

2012 Guidelines

Aspire Science Competition

May 23, 2011

1 Introduction

The Aspire Science Competition is an annual research competition established by the TAMS Research Organization to foster interest in science, promote research, and offer students national recognition for excellence in research. The competition is open to students in the United States in grades nine through twelve who have completed an individual or team research project. Students are required to concisely explain their scientific research in an paper.

The University of North Texas (UNT) has undergone significant growth to become a student-centered and selective research institution. Centered in Denton, Texas, UNT offers bachelor's, master's and doctoral degrees in a variety of disciplines. The university is the fourth largest in the state with approximately 36,000 students enrolled.

The Texas Academy of Mathematics and Science (TAMS) is a unique residential program for high school juniors and seniors who are gifted in mathematics and science. While living on campus, students in this two-year program complete a rigorous academic curriculum of college coursework at the University of North Texas.

Research Organization (RO) has been committed to helping students excel in the field of research. Its members participate in research competitions across the nation. Furthermore, Research Organization members participate in regular volunteering opportunities based in science. For over ten years, Research Organization has represented the brightest high school minds in the state of Texas.

This document covers the preliminary rules of the 2012 Aspire Science Competition. Rules may be changed before the final guidelines document is released.

2 Eligibility

Both students submitting individual projects and team projects must be enrolled in high school (grades nine through twelve). For team projects, a team leader must be chosen who

will submit the project and communicate for the team with the Aspire Science Competition.

A student may only submit one project to the Aspire Science Competition. This includes both individual and team projects. Additionally, although projects may be submitted again, the resubmitted report should focus on new work only.

Students at the Texas Academy of Mathematics and Science are eligible to compete. However, students who have parents, guardians, or mentors affiliated with the University of North Texas or Southwestern University are not eligible. Students on the Aspire Science Competition management board (including Research Organization executives, members, and any volunteers) are also not eligible.

Projects may be in the fields of mathematics, science (biological or physical), and engineering. Projects involving interaction with human subjects are not allowed. Teams may only be of two or three students. Note that the option for submitting projects reviewing published literature is not available this year. However, students without access to the resources necessary to conduct their experiment may omit the results and conclusions sections. More information is provided later in this document, in the Research Proposal Option subsection.

3 Schedule

There is no limit on the duration of the research project. Thus, you may begin the project at any time before the registration deadline.

Registration and submission for the Aspire Science Competition are due on March 21st, 2012, but will be open by February 21st, 2012.

Semifinalists will be announced by April 21st, 2012, and finalists will be announced on April 28th, 2012.

4 Registration and submission

Registration and submission of projects is completed via an online system. The deadline for submission (and registration) is March 21st, 2012. Additional instructions are provided at www.aspirecompetition.com.

Although the final deadline is March 21st, 2012, students are advised to register earlier in case there is a problem with their registration. The following information is required of the individual or team leader: name, address, telephone number, email address, and high school information (name and address). For other team members, the following information is required: name, address, and telephone number. If any mistake in the information is found after registration, you may change it during submission.

After registration, you should receive an email with a registration ID and confirmation

number that you need for submission. Submission is completed on the same website as registration. For the project report, the following formats are accepted.

- PDF
- PostScript
- DVI
- Microsoft Word (.doc or .docx)
- OpenDocument (.odt)

In order to ensure that your project will be evaluated in the same format as you submit it, you are recommended to use PDF: all submissions will be converted to PDF format before judging. If you have multiple files in your report (for example, if you have a separate file for your abstract or references), you may combine them into a ZIP archive; the combined page-limit (excluding your abstract and references) for such archives is still eight pages. Note that the files inside of the ZIP archive still should adhere to the list of accepted formats above. Other formats may or may not be accepted; thus, you are strongly advised to submit a report in one of the accepted formats.

The abstract should be submitted as part of your upload to the website, either in separately in a ZIP archive or in the document with the report. However, an additional text version of the abstract will be required on the website. The text version must match with the upload version.

