College of Natural Sciences & Mathematics

Jensen SAS Center
California State University, Long Beach
www.csulb.edu/sas

ABSTRACT SUBMISSION GUIDELINES
CNSM STUDENT RESEARCH SYMPOSIUM 2023

1. By **Friday, September 8, 2023 at 11:59pm:** visit the CNSM Student Research Symposium website and complete the online registration form**.**
2. By **Friday, September 15, 2023 at 11:59pm:** submit your abstract to Cheyanne.Ramon@csulb.edu attached as a WORD document.
3. All abstracts must be approved by your research mentor before submission. Please follow the instructions carefully.

Formatting

A sample abstract is available at the end of this document.

Header

- **Title –** The entire title is written in bold and the first letter of each word is capitalized except prepositions and conjunctions. Only scientific names are written in italics with just the first letter of the genus capitalized.
- **Presenters –** The first person/s listed is/are the student(s) presenting. Presenters' names are underlined.
- **Authors –** If the authors are from more than one department/institution, then a superscript number follows the surname of each author to identify the department/institution each author is associated with, do not underline superscript.
- **Department and institution affiliations –** List the complete name of department, full name of institution, and city, state, and zip code for each institution. Please note that the corresponding superscript precedes each department's name.

Abstract Body

1. Insert the text previously approved by your faculty research mentor. Your abstract should summarize the study's hypothesis, methods used, results, and conclusion(s).
2. Scientific names are written in *italics* with just the first letter of the genus Capitalized.
3. Limited to 2,500 characters, not including spaces.
4. DO NOT include the title and/or author(s) in the abstract block.

Grant Support

Acknowledge the granting agency and grant number which supported this research. There may be multiple sources of funding in your mentor's lab. Please make sure to list all sources of funding associated with this project.

Important Notes

- Any undergraduate or graduate CNSM student or student in an affiliated program can be an author.

- Students (as a group) may jointly present a poster, as long as it is indicated on the online registration form.
- Work must be proofread prior to submission. Jensen SAS Center staff will not be responsible for editing abstracts.
- Any incomplete or incorrectly formatted abstract(s) will not be accepted; please follow the accompanying sample abstract.

Abstract Selection

The following are the abstract selection criteria from ABRCMS (Annual Biomedical Research Conference for Minority Students). You should follow these guidelines when writing your abstract.

Accepted abstracts must contain:

1. At least two authors in the author block.
2. Hypothesis or statement about the problem under investigation.
3. Statement of the experimental methods/methodology used
4. Essential results provided in summary form (even if preliminary).
5. Conclusion.

Abstracts missing any of the items above will not be accepted.

Sample Abstract with Correct Formatting

Agr Typing and Bacterial Interference in *Staphylococcus aureus.*

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Regulation of virulence factor expression in the pathogen, *Staphylococcus aureus*, is coordinated by the *agr* (accessory gene regulation) operon. The *agr* locus codes for the components necessary for quorum sensing. The Agr system triggers the expression of pathogenicity factors when the cell density is high in response to the accumulation of a self-secreted autoinducing peptide (AIP). Due to interspecies variation at the *agr* locus, each strain secretes an AIP that self-activates but completely inhibits Agr activation in heterologous strains. Most non-aureus species produce AIPs that generally inhibit Agr activation in *S. aureus*, leading to a novel type of bacterial interference. To date, four different Agr groups have been identified in *S. aureus*, with intriguing relationships between Agr type and disease pathogenesis. To further our studies along these lines, we have developed a simple assay to determine the Agr type of new *S. aureus* isolates and to test for AIP-specific, cross-inhibition between staphylococcal species. This functional assay depends on the ability of AIP producing strains to activate or inhibit an Agr-specific luciferase or GFP reporter. A collection of clinical *S. aureus* isolates was examined to verify the assay and to explore any functional relationships between Agr type and pathotype. Most of the *S. aureus* strains secreted a substance that activated one and only one of the four *S. aureus*-group-specific tester strains, suggesting that a single functional AIP is secreted by most clinical isolates. Moreover, multiple isolates from the same patient were almost always the same Agr type. Agr type, hemolytic activity, and clinical manifestations were compared. The simplicity of these assays will facilitate future studies to understand the role of Agr biotypes in pathogenesis and explore the phenomenon of *agr*-based bacterial interference between "Staphylococci".

This project is supported in part by National Institutes of General Medical Science Grant GM050089-11.