About the GMiS Research Poster Competition

Each year at the GMiS Conference, college students have the opportunity to showcase their latest research findings through a poster presentation to STEM professionals. Students are encouraged to present unclassified research - dissertation, thesis, senior project, or co-op, internship or research experiences. Students may earn monetary prizes and be recognized at the Student Leadership Awards Show. Furthermore, students can further enhance their job search as competition judges may be looking for technical talent to recruit into graduate programs, research labs, summer internships, co-ops, or full-time employment.

The 2020 Virtual GMiS Research Poster Competition

GMiS realizes that COVID-19 may have adversely impacted the start or continuation of research projects. To broaden the participation in this competition, GMiS is excited to introduce an additional presentation category to this year’s competition. The new category is Conceptual Research.

The Conceptual Research Category invites undergraduate and graduate students, from traditionally underrepresented groups in STEM, to submit a well-written and concise abstract on their proposed science, engineering, computing, technology or health-related research project. The research project might have been a project that was never started this summer, has been delayed to this fall or next spring, or is the beginning of your senior design, thesis or dissertation work. Students will have the opportunity to virtually present their conceptual research to a panel of judges.

The traditional Research Poster Category invites undergraduate and graduate students, from traditionally underrepresented groups in STEM, to submit an abstract and a poster on their ongoing research project. Participants in this category will have the option to submit a three-minute YouTube video presentation of their poster. Participants will also virtually present their conceptual research to a panel of judges.

<table>
<thead>
<tr>
<th>Element</th>
<th>Conceptual Research Category</th>
<th>Research Poster Category</th>
</tr>
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<tbody>
<tr>
<td>Abstract Required</td>
<td>Yes, well-defined and concise</td>
<td>Yes</td>
</tr>
<tr>
<td>Poster Required</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Video Required</td>
<td>No</td>
<td>Optional</td>
</tr>
<tr>
<td>Virtual Judging Panel</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Judging Content</td>
<td>Abstract and Presentation</td>
<td>Abstract, Poster and Presentation</td>
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</table>
Eligibility

- Must be from an underrepresented racial/ethnic group
- Enrolled full-time in a graduate or undergraduate college or university pursuing studies in a related science, technology, engineering, math or health discipline at a college/university in the U.S./U.S. territories.

Content Submission and Conference Registration Process

**STEP 1:** Submit your abstract, poster, video link, and photo through the GMiS Research Scholars Portal at [https://posters.gmis-scholars.org/](https://posters.gmis-scholars.org/). Be mindful of the deadlines to submit each required/optional component. Submissions are accepted in the Topic Categories listed below.

<table>
<thead>
<tr>
<th>Classification</th>
<th>Conceptual Research Category</th>
<th>Research Poster Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate</td>
<td>Computer Engineering/Computer Science</td>
<td>Engineering and Technology</td>
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<td></td>
<td>Math and Science</td>
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<tr>
<td>Graduate</td>
<td>Computer Engineering/Computer Science</td>
<td>Engineering and Technology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Math and Science</td>
</tr>
</tbody>
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**STEP 2:** Register for the virtual 2020 GMiS Conference. Conference registration is required to participate in the virtual GMiS Research Poster Competition, attend the Research Poster Competition Networking Reception, access the Two-Day Virtual GMiS Graduate School and Career Fair, and attend sponsored hospitality suites, webinars, and award shows. Please visit the 2020 GMiS Conference website at [https://www.gmisconference.org/](https://www.gmisconference.org/)

In the event a student is not selected to participate in the Competition, GMiS encourages the student to attend the Conference and participate in the various programs, such as the two-day virtual Graduate School and Career Fair, Webinars, and Networking events.

**Registration Fee**

The virtual 2020 GMiS Conference student registration fee for the **GMiS All-Access Pass** is $125.

**Cancellation**

If a student chooses to cancel the registration for the Conference, he/she must log into the GMiS Conference Registration Portal and select “cancel” for the registration. This cancellation
will trigger a reimbursement to the student’s credit card minus an administrative processing fee. Full refund for registration fees (minus administrative fees) will be allowed if requested prior to the cancellation deadline. No cancellations will be processed after that deadline, so please plan accordingly.

