Research Strengths & Facilities

The Bacterial Adaptation and Response Networks Research Group includes members from the departments of Biochemistry & Molecular Biology, Microbiology & Immunology and Zoology.

This group comprises individuals with experience and expertise in a broad range of disciplines, including:

- Bacterial Pathogenesis
- Biochemistry
- Bioinformatics
- Chemistry
- Genetics
- Genomics
- Microbial ecology
- Microbial physiology
- Structural biology

The common thread linking all of the group members is investigation of how bacteria adapt and respond to their environments. The environments studied are diverse, including soil and the ocean, and the human host for pathogenic bacteria. However, there are common molecular mechanisms of adaptation and response to these diverse environments. Thus, group members share common research approaches. http://barn.lsi.ubc.ca

Understanding gained from the study of one adaptation or response network is applicable to others. Adaptation and response mechanisms of particular interest to this group include:

1. genetic regulatory networks
2. transport of molecules across membranes and cell walls
3. horizontal gene transfer

Investigations of these fundamental mechanisms benefit from great intellectual and infrastructural synergy. Further, these fundamental mechanisms also occur in multicellular organisms, making bacteria excellent experimental systems for developing broadly applicable knowledge.
Graduate Studies Admission
UBC Faculty of Graduate Studies establishes common minimum academic requirements. One of the major requirements for LSI graduate programs is securing a research supervisor.

Contact
Recruitment & Outreach Coordinator
lsi.grad@ubc.ca
website: grad.lsi.ubc.ca

Recent Publications


BARN Researchers:

J. Thomas Beatty: virus-like gene transfer agents; photosynthetic pigment-protein complexes
Sean Crowe: geomicrobiology
Franck Duong: essential process of protein transport
Lindsay Eltis: bacterial degradation of aromatic compounds and steroids, including lignin & cholesterol
Rachel Fernandez: molecular pathogenesis of Bordetella pertussis; biogenesis and immunomodulatory properties of the outer membrane
Erin Gaynor: molecular pathogenesis of foodborne human pathogens
Steven Hallam: microbial systems ecology and functional metagenomic screens
George Mackie: the properties of the relevant enzymes and RNA chaperones, the functional state of the mRNA and the secondary or tertiary structure of the RNA substrate determine its fate
William Mohn: ecology of forest soil and gut microbial communities; bacterial steroid metabolism
Michael Murphy: mechanism of iron homeostasis in pathogenic bacteria
Rosemary Redfield: the ability of Haemophilus influenzae to take up DNA from their surroundings
John Smit: biotechnology applications using the S-layer of Caulobacter
Charles Thompson: regulation of bacterial gene expression associated with tuberculosis

The University of British Columbia
UBC is a global centre for research and teaching, consistently ranked among the 40 best universities in the world. Surrounded by the beauty of the Canadian West, UBC embraces bold new ways of thinking that attract exceptional students and faculty. It is a place where innovative ideas are nurtured in a globally connected research community, providing unparalleled opportunities to learn, discover and contribute in one’s own way. UBC is a place of mind.

Grad School @ UBC
UBC offers over 130 master’s and doctoral degree programs in nearly every academic field imaginable.
Discover more. www.grad.ubc.ca