

2001 SIGMA XI STUDENT RESEARCH SYMPOSIUM

Thursday May 4 and Friday May 5

Times and Location will be announced later

INSTRUCTIONS FOR STUDENT PRESENTERS AND THEIR ADVISORS

DEADLINES (no exceptions):

L ABSTRACT: Friday, April 20 to Dr. Ben Yaspelkis, Kinesiology

I Dates and Times: Once abstracts have been submitted, the Sigma Xi Student Research Symposium Committee will determine whether or not a second day will be necessary. If there is a large number of submissions, the talks will be divided into two days. The symposium will start promptly at the designated times and each talk will be held to a maximum time so that the symposium will run smoothly.

Abstract: Please submit final abstract by the date indicated above. Please follow the guidelines for your abstract on the attached sheet. Do not exceed the space indicated on this sample abstract.

Individual Presentations:

1. The talks will be scheduled every 15 minutes. Students should prepare a talk of no more than 10 minutes. Allow a period of about 3 minutes for questions at the end of the talk. No speaker will be allowed to talk more than 10 minutes. Inspect the attached criteria for evaluation of your talk. Judges will use these criteria to rate your talk.
2. If 35 mm slides are used, *PLEASE BRING THEM INSERTED PROPERLY IN A CAROUSEL AND READY TO GO*. Because of the very tight scheduling of the talks, no time will be available to insert slides into a carousel immediately before the talk.

3. CRITERIA FOR EVALUATION OF TALK:

- A. Organization: Organize slides with the following in mind:
- └ Title
 - └ Introduction and/or Background
 - └ Experimental (if appropriate, can be integrated with Results)
 - └ Results
 - └ Conclusions or Summary
 - └ Future work
 - └ Acknowledgments (\$ support, Advisor, etc.)
- B. Quality of visual aids:
- └ Readability / clarity
 - └ How presented information is pertinent to subject
- C. Use of visual aids:
- └ Adequate referral to slides using a pointer
 - └ How visual aids are used to support presentation
- D. Overall quality of presentation:
- └ Quality of delivery and ease of presentation
 - └ Student's understanding of topic being presented
- E. Level of information¹:
- └ How well background and introduction inform a general audience
 - └ How well student has presented the chosen level of information in the body of the presentation
 - └ How well summary and conclusions are integrated to inform a general audience
- F. Handling of audience questions
- └ How well student understands questions from audience
 - └ How well student answers questions from audience
- G. Quality of Abstract
- └ How well the abstract conveys information and interest to a general audience
 - └ How well the abstract documents the material presented
 - └ References optional

¹ This year's Sigma Xi Student Symposium Committee will assess student talks based upon the ability of each student to present information to engage a general audience. This is important for two reasons. This first is to attract a wider audience that will understand and appreciate the information the students are presenting. The second is to facilitate judging; some judges will be evaluating talks of students outside their own departments. Students can present highly technical information in the main body of their talk; however, they should engage a general audience both with their introductory or background material as well as at the end with their summary and conclusions.

STUDENT PRESENTER: Michael H. Collins
LEVEL: Graduate
DEPARTMENT: Biology
FACULTY ADVISOR: Dr. Linda Caren

THE EFFECT OF LECTINS ON THE CHEMILUMINESCENCE OF MACROPHAGES
[note that the title is centered]

Lectins are a class of proteins which specifically bind to carbohydrates. The binding of lectins to the surface carbohydrates of various cells can induce changes in their function. Some lectins cause lymphocytes to undergo mitosis, while others have been shown to inhibit the ability of human neutrophils and murine bone marrow macrophage to generate potent antimicrobial oxygen radicals. Macrophage are immunologically important phagocytic cells whose capacity to kill invading microbes is directly related to the amount of oxygen radicals they can produce. To investigate this further, the effect of 11 lectins on the chemiluminescence (CL) of murine peritoneal macrophage was assessed. CL is a standard method which allows the quantification of oxygen radicals. Macrophage were co-incubated with various concentrations of lectins at 37°C prior to the measurement of CL. Ten of eleven lectins caused a dose-dependent reduction in CL. As the lectin concentration increased, the CL of lectin-treated cells decreased. Among these 10 lectins, LPA lectin as the strongest inhibitor of CL while GNA lectin was the weakest. The 11th lectin, PHA-L, actually increased CL above control levels. LPA is specific for sialic acids, while GNA and PHA-L are specific for mannose and complex oligosaccharides, respectively. Thus, lectins having different carbohydrate specificities affected macrophage chemiluminescence in different ways. This suggests that individual lectins altered oxygen radical production by interacting with unique carbohydrate-containing surface structures. The idea that pathogenic microorganisms may use their surface lectins to inhibit the activation of macrophage is discussed.

[Use this designated space for your abstract]

[Do not exceed the 1" margins]

[DO NOT PUT BOX AROUND ABSTRACT!]

**2001 SIGMA XI STUDENT SYMPOSIUM
JUDGES EVALUATION FORM**

TITLE OF TALK:	
STUDENT NAME:	
LEVEL:	

Please evaluate the performance of the speaker according to the following categories:

CATEGORY	RATING
A. Organization	
B. Quality of Visual Aids	
C. Use of Visual Aids	
D. Overall Quality of Presentation	
E. Level of Information	
F. Handling of Audience Questions	
G. Quality of Abstract	
TOTAL	

5 excellent**4 good****3 fair****2 fair****1 poor****COMMENTS:** _____

Judge's initials _____