with an Event T-shirt? T-shirts are on sale for $15 each at the NRL info booth.

Thank Volunteers--This event would not be possible without the many volunteers from our industry and the city of Indianapolis.

Please take a look at the list of volunteers in your program and give these great people a round of applause!! If you would like to be on this list for our next event, let us know by signing up at the information table!

The Manufacturing Industry Supports STEM Education

Strong STEM education programs in our middle and high schools, as well as colleges and universities, are essential to the future growth of industries like manufacturing. There are several hundred thousand skilled jobs in manufacturing right now that need to be filled. Our company owners know that and want to step up to do their part to make sure those education programs thrive and support our industry in the long run.

The NRL grabs the attention of students in ways other "career readiness" programs cannot.

Teenagers have a lot going on, and so it can be hard to allocate time and energy to learning the skills needed for a successful career. Combat robotics programs like the National Robotics League get around that problem by hooking young people with the fun, creativity and wow factor of designing their own sophisticated machine, and then following up with challenges that force them to expand their knowledge and skills. It just so happens that the knowledge and skills required to build a successful combat robot are the same ones required for a successful career in engineering or manufacturing.

Welcome to the new world of Manufacturing

One of the side benefits of this program is it gives students and their parents a chance to see what modern manufacturing looks like from the inside. Once people see what really happens inside today's manufacturing facilities, old views of what it means to work in manufacturing fade away and a whole new world of possibilities opens up for them. That's not only good for our companies, but for our economy as a whole.

Announcer Script Examples for Matches

Introduce the bots:

(Fight or bout or battle or match your choice of terms.)

Match number _____ (Important to say this number at start and finish so teams have an idea where we are on the tournament tree)

In the blue square from ……..

In the red square from……..

To start a match:

The robots are loaded and the box is locked. (When referee locks the door)

Blue team are you ready? (Wait for signal)

Red team are you ready? (Wait for tree to start countdown)

In 3, 2, 1 fight robots fight.

At the end of match:

(Give judges some time to get ready for their decision.)

Judges your decision for match number _____ in 3, 2, 1 and the winner is *blue or red*. MUST ANNOUNCE COLOR OF WINNER.

Tap out:

(The color of the team tapping out will light up on the tree.)

We have a tap out by the *blue or red* team, so the winner of match number _____ is *blue or red* team.

If robots get stuck:

Official time out while the robots are separated.

(When the box is relocked watch for the referee's signal)

(Countdown) In 3,2,1

If one robot gets stuck under the bumper:

One unstick per bout.

First time, 20 seconds to try to free itself. The other bot can wail away in the mean time, if they want to. Then an official timeout to free the bot.

(When the box is relocked watch for the referee's signal)

(Countdown) In 3,2,1

Second time, 20 seconds to try to free itself if not TKO for the other bot.

Bot pinning the other bot:
10 seconds then the pinning bot must release. No limit to the amount of times a bot can pin.

What is a bout, match, fight, battle:
Two 15lb robots for 3 minutes or until one taps out or is counted out as being immobile, a knockout.
If 3 minutes pass then it goes to our three experienced, wonderful judges that will score a winner based on aggression, control, damage and strategy of the bout.

What is in a bot:
Imagination, hard work, many hours etc. etc.

- Aircraft grade aluminum. Very light with good strength.
- That magical metal titanium. Much lighter than steel but just a strong. Big bucks $45/lb.
- High impact plastics. Extremely light, fair strength, low cost.
- Batteries are nickel metal hydride, nickel cadmium, lithium ion with voltages from 9 volt to 24 volt. No lithium polymer batteries are allowed.

Types of bots:
The Brick: Simple design but must be fast and durable to take punishment. A four wheel, basically square design with flat sides. Idea behind the design is to ram and push the opponent hoping to break internal parts.

The Classic Wedge: Simplest design. Either two or four wheel bot with sloping or angular sides. Idea behind the design is to get under the opponent rendering the opponents drive useless because the wheels are off the ground.

Thwack Bot: Two wheel bot who's strategy is to get into the center of the arena and spin around hoping the other bot will drive into the spin.

Horizontal Spinner: A blade or disc that spins in the horizontal plane.

Vertical Spinner: A blade or disc that spins in the vertical plane.

Undercut Spinner: Usually something like a lawn mower blade that spins very close to the floor. Strategy is to attack the opponent's wheels.

Full Body Spinner: The entire shell of the bot spins around a stationary drive train. If done right this style is very destructive. If not done right they are very self-destructive.

Drum Spinner: A horizontal drum with teeth or bars mounted on it that will lift and through its opponent. One of the most popular type of weaponed bot.

