



# **The 2007 Indiana Robotics Invitational Information Document**

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IRI Organizing Committee  
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## **I. Introduction**

This document is written to describe the 2007 Indiana Robotics Invitational, otherwise known as the “IRI”. 2007 is the 8<sup>th</sup> year for the IRI and this year is expected to be the biggest and best ever. The goal of the organizing committee is to make the IRI the premier out of season FIRST robotics tournament.

## **II. History**

The IRI began in 2000 and was originally developed by Team 45, the TechnoKats from Kokomo High School. By 2001, the IRI had outgrown the Kokomo facility and was too big to be managed by a single team. For the 2002 IRI, Team 234, Cyber Blue from Perry Meridian High School, and Team 393, Full Metal Jackets, from Morristown High School, joined forces with Team 45 and moved the IRI to its’ current location in Indianapolis.

For 2007, the IRI will expand to include 66 teams, several new awards and special program events. The tradition of the All Team Dinner on Friday night continues.

New for 2007 will be the “Pre-Rookie Exhibition Challenge”. See Section XIII for more details.

The sections below provide details on the event.

Please direct any questions, concerns or inquiries to the Planning Committee at: [PC@IndianaRoboticsInvitational.org](mailto:PC@IndianaRoboticsInvitational.org)

The latest updates for event information can be found at the event website: [www.IndianaRoboticsInvitational.org](http://www.IndianaRoboticsInvitational.org)

## **III. Hosts**

- A. Event Hosts
  - 1. Team 234, Cyber Blue, from Perry Meridian High School, Indianapolis, IN
  - 2. Team 45, TechnoKats, from Kokomo High School, Kokomo, IN
- B. Site Hosts
  - 1. Team 1024, Kil-A-Bytes, from McKenzie Career Center, Lawrence, IN

## **IV. Location**

- A. The 2007 IRI is at Lawrence North High School

Lawrence North High School  
7802 Hague Road  
Indianapolis, IN 46256

## V. Dates and Times

- A. Dates – The 2007 IRI is Friday and Saturday, July 20 and 21.
- B. Times – Thursday July 19
  - Team Load In \* 7 PM – 8:30 PM
- C. Times – Friday July 20
  - Doors open at 7 AM
  - Opening Ceremonies 10:30 AM
  - Matches begin at 11 AM
  - Activities end at 9:30 PM
  - Doors close at 10:00 PM
- D. Times – Saturday July 21
  - Doors open at 7 AM
  - Opening Ceremonies 8:00 AM
  - Matches begin at 8:15 AM
  - PRE-Challenge ~ Noon
  - Finals begin at 1:30 PM
  - Activities end at 4:00 PM
  - Doors close at 5:30 PM

\* This is only for bringing in your robot and setting up your pit area.  
There will be no practice or field time available for teams.  
All teams must depart by 8:30 PM on Thursday night.

## VI. Entry Fees

- A. \$400 – All Regular Competition Teams  
\$ 0 – Pre-Rookie Exhibition Competition Teams

- B. Filled Back-Pack for an Elementary School Student

Materials: Small Backpack, 1 pair scissors, 3 pocket folders, 1 box of 24 crayons, 3 glue sticks, 1 ruler with inches and centimeters, 1 package pencils, 2 large erasers, 2 black pens, 2 red pens, 2 packages loose leaf notebook paper, 1 school supply box, 1 package colored pencils, 1 package washable markers, 2 packages tissues, 3 spiral notebooks.

*Rolls-Royce supports several education related activities in the local area. This includes FIRST Robotics, Project Lead the Way and B.I.G. at the high school level, and several programs at the elementary school level. One special program is called "Pack to School". Employees donate materials for a backpack equipped for an elementary school student. These backpacks are collected and provided to local elementary schools with a high percentage of students who need this type of assistance. In 2006, the IRI collected over 80 backpacks and sent ½ of them to the hurricane ravaged areas of Louisiana and ½ to the Pack To School program.*

- C. \$1 Per Person Dinner Reservation Fee  
The Parent Crew from Team 234 Cyber Blue provides dinner for all team members and mentors on Friday night, between the competition matches and the talent show. To help assure an accurate count for food purchase, teams are asked to provide a count for dinner and \$1 per person for the reservation. A maximum of 25 tickets are allowed per team.
- D. IRI Scholarship Fund – VOLUNTARY DONATION  
New for 2007 is the IRI Scholarship Fund. This will be a permanent fund that will be used to provide a scholarship to a graduated FIRST team member. The decision to donate to this fund is entirely voluntary for teams. Any contribution is appreciated.

