59th Annual Student Research Day
Meharry Medical College
March 18, 2015

Guidelines for Submission of Abstracts

Deadline for Submission of Abstracts
Friday, November 14, 2014
MEHARRY MEDICAL COLLEGE
2015 Student Research Day Program

For the past 59 years, Meharry Medical College has presented Student Research Day, a forum for students in all Schools of the College to present their current research findings. The students are judged on their presentation skills and knowledge of their research projects. Awards are given for the best poster presentations by students in the Dental, Graduate and Medical Schools. A grand prize award is presented for the best overall student presentation.

The 59th Annual Meharry Medical College Student Research Day will be held in the Cal Turner Family Center on Wednesday, March 18, 2015. Presenters MUST report to the Center at 8:15 a.m. to pick-up their packets and display their posters by 8:45 a.m. Judging of posters will take place between 9:00 -11:00 a.m., and students MUST be present at their posters to discuss their findings with the judges in order to qualify for awards. The Student Research Day Luncheon, Keynote Address and Awards Program will be presented in the Cal Turner Family Center.

ELIGIBILITY FOR PARTICIPATION
All Meharry Medical College students who conducted research at Meharry or elsewhere during 2014 are eligible to submit abstracts and present posters in competition for awards. Each student is invited to present one abstract as first (presenting) author. If a student submits two abstracts or is the first author on two abstracts, one of the abstracts must be withdrawn. No presentation may be given by an individual who is not an author on the abstract.

Post-doctorate, Clinical Fellows and Residents may submit abstracts and present posters for scientific information only. These posters will NOT be considered for awards.

DEADLINE FOR RECEIPT OF ABSTRACTS
Friday, November 14, 2014

ABSTRACT SUBMISSION
Abstracts NOT EXCEEDING 300 WORDS must be submitted in hard copy form with the sponsor or mentor’s signature AND electronically on Sharepoint no later than 5:00 p.m. on Friday, November 14, 2014. We strongly suggest that you enter the submission site and begin your submission well in advance of the deadline. In addition to the electronic submission, all presenters MUST deliver a hard copy of their abstract to:

School of Graduate Studies and Research
Harold D. West Basic Sciences Building, M121
Meharry Medical College
Nashville, TN 37208-3599

A confirmation email will be sent to notify you of your assigned abstract and poster board number by Friday, March 6, 2015.
INSTRUCTIONS TO AUTHORS

1. Typed abstracts NOT EXCEEDING 300 WORDS should be single-spaced with 1-inch margins all around. The entire WORD document should be typed using Times New Roman 12 point font with the heading centered. Abstract heading MUST include the following information:
   - Title of abstract (IN CAPITAL LETTERS)
   - Author(s) - Student’s name should be first in Bold followed by co-authors with the Principal Investigator’s name last
   - Department(s), Institution, City and State

   Example:
   THE HORSESHOE CRAB NERVOUS SYSTEM AS A MODEL FOR COMPUTER HARDWIRING
   John Smith, Les Brown and John Doe
   Department of Computer Science, Meharry Medical College, Department of Biology, Vanderbilt University, Nashville, TN

   - Justify the body of the abstract on the left and right margins
   - Text must include statement(s) on:
     - The nature of the problem
     - What is generally known already (historical background)
     - What was done
     - How it was done
     - What was found
     - What the findings mean

   - Text should not include tables or line drawings. Material presented at Research Day MUST be substantively identical to that described in the abstract. Live exhibits cannot be accommodated.

2. To ensure proper citation in the author index, write your name in a consistent format, and list the same contact e-mail address on all paperwork submitted.

3. If your project uses ANIMALS, you MUST submit an official letter or copy from the Institutional Animal Care and Use Committee (IACUC) which states that your project was reviewed and approved.

   If your project uses HUMAN SUBJECTS, you MUST submit an official letter or copy from the Institutional Review Board (IRB) stating your project was reviewed and approved.

NOTE: Whether your project involved on or off-campus personnel as sponsors or mentors, you MUST submit an abstract submission form with the sponsor or mentor’s signature along with your abstract. This signifies that your project has been approved for submission. Please allow sufficient time to secure the sponsor or mentor’s signature in advance of the November 14, 2014 deadline. ABSTRACTS WILL NOT BE ACCEPTED WITHOUT SPONSOR’S OR MENTOR’S SIGNATURE ON THE ABSTRACT SUBMISSION FORM.
THE HORSESHOE CRAB NERVOUS SYSTEM AS A MODEL FOR COMPUTER HARDWIRING

John Smith, Les Brown and John Doe
Department of Computer Science, Meharry Medical College, Department of Biology, Vanderbilt University, Nashville, TN

The horseshoe crab (Limulus) contains an extremely simple nervous consisting of a corpora pedunculata and cardiac ganglia. The small numbers of neurons in this system require a large number of axon branches in order to interconnect the various body organs. The objective of our research was to demonstrate that the nervous system branches were so efficient that the pattern of interconnections would serve as a model for design of a superconducting analog computer.

