

**International Conference on Gram-Positive Pathogens
Nebraska City, Nebraska**

Sunday, October 5th

- 6:00 - 7:00 Buffet Dinner - Embassy Suites Hotel
- 7:00 - 7:15 Opening Remarks - Ken Bayles
- 7:15 - 8:15 Featured Speaker #1 – Alexander Tomasz
Where resistant genes come from: the inventors and the users
- 8:15 - Happy hour...

Monday, October 6th

Regulation I

Moderator: Rich Goering

- 8:30 - 8:50 Sang-Joon Ahn
Two paralogous operons modulate autolysis and virulence expression by
Streptococcus mutans
- 8:50 - 9:10 Jessica Kajfasz
Significance of Clp/Spx interaction in expression of virulence traits in
Streptococcus mutans
- 9:10 - 9:30 Kevin McIver
Sweet & Sour: The connections between sugar availability and virulence
regulation in the Group A Streptococcus
- 9:30 – 9:50 Rasmus Jensen
Quorum sensing in *Staphylococcus aureus*: a target for virulence
inhibition
- 9:50 – 10:20 Break

Cell Wall Physiology

Moderator: Rich Goering

- 10:20 – 10:40 Jeff Bose
The *cid* and *lrg* operons regulate cell death and lysis of *Staphylococcus*
aureus and show a similar function to the proapoptotic Bax protein of
eukaryotes

- 10:40 – 11:00 Dev Ranjit
Characterization of *Staphylococcus aureus* Cid and Lrg proteins involved in cell death and lysis
- 11:00 – 11:20 Kohei Homma
X-ray Structural Studies of *Staphylococcus aureus* cidABC and IrgAB operon proteins
- 11:20 – 11:40 Sandro Pereira
Evidence that the transpeptidase activity of PBP1 may serve as a checkpoint linking cell wall synthesis and cell division to the activity of the autolytic system in *Staphylococcus aureus*
- 11:40 – 12:00 Benjamin Orsburn
Elucidation of peptidoglycan structure with LC-MS/MS
- 12:00 - 1:00 Lunch break

Virulence

Moderator: Keith Weaver

- 1:00 – 1:20 Indranil Biswas
Virulence regulation in *Streptococcus mutans*
- 1:20 – 1:40 Melody Neely
The role of biofilms in *S. pyogenes* pathogenesis
- 1:40 – 2:00 Blaise Boles
Identification of PIA-independent biofilm formation defective mutants of *Staphylococcus aureus*
- 2:00 - 2:20 Robert Clubb
The structural basis of sortase catalyzed protein attachment to the cell wall of *Staphylococcus aureus*
- 2:20 - 2:40 Konstantin Shatalin
B. anthracis-derived NO is essential for pathogen virulence
- 2:40 – 3:10 Break
- 3:10 – 3:30 Adam Wilson
Role of the bicarbonate transporter in *Bacillus anthracis* virulence
- 3:30 – 3:50 William McShan
Prophages and the mutator phenotype in *Streptococcus pyogenes*
- 3:50 – 4:10 Michael Olson
Biofilm maturation in *Staphylococcus epidermidis*

4:10 - 5:10 Featured speaker #2 – Debra Bessen
Population biology of antibiotic resistance among group A streptococci

7:30-9:30 Poster Session #1 and cash bar

Tuesday, October 7th

Host-Pathogen Interactions

Moderator: Mark Smeltzer

8:10 – 8:30 Vijay Pancholi
A novel paradigm of regulation of the virulence-controlling TCRS by the eukaryotic-type *S. pyogenes* Ser/Thr kinase

8:30 - 8:50 Tammy Kielian
Toll-like receptors influence both innate and adaptive immunity to *S. aureus* in the brain

8:50 - 9:10 Mark Lisanby
Cathelicidin administration protects mice for *Bacillus anthracis* spore challenge

9:10 - 9:30 Anthony Richardson
The metabolic constraints imposed by host nitric oxide

9:30 – 9:50 Maria Miragaia
Staphylococcus epidermidis: Evidence for clonal adaptation to the community environment?