## **VII. Teams**

- A. Entries will be limited to 66 Teams, including the three host teams.
- B. All Indiana Teams are guaranteed entry if they apply during the first two days.
- C. A waiting list will be created after the field is full
- D. Teams not confirming their entry or not making payment by the required dates will be moved from the registered listing and replaced with a wait listed team to assure a full field.

## **VIII. Registration Process – CHANGED FROM PREVIOUS EVENTS**

- A. Registration begins at 6 PM (Eastern) on May 1<sup>st</sup>, 2007.
- B. Registration ends at midnight, May 30<sup>th</sup>, or when the field is full, whichever is first.
- C. Registration will be through the IRI Website –  
[www.IndianaRoboticsInvitational.org](http://www.IndianaRoboticsInvitational.org)
- D. Payment in full must be received by June 1<sup>st</sup>.  
Make checks payable to “Perry Meridian High School – IRI”.  
Checks must be in US Dollars  
Credit cards are not accepted
- E. Mail payment to:  
Indiana Robotics Invitational  
Perry Meridian High School  
c/o Steve Wherry  
401 West Meridian School Road  
Indianapolis, IN 46217
- E. An invoice will be generated when you complete the Registration Process.
- G. Information Required – the following information will be required to register –  
Team name, Team number, Point of Contact, Point of Contact phone and email,  
Number of students and adults attending, number of participants for the team  
dinner on Friday night.

## APPLICATION PROCESS

Note: Final Team Selection Process is at the discretion of the IRI Planning Committee and is designed to provide for a diverse field, recognition of teams supporting the IRI event and support for rookie and forming teams. Application date and time are important considerations in the final decisions.

### Application Process – Regular Competition:

1. May 1 – Applications Open
  - a. Teams apply through the IRI website and provide their team number, team name, contact person, contact email and contact phone numbers. Teams must provide a listing of 2007 Competitions attended and tell the IRI why they want to attend and how they will make the IRI a better event.
  - b. The application is date and time stamped by the website.
2. May 6 – Team Decisions Completed by Planning Committee
3. May 7 – Team Invitations Made
  - a. An invited team list and waiting list will be posted on the IRI website.
  - b. Invited teams will be notified by email.
    - i. Teams are encouraged to check the web site in case email security blocks or other technical problems block an email transmission.
  - c. Invited teams must return to the IRI website and complete the registration process. Additional information will be required. Teams will be able to print an Invoice directly from the website after registering.
  - d. Invited teams who are not able to attend are asked to notify the IRI planning committee ([PC@IndianaRoboticsInvitational.org](mailto:PC@IndianaRoboticsInvitational.org)) as quickly as possible so that wait listed teams can register.
4. May 14 – Registration Deadline for Invited Teams
  - a. All invited teams must complete the registration process by midnight May 14<sup>th</sup> or they will be moved to the waiting list and a wait listed team moved into the invited team list.
5. June 1 – Full Payment Due
  - a. Full payment must be received by Midnight, June 1.
  - b. Teams who have not completed payment by the required date will be moved to the bottom of the waiting list and a wait listed team moved to the invited team list.
6. Wait Listed Teams
  - a. Teams on the waiting list will be advised if a position becomes available. Teams will have 2 days to register and 2 weeks to send payment after notification.
7. July 1 – Final Team List Frozen
  - a. No additions to the team list will be made after July 1.

## Application Process – Pre-Rookie Exhibition Challenge:

### May 1 – Applications Open PRE-Challenge

Teams apply through the IRI website and provide as much team information as they have available. Teams will designate the existing FIRST team that is mentoring them and will provide their support during the IRI.

Teams may register up to July 1 for participation in the 2007 IRI PRE-Challenge.

There is no entry fee for the PRE-Challenge, however, teams are asked to pay the \$1 per person dinner reservation fee and bring a filed backpack.

