

## Matthew Cabeen, Ph.D.

Assistant Professor  
Department of Microbiology and Molecular Genetics  
College of Arts and Sciences  
Oklahoma State University

### Contact Information:

E-mail: [matthew.cabeen@okstate.edu](mailto:matthew.cabeen@okstate.edu)  
Phone: 405-744-6652  
Office: 416 LSE, Oklahoma State University, Stillwater, OK 74078

### Education:

2010: Ph.D., Molecular, Cellular and Developmental Biology, Yale University  
2005: M.S., Molecular, Cellular and Developmental Biology, Yale University  
2003: B.S., Molecular Cell Biology, University of Connecticut  
2003: B.S., Diagnostic Genetic Sciences, University of Connecticut

### Academic Appointments:

Assistant Professor in the Department of Microbiology and Molecular Genetics

### Honors and Awards:

2014/2015/2016: Certificates of Distinction in Teaching, Harvard University  
2011-2014: Postdoctoral Fellow, Jane Coffin Childs Foundation  
2005-2008: Graduate Research Fellow, National Science Foundation  
2005: Short-term Research Fellow, European Molecular Biology Organization

### Research Support:

CRID 2019-2020 Pilot Project Grant

### Selected Publications:

1. Russell JR, Cabeen MT, Wiggins PA, Paulsson J, Losick R. (2017) Noise in a phosphorelay drives stochastic entry into sporulation in *Bacillus subtilis*. *EMBO J*, in press.
2. Cabeen MT, Russell JR, Paulsson J, Losick R. Use of a microfluidic platform to uncover basic features of energy and environmental stress responses in individual cells of *Bacillus subtilis*.
3. (2017) *PLOS Genetics* 13: e1006901.
4. Wang X, Koehler SA, Wilking JN, Sinha NN, Cabeen MT, Srinivasan S, Seminara A, Rubinstein S, Sun Q, Brenner MP, Weitz DA. (2016) Probing phenotypic growth in expanding *Bacillus subtilis* biofilms. *Appl Microbiol Biotechnol* 100: 4607-15.
5. Cabeen MT, Leiman SA, Losick R. (2016) Colony-morphology screening uncovers a role for the *Pseudomonas aeruginosa* nitrogen-related phosphotransferase system in biofilm formation. *Mol Microbiol* 99: 557-70.
6. Cabeen MT, Losick R. (2015) Bacterial backstabbing: EF-Tu, Brute? *Cell* 163: 537-9. (News and views article.)

7. Cabeen MT. (2014) Stationary phase-specific virulence factor overproduction by a lasR mutant of *Pseudomonas aeruginosa*. PLoS One 9(2): e88743.
8. Parry BR\*, Surovtsev IV\*, Cabeen MT, O'Hern CS, Dufresne ER, Jacobs-Wagner C. (2014) The bacterial cytoplasm has glass-like properties and is fluidized by metabolic activity. Cell 156: 183-94.
9. Takacs CN, Hocking J, Cabeen MT, Bui NK, Poggio S, Vollmer W, Jacobs-Wagner C. (2013) Growth medium-dependent glycine incorporation into the peptidoglycan of *Caulobacter crescentus*. PLoS One 8(2): e57579.
10. Cabeen MT, Herrmann H, Jacobs-Wagner C. (2011) The domain organization of the bacterial intermediate filament-like protein crescentin is important for assembly and function. Cytoskeleton 68: 205-19.
11. Le Blastier S, Hamels A, Cabeen M, Schille L, Tilquin F, Dieu M, Raes M, Matroule JY. (2010) Phosphate starvation triggers production and secretion of an extracellular lipoprotein in *Caulobacter crescentus*. PLoS One 5(12): e14198.
12. Cabeen MT, Jacobs-Wagner C. (2010) The bacterial cytoskeleton. Ann Rev Genet 44: 365-92. (Review article.)
13. Cabeen MT, Jacobs-Wagner C. (2010) A metabolic assembly line in bacteria. Nat Cell Biol 12: 731-3. (News and views article.)
14. Cabeen MT\*, Murolo MA\*, Briegel A, Ausmees N, Jensen GJ and Jacobs-Wagner C. (2010) Mutations in the lipopolysaccharide biosynthesis pathway interfere with crescentin-mediated cell curvature in *Caulobacter crescentus*. J Bacteriol. 192: 3368-78.
15. Sliusarenko O, Cabeen MT, Wolgemuth CW, Jacobs-Wagner C, Emonet T. (2010) Processivity of peptidoglycan synthesis provides a built-in mechanism for the robustness of straight-rod cell morphology. PNAS 107: 10086-91.
16. Cabeen MT, Charbon G, Vollmer W, Born P, Ausmees N, Weibel, D and Jacobs-Wagner C. (2009) Bacterial cell curvature through mechanical control of cell growth. EMBO J 28: 1208-1219. (Featured in "Have you seen?" in this issue of The EMBO Journal.)
17. Charbon G, Cabeen MT and Jacobs-Wagner C. (2009) Bacterial intermediate filaments: In vivo assembly, organization and dynamics of crescentin. Genes & Dev 23: 131-44. .
18. Cabeen MT, Jacobs-Wagner C. (2007) Skin and bones: the bacterial cytoskeleton, cell wall, and cell morphogenesis. J Cell Biol. 179: 381-7. (Review article.)
19. Cabeen MT, Jacobs-Wagner C. (2005) Bacterial cell shape. Nat Rev Microbiol. 3: 601-10. (Review article.)