

Abstract Submitted
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Cell size control and homeostasis in bacteria SERENA BRADDE, GC CUNY, SATTAR TAHERI, JOHN SAULS, UCSD, NOBERT HILL, UC Berkeley, PETRA LEVINE, Washington University, JOHAN PAULSSON, Harvard, MASSIMO VERGASSOLA, SUCKJOON JUN, UCSD — How cells control their size is a fundamental question in biology. The mechanisms for sensing size, time, or a combination of the two are not supported by experimental evidence. By analysing distributions of size at division at birth and generation time of hundreds of thousands of Gram-negative *E. coli* and Gram-positive *B. subtilis* cells under a wide range of tightly controlled steady-state growth conditions, we are now in the position to validate different theoretical models. In this talk I will present all possible models in details and present a general mechanism that quantitatively explains all measurable aspects of growth and cell division at both population and single-cell levels.

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