## **IX. Volunteers**

- A. Volunteers make the IRI a successful event. Volunteers can register through the IRI website.
  - 1. If you apply, assume you will be utilized as a volunteer.
  - 2. You will be notified in early July of your role / responsibility.
  - 3. You can indicate a preference for position when you apply. The areas where volunteers are needed are:
    - Field Reset, Queuing, Pit Announcer, Scoring.
  - 4. If you are interested in being a Judge or Referee, please contact the Planning Committee directly at: [PC@IndianaRoboticsInvitational.org](mailto:PC@IndianaRoboticsInvitational.org)

## **X. The Game**

- A. The IRI Challenge will be the 2007 “Rack N Roll” game.
- B. There will be a “Mentors Round” during the Qualifications – this match counts in the standings. Teams will only play one mentor match and could possibly be in a match with a mixture of student driven robots and mentor driven robots. For the Mentor Round, the Driver, Operator and Human Player must be over 21 years old and the driver cannot have been a driver on a FIRST team while in high school. The coach must be a high school student (can be a 2007 graduate).
- C. **SCORING**  
Scoring will be the same as the official FIRST “Rack N Roll” with the following exceptions
  - 1. A keeper scored in Autonomous Mode will be worth 15 bonus points, in addition to any points it is worth as a scored tube.
  - 2. Other changes may be identified at the event
- D. **RULES**  
FIRST “Rack N Roll” rules will apply, with the following exceptions:
  - 1. Referees will attempt provide an indication that a tube has been de-scored.
  - 2. If a tube is de-scored, the same color tube may be re-scored without penalty. Another color tube may not be scored on the spider. A spoiler may be scored on the spider with a virtual tube (de-scored) or actual tube (re-scored).
  - 3. A lift or ramp robot may be on a tube and there still be a valid lift if the measurement requirements are met (4” or 12”). The tube will be removed or flattened before measurements are taken.
  - 4. A lifted or ramped robot may be on a tube and there still be a valid lift. The tube will be removed or flattened before measurements are taken.
  - 5. Other changes or clarifications will be made at the event.
- E. **ALLIANCE SELECTION & TOURNAMENT PLAY**
  - 1. Alliances will be 4 (four) Teams.
  - 2. The Top 8 Teams will be Alliance Captains and pick 3 (three) partners.
  - 3. Teams are allowed to pick alliance partners within the top 8 teams. “Declining an Invitation” rules will be the same as regular FIRST events.
  - 4. Alliance selection will be 1 - 8, - 1 – 8, 1 – 8.
  - 5. Alliances are allowed One Five Minute Time-Out during the Tournament Play. Alliances may not give their time out to the other alliance.
  - 6. With Alliances of 4 robots, there will be no replacement robots allowed in case of any robot on an alliance being unable to play.



## **XI. The Robot**

- A. Robots must meet the design and safety requirements of the 2007 “Rack N Roll” Game
- B. Teams have an honorary 5 pound allowance in total robot weight. Bring your Gracious Professionalism. There will be no weigh in or technical inspection.
- C. The Referees reserve the right to Disqualify or require Repair or Modification to any robot that appears to be unsafe or is operating outside of the “Rack N Roll” rules and guidelines.

## **XII. Matches**

- A. A limited number of practice times will be available and practice time is not guaranteed.
- B. Come ready to play!
- C. The match schedule will be set to maximize the number of matches available for teams. This requires teams to be queued and ready to rapidly move on and off the field.
- D. One round will be a “MENTOR ROUND”. Drivers and Human players MUST be over 21 and the driver cannot have been a high school student driver on a FIRST team. One high school team member (can be a 2007 graduate) MUST serve as the on-field coach but cannot touch the controls. This match WILL count in your qualification points. You may recruit adults from another team if you cannot field a group of three adults from your own.

## **XIII. Pre-Rookie Exhibition Challenge Matches – Saturday Noon**

New for 2007 will be the “Pre-Rookie Exhibition Challenge”. The intent of these matches is to allow newly forming teams to experience the excitement of FIRST competition in a method where they can learn while gaining this experience.

These exhibition matches are for forming teams that did not compete in the 2007 FIRST challenge but are gearing up for the 2008 season. Teams may compete using a robot they have built or that has been loaned to them by another FIRST team. The robots must meet the general rules for the 2007 “Rack ‘N Roll” challenge but leeway will be given.

