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It is our pleasure to invite you to the following seminar:

FRIDAY November 16th, 2018 at 13:15 pm

Auditoire I, BSP 231, Cubotron/Unil, 2nd floor
(Bâtiment sciences physiques UNIL)

Environmental signals tune bacterial growth and physiology

by

Professor Petra Anne Levin

Department of Biology, Washington University in St. Louis, MO, USA. Co-Director Plant and Microbial Biosciences Graduate Program

Bacterial morphology is a complex trait, influenced by genetic and environmental factors alike. To date, analysis of environmental determinants of bacterial shape has been restricted to nutrient-derived signals. Comparatively little is known about the contribution of chemical and physical cues to cell size homeostasis. In this talk, I will present data supporting extracellular pH as an environmental signal capable of modulating cell wall synthesis and cell size in the rod-shaped bacterium *Escherichia coli*. Modest reductions in pH alter the activity of the division machinery resulting in changes in cell length. Changes in pH also enhance recruitment and activation of periplasmic cell wall synthesis enzymes, rendering cells resistant to specific classes of antibiotics. Together these data reveal cell wall metabolism in *E. coli* to be highly responsive to chemical cues, bolstering fitness across environmental conditions.

Lab website: <https://pages.wustl.edu/levin>