The last day to cancel and request a refund is **Saturday, September 12.**

**Virtual Research Scholars Networking Reception**

GMiS will host a Virtual Research Scholars Networking Reception on Thursday, October 1, at 4:00 PM PDT. This *exclusive invite-only* reception is for all the students, who had their abstract accepted into the competition. STEM Professionals, including competition judges, graduate school representatives, industry recruiters, and event sponsors will be invited to network with the students. Further details about the reception will be sent to competition participants after they have registered for the virtual conference.

**Virtual Research Scholars Exhibit Hall**

As part of the student experience, GMiS will host a virtual Research Scholars Exhibit Hall to showcase the excellence in research innovation and design processes. This virtual hall will host all the abstracts, posters, video links, and contact information for the presenters. Conference attendees will have access to the Research Scholars Exhibit Hall to read the abstracts, view the posters, listen to the presentation videos and contact the presenter for follow-up discussion questions on their research.

**Timeline**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>Saturday, September 12</td>
<td>Last day to cancel registration and request an online refund.</td>
</tr>
<tr>
<td>Friday, September 18</td>
<td>Abstract Submission Deadline for Category I and Category II</td>
</tr>
<tr>
<td>11:59 PM PDT</td>
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</tr>
<tr>
<td>Monday, September 21</td>
<td>Individuals Notified of Presentation Status</td>
</tr>
<tr>
<td>Wednesday, September 23</td>
<td>Last day to register for the virtual GMiS Conference</td>
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<tr>
<td>Monday, September 28</td>
<td>Pre-Conference Week Events Begin</td>
</tr>
<tr>
<td>Wednesday, September 30</td>
<td>Poster Submission Deadline</td>
</tr>
<tr>
<td>11:59 PM PDT</td>
<td>Photo Submission Deadline</td>
</tr>
</tbody>
</table>
Thursday, October 1
4:00 PM PDT
Virtual Networking Reception for Research Poster Presenters, Judges, and Sponsors (Exclusive Invite-Only)

Monday, October 5
8:00 AM PDT
Deadline to upload the optional video link on the poster presentation

Tuesday, October 6
9:00 AM – 11:30 AM PDT
Virtual 2020 GMiS Conference Week Begins

Wednesday, October 7
9:00 AM – 11:30 AM PDT
Virtual Undergraduate Student Presentations to Judges

Awards

Top prizes will be presented to students who are recognized for having the best Conceptual Abstract or Research Poster based on both technical merit and presentation as determined by a panel of judges. Submissions are accepted in the categories listed below.

I. Computer Engineering/Computer Science
II. Engineering and Technology
III. Math and Science

Contact Information

For further information, please email posters@greatmindsinstem.org

Abstract Guidelines

The length of the extended abstract must be between 775 – 800 words. Graphics, drawings, or tables are not permitted in the abstract. The abstract should be a concise summary of the proposed research project (Conceptual Research Category) or research in progress (Research Poster Category) and meet criteria as outlined in the Judges Scorecard. The abstract will be evaluated on both the merit of its content and grammar/formatting.

The Abstract Format must adhere to the following:
- Typed, Single-spaced
- 1-inch margins
- Times New Roman, with 11 or 12-pt font (expect for header requirements)
The **Abstract Heading** must adhere to the following:

- Title of Project (Bold, Centered, Times New Roman, 14 pt)
- Author(s) (Centered, Times New Roman, 12 pt)
  - The project/research advisor should be included
- Institution, Department, City, State, Zip (Centered, Times New Roman, 12 pt)
  - If the authors are from different institutions, please add a superscript number to the matching author and matching institution
- Keywords: List five (5) keywords for indexing

The **Abstract Content** should include:

- Introduction
- Hypothesis or Intent
- Proposed or Actual Materials and Methods
- Predicted or Actual Results
  - If research results are not available at the time of the submission, authors are encouraged to submit predicted results based on peer-reviewed scientific literature.
  - Students are encouraged to discuss differences between their hypothesized results and their actual results when presenting their research at the conference.
- Summary/Conclusion
- List of Cited References (APA 7th Ed. format; does not count towards word count)

