Northwell Health℠

Medical Marvels Competition 2024: Detailed Guidelines

Please find detailed guidelines for the 2024 Medical Marvels Competition below. We look forward to your submission!

Contents

Written Submission Guidelines

a. **Format Specifications:**
    Students must adhere to the standards of APA, 6th edition. For more information about this style, please visit **this link**. Please follow font and format specifications, otherwise application processing may be delayed or not reviewed.
    - The overall paper cannot exceed 8 pages, excluding references and title page.

b. **Content:**
    - **Title Page** [1 page]: Include Title of Project, Name of School, Name of Principal and Advisor, Advisor Contact Information (including mailing address), Team #, Names of Students and Grade.

    - **Introduction** [1 page]:
        1. The first and major component of the introduction should be **an abstract**. It is meant to serve as a succinct and accurate description of the proposed work. State the application's broad, long-term objectives and specific aims, referring to the project's health-relatedness. Concisely describe the research design and methods for achieving the stated goals.
        2. The second component of the introduction is **relevance**. Using no more than two or three sentences, describe the relevance of this research to using science, engineering and technology to create supportive, accommodating, and accessible schools. Why is this research important? What research can be conducted to develop appropriate accommodations and solutions for the challenges faced by those living with a disability?

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- **Specific Aims/Goals** [1 page]: Clearly state the goals and objectives of the proposed plan to address how using science and technology can create supportive, accommodating, and accessible schools. Please clearly include how this project will improve the accessibility and accommodations for students that will have impactful solutions for years to come.

  Be sure to include:
  1. a technological/engineering component,
  2. a scientific research assessment, and
  3. a public policy and community strategy

- **Project Plan/Strategy** [2 pages]: What project or solution are you proposing to address the issue? Describe the methodology for program development and implementation in detail, being sure to incorporate elements of the scientific method. Be sure to include the following:
  1. Significance:
     - Explain the importance of the problem or critical barrier in the field that the proposed project addresses.
     - Explain how the proposed project will improve scientific knowledge, technical capability in one or more broad fields.
     - Describe how concepts, methods, technologies, treatments, services, or preventative interventions that drive this field will be changed if the proposed aims are achieved.
  2. Innovation:
     - Explain how the application challenges and seeks to shift current research or social paradigms.
     - Describe any novel theoretical concepts, approaches, methodologies, instrumentation, or interventions(s) to be developed or used, and any advantage over existing methodologies, instrumentation, or interventions.
  3. Approach:
     - Describe the overall strategy and methodology you propose to be used to accomplish the project's specific aims.
     - Discuss potential problems, alternative strategies, and benchmarks for success anticipated to achieve the aims.

- **Project Assessment/Impact** [1 page]: How will implementation be measured? What does success look like? Describe methodology for assessment in detail. Please address these questions for each component of the project (technology/engineering, scientific research, public policy).
  1. Please describe the analyses used to accomplish the project's specific aims. Include how the data will be collected, analyzed, and interpreted.

- **Resources** [1 page]: Discuss what kind of location, equipment, technology, space, supplies, transportation, advertising, marketing, etc. will be needed to meet the goals of the project. This information is used to assess the capability of the organizational resources available to perform the effort proposed.

- **Personnel** [no page limit, but do not go over the maximum 8 pages]: Describe the kinds of people and expertise that will be needed to support the project. Each role should be identified by a title followed by a brief paragraph explaining the project's role.
    1. This is **not** a description of the student team. This is a description of the personnel needed to carry out your project. Define individuals who contribute to the scientific development or execution of the project in a substantive, measurable way.
    2. Briefly describe the experience and qualifications that make the individual particularly well suited for their role in the project that is the subject of the application.
        - For example: *Program Director: This person will oversee overall implementation of the project and be responsible for strategic planning, budget decisions, allocation of resources…*

- **References** [no page limit, not included in the 8-page limit]: Please include any external sources you have used. Adhere to APA guidelines for reference page formatting. Please note: *a reference page is required.*

Please note your final paper should be no longer than 8 pages combined (References and title pages are not included in this number).

Poster Guidelines

Poster sessions are particularly prominent at scientific medical conferences and are an important part of dissemination of information and collaboration. For this competition, all teams are required to present a poster.

a. **Format Specifications:** All poster boards must be no larger than 36 X 48 inches. This can be vertical or horizontal. Judges and the public viewing the board must be able to comprehend quickly what your project involves.
b. **Content:** Arrange the information logically. Credit all data tables, charts, graphs, or photographs you use. The poster should include:
    - Purpose
    - Specific Aims
    - Project Plan and Assessment
    - Resources/Personnel
    - Discussion/Conclusion
c. **Supplemental Materials:** No additional materials should be used during the presentation. Students can reference their 36 X 48-inch board or use note cards for presentation notes. Any additional props will disqualify the team from the presentation awards.
d. **Presentation Time**: Teams have 3 minutes to present their project. If team ends presentation prior to 3 minutes, that time is added to questioning time. After the presentation, teams will be given 1 minute for a question-and-answer session with judges and the audience. If no questions are asked,

teams can choose to end their presentation or continue talking about their project (still with a 1 minute cut off). Presentation and questions combined will not exceed 4 minutes.

e. **Additional Information:**
- Posters should be brought to the Medical Marvels Competition **on Friday, March 1, 2024.**
- All team members should be prepared to discuss their project with scientists and their peers during this session.