If you encounter any problems during the registration and submission process, require assistance, or have questions, please contact us at director@aspirecompetition.com. Submissions via email will only be accepted in special cases. Submissions will not be accepted through mail or fax.

By registering and submitting your research report, you agree that your name, school, abstract, and project description may be displayed on www.aspirecompetition.com in the event that you are chosen as a semifinalist or finalist.

5 Research report

The research report should cover the problem or question being examined (and the importance of this problem), materials and methods used to solve the problem, results and their interpretation, and conclusions. The maximum length of the report is eight pages; note that this includes tables, graphs, figures, and illustrations, as well as appendices. References are not included in the eight-page limit, but should be submitted together with the rest of your report. The abstract is also not included in the page limit, but should not exceed 250 words.

Only reports written in English are allowed, and margins should be one inch or more. The report may be single- or double- spaced and one- or two- column, but the page size must be letter. The minimum font size for normal text in your report (i.e., excluding captions and labels) is 11 point. Your report should not contain any gender-specific pronouns, names (including those of students, teachers, parents, and institutions), or acknowledgements.

5.1 Research proposal option

Students without access to the resources necessary to conduct their proposed experiment may still submit a research report. In this case, the results, interpretation, and conclusions sections should be omitted. The registration and submission process, formatting, report limitations, and other guidelines are the same.

To replace the omitted sections, the student should include a section explaining how results may be interpreted and what procedures for data analysis may be used.

If a research proposal is chosen as a semifinalist or a finalist, then the proposal will be sent to universities near the student.

5.2 Description

The submission will include a short project description that should summarize your research. The description may not exceed 350 characters.

5.3 Abstract

The abstract should briefly summarize your research project so that a reader may understand its purpose. It should include the title of your project and not exceed 250 words. Also, your abstract must appear on a separate page (and must not exceed one page).

The abstract is not included in the eight-page limit. However, formatting guidelines for the research report still apply.

5.4 References

All sources consulted for the research project should be cited in the references section. Sources should be formatted based on the style standard to the project's discipline.

References may either be included in the same file as the rest of the research report or in a separate file. If you include them with the report, put the references at the end of the report. Also, in this case, it is recommended that the references appear on a separate page; however, this is not required.

6 Categorization

Entrants must select one of the categories below to ensure that their project is evaluated by experienced judges. Note that the recognition of winners will not be decided based on category, and selection of category should consider the nature of the project and not the competition.

- Animal Sciences
- Biochemistry
- Chemistry
- Computer Science
- Earth and Atmospheric Science
- Engineering
- Environmental Sciences
- Materials Science
- Mathematics
- Medicine and Health Sciences
- Microbiology
- Physics and Astronomy
- Plant Sciences

7 Academic Integrity

Participants in the competition are responsible to ensure that the research report is entirely their own work. The Aspire Science Competition will disqualify reports that it finds has violated rules to ensure fairness.

8 Recognition

Depending on the number of projects submitted, up to two hundred semifinalists will be recognized. They will be announced by April 21st, 2012. From these, up to five finalists will be announced on April 28th, 2012. Finalists will receive an award of \$200.

9 Judging Criteria

Essays will be evaluated based on mechanics, structure and organization, scientific understanding, and contribution to scientific knowledge. The following guidelines will be used.

- Clarity
 - Logical and coherent essay
 - Tables, graphs, and figures integrated well
- Creativity
 - Originality in problem, methods, and data analysis
- Field knowledge
 - Degree of assistance received for research
 - Necessary skills to obtain data and perform the scientific process shown
- Literature review
 - Understanding of related research
 - Scientific literature cited
- Relevance
 - Addresses an important question or issue
 - Adds to investigated area
- Scientific process
 - Defined problem, variables, and process well
 - Conclusions drawn from a large enough set of data (not for research proposals)
 - Future research discussed

10 Contact information

More information is available on the official website, www.aspirecompetition.com. If you wish to contact us, for the quickest response, you are recommended to email us at director@aspirecompetition.com.