Gyroscopic tendency when a spinning mass is so great that it affects the maneuverability of the bot.
Example 1: Vertical and Drum bots will get one corner of their opponent lifted off the floor.
Example 2: Horizontal and Full body spinners will have a hard time turning one direction and when hit turn into a wildly spinning top.

Volunteer Confirmation Email

Subject: Xtreme Bots Competition Volunteer Confirmation notice – Please respond by Wed. Oct 14th

Dear Bots Volunteers:

I'm writing to thank you for agreeing to volunteer for the Fall 2009 Xtreme Bots Regional Competition, sending you more information about the event, and confirming the times you are available to help.

Action items (Please respond by Wednesday, Oct 14th)

• Confirm your availability and assignment on Wednesday, Oct 21st and/or Thursday, Oct 22. The attached roster lists assignments and work schedules. If I've listed your availability incorrectly, or you would prefer a different assignment please let me know ASAP. Lunch will be provided for all volunteers on both days.

• Volunteers should wear their volunteer shirt from previous year. If you do not have one please let us know what size you need and we will provide a t-shirt for you.

• Everyone with access to the pit areas, including volunteers, needs to read and sign a liability wavier. Please read the attached waiver and bring a signed copy with you to the event.

• If you have signed up for a specialized position (i.e. announcer, documentation judge, match judge, safety inspector or referee) details will be sent about your specific role in the next week.

• Do you know someone who would enjoy volunteering for this event? Forward this email to them and encourage them to contact us to get on the mailing list.

Schedule

Thursday, Oct 22nd

8:30am Volunteers arrive

9:00am – 5:00pm Teams begin to arrive for safety inspection and documentation

Friday, Oct 23rd

8:00am Volunteers arrive

8:30am Teams arrive

9:00am – 5:00pm Bouts begin

5:30pm Awards and Closing Ceremony

Announcer Email

Dear Bots Volunteers,

Thank you for volunteering as an Announcer for our upcoming Xtreme Bots Competition on Oct. 23rd at the Advanced Manufacturing and Technology Show.

The role of the Announcer is to help the crowd get into each battle by providing color commentary and to deliver our "key messages" though out the day. I have attached a copy our four key messages and the competition rules (there will be copies at the event as well) so you will be more familiar with what is going on in the ring.

Thanks for your help and we look forward to seeing you next week. Feel free to contact us if you have any questions before then.

Cheers,
Sarah

Documentation Judge Email

Dear Bots Volunteers,
Thank you for volunteering as a Documentation Judge for our upcoming Xtreme Bots Competition on Oct. 23rd at the Advanced Manufacturing and Technology Show.

The role of the Documentation Judge is to review the documentation teams turn in with their robots. I've attached a copy of the documentation guidelines provided to the teams to this email and will provide score-sheets at the event which should make the judging a fairly straight forward affair. Thanks for your help and we look forward to seeing you next week!

If you have any questions prior to next Wednesday, please don't hesitate to contact us!

Match Judge Email

Dear Bots Volunteers,
Thank you for volunteering as a Match Judge for our upcoming Xtreme Bots Competition on Oct. 23rd at the Advanced Manufacturing and Technology Show.

The role of the judge is to determine the winner in matches where a robot is not "knocked out". I've attached a copy of the competition rules and some judging guidelines for your reference. Please don't feel like you need to memorize either of these documents. They are provided as a tool to help you make your decision. In the end it is up to your own judgment to decide which robot is the winner.

Thanks for your help and we look forward to seeing you next week. Feel free to contact us if you have questions before then.

Referee Email

Dear Bots Volunteers,

Thank you for volunteering as Referee for our upcoming Xtreme Bots Competition on Oct. 23rd at the Advanced Manufacturing and Technology Show.

The role of the referee is to help students get in and out of the arena safely, to open and close the arena doors between matches and to help enforce the safety and match rules.

I've copied those rules below for your reference. You don't need to print them or memorize them as we will have copies for you at the event.

Thanks for your help and we look forward to seeing you next week. Feel free to contact us if you have questions before then.

