

**Emerging Researchers National (ERN) Conference in STEM**  
Co-sponsored by the  
*American Association for the Advancement of Science (AAAS) and*  
*NSF Division of Human Resource Development (HRD),*  
*Directorate for Education and Human Resources (EHR)*

**Guidelines for Submission of Oral Abstracts for Graduate Students**

**Graduate Student Oral Abstract Submission Deadline**

All graduate student oral abstracts **MUST** be submitted through the abstract submission website by **Friday, October 4, 2013 (12:00 Midnight Pacific Standard Time)**.

The abstract submission website is located at: <http://www.cvent.com/d/9cq6r>

**\*\*\*Abstracts sent by mail, FAX, or via email WILL NOT BE ACCEPTED\*\*\***

**Student Eligibility**

The conference is open to students who:

- Are currently registered in a graduate program at a U.S. college or university; and
- Have conducted graduate research in science, technology, engineering, or mathematics (STEM).

**Presentation Schedule**

**All graduate student oral presentations will be scheduled for February 21<sup>st</sup> and February 22<sup>nd</sup>, 2014.**

**Criteria for Abstract Acceptance**

All abstracts **MUST INCLUDE** the following:

- Hypothesis or statement about the problem being investigated and why the research is important;
- Methods and controls;
- Results and discussion of findings;
- Conclusions, future research, and key references; and
- Acknowledgement of funder(s).

Accepted graduate student oral abstracts will be listed in the Conference Program Book. Cash awards will be given for the top oral presentations for each STEM category. Awards will be announced during the conference at the closing banquet on **Saturday, February 22, 2014**. Graduate students will be reviewed in separate award categories.

## **Abstract Categories**

Abstracts can be submitted in the following **broad STEM categories**:

- Biological Sciences
- Chemistry & Chemical Sciences
- Computer Sciences & Information Management
- Ecology, Environmental & Earth Sciences
- Mathematics & Statistics
- Nanoscience
- Physics
- Science & Mathematics Education
- Social & Behavioral Sciences
- Technology & Engineering

Submission of abstracts for review **must also** adhere to the following guidelines:

1. Only **one (1)** oral abstract may be submitted per student. However, a student may be listed as a co-author on a second abstract.
2. **Students working in the same lab must independently submit original abstracts. Identical abstracts submitted by different students will be automatically rejected.**
3. **The primary author will present the project during the conference. There will be NO co-presentations allowed.**
4. Approval must be obtained from all co-authors listed on the abstract. Failure to do so will result in the immediate rejection of the abstract.
5. Students must obtain approval from faculty advisor(s)/research mentor(s) before submitting the abstract. Failure to do so will result in the immediate rejection of the abstract.
6. Abstracts must be written **by the student** and **reviewed by the faculty or research mentor.**
7. Abstracts must adhere to the highest quality standards, with correct grammar, spelling and sentence structure, i.e., with editing and proofreading prior to submission.

A guide to developing the abstract and sample abstract is attached at the end of these guidelines.

## **Abstract Review Process**

All abstract submissions will be reviewed for:

- Originality and innovation;
- Scientific content supported by quantitative information and references;
- Merit of the research;
- Quality of written content; and
- Adherence to guidelines and format.

Abstracts will be reviewed by a panel of scientists in the appropriate STEM discipline and according to the criteria presented in these guidelines

All abstract review decisions are final. Because of the timeline, there is no appeals process or opportunity to resubmit once an abstract is rejected.

Once accepted, the conference staff will group abstracts with similar themes within the conference oral sessions. The location and time of your conference presentation in a session is final.

**Abstracts will be rejected for one or more of the following reasons:**

1. **No Hypothesis or Statement of the Problem:** When the reason for conducting the research is not clearly explained or the proposed question(s) are not clearly explained.
2. **No Methods:** Explanations of the methods are not clearly presented or appear to be inappropriate.
3. **No Results/Insufficient Data Presented:** The investigators failed to show either evidence of the results or the status or the outcome(s) of their research. Insufficient data are presented to support conclusion(s).
4. **No Conclusion or Expected Outcomes/Future Research:** The investigators failed to describe the conclusions or expected outcomes of their research with regard to their hypothesis.

**Abstract Acceptance Notifications**

Once an abstract has been received by the conference staff, the most efficient means of communication and notification of status will be by email. Therefore, it is very important that a valid and current email address be on record for all students and faculty/mentors to help speed the notification process. Author should notify AAAS via Donna Behar (dbeh@aaas.org) with changes in email addresses or other contact information.