The PRE-Challenge teams will compete only with other PRE-Challenge teams. An additional, veteran mentor will be allowed on the field with these teams as they compete. Referees will call the match, but will limit penalties called and provide more detailed descriptions of infractions to allow these future FIRST teams to learn.

Pre-Challenge teams must be sponsored by an existing FIRST team who will mentor them on robot rules, game rules, Gracious Professionalism and provide guidance during the matches.

#### **XIV. Webcast**

- A. We are working to provide a webcast of the event. Details will be provided when available.

#### **XV. Food**

- A. At the IRI – Food, snacks and drinks will be available in the school concession stands. Concessions are a fund-raiser for Team 1024 and are affordably priced.
- B. In the area – The IRI is located near 82<sup>nd</sup> Street and I-69, Castleton Mall, Keystone at the Crossing and several other shopping areas. Just about any meal you desire is available in the general area.
- C. Friday Night – All team members, Engineers and Mentors are invited to dinner. Dinner will be served between match play and the Talent Show.
- D. Saturday Morning – Donuts, milk and juice will be provided to all participants.

#### **XVI. T-Shirts**

- A. Limited Edition 2007 IRI T-Shirts will be available for purchase.
- B. T-shirts will be \$10, cash or check only.

#### **XVII. Other Entertainment**

- A. Indianapolis is home to many family oriented attractions. Museums, the Indianapolis Motor Speedway, Indianapolis Raceway Park, bowling, laser tag and other facilities are in the general area.
- B. The Indianapolis Indians, Minor League Baseball Team, play in Downtown Indianapolis. Tickets are \$8 - \$12. The field offers a fantastic view of the Indianapolis skyline as well as exciting baseball, up close and personal. Visit [www.IndyIndians.com](http://www.IndyIndians.com) for details and tickets. The Indians are in town from July 16<sup>th</sup> to 23<sup>rd</sup>.

#### **XVIII. Hotels**

- A. Many hotels are located in the I-69, 82<sup>nd</sup> Street, 96<sup>th</sup> Street area. Be sure you are on the North-East Side of Indianapolis. There is a location map on the IRI website.
- B. In the past, the following hotels have provided special rates for FIRST Teams attending the IRI. We are working with them now to obtain special rates. Mention the IRI when you call for reservations. Watch the IRI website for updates.
  1. The OMNI
  2. The Candlewood
  3. Super 8

## **XIX. Special Events**

- A. Senior Recognition – We will recognize all 2007 graduating seniors who are in attendance on Saturday, during the awards ceremony. You will be asked to provide this list when you sign in at the event. Please be sure to include your team number in the listing.
  
- B. Talent Show – Since the inaugural IRI Talent Show in 2004, this activity has continued to grow in popularity and (luckily) in talent. Friday evening will feature the 4<sup>th</sup> IRI Talent Show and will once again feature a star-studded FIRST –famous judging panel. The show will begin after dinner and will be in the Auditorium at the school. All performances must be in good taste and suitable for family enjoyment. Your act will be screened and approved during the day Friday by the Talent Show Coordinator. Send your entry to [Talent@IndianaRoboticsInvitational.org](mailto:Talent@IndianaRoboticsInvitational.org) no later than July 10.
  
- C. Charity Auction – This will be the third year for the IRI Charity Auction. FIRST memorabilia and other valuable items will be offered in a silent auction format. A quilt made from 2007 FIRST Team shirts will be offered. A small portion of the proceeds will go to the IRI Scholarship Fund and all of the remaining funds will go to a local youth-oriented charity. In 2006, over \$3500 was donated to the Methodist Hospital Children’s Center.  
  
Teams that have an item to donate are asked to contact the Planning Committee to make arrangements.
  
- E. Team Photo – There will be a designated area for team photos. These photos will be used during the awards ceremony.