Review of Written Submissions

All applications will be reviewed by a group of scientists and administrators from the Feinstein Institutes for Medical Research, the research arm of Northwell Health.

Since this is a biomedical competition, Medical Marvels will be using the National Institutes of Health grant review criteria to evaluate the awards. The NIH grant application scoring system uses a 9-point scale. A score of 1 indicates an exceptionally strong application with no weaknesses. A score of 9 indicates an application with serious and substantive weaknesses with very few strengths; 5 is considered an average score. This is called an Impact Score. The score will not be posted but applicant organizations will receive a summary of comments relating to the strengths and weaknesses once the advisor completes the program evaluation.

a. **Review Criteria:** Each application's impact will be judged on the following:
- **Significance**: Does the project address an important problem or a critical barrier to progress in the field? If the project aims are achieved, how will scientific knowledge, technical capability, and/or clinical practice be improved? How will successful completion of the aims change the concepts, methods, technologies, treatments, services, or preventative interventions?
- **Personnel (Investigators):** Are the personnel identified to be working on the project well suited to the project? Do they have appropriate experience and training? Since the project is collaborative, do the investigators have complementary and integrated expertise? Is the organizational structure appropriate for the project?
- **Innovation**: Does the application challenge and seek to use novel theoretical concepts, approaches or methodologies, instrumentation, or interventions? Are the concepts, approaches or methodologies, instrumentation, or interventions novel to one field of research or novel in a broad sense? Is a refinement, improvement, or new application of theoretical concepts, approaches or methodologies, instrumentation, or interventions proposed?
- **Approach: Is the overall strategy, methodology, and analyses well-reasoned and appropriate to accomplish the project's specific aims?** Are potential problems, alternative strategies, and benchmarks for success presented?
- **Environment**: Will the environment in which the work will be done contribute to the probability of success? Are the institutional support, equipment, and other physical resources available to the investigators adequate for the project proposed? Will the project benefit from unique features of the scientific environment, subject populations, or collaborative arrangements?

b.   **Misconduct:**

- **Similar, Essentially Identical, or Identical Applications**: Submissions of identical applications are not allowed, and Medical Marvels will **not** accept applications that have been submitted to other competitions. This application must be unique to Medical Marvels. This includes derivative or multiple applications that propose to develop a single product, process, or service that, with non-substantive modifications, can be applied to a variety of purposes. Applicant organizations should ascertain and assure that the materials they are submitting on behalf of the students are the original work of the students and have not been used elsewhere in the preparation and submission of similar applications.
- **Scientific Misconduct**: All applications must avoid scientific misconduct. If misconduct is suspected, the applicant organization will immediately be notified, and an investigation conducted. If misconduct is substantiated, the application will be withdrawn, and the entire team disqualified. Misconduct includes knowing fabrication, falsification, and plagiarism in the design, conduct, or reporting of the project.

Day of the Competition

All participating applicant organizations must attend a poster session and awards ceremony on March 1, 2024. All team members should be there. Please note parents of students may not attend due to space considerations. Applicant organizations are required to provide their own transportation and should plan accordingly. Please see below for the tentative time and location:

8:00am: **Bus drop off: The Feinstein Institutes for Medical Research**
350 Community Drive, Manhasset, NY – Entrance # 4
1:00pm: **Bus Pick up: The Feinstein Institutes for Medical Research**
350 Community Drive, Manhasset, NY – Entrance # 4

- All teams must present their project to their peers and a panel of judges during the Student Presentations. The winning team will be expected to present a brief presentation (not to exceed three minutes) overview without slides of their project, in lay terms during the awards presentation.
- All students attending the conference **must** include Northwell Health's Photo Release form. Please send all forms in with written application. **Please be sure this is signed by a parent and not the student.**
- Winning applications will be recognized with a certificate the day of the poster session and monetary awards will be made in the form of gift cards mailed to the applicant organization after the awards ceremony for distribution to the winning team members.
  - The winning team will receive a $1,800 scholarship
  - The second-place team will receive a $1,000 scholarship
  - The third-place team will receive a $500 scholarship
  - Three separate awards of $300 each will be awarded to the best team's poster and discussion during the poster session

Commented [SL1]: Based on the last call, agenda has not been finalized so we don't know exact timing for when students to arrive and be picked up. 8a-1p is what we've done in previous years that has worked well but the agenda just needs to match that.

Awards will be proportioned according to the number of team members (for example if the first-place team has 6 members, each student will receive $300).

Contact Information

If you have any questions, comments, or concerns, please contact Ruqayyah Abdullah at medicalmarvels@northwell.edu.

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