Indiana Academy of Science
Emerging Scientists Research Competition
(Graduate and Undergraduate Students, Fellows, Interns)

Description

The purpose of this competition is to encourage and stimulate the research interest of Indiana emerging scientists (graduate and undergraduate students, fellows, interns) in their area of scientific interest, to facilitate an opportunity for emerging scientists to receive feedback from senior scientists, and to provide an avenue for emerging scientists to communicate their science and its broader impact to the wider interdisciplinary scientific community. This competition also provides opportunity for emerging scientists to network with other emerging scientists in Indiana, and with senior Indiana scientists from industry and academia. The Emerging Scientists Research Competition is designed to offer a recognized venue that enables emerging scientists to experience the research world and share their research results with other emerging scientists, scientist judges, science educators, and others; and compete for recognition. Finalists will compete, and the winners will be recognized at the Annual Academy Meeting of the Indiana Academy of Science.

Eligibility:

This competition is open to members of the Indiana Academy of Science who are classified *as student members* at the time of initial submission (register student membership at (www.indianaacademyofscience.org). Participants will submit their poster under one of two categories (1) Baccalaureate investigators (inclusive of undergraduate students, undergraduate interns, individuals in post-bac academic programs that are preparing for application to professional or graduate school, and high school students involved in supervised research in industry or college/university laboratories at the time research was performed); (2) Post-Baccalaureate investigators (inclusive of industry and academic interns graduate students, medical/nursing and other health professional students, fellows, and/or interns). A participant or team of participants (if the work is collaborative with others and/or is part of a larger group project) may submit only one entry. If submitted by a team, one author must serve as the presenter, representing all the authors, and thus will be the entrant in the competition. The presenting author must be able to

clarify their contribution to the research. Entries will be grouped by scientific section. Related smaller sections will be combined for judging to ensure roughly equal number of entrants in each judging group.

Submission:

Each applicant will prepare and submit an abstract following general Annual Academy Meeting abstract submission guideline; however, they will check the box that indicates they are submitting their poster for competition in the Emerging Scientists Research Competition. Abstracts will be reviewed by scientific section leadership, and those students who indicated interest in the competition will be asked to prepare and submit their poster to be emailed one-week before the annual meeting (by Friday, March 10, 2023). The poster will be reviewed by content scientist judges and graduate students for scientific content and aesthetics prior to the annual meeting. All submitters will then present a physical copy of their poster in-person at the 138th Annual Academy Meeting, March 18, 2023, J.W. Marriott Hotel in downtown Indianapolis. Monetary awards will be given to contest winners.

At the poster session, submitters will be asked to deliver a not more than 5-minute presentation of their poster content to at least two contest judges and should be prepared to answer on-site questions as requested by the judges and other viewers. Winners will be chosen based on summed poster and presentation scores. A 1st place winner will be chosen in each participating section (a 2nd place winners will only be awarded in categories with 10 or more submissions.) Awards will be presented in person at the close of the *138th Annual Academy Meeting.*

Judging:

Judging will be done by a panel of Indiana senior scientists and graduate level students representing disciplines defined by each section/group of sections across physical sciences, biological sciences, and science education. The judges will evaluate each poster submission based on the quality of the work, significance of the contribution, and clarify of the presentation. (See IAS Judging Criteria below).

(All entrants are required to be present and display their posters during the assigned judging period. Expenses related to participation in the

competition including travel are the presenter's responsibility.) The designated presenting author of the poster, or a team representative that prepared the poster should the designated presenter become unavailable, must present the poster for judging at the 138th Annual Academy Meeting. *If membership or meeting registration costs are prohibitive, please contact the chair of the Diversity, Equity, and Inclusion (DEI) Committee of the Indiana Academy of science, Dr. Samina Akbar sakbar@marian.edu.

Criteria for evaluating Abstracts:

Abstracts will be evaluated based on the following criteria:

1. Objectives of the research and why the research is important.
2. Hypothesis/statement of the problem; methods and controls; results; conclusions and future research; and references and acknowledgements.
3. Presentation: Submitters should demonstrate a good understanding of the study and related areas.

Selection Process and Prizes:

The judges will evaluate the posters and presentations and select the top winners(s) in each section (or group of related sections) based on the provided rubric. The winner in each group will receive a prize of $400.00, and recognition at the 138th Annual Academy Meeting. Second-place winners in each section will receive a prize of $200.00 and recognition at the 138th Annual Academy Meeting. (Note: 2nd place winners will only be awarded in categories with 10 or more submissions.) Each winner will receive an award certificate and a one-year complimentary membership with the Indiana Academy of Science.

Additional Information

For additional information, clarification, or answers to questions please submit your question online to (execdir@indianaacademyofscience.org Subject line: Emerging Scientists Research Competition.

