

GUIDELINES FOR ABSTRACT SUBMISSIONS

Note: All abstracts must be approved by your research mentor before submission!

FORMATTING: Below is a sample abstract. Please note that the block format is used.

1. **Title** – The entire title is written in bold and in capital letters. Scientific names are written using *italics* font.
2. **Authors** – The first person listed is/are the student(s) presenting and the presenter name(s) are underlined. If the authors are from more than one department/institution, then a superscript number follows the surname of each author to identify the institution each of the authors is associated with.
3. **Department(s) and Institution(s) Involved** – Please list complete name of department, full name of institution, and city, state, and zip code for each institution identified. Please note that the corresponding superscript precede the department name.
4. **Insert a double space between the last line of the Department and Institution before starting your abstract.**
5. **Text** – Insert the text previously approved by your faculty research mentor. When you use a scientific name in the text, write the name in italics. The first letter of the genus is capitalized. The second name of the organism is written in lower case letters and italicized.
6. **Acknowledging Grant Support** – Include the name of granting agency and grant number which provided support for this research. There may be multiple sources of funding.

PRINTING: If you will be using the SAS computer lab to print your poster you will need to follow the printing instructions on www.sascenter.org. Be advised that you will need to set up an appointment ahead of time with Mr. Tom Tran, and your faculty mentor will need to initial an 8 ½" X 11" version of your poster.

SAMPLE:

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*.

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