Neuronal patterns and interconnections were determined by recording electrophysiological events using a rotating kymograph and supravitally staining the impaled neuron using mood indigo. We found that lateral myelinated neurons running from distal feeler surface to the proximal tail region were one micron in diameter and transmitted impulses at a rate of one kilometer per second. Dendritic branches from these neurons interconnected with the cephalic ganglia and were, therefore, able to control the cardiac pacemaker. These results are consistent with the hypothesis that the Limulus nervous system is sophisticated enough to serve as a model for both an analog and digital computer.

This project was supported, in part, by Greenback Foundation Grant B52203.
Abstract Submission Form
(Please complete entire page)

Presenter’s Name: ________________________________

Meharry School Affiliation: ________________________________

Student Status (Year in Program): ________________________________

Title of Research Project: ________________________________

Name of Department where research was conducted: ________________________________

Name of Institution where research was conducted: ________________________________

Sponsor or Mentor: ________________________________

Funding Source: ________________________________

Student Local Telephone Number (Required): ________________________________

Selection of a primary area or topic of research allows us to categorize your abstract, which assists us in assigning judges with specific research expertise in your area to review your poster. Please make your selection below.

Theme (check one box below, if more than one, rank –1, 2, 3)

☐ Neuroscience ☐ Microbiology and Immunology ☐ Infectious Disease
☐ Biochemistry ☐ Cardiovascular Biology ☐ Pharmacology
☐ Cancer Biology ☐ Toxicology ☐ Public Health
☐ Other ____________________________________________ ☐ Physiology

________________________________ ________________________________
Student Signature Preceptor/Mentor Signature
DIRECTIONS FOR POSTER PREPARATION

The purpose of a poster is to give the observer the background and summary of your research. It should be self-explanatory and leave you free to discuss particular points raised by an interested observer.

The essentials of poster arrangement are as follows:
A. A bulletin board with your assigned number will be placed in the Cal Turner Family Center on Tuesday, March 17, 2015. The poster board surface area is 4’H x 8’W. Posters cannot exceed these dimensions. Your poster must be attached directly to the bulletin board using the push pins or thumb tacks from the poster boards. All posters must remain on display between 8:45 a.m. and 4 p.m. Wednesday, March 18, 2015.

B. Display the title, author(s) name(s), and institution(s) name(s) at the top of your poster board space. All lettering should be printed large enough to be read from a distance, and the poster should include large, readable diagrams, graphs and legends.

C. The following items should be included in your poster presentation:
   (1) A brief introduction providing a historical background of your project. The introduction should conclude with the hypothesis developed from this background and tell why you did the research (what question you are asking).
   (2) Your experimental design and research techniques. Diagrams illustrating special equipment used with a brief, descriptive legend are helpful (a picture is worth a thousand words). All data should reflect appropriate statistical methods as needed as it is included as part of the judging criteria.
   (3) Results should be displayed in the form of tables, graphs, illustrations, photographs, etc. Each figure should be numbered sequentially and have a one or two line heading describing the intent of the experiment from which that data was obtained. The accompanying legend should contain detailed information pointing out only the most important data in the figure and conclusions; mention of special methods should be brief and should be placed at the end of the legend. The figure itself should be simple, eliminating unnecessary details.
   (4) A short discussion relating the results to your introduction and discussing the significance of your unique research finding.
   (5) A summary or list of conclusions.

When you run out of space in the first column below the abstract, begin a new column to the right. It is easier for viewers to scan a poster by systematically reading from top to bottom and left to right.

Poster printing is available by DEX Imaging (School of Dentistry-Basement). All posters printed by DEX Imaging must be submitted no later than March 6, 2015 to avoid unnecessary printing delays.
GUIDELINES FOR STUDENT PRESENTATIONS

CONTENT

Why
The audience needs to understand why you are trying to solve this particular problem. The problem should be answered at the appropriate level, meaning that you will be answering this question to people of all types of backgrounds. Some people will be in your specialty, however, some will not even have a basic understanding of the type of science that you do. The key is to get your message across at all levels. To accomplish this, remove as much jargon as you can without losing content.