Time	Topic	Actions	Notes
2 weeks	Forms/ Printed Materials	Print Team Registration Forms	This is the master copy of the registration spreadsheet
	Site Setup	Make Pit Assignments	Determine which teams should be at what tables, group them locally by school.
	Sponsorship	Finalize Sponsors	
	Awards	Confirm Sponsor's Availability to present the Awards	
	Forms/ Printed Materials	Prep Competition Bins	Make enough extra copies of the informational material for your size of competition Each bin should have: • Pens + extra • Blank paper • Stapler • Scissors • Tape • Binder clips
	Forms/ Printed Materials	Prep Volunteer Registration Bin	SEE FOLLOWING EXAMPLE of registration instructions • Competition agenda • Label maker / marker for extra name badges • Volunteer Registration form • Pit map / Team list with Bot name • Volunteer list sign-in • Competition Procedures • Liability forms • Technical Regulations • Lunch instructions / options • Extra name badge holder clips • Venue map • Extra name badge holders • Volunteer name badges in badge holders • Blank name badges • Badge holder clips (if needed)
	Forms/ Printed Materials	Prep Team Registration Bin	• Liability forms • Markers • Documentation grading info / rubric • Extra name badge clips • Competition agenda • Extra name badge holders • Technical Regulations • Blank name badges • Competition Procedures • Lunch options • Pit map / Team list with Bot name
	Forms/ Printed Materials	Prep Judges Bin	• Technical Regulations • Pit map / Team list with Bot name • Competition Procedures • 4 Clipboards (1 for each judge and an extra) • Competition agenda • Extra score sheets • Enough score sheets to cover all bouts
	Forms/ Printed Materials	Prep Safety Judges Bin	• Competition agenda • Enough voltmeters for each safety inspector • Safety inspection instructions • Enough clipboards for each safety inspector • Internal inspection forms • Pit map / Team list with Bot name • Functional inspection forms
	Forms/ Printed Materials	Prep On Deck Lead / Bout Scheduler	• Pad of lined paper • Computer with internet access to online brackets (if needed) • Red and Blue duct tape • Clipboards (2) one for designated red and blue team • Individual team information sheets for announcer
	Forms/ Printed Materials	Prep Materials for Documentation Rooms	• Documentation rubrics enough for each team • Pens + extra
	Team Registration	Prep Teams for Bracket Spreadsheet	An online bracket option can be provided to you by Sarah Brooks (sbrooks@ntma.org)
	Team Registration	Prep Team Registration Packet	• Team member, teacher and industry advisor name badges in badge holder with clips

Conducting the Registration/Check In

- Get waiver forms from teacher/student checking in team
- Confirm each student, coach and advisor on the registration sheet has signed the waiver by highlighting each name on the registration spreadsheet.
- Tell the team to which documentation group they belong and have them place their documentation in the corresponding bin.
- If the team pre-ordered t-shirts (check the back flap of the registration envelope) give the coach the t-shirt bundle for his/her school.
- Hand the coach their team packet envelope
- Tell teacher next steps/safety inspection directions: unload bot at your pit table, wait for inspector to visit at your assigned time.

Time	Topic	Actions	Notes
1 week	Awards	Create Special Award Winner form	SEE DROPBOX FOR SAMPLE
	Forms/ Printed Materials	Make People's Choice Award ballots (if needed)	
	Forms/ Printed Materials	Prep Announcer's Assistant Binder	
	Forms/ Printed Materials	Prep Clipboards for Pit Runners	• Pit map / Team list with Bot name • Blank paper • Pen
	Forms/ Printed Materials	Print Dummy Certificates	
	Schedule	Confirm all items on Event Planning Checklist	
	Volunteer Registration	Send Detailed Volunteer Reminder Info to Specialized Volunteers	This is a reminder email about the specialized volunteer informational duties sent at the one month mark
	Site Setup	Meet with Venue Contact to Confirm Plans	
	Awards	Pick-up Trophy/Plaques	
	Forms/ Printed Materials	Copy Volunteer Assignment Sheet	
	Schedule	Arrival Date at Competition Site	You may have to adjust times/days based on the size of your tournament. Not every task will be relevant to every event.

Time	Topic	Actions	Notes
Day of	Marketing	Send Press Releases to Regional Newspapers with Winners	SEE FOLLOWING EXAMPLE
	Site Setup	Return Transportation Date	Confirm return shipping with Shipping Company. Have Bill of Landing ready for each crate or box in return shipment.
1-2 weeks after		Update records	Update school, Sponsor, Technical Advisor, and all Company Spreadsheet records for next event
	Event Logistics	Review on Event	Get the major planners of the event together to discuss / review how event went and what to improve upon.
	Forms/ Printed Materials	Send Thank You Letter to Media	
	Forms/ Printed Materials	Send Volunteer Thank You	**Example Thank You Volunteer Email:** Thank you for all of your work and dedication to the SWPA BotsIQ Program. It is amazing that the program has grown from 5 schools in 2006 to 60 schools involved in BotsIQ during the 2014-2015 school year. You should all be proud of what you have built over the past ten years. One of the by-products of our growth, is the need for more volunteers to help out at the competition. There is no such thing as having too many volunteers for the BotsIQ Finals. We can always find something for someone to do. Therefore, please send out one more reminder to your contacts about helping us out at CAL U on Thursday, Friday and/or Saturday. If you need to, remind yourself to go and register your volunteer slot(s) at www.botsiqvolunteer.org.
	Forms/ Printed Materials	Store Liability Release Forms	ALL liability release forms from participants (volunteers, team members, teachers, etc.) need to be stored for at least seven years.
	Marketing	Add new names to List from Competition	• Maintain a list of everyone involved in Bots and/or interested in receiving Bots info. • Names are added to the list via contact information on the liability forms (students and parents), mailing list sign-up forms at exhibition event and manually after face-to-face meetings etc.
	Marketing	Post Competition Winners	On Website and Social Media outlets
	Marketing	Post Info on Next Competition	On Website and Social Media outlets
	Marketing	Post Photos	On Website and Social Media outlets
	Site Setup	Clean Up	
	Forms/ Printed Materials	Send Participation Certificates to Teachers	