*Sample Abstract Header*

**A Physics-Based Simulation Study of Tensegrity Damping Strategies for Controlled Hopping on Small Solar System Bodies**

M. Retana¹, B. Hockman², J. Ahmar³, M. Pavone²

University of Nevada, Reno, Reno, NV 89557¹
Stanford University, Stanford, CA 94305²
University of California, Berkeley, Berkeley, 94720³

*Keywords*: Hedgehog, Tensegrity, Microgravity, Damping Strategies, NTRT

Authors are strongly encouraged to review their abstract prior to submission and ensure that proper spelling and grammar have been utilized and that all italicization, math and scientific notations, etc. are correct. Abstracts with incomplete information will not be considered for the competition. GMiS reserves the right to make any formatting edits to the abstract only for the sole purpose to fit the Research Poster Competition Proceedings.
Poster Format and Resources

This section applies to students, who submitted an abstract for the Research Poster Category and were accepted to present a poster. The format of the poster is at the discretion of the presenter. However, it should be sufficient to technically explain and illustrate the research project to the public and the judges. The poster should be formatted horizontally and sized 48 ft x 36 ft. Presenters should carefully critique the content and arrangement of their posters. The flow of information in the poster layout should be done in a way that easily reveals the research process and addresses salient points. Graphs, charts, tables and references must adhere to APA 7th Ed. formatting. Avoid the use of “whiz bang” pictures that are visually attractive, yet do not add much to the content. At minimum, it is recommended that the poster contain the following sections:

• Abstract
• Introduction
• Background
• Problem Statement
• Hypothesis
• Proposed or Actual Testing (Procedure)
• Results
• Conclusion
• References

Presenters are encouraged to cite the sponsorship of their work, such as corporations or government agencies. Relevant resources to the work should be recognized and cited. Presenters are also encouraged to list their mentors.

There is a myriad of resources regarding designing a good research poster. Here are two resources:

Making a Better Research Poster - https://www.youtube.com/watch?v=AwMFhyH7_5g
Poster Presentations - https://www.youtube.com/watch?v=-62rK6htjWE

Video Presentation - Optional

Students, who were accepted to present a research poster, may submit a video link of their presentation. This is optional and will not be part of the judging. Rather, the video will allow conference attendees to virtually engage with the presenter and learn more about the project than what is already presented in the abstract and poster. The video should be no more than 5 minutes and the preferred link is a YouTube Channel link.
Virtual Judging

All students, whose abstract has been accepted for either the Conceptual Research Category or the Research Poster Category will present their work to a panel of judges. If selected to present, only the authoring student may present his/her work to the judges. No substitutions will be allowed under any condition. Mentors are not allowed to co-present. Remember, this is an individual competition and not a team competition.

Each abstract and poster will be reviewed based on the two principles outlined by the National Science Foundation. Abstracts and posters will be evaluated on the overall writing, content and presentation as it relates to the baseline principles of Intellectual Merit and Broader Impact. According to the National Science Foundation (NSF Strategic Plan for FY 2006-2011: Investing in America’s Future (NSF 06-48), successful projects can demonstrate Intellectual Merit and Broader Impact if the following questions are succinctly addressed:

**Intellectual Merit**
- How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields?
- How well qualified is the proposer to conduct the project?
- To what extent does the proposed activity suggest and explore creative, original, or potentially transformative concepts?
- How well conceived and organized is the proposed activity? Is there sufficient access to resources?

**Broader Impact**
- How well does the activity advance discovery and understanding while promoting teaching, training and learning?
- How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)?
- To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks and partnerships?
- Will the results be disseminated broadly to enhance scientific and technological understanding?
- What may be the benefits of the proposed activity to society?

Information Release and Disclaimer

Research posters presented at the GMIIS Conference must not be classified. It is the author’s responsibility to obtain all requisite permissions to release the information presented in the research poster. By participating in the virtual 2020 Great Minds in STEM Research Poster
Competition, the author grants permission to Great Minds in STEM to publish and release, in whole or in part, information about the research concept presented in the abstract and/or poster, participant photographs, contact information, and institutional and/or employer affiliation, and other such information for audio, video and print media, including social media. Posters must be original in content. Posters must have all proper citations and permissions.