What/How
Once you have told the audience why you are doing this work, you can now get into what you have done and how you have done it. This is where you can get into details (data, methods, innovations, results, discussion, etc.) of your work. Remember: details are important, but do not lose your audience with a rambling presentation.

What’s Next
Although this can usually be in your summary, it is important to convey that you understand where this research is leading you and that you understand the implications of your work.

PRESENTATION

Logical Flow
Each presentation needs a logical flow to best present your work. A typical flow might be the title, introduction, explanation of your work, followed by a summary/conclusion. Remember, each section should flow into the next section.

Visual Aids/Impact
Effective figures are key to a successful presentation. Effectiveness comes in a variety of forms. Keep your presentations simple: each figure must be accompanied with a legend and a caption. Sometimes, posters with colors and slides are too overpowering for the multi-level knowledge of the audience. The use of color can have a positive and negative impact. You may implement them as visual artistry to distinguish different symbols, but leave background colors simple.

For presentations, part of your visual impact is you – how you dress and present yourself. Keep this in mind as you prepare for your presentation.

Verbal
Verbally articulating your ideas is crucial for success in any field and any career. You may feel nervous, making public speaking difficult. Just remember to speak clear and strong and RELAX!!! Before giving an oral presentation, be sure to Practice, Practice, Practice. If you are presenting a poster, run through the key ideas that you want to convey in advance to become more comfortable in speaking about your research. Remember: RELAX!!
**JUDGING CRITERIA FOR RESEARCH POSTERS**
(Original Research – Doctoral, Dental and Medical Students)

**Problem/Purpose (25 points):**
- a) Make sure the specific problem/purpose is well defined based on literature.
- b) Make sure the questions or hypotheses are clearly stated.
- c) Make sure the study design supports the questions or hypotheses to be investigated.
- d) Show originality and creativity.
- e) Show significance for general health field.

**Procedures (25 points):**
- a) Provide data based on an adequate sample size.
- b) Use correct and appropriate statistical methods.
- c) Provide valid and reliable data.
- d) Use techniques which are well understood.
- e) Use methods which are appropriate for achieving the goals of the research.

**Presentation and Content (50 points):**
- a) The presenter speaks clearly and is in command of the technical language.
- b) The presenter shows knowledge of the subject matter and answers the questions with confidence.
- c) The information on the poster should be clearly displayed and easy to read.
- d) Materials should be carefully organized to show relationships and smooth transitions between sections (i.e., Introduction, Methods, Results and Discussion).
- e) Conclusions should be consistent with the evidence.

**JUDGING CRITERIA FOR RESEARCH PROPOSAL POSTERS**
(MSPH Students)

**Background (25 points):**
- a) Literature and practical observations must be clearly and logically presented.
- b) The specific problem should be well defined based on the literature.
- c) Questions or hypotheses should be clearly stated.
- d) Information presented should support the questions or hypotheses to be investigated.
- e) Show significance for the general health of the community.

**Proposed Procedures (25 points):**
- a) Results should be based on an adequate sample size.
- b) Use correct and appropriate statistical methods.
- c) Use techniques which are well understood.
- d) Use techniques which are demonstrably validated.
- e) Use techniques which provide reliable data.
Presentation and Content (50 points):

a) The presenter speaks clearly and is in command of the technical language.

b) The presenter shows knowledge of the subject matter and answers the questions with confidence.

c) The information on the poster should be clearly displayed and easy to read.

d) Materials should be carefully organized to show relationships and smooth transitions between sections (i.e., Introduction, Methods, Results and Discussion).

e) Conclusions should be consistent with the evidence.

NOTE: Students must stand at their posters and present their research to the judges in order to be considered for awards.

CATEGORIES FOR AWARD DESIGNATIONS

1. Original Research
   • Dental Students (1st, 2nd, 3rd Place Awards)
   • Medical Students (1st, 2nd, 3rd Place Awards)
   • 1st and 2nd Year Ph.D. Students (1st, 2nd, 3rd Place Awards)
   • 3rd Year and above Ph.D. Students (1st, 2nd, 3rd Place Awards)

2. Research Proposals
   • MSPH Students Only (1st, 2nd, 3rd Place Awards)

3. Grand Prize
   • All Students considered (overall highest score)

AWARDS

1. All participants will receive certificates acknowledging their participation.

2. First ($100), second ($75), and third ($50) place monetary awards will be given in each category.

3. The Grand Prize winner receives the C. W. Johnson Award, a cash award and a plaque.

4. Students selected as winners must be present during the Keynote Address and the Awards Program in order to receive their monetary award.