



February 23, 2024

Dear Student/Parent/Faculty Member:

You are invited to participate in The Aerospace Corporation's 47th annual Robert H. Herndon Memorial Science Competition on **Thursday, May 23rd, 2024**

The competition is held to evaluate essays submitted by middle school and high school students. Winners will be selected based on originality and a demonstrated understanding of the subject matter.

In keeping with the long-range goal of this competition, which is to increase diversity in the engineering and science professions, this competition invitation enthusiastically encourages submission of students from diverse backgrounds who show an interest in science or math. All entries will be evaluated by the science competition's steering committee. **Online registration is required for participation.**

Please complete the essay participants' registration and abstract forms by no later than the deadline of **March 29th, 2024**. You must submit your final essay by **April 26, 2024**.

Winners will be notified on **May 23rd, 2024**. If you have any questions, please call me at (703) 639-7661 or email us: herndonscience@aero.org.

Sincerely,

James (Jay) Northern
Chairperson

INSTRUCTIONS FOR ESSAY COMPETITORS

Robert H. Herndon Memorial Science Competition

Winning students will receive prizes. The Essay Evaluation Committee of the Robert H. Herndon Memorial Science Competition will judge all essays. Awards will be given based on the merit of the essay submitted. The essay competition is open to middle and high school students.

To participate in the essay competition, complete the following steps:

1. Submit the following documents by not later than **March 29, 2024**:
 - a. **Attendee Info:**
 - i. Please list participant name and Faculty/Parent contact
 - ii. **Please type information into online form**
 - b. **Essay Abstract instructions.**

Each abstract must contain the following items:

 - i. Category: Choose Chemistry, Computers, Physics, Engineering, Robotics, Aeronautics, Environmental Science, or Biology
 - ii. 100-word (approx.) paragraph describing the selected topic
 - iii. Author's name
 - iv. Author's grade level
2. Submit **FINAL** online, **original** 500-word (minimum) essay by **April 26, 2024**:
 - a. **All essays will be checked for plagiarism prior to judging.** Essays found to be plagiarized will be disqualified and the author may not attend the competition.
 - b. Essays must follow the proper research-paper format, including title page and bibliography or list of references.
 - c. There is a **4-page** length limit for Middle School and **5-page** limit for High School.
 - i. Title page and bibliography do not count towards length limit.
 - ii. Font should be at least 12 point in size and single spaced.
 - d. Student's name should only be on the title page.
 - i. Each school will be assigned an ID number to maintain objectivity during judging.
 - e. Essays must be submitted using the online essay submission form or as a Microsoft Word document e-mail attachment to herndonscience@aero.org. **Fax and PDF submissions will not be accepted.**
 - f. If your essay includes diagrams submit the Microsoft Word version to: herndonscience@aero.org.
 - g. Essays winners will be notified on **May 23rd, 2024**.

Summary: We look forward to receiving your essay registration and abstract by no later than the **March 29th** deadline and your final essay by the **April 28th**. If you have any questions, contact: herndonscience@aero.org.

SAMPLE FINAL ESSAY FORMAT

The final essay due no later than **April 26th** should follow the format shown below. In addition, it should attempt to address the questions listed within each section.

Section 1: Title Page

- Provide the Student Name and School
- Provide the Essay Title
- Provide the Essay Category [Chemistry / Computer / Physics / Engineering / Robotics / Aeronautics / Environmental Science/ Biology]

Section 2: Abstract (see instructions on previous page)

- Provide a clear statement of the topic being considered
- Provide a short summary of essay contents and any conclusion you have drawn

Section 3: Introduction/Background

- Describe the topic or technology
- Discuss the history and evolution of the topic/technology
- Discuss the development of alternative technologies

Section 4: Main Body (this may contain several subsections)

- Provide a detailed description of topic/technology
- Discuss key current technical directions and challenges
- Discuss applications of the technology (present and future)
- Compare with alternative technologies. Describe the relative advantages/disadvantages
- Provide an example of how/why this technology is beneficial
- Describe future directions of the technology
- Provide a discussion of the business opportunities: what are the most important enabling technologies, more cost-effective alternative enabling technologies.
- Identify the major vendors selling the technology
- Identify the major customers buying the technology
- Identify the important scientists/engineers/companies that have developed the technology
- Describe how this technology impacts society/people (good & bad)

Section 5: Summary/Conclusion

- Summarize future of the topic/technology
- Include your opinion for possible new/unforeseen applications, problems, or limitations.

Section 6: Bibliography

- List all reference sources used in the essay and the location of the source
- *****Plagiarism is Illegal***** Do not copy information directly from a source without referencing the source.
- **Example: In-Text Citation**
 - Human beings have been described as "symbol-using animals" (Burke, 3).
(Author's Name, Page Number)
- **Example Bibliography Entry**
 - Burke, Kenneth. *Language as Symbolic Action: Essays on Life, Literature, and Method*. Berkeley: University of California Press, 1966.

JUDGES' WORKSHEET FOR ESSAY COMPETITION

(Note: This is just a guide. Record your final scores in the Essay scoring spreadsheet)

	Min				Max	Score	
INITIAL PLANNING							
1. Did the student do adequate research on the chosen topic?	0	1	2	3	4	5	___
2. Has the approach in the essay been well thought out and organized?	0	1	2	3	4	5	___
3. Was the topic appropriate for the essay competition?	0	1	2	3	4	5	___
LEVEL OF EFFORT, ORGANIZATION AND INITIATIVE							
4. Has reasonable technical depth been demonstrated for the grade level?	0	1	2	3	4	5	___
QUALITY OF ANALYTICAL WORK							
5. Has a reasonable hypothesis or analytical model been developed?	0	1	2	3	4	5	___
6. Is there evidence of creative thinking in the development of the method used?	0	1	2	3	4	5	___
7. Are the results or conclusions displayed in an easily understood manner?	0	1	2	3	4	5	___
PRESENTATION							
8. Do the results or conclusion relate back to the hypothesis?	0	1	2	3	4	5	___
9. Were the conclusions supported by the argument given?	0	1	2	3	4	5	___
10. Was the report clear, easy to follow and grammatically well-written?	0	1	2	3	4	5	___
11. Was the student's understanding of the work clearly evident?	0	1	2	3	4	5	___
						Total Score	___