Media Contact: Diane Wuycheck, 412-310-4151

Dayton's Ponitz CTC takes National Robotics League Grand Championship Plum Borough School District in First Place

Cleveland, OH – May 18, 2015 – Ponitz CTC of Dayton, Ohio, took Grand Championship and third place honors at the National Robotics League (NRL) national competition at Baldwin Wallace University, in Berea, OH, May 15-16.

In addition to double elimination bouts, teams complete stringent engineering and detailed documentation requirements and face-to-face interviews with NRL officials to determine points toward the Grand Champion title. The Grand Champion Award and $500 prize go to the team with the highest combined score. Other winners receive an award or certificate.

The lineup of awardees includes:

- Grand Champion -- Ponitz CTC, Dayton, OH Robot: R.O.N.
- First Place -- Plum Borough School District, Pittsburgh, PA Robot: Knockout
- Second Place -- North High School, North St. Paul, MN Robot: Final Cut
- Third Place -- Ponitz CTC, Dayton, OH Robot: R.O.N.
- Best Engineered Bot (tie) -- Beaumont School, Cleveland Hgts., OH - Robot: Beaumonster and Dunwoody College of Technology, Minneapolis, MN Robot: Wedgey
- Best Documentation -- Ringgold High School, Monongahela, PA Robot: Mark 42
- Coolest Bot (tie) -- Admiral Peary AVTS, Ebensburg, PA Robot: TOXIC and Punxsutawney (PA) Area High School Robot: The Mystery Bot
- Sportsmanship -- Punxsutawney Area High School

Months of work by a record number of 65 teams and nearly 300 student participants from eight states and Puerto Rico were on display this year. Student teams competed in NRL sanctioned regionals to prepare for the national competition.

The NRL, a program of the National Tooling and Machining Association (NTMA), provides a national structure for job-driven, STEM (science, technology, engineering and math) focused educational robotics where students design and build remote controlled robots to face off in a gladiator-style competition.

Manufacturers support the National Robotics League because it's "wow" factor helps to overcome two of the industry's greatest challenges -- to attract the best and brightest into a variety of manufacturing careers and to align public perception of manufacturing with today's clean, high-tech, advanced facilities. The technical and soft skills students learn can directly lead to broad career options – direct to industry, technical school certificates, associate's or bachelor's degrees, and a career track with family-wage earnings.

"The NRL is the only combat robotics league that formalizes ties with middle to post-secondary school teams, teachers and manufacturing partners, introducing them to real-world manufacturing experiences," said Bill Padnos, NRL director of youth engagement.

Industry sponsors supporting the competition were: NTMA Akron Chapter -- Premier Competition Awards Sponsor; Boston Centerless and Voss Industries -- Pit Sponsors; and +GF+ and MPM (Moseys' Production Machinists) -- Bleacher Sponsor s. Other company sponsors are Homeyer Precision Manufacturing, Grainger, and Gears. T-shirt sponsors are Royal Product, PartnerShip LLC, and the NTMA Training Centers.

For additional information about the NRL, industry sponsorships and participation in 2016 regional and national competitions, contact Bill Padnos, 412-258-6629, bpadnos@ntma.org, or visit www.gonrl.org.

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Editor's Note: A complete list of participating schools is at http://gonrl.org/press-room/
Competition photos available upon request.

***About NTMA**: NTMA's 1,400 member companies design and manufacture special tools, dies, jigs, fixtures, gages, special machines and precision-machined parts. Some firms specialize in experimental research and development work as well as rapid prototyping. Many NTMA members are privately owned small businesses, yet the industry generates sales in excess of $40 billion a year. NTMA's mission is to help members of the U.S. precision custom manufacturing industry achieve business success in a global economy through advocacy, advice, networking, information, programs and services.*