

Workshops Current trends in Biomedicine 2010

The Dynamics of Peptidoglycan Structure and Function: New Insights into the “Great Wall”

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Scope

Peptidoglycan makes up the cell wall of almost all bacterial species and serves to maintain the shape and structural integrity of the cell, but peptidoglycan is a much more dynamic molecule than is implied by the term cell wall. Strands of peptidoglycan must be degraded and replaced with more strands for the cell to grow, and peptidoglycan must be built into different shapes for formation of the side-wall, septum, and poles. Openings must be created in the peptidoglycan for insertion and attachment of secretion systems, flagella, or other molecular machines. The processes of synthesis and breakdown are not fully understood, and what the structure actually looks like is only now being glimpsed using new microscopic techniques. Understanding the mechanisms used by the enzymes for synthesis and breakdown of the cell wall will both lead to a better understanding of bacterial metabolism and cell growth and will also reveal how new antibiotics can be developed to target these enzymes. Peptidoglycan that is released from bacteria is sensed by other bacteria and by host cells, and recent discoveries have shown that peptidoglycan recognition is necessary for normal development, symbiotic relationships, immune responses to infection, and also inflammatory diseases. This workshop will bring together scientists working in all areas of peptidoglycan research. Discussions will focus on structural biology characterizations of the whole cell wall, biochemical and genetic characterizations of enzymes involved in peptidoglycan assembly and breakdown, and recognition of peptidoglycan and responses by humans and other organisms.

Format of the Workshop

The workshop will bring together 17 speakers and a maximum of 33-35 participants, to form a group of around 50 people. The scientific programme will start in the morning of Monday, October 4th, and will end around noon on Wednesday, October 6th. Ample time for informal discussion will be reserved. Participants will be invited to present a poster.

Venue of the Workshop

The workshop will be held in Baeza, at the “Sede Antonio Machado”, a XVII century building turned into a Conference Centre of the Universidad Internacional de Andalucía (UNIA). This Seat includes a recently restored residence, where participants will be accommodated. Baeza is a World Historic Heritage town, renowned for its Renaissance and Gothic buildings.

Sponsored by:



Organized by:

Miguel A. de Pedro
Centro de Biología Molecular “Severo Ochoa”,
CSIC-UAM. Madrid, Spain.

Joseph P. Dillard
University of Wisconsin-Madison. Madison, USA.

Margaret J. McFall-Ngai
University of Wisconsin-Madison. Madison, USA.

Speakers

Morgan Beeby. HHMI and California Institute of Technology. Pasadena, CA, USA.

Didier Blanot. Laboratoire des Enveloppes Bactériennes et Antibiotiques, Institut de Biochimie et Biophysique Moléculaire et Cellulaire, UMR 8619 CNRS, Université Paris-Sud. Orsay, France.

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Jonathan Dworkin. Department of Microbiology and Immunology, College of Physicians and Surgeons, Columbia University. New York, NY, USA.

Gérard Eberl. Institut Pasteur, Laboratory of Lymphoid Tissue Development, CNRS URA1961. Paris, France.

Jeff Errington. Centre for Bacterial Cell Biology, Institute for Cell and Molecular Biosciences, Newcastle University. Newcastle upon Tyne, UK.

Pedro García. Departamento de Microbiología Molecular y Biología de las Infecciones, Centro de Investigaciones Biológicas, CSIC, and Ciber de Enfermedades Respiratorias. Madrid, Spain.

Ivo G. Boneca. Institut Pasteur, Group Biology and genetics of the bacterial cell wall; INSERM Avenir group. Paris, France.

Bruno Lemaître. Global Health Institute, Ecole Polytechnique Fédérale de Lausanne (EPFL). Lausanne, Switzerland.

Roger C. Levesque. Département de Biologie Médicale, PROTEO, Institut de Biologie Intégrative et des Systèmes (IBIS), Université Laval. Sainte-Foy, QC, Canada.

Valério R. F. Matias. Max Planck Institute of Biochemistry, Department of Molecular Structural Biology. Martinsried, Germany.

