

# Statistical Data Analysis Competition

Pre-college Edition

Spring 2016

**Introduction:** The School of Mathematical Sciences at Rochester Institute of Technology is pleased to announce its Spring 2016 pre-college edition of the Statistical Data Analysis Competition. The Competition provides a golden opportunity for high school students and their teachers (as mentors) to explore new problem-solving techniques and fully showcase their statistical and mathematical skills on useful and practical real life problems.

**Team constitution:** Each team must consist of at least 1 high school student and a mentor (who must be a teacher at the school), and teams may have as many as 4 students but not more. High school students enrolled in AP Statistics, AP Calculus, AP Physics or any other AP involving quantitative analysis are specially encourage to seriously consider taking part in this competition as they will gain tremendously from having taken part in it. There is however no restriction as far as which high school students can take part.

**Registration/Entry:** Teams will have to register by the registration deadline (see below) in order to access the data and the description of the required tasks. All registrations will be made online at the special [sectionweb-site](#) on the website of the School of Mathematical Sciences at Rochester Institute of Technology. Participation is limited to the first 50 teams that register so it is important to get your team(s) registered as early as possible.

**Expectations and Tasks:** Once a team is registered, it will have access to the data (see the timeline below), and the essence of the tasks include amongst other things:

- Provide meaningful analyses and summaries of the data, through compelling graphical displays and tables.
- Explore the data to seek and highlight significant structures and patterns.
- Seek. Find and reveal relationships among the data types and describe them clearly
- Compute wherever possible some predictive measures that could provide deeper insights into the internal structure of the data
- Computer use?

**Assessment/Reviewing/Refereeing:** Each team's entry will be reviewed by **three different referees** using a scholarly publication review style. Upon receipt, each entry (team's report and computer code, if any) will be assigned to the panel to three independent reviewers chosen by the Competition Committee. The merit of each entry will be measured according to the following five criteria

- 1- [A] Novelty, Appeal and Compelling nature of the proposed solution (20 points)
- 2- [B] Thoroughness/Completeness of the proposed solution (20 points)
- 3- [C] Accuracy and Authenticity of the method(s) used (20 points)
- 4- [D] Clarity, readability and overall professional quality of the final report (20 points)
- 5- [E] Usefulness, usability, practicality and insights from the conclusions presented (20 points)

**Winners:** A leaderboard will be displayed on the Competition web page of the RIT School of Mathematical Sciences website upon determination of the scores of each team. The top three teams will receive both prize money and certificates. All the teams will get a certification of participation.

- 1- Champion - Winner (Best team) - Largest Prize Money
- 2- -Runner up (second best team) - Second largest prize money

- 3- 2nd Runner up (third best team) – Third prize money
- 4- Teams will be invited to feature in a special AWARDS ceremony on the RIT Campus where they will present their final report orally with slides prior to the presentation of the prizes.

**Format of submission:** The reviews will be kept anonymous. To help with that, teams are required to submit two versions of their report, one with their affiliations and the other without their affiliations. Since the quality of the report is one of the merit criteria, the Competition Committee will let each team decide the best way to prepare the report. However, the report must not exceed 10 (ten) pages. Each team is required to submit their computer code, if any, along with their report. At the discretion of the panel or the reviewer, the code may be run to verify the authenticity of the results claimed and presented.

**Format of assessment:** Reviewers reports must indicate clearly cases of blatant/flagrant technical/scientific incorrectness, along with the scores for each of the above 5 scoring categories, and a final recommendation. Once the first round of reviews is completed, the teams deemed worthy of further consideration will be identified and the panel might shuffle for a second round of reviews to further refine the ranking of the teams.

Important dates to remember:

- ~~1-~~ ~~Deadline to receive a letter of interest: January 22~~
- ~~3-2-~~ Web access opens to download data and project details: February ~~17~~<sup>8</sup>
- ~~4-3-~~ Deadline to receive analysis and report : April ~~14~~<sup>7</sup>
- ~~5-4-~~ Announcement of results: April 25
- ~~6-5-~~ Award ceremony during Imagine RIT Festival: May 2

**Contact:** For any further information regarding the competition, please contact  
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