

# FIRST Robotics Competition

## 2009 St Louis Regional

# Technology Innovation Award

### Description

The FIRST St. Louis Regional Technology Innovation Award has been established to foster technical innovation in the field of robotics. This award recognizes students participating in the St. Louis Regional Competition who have incorporated an innovative function into their robot and have been able to communicate this to others.

The innovation may be any feature of their robot that is considered different or novel. The innovation does not need to be a totally new concept, just "not commonly used" in FIRST competitions. The innovation must have been incorporated and functional during the 2009 competition. All fields of science and engineering are considered in this award.

Applicants are required to fully document their innovation in the form of an engineering report. This report describes the innovation in a three-page document. There are limited guidelines for the report. It relies on the creativity and ability of the student/s to skillfully communicate their innovation. Uniqueness, contribution to the field of robotics, presentation and an understanding of engineering principles are part of the judging criteria.

All applicant/s must agree to have their engineering report published on the Technology Innovation web site, [www.technologyinnovationaward.org](http://www.technologyinnovationaward.org). Individual names and identifying information will not be posted on the web site; only screen names will be shown. The panel of judges reserves the right to approve reports that are published on the web site.

The student/s ability to innovate and to communicate the concept are fundamental in receiving this award.

Academics and financial background are not a consideration in this competition.

Applicant/s will be required to provide a description of their innovation with a telephone interview with the panel of judges.

All students that have participated in any 2009 FIRST competition, in any region, may submit an Innovation Report and have their report published on the web site. Students that not participate in the St. Louis regional, however not be considered for the cash awards.

### Eligibility

The application may be submitted by one or up to three students. Each participant must have made a major contribution to the innovation and preparation of the report.

Applicant/s must demonstrate an active participation in the 2009 St. Louis Regional FIRST Robotics competition.

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## Application Process

The completed Application Form, Report and Attachments must be emailed to [application@technologyinnovationaward.org](mailto:application@technologyinnovationaward.org) no later than Thursday, April 30, 2009. No entries will be accepted or altered after that date.

**The applicant/s name or any personal identifying information must not be on any of the three pages of the report and attachments. The applicant/s name must only be on the Application Form.**

The report, body and attachments, must be in Microsoft Word or OpenOffice Writer.

Students from the same team may submit several reports on different innovations. An individual student may receive only one award regardless of the number of reports submitted.

Applicant/s must include the names and number of the team and name of any non-applicants that have made a major contributed to the innovation or preparation of the report.

## Innovation Report

The report must be submitted in English and on 8-1/2 by 11 inch pages with 1-inch margins on all sides, single-spaced with no text smaller than 12 point. All fonts must be Arial, Helvetica or sans serif. Special fonts to indicate symbols or mathematical functions may be used.

The body of the report may not exceed three pages in length. Up to five attachments are allowed in addition to the three pages of the body. Attachments are for items such as: illustrations, schematic, photographs, software coding, photos, line drawings and the like. Items in the attachments must be referred to in the body of the report. Outside the bottom margin of all pages must be the title of report, date, page number and field/s of technology as stated on the application.

The beginning of the report must contain an executive summary of less then 100 words. These summaries will be listed on the web site with links to the complete text of the report.

The body of report may be of any format that skillfully details the innovation. Although the report need not follow any specific format it should generally include the following four sections.

- An introduction that describes the innovation in general terms and how it is an improvement over exiting technologies use in FIRST robotics competitions. A description of what has been done in the past including limitations of the previous technologies. How this innovation improves on past technologies with a discussion of its benefits and limitations.
- The body of the report should present engineering details of the innovation. This section may include any type description of the innovation that may include: theory of concept, function, operation, software, mathematical analysis, stress analysis, testing, theoretical / empirical analysis. The body is intended for text and the attachments are for graphic illustrations. All graphics must be imbedded in the document and use only formats compatible with Microsoft Word or OpenOffice Writer.
- A conclusion would summarize the innovation and discuss how this innovation contributes to the advancement of robotics.
- References to any related publications would be beneficial.

## Selection Criteria

The applications will be reviewed by an independent panel of judges at the Emerson Center for Engineering & Manufacturing and will primarily be based on the following criteria:

- How this innovation contributes to the advancement of Robotics.
- Ability to skillfully communicate the innovation. The applicant/s should consider the reader as someone skilled in the field and will understand the technology. The description may range from fairly straightforward to very complex depending on what best describes the technology.
- Understanding of the fundamental engineering and scientific concepts.
- Correct engineering practices used in the presentation.
- Well organized, including the use of correct language, grammar and engineering terminology.

## **FIRST Robotics Competition 2009 St Louis Regional Technology Innovation Award**

### Presentation

Applicant/s selected as being outstanding will be required to provide a short description of their innovation by telephone before a panel of judges. Any supporting documents may be forwarded to the judges prior to the phone interview. The interviews will be coordinated by Mr. Ashok Agrawal of the St. Louis Community College, Florissant Valley Campus

The judging will take place during the month of May with the specific time and dates determined later.

This telephone interview is mandatory to be considered for the award.

### Questions

Question regarding the award may be emailed to [questions@technologyinnovationaward.org](mailto:questions@technologyinnovationaward.org).

Answers and any rule change will be posted on the web site up until April 15, 2009. No changes to the rules will be made after that date.

All students will be required to follow any change made to the rules up until that date.

### Release

All applicant/s must agree to allow their Innovation Report along with attachments to be posted on the Technology Innovation Award's web site and available for viewing by the public. The posting will not include the applicant/s name or any personally identifiable information.

Applicant/s and if under the age of eighteen, their Parent/Legal guardian, must have agreed to and signed the FIRST, "2007-2008 CONSENT, RELEASE, HOLD HARMLESS AND AUTHORIZATION TO REPRODUCE PHYSICAL LIKENESS" form. Copy available at

<http://www.usfirst.org/uploadedFiles/Community/Asset/2008-2009%20FIRST%20Consent%20and%20Release%20Form.pdf>.

Applicant/s must agree to have their Innovation Report published on the Internet under a Creative Commons License that lets others distribute, remix, tweak, and build upon your work, even commercially, as long as they credit you for the original creation. Additional information may be obtained at <http://creativecommons.org>

### Awards

- First place award of a \$5,000.00 will be presented to a student or students meeting the selection criteria and \$500.00 to the team.
- Second place award of a \$2,000.00 will be presented to a student or students meeting the selection criteria and \$500.00 to the team

Award amounts will be equally distributed to winning entries with more than one applicant.

The right is reserved not to offer this award if no applicant/s meet the minimum requirements to qualify for the presentation level.

### Further Information

The latest updates to the award can be found at the web site [www.technologyinnovationaward.org](http://www.technologyinnovationaward.org). Questions regarding the administration of the award may be directed to Mr. Ashok Agrawal, St. Louis Community College, Florissant Valley Campus, [aagrawal@stlcc.edu](mailto:aagrawal@stlcc.edu).