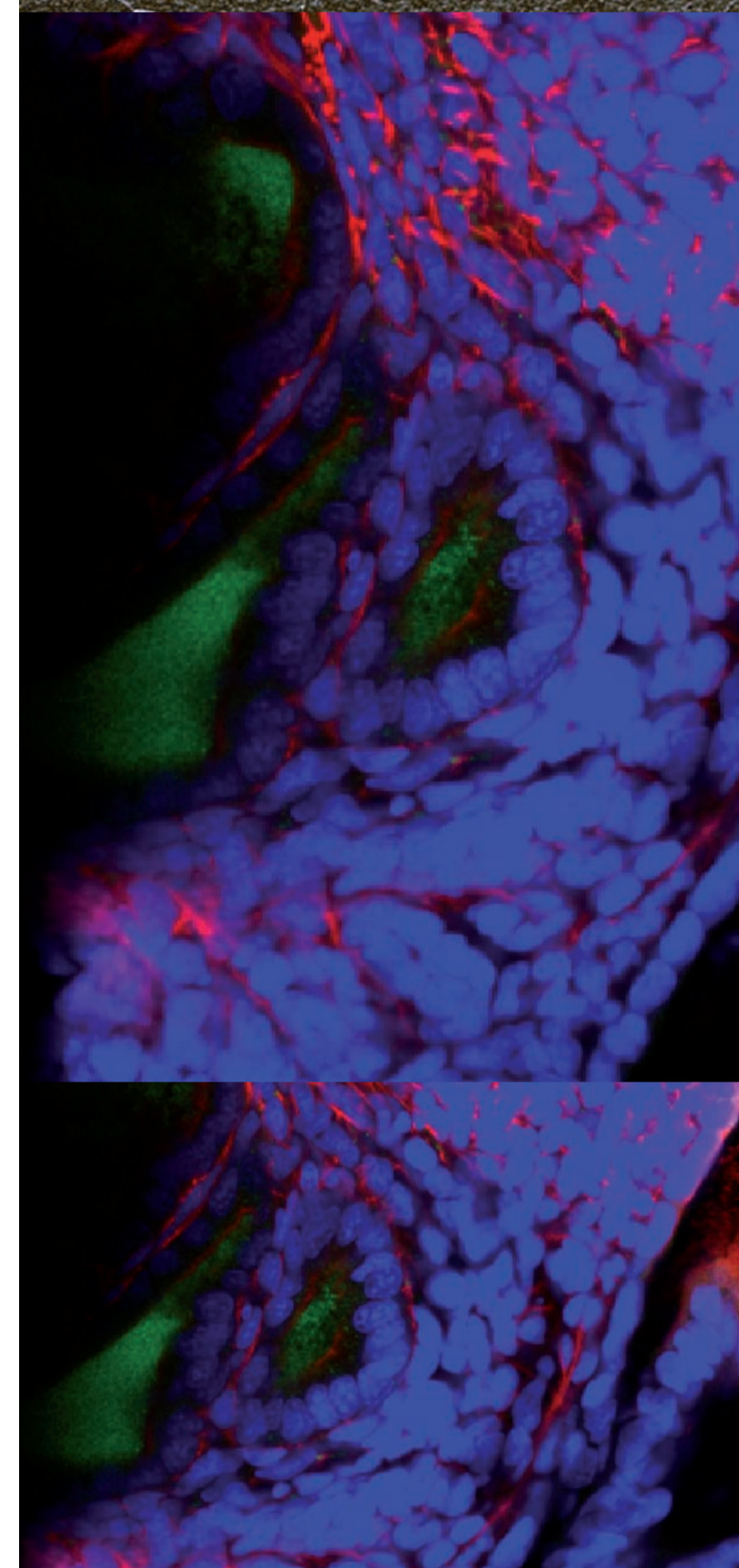
Margaret J. McFall-Ngai. Department of Medical Microbiology and Immunology, University of Wisconsin-Madison. Madison, WI, USA.

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Gabriel Núñez. Department of Pathology and Comprehensive Cancer Center, University of Michigan Medical School. Ann Arbor, MI, USA.

Andy-Mark W. H. Thunnissen. Department of Biophysical Chemistry, Groningen Biomolecular Sciences and Biotechnology Institute, University of Groningen. Groningen, The Netherlands.

Waldemar Vollmer. Centre for Bacterial Cell Biology, Institute for Cell and Molecular Biosciences, Newcastle University. Newcastle upon Tyne, UK.



**Baeza, Spain
4th-6th October 2010**

Deadline:

23rd July 2010

Venue:

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More information and application:

<http://www.unia.es/biomedicine>