## **XX. Awards and Competitions**

### **A. Team Awards**

- a. TechnoKats Spirit of Indiana Award
- b. Most Awesome Drive-train
- c. Outstanding Quality
- d. Leadership IN Control
- e. Imagery and Design
- f. Driving Tomorrow's Technology
- g. Best Ringer
- h. Best Ramp / Lift
- i. Team Spirit
- j. Judges Award
- i. Rookie
- k. Winning Alliance
- l. Runner-Up Alliance

### **B. Individual Awards**

- a. IRI Mentor of the Year
- b. Individual Recognition Awards (one per Judge)
- c. IRI Scholarships

## **OVERVIEW**

This section provides a general summary regarding the awards and competitions for both team and individuals at the Indiana Robotics Invitational (IRI) 2007.

(As hosts, teams 234, 45 and 1024 have asked to be excluded from the awards.)

## **TEAM AWARDS**

### **The *TechnoKats* Spirit of Indiana Award**

The *TechnoKats* Spirit of Indiana Award is award celebrates the top Indiana team regarding spirit, motivation and overcoming obstacles.

### **The Most Awesome Drive System Award**

The Most Awesome Drive System award celebrates the team that has created, by the judge's best approximation, the most awesome drive system. The criteria and definition of the word 'awesome' is left up to the judges.

### **The Outstanding Quality Award**

The Outstanding Quality Award celebrates quality and robustness in robot design, build, and operation.

### **The Leadership in Control Award**

The Leadership in Control Award celebrates an innovative control system or application of control components to provide unique functions and a competitive edge in this year's game.

**The Imagery and Design Award**

The Imagery and Design Award celebrates attractiveness and uniqueness in engineering, aesthetics, design or construction.

**The Driving Tomorrow's Technology Award**

The Driving Tomorrow's Technology award celebrates an elegant and advantageous feature of a machine. The criteria for this award are based on the team's ability to verbally describe, as well as demonstrate said feature.

**The Best Ringer Award**

The Best Ringer award celebrates the best ringer. The criteria for "best" is left up to the judges.

**The Best Ramp / Lift Award**

The Best Ramp / Lift award celebrates the best lifting or ramping robot. The criteria for "best" is left up to the judges.

**The Team Spirit Award**

This Team Spirit Award celebrates the team who shows the best team spirit both in the stands and in the pits.

**The Judges Award**

This Judges award celebrates the team that the judges would like to "take home with them".

**The Rookie Award**

The Rookie Award celebrates the best all around rookie team (new to competition in 2007).

## INDIVIDUAL AWARDS

***Note: THESE AWARDS REQUIRE WORK PRIOR TO THE IRI.  
SUBMISSIONS MAY BE REQUIRED IN ADVANCE OF THE EVENT!***

### **The Indiana Robotics Invitational Mentor of the Year**

This award celebrates the selected the mentor from a team participating in the 2007 IRI. Each team may nominate one individual for this award. Nominations should be a one page typed or two page hand written essay describing the mentor's activities to help his/her team grow within itself and to help the FIRST community. Nominations should be brought to the competition and placed in the Mentor of the Year Box. Judging will be by a select group of FIRST Alumni. Nominations should have the nominee's name, team number, and team name in the footer.

### **IRI Scholarships**

The 2007 IRI will award up to four \$1000 Technical Scholarships and, new for 2007, one \$1500 Education Focused Scholarship. These scholarships will go to a graduating senior student from any team competing at the 2007 IRI. Students must apply through the IRI website and follow the instructions there. Two references are required for a student to be considered for a scholarship.

Students will be required to complete a short essay (500 words) to answer the following question:

1. How FIRST participation has impacted your life and your future career plans.

Students will require two reference letters -

1. A reference form from a Mentor, Engineer or Teacher on your team.
2. A reference from one other adult.

Complete applications (Essays and Reference Letters) must be received by July 10, 2007 to be considered. Scholarship decisions will be made by the sponsoring companies.

### **Scholarship Criteria**

#### Technical Scholarships

Up to four of the scholarships will focus on students pursuing engineering, science or technical fields in post-high school education.

#### Marcia Beatty Memorial Scholarship

Marcia Beatty was a lifelong educator and dedicated to young people. She was also a dedicated member of Team Hammond and FIRST in Indiana. To honor Marcia, who passed away this past year, the Marcia Beatty Educational Foundation and the Indiana Robotics Invitational are awarding a scholarship to a 2007 FIRST team graduate who is pursuing a career in education.