

**Symposium on Bacterial Cell Biology and Pathogenesis & Workshop on
Microscopy in Microbial Systems**

14.-18.6.2009

Umeå University, Umeå, Sweden

The Umeå Centre for Microbial Research organised a symposium on bacterial pathogenesis and a workshop on microscopy methods in mid-June 2009. I attended both. The meeting was a good one, the topic being relevant to my research. In addition to many interesting talks at the symposium, the workshop provided educational demonstrations on different methods in microscopy with particular emphasis on applications for bacterial systems. The schedule of the meeting was quite a tight one, with the programme running from 9 am to 9pm on most days, and including a Midnight Sun Seminar – surely unique to Umeå – on the penultimate evening after the conference dinner (11-12 pm!).

The symposium offered a total of 26 presentations by invited speakers, 12 poster presentations and three poster sessions. Several speakers were Swedish, but most of the invited speakers were international, giving the symposium a suitably balanced and broad spectrum of topics. Particular highlights for me included Hans Wolf-Watz's (Umeå University) talk on the type III secretion system of *Yersinia*, Ove Axner (Umeå University) on using optical tweezers for measuring the response of bacterial fimbriae to shear forces, Mavin Whiteley (University of Texas) on outer membrane vesicle formation and building lobster traps for bacteria, Esther Bullitt (Boston University) on the structure of fimbriae, Matthew Chapman's (University of Michigan) very lively talk on how bacteria make cheap exoproteins and the Midnight Sun Seminar given by Thomas Silhavy (Princeton University) on the biogenesis of the outer membrane of Gram-negative bacteria.

The workshop on microscopy was highly interesting. Unfortunately, the schedule for the workshop was very tight, only three hours in the afternoon, so it wasn't really possible for the participants to get much hands-on experience with the various techniques. The afternoon sessions included demonstrations on some fairly familiar methods such as fluorescence microscopy on tissue sections, confocal microscopy and electron microscopy. Umeå University has some excellent facilities, so in addition more exotic techniques, *e.g.* atomic force microscopy, live cell imaging and the use of flow cells, were demonstrated. A particularly interesting new technique for me was the use of optical tweezers for measuring the forces involved in extending bacterial fimbriae. This was one of the few demonstrations where the participants had the opportunity for some real hands-on work by capturing live bacteria and mounting them onto polystyrene beads.

I acknowledge ISB for supporting my participation at this conference and workshop.

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