9:50 – 10:20 Break

Systems Biology

Moderator: Mark Smeltzer

10:20 – 10:40 Barry Bochner
Detailed phenotypic analysis of Gram-positive pathogens

10:40 – 11:00 Ross Overbeek
Rapid and accurate annotation of Gram-positive pathogens

11:00 – 12:00 **Featured Speaker # 3 - Louis Rice**
Class A Penicillin-Binding Proteins and Expression of β -lactam
resistance in *Enterococcus faecium*

12:00 - 2:20 Lunch break and poster session #2

Iron

Moderator: Paul Fey

2:20 – 2:40 **Brian Corbin**
Mechanism and function of calprotectin in the host response against
Staphylococcus aureus infection

2:40 – 3:00 **Gleb Pishchany**
Mechanism and function of *Staphylococcus aureus* hemoglobin capture

3:00 – 3:20 **Victor Torres**
Staphylococcus aureus senses iron availability to modulate virulence

3:20 – 3:40 **Benfang Lei**
Mechanism of heme acquisition in *Streptococcus pyogenes* and
Staphylococcus aureus

3:40 – 4:00 **Devin Stauff**
Bacillus anthracis expresses a heme detoxification during anthrax
infection

4:00 – 4:20 **Break**

Antimicrobial Development

Moderator: Paul Fey

4:20 – 4:40 **Robert Allen**
Myeloperoxidase shows selective microbe killing

4:40 – 5:00 **Marilynn Larson**
Modular functions of primase from bacterial pathogens

5:00 – 5:20 **Patrick Olson**
Messenger RNA stabilizing antimicrobials

6:30 - 9:00 **Banquet at the Western Heritage Museum**

Wednesday, October 8th

8:30 - 9:30 Featured speaker #4 – Kim Lewis
 Persister cells: role in pathogenesis and mechanisms of drug tolerance

9:30 - 9:50 Break

Toxins

Moderator: Alex Horswill

9:50 - 10:10 Medora Huseby
 The role of beta toxin in virulence of *Staphylococcus aureus*

10:10 - 10:30 Yinduo Ji
 New insights into the role of alpha toxin in pathogen-host cell interactions

10:30 - 10:50 Craig Ellermeier
 Cannibalism and Toxin Sensing in *Bacillus subtilis*

10:50 - 11:10 Cassandra Brinkman
 Mechanism of action of *E. faecalis* plasmid pAD1-encoded addiction module toxin Fst

11:10 - 11:30 Alexander Solonin
 Transcription factors interplay in the regulation of hemolysin II gene expression

11:30 – 12:40 Lunch Break

Regulation II

Moderator: Paul Dunman

12:40 – 1:00 Marta Perego
 Ethanolamine activates a sensor histidine kinase regulating its utilization in *Enterococcus faecalis*

1:00 – 1:20 Jose Lemos
 The stringent response of *Enterococcus faecalis*

1:20 – 1:40 Eric Miller
 Characterization of *Staphylococcus aureus* log and stationary phase small stable RNAs

- 1:40 – 2:00 Kelly Rice
Low-oxygen and nitric oxide: Two new signals that regulate the *Staphylococcus aureus cid/lrg* cell death regulon
- 2:00 – 2:20 Tomaz Koprivnjak
Knockout of *cls2* in *Staphylococcus aureus* reveals a selective role of this gene in the conversion of membrane phosphatidylglycerol to cardiolipin during transition of the bacteria from logarithmic to stationary phase
- 2:20 – 2:50 Break
- 2:50 – 3:10 Adhar Manna
Regulation of Virulence Factors by Staphylococcal Specific SarA Protein Family

Antimicrobial Resistance

Moderator: Paul Dunman

- 3:10– 3:30 Duarte Oliveira
A three-step system for typing the SCCmec element in MRSA
- 3:30 – 3:50 Lynn Hancock
The role of *rpoN* in resistance to cephalosporins in *Enterococcus faecalis*
- 3:50 – 4:10 Chris Kristich
Intrinsic resistance to cell envelope-active antimicrobials by *Enterococcus faecalis*