IAS Judging Rubric – Poster Evaluation

SCORE	HYPOTHESIS AND/OR STATEMENT OF PROBLEM	METHODS AND CONTROLS/COMPARISON	RESULTS	RESULTS, CONCLUSION AND FUTURE WORK
5	• A logical hypothesis/statement of problem was presented. • Background information was relevant and summarized well. Connections to previous literature and broader issues were clear. • Goal of project was stated clearly and concisely; showed clear relevance beyond project.	• Thorough explanation of why particular methods were chosen. • Clear discussion of controls or comparative groups; all appropriate controls or comparative groups were included.	• Presentation of data was clear, thorough, and logical. All necessary statistical analysis was present.	• Reasonable conclusions were given and strongly supported with evidence. • Conclusions were compared to hypothesis and their relevance in a wider context was discussed. • Project has significant impact on the field.
4	• A logical hypothesis/statement of problem was presented. • Background information was relevant, but connections were not clear. • Goal of project was stated clearly; showed relevance beyond project.	• Good explanation of choice of methods • Clear discussion of controls or comparative groups; most controls or comparative groups were included.	• Presentation of data was clear and logical. Some statistics were missing.	• Reasonable conclusions were given and supported with evidence. • Conclusions were compared to hypothesis, but their relevance was not discussed.
3	• A questionable hypothesis or statement of problem was presented. • Background information was relevant, but connections were not made. • Goal of project was stated understandably.	• Little comment on why the methods were chosen and others not chosen. • Adequate discussion of controls or comparative groups; some significant controls or comparative groups were lacking.	• Presentation of data was not entirely clear. Statistical analysis was missing.	• Reasonable conclusions were given. • Conclusions were not compared to the hypothesis and their relevance was not discussed.
2	• A questionable hypothesis/ statement of problem was presented. • Some relevant background information was included, but not connected. • Goal of project was not clear.	• No discussion of choice of methods. • Controls or comparative groups not adequately described; some appropriate controls or groups were missing.	• Presentation of data was included, but unclear or difficult to comprehend. Statistics were missing.	• Conclusions were given. • Little connection with the hypothesis was apparent.
1	• The hypothesis/statement of problem was inappropriate or was missing. • Little or no background information was included or connected. • Goal of project was not stated.	• Methods section missing. • Serious lack of controls of discussion of controls.	• Presentation of data was missing.	• Conclusions were missing. • There was no connection with the hypothesis

Modified from the Annual Biomedical Research Conference for Minority Students (ABRCMS) and American Society of Microbiology (ASM) Judging Handbook. Some judging instruction language and judging questions were modified from the American Astronomical Society's Chambliss Astronomy Achievement Student Awards Competition packet.

SCORE	OVERALL PRESENTATION & HANDLING QUESTIONS	POSTER BOARD
5	Presenter: • Demonstrates a very strong knowledge of the research project • Speaks clearly, naturally and with enthusiasm; makes eye contact • Comfortably uses visual aids to enhance presentation • Answers difficult questions clearly and succinctly • Presentation is consistently clear and logical	• All expected components are present, clearly laid out, and easy to follow in the absence of presenter • The text is concise and consistently free of spelling or typographical errors; the background is unobtrusive • The figures and tables are appropriate and consistently labeled correctly • Photographs/tables/graphs improve understanding and enhance the visual appeal
4	Presenter: • Demonstrates a good knowledge of the research project • Speaks clearly and naturally; makes eye contact • Uses visual aids to enhance the presentation • Answers most questions • Presentation is clear for the most part, but not consistently	• All expected components are present, but layout is crowded or jumbled and somewhat confusing to follow in the absence of presenter • The text is relatively clear and mostly free of spelling or typographical errors; the background is unobtrusive • Most of the figures and tables are appropriate and labeled correctly • Photographs/tables/graphs improve understanding
3	Presenter: • Demonstrates some knowledge of the research project • Reads from the poster (or script) some of the time • Uses some visual aids to enhance the presentation • Has some difficulty answering challenging questions • Presentation is generally unclear and inconsistent	• Most of the expected components are present, but layout is confusing to follow in the absence of presenter • The text is relatively legible, but there are some typographical errors; the background may be distracting • The figures and tables are not always related to the text, or appropriate, or are labeled incorrectly • Photographs/table/graphs do not improve understanding
2	Presenter: • Demonstrates a poor knowledge of the research project • Reads from the poster (or script) most of the time • Does not use the available visual aid to enhance presentation effectively • Has difficulty answering questions • Presentation is unclear	• Some of the expected components are present, but layout is untidy and confusing to follow in the absence of the presenter • The text is hard to read due to font size or color and inconsistently free of typographical errors; the background may be distracting • The figures and tables are not related to the text, or are not appropriate, or are poorly labeled • Photographs/tables/graphs do not improve understanding of the project
1	Presenter: • Does not demonstrate any knowledge of the project • Reads from the poster (or script) all the time • Does not use the available visual aid to enhance Presentation; Presentation is very confusing • Does not understand questions	• Some of the expected components are present, but poorly laid out and confusing to follow in the absence of the presenter. • The text is hard to read and contains multiple typographical errors; There is a very poor background • The figures and tables are poorly done or are missing

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