



**WORKSHOPS**  
**“CURRENT TRENDS IN**  
**BIOMEDICINE”**

**2010**

**SEDE ANTONIO MACHADO**  
**BAEZA, SPAIN**

**THE DYNAMICS OF PEPTIDOGLYCAN**  
**STRUCTURE AND FUNCTION:**  
**NEW INSIGHTS INTO**  
**THE "GREAT WALL"**

**Baeza, Spain • 4-6 October 2010**

**Organized by:**

**Miguel A. de Pedro**

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

**Joseph P. Dillard**

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MICROBIOLOGY

**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 4<sup>th</sup>, and will end around noon on Wednesday, October 6<sup>th</sup>. 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.

**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  
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School of Medicine and Public Health. Madison,  
WI, USA.

**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 Lemaitre**

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.

**Dominique Mengin-Lecreulx**

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

**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.

**DEADLINE: 23 JULY 2010**

**WORKSHOP COORDINATOR:**

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**MORE INFORMATION AND APPLICATION:**

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

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