**Abstract acceptance notifications will be emailed on or before Monday, November 4, 2013.**

**Travel Awards**

The deadline to apply for a travel award is **Friday, October 4, 2013 (12:00 Midnight Pacific Standard Time).**

Travel awards will be announced on or before **Monday, November 4, 2013.**

**Abstract Development Guide and Sample Abstract**

**ABSTRACT TITLE:**

**TITLE** (e.g. The Science of Education, Life, and the Computer Era)

**ABSTRACT PRIMARY AUTHOR AND ABSTRACT PRESENTER:**

The **PRIMARY AUTHOR** is the person submitting the abstract; type in **YOUR NAME**:

**PRIMARY AUTHOR:** Jane Doe

**Co-Author(s): Faculty Advisor/Mentor, Academic Institution; Other Contributors, Academic Institutions)**

**\*\*\*Co-Authors are NOT PERMITTED to co-present with the Primary Author. There are NO co-presentations allowed during the conference.\*\*\***

**Co-Author(s): (e.g. John Doe, Howard University; Dr. Mary Doe, Howard University, Jane Doe, Howard University).**

**ABSTRACT INFORMATION:**

**2500 character limit. All abstracts MUST include the following:**

- ❖ Hypothesis statement and why the research is important
- ❖ Methods and controls
- ❖ Results
- ❖ Conclusions and future research questions
- ❖ Acknowledgement of funder(s)

**IF YOUR ABSTRACT INCLUDES SYMBOLS, NOTATIONS, OR MATHEMATICAL EQUATIONS, (AS IN THE SAMPLE ABSTRACT BELOW), WE ASK THAT YOU ALSO UPLOAD YOUR ABSTRACT IN WORD FORMAT DURING THE SUBMISSION PROCESS.**

**FINAL ABSTRACT FORMAT:**

**ABSTRACT EXAMPLE**

**Biochemical Characterization, Kinetic Analysis, and Immunolocalization of Rat N-acetyl  $\beta$ -D-glucosaminidase: An Enzyme Required for Mammalian Fertilization**

Jane Doe, HRD University, Washington, DC

John Doe, HRD University, Washington, D.C, Mary Doe, HRD University, Washington, D.C.

The activity of N-acetyl- $\beta$ -D-glucosaminidase (EC. 3.2.1. 52) in the mammalian male reproductive tract has been well documented. Of all mammalian tissues surveyed to data, the epididymal organ of the mammalian male reproductive tract exhibits the highest activity of this enzyme. Previous studies have demonstrated that the enzyme is found on the surface of rat sperm cells and facilitates sperm penetration through the zona pellucida (ZP), a carbohydrate-containing cellular matrix that surrounds the egg. The present study was undertaken to isolate and kinetically characterize the enzyme from the testis and various regions of the epididymis, and to immunolocalize the enzyme on the surface of sperm cells using polyclonal antibodies generated against a purified preparation of the enzyme *to test the hypothesis that enzyme remains associated with the sperm surface after ejaculation into the female reproductive tract*. The kinetic parameters,  $K_m$ ,  $V_{max}$ , and  $K_{cat}$  were estimated by Lineweaver-Burk and Direct Linear plots. Indirect immunofluorescence (IIF) studies were used to localize the enzyme on the surface of sperm cells. The  $K_m$ ,  $V_{max}$ , and  $K_{cat}$  values for the testicular enzyme was 1.33 mM,  $4.2 \times 10^{-7}$  mM/min,  $2.02 \text{ min}^{-1}$ , respectively. In contrast [contrast], the  $K_m$ ,  $V_{max}$ , and  $K_{cat}$  values were significantly different for the epididymal enzyme. For example, the  $K_m$ ,  $V_{max}$ , and  $K_{cat}$  values for the enzyme associated with the caudal region of the epididymis were 0.52 mM,  $5.0 \times 10^{-6}$  mM/min, and  $973 \text{ min}^{-1}$ , respectively. IIF labeling revealed that the enzyme is redistributed primarily over the head region of

sperm cells as they mature in the epididymis and demonstrated that the enzyme remains associated on the head region of sperm cells up to six hours after ejaculation and being deposited into the female reproductive tract. These data indicate that the enzyme becomes more active and migrates to the head region as sperm cells mature in the epididymis and provides evidence to support the hypothesis that the enzyme remains associated with the sperm cell even after being deposited in the female reproductive tract. *[Acknowledgment: This study was supported, in part, by a grant from NSF/AAAS awarded to John Doe Ph.D., Director for the Center of Biotechnology and Biomedical Sciences, HBCU-UP University, Washington, DC 20001]*

*Faculty Advisor, Faculty Advisor Email*