

**School of Medicine**

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Assistant Professor

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**Education**

2004-present Assistant Professor  
Dept. Molecular Biology & Microbiology, Case Western Reserve University, USA  
2003-2004 Research Associate  
Department of Developmental Biology, Stanford University, USA  
2000-2002 Postdoctoral Research Fellow  
Department of Developmental Biology, Stanford University, USA  
1999 Ph.D. in Microbiology  
1994-1999 Research Fellow in the Graduate Program Biology II (Microbiology)  
Division of Molecular Microbiology, Biozentrum, Basel University, Switzerland  
1994 Undergraduate Diploma in Biology II  
1989-1994 Research Fellow in the Undergraduate Program Biology II (Genetics)  
Division of Molecular Microbiology, Biozentrum, Basel University, Switzerland

**Lab affiliations & Research Themes**

2004-present Dept. Molecular Biology & Microbiology, Case Western Reserve University, USA  
Mechanisms of cell polarity, asymmetric cell division and cell-cycle control in *Caulobacter crescentus*  
2000-2004 Dr. Lucy Shapiro, Director Beckman Center  
Department of Developmental Biology, Stanford University, USA  
Spatial and temporal control in the assembly of polar pili and chromosome organization in *Caulobacter crescentus*  
1994-2000 Dr. Charles Thompson, Chairman  
Division of Molecular Microbiology, Basel University, Switzerland  
Factors controlling colonial differentiation in *Streptomyces coelicolor*  
1993-2000 Dr. Werner Arber (Emeritus), Nobel Laureate in Medicine 1978  
Division of Molecular Microbiology, Basel University, Switzerland  
Cin-mediated recombination on the chromosome of *Escherichia coli*

**Awards and Fellowships**

2004 Scholar of the Mount Sinai Health Care Foundation  
2002 Recipient of the Annual Encouragement Award ("Förderungspreis") of the Swiss Society of Microbiology (SGM), awarded at the Annual SGM Meeting March 6<sup>th</sup>, 2003, Basel, Switzerland  
2001 Postdoctoral Fellowship of the Swiss National Science Foundation (SNF)  
2000 Postdoctoral Fellowship of the Roche Research Foundation (RRF)  
1999 Ph.D. in Microbiology, *summa cum laude*

**Meetings**

2004 104<sup>th</sup> General Meeting of the American Society of Microbiology (ASM). Poster.  
2004 Keystone Symposium on Bacterial Chromosomes. Invited Speaker.  
2003 General Meeting of the Swiss Society of Microbiology (SGM). Invited Speaker.  
2002 1<sup>st</sup> ASM Conference on Prokaryotic Development. Poster.  
2002 1<sup>st</sup> Caulobacter Meeting. Short talk.  
1999 11<sup>th</sup> Symposium on the Biology of the Actinomycetes (ISBA). Short talk.  
1998 Gordon Conference: Microbial Stress Response. Poster.  
1996 Gordon Conference: Microbial Stress Response. Poster.

### Publications: Research Articles

- Viollier**, P. H., M. Thanbichler, P. T. McGrath (equal contributors), L. West, M. Meewan, H. H. McAdams, and L. Shapiro (2004) Rapid and sequential movement of individual chromosomal loci to specific subcellular locations during bacterial DNA replication. *Proc. Natl. Acad. Sci. USA*, 101(25):9257-62.
- Holtzendorff, J., D. Hung, P. Brende, A. Reisenauer, P. H. **Viollier**, H. H. McAdams, and L. Shapiro (2004) Oscillating Global Regulators Control the Genetic Circuit Driving a Bacterial Cell Cycle. *Science*, 14;304(5673):983-7.
- Viollier**, P. H., A. Newton, and L. Shapiro (2003) A lytic transglycosylase homologue, PleA, is required for the assembly of pili and the flagellum at the *Caulobacter crescentus* cell pole. *Mol. Microbiol.*, 49(2): 331-45.
- Viollier**, P. H., A. Weihofen, M. Folcher, and C. J. Thompson (2003) Post-transcriptional regulation of the *Streptomyces coelicolor* stress-responsive sigma factor, SigH, involves translational control, proteolytic processing and an antisigma factor homologue. *J. Mol. Biol.*, 325(4): 637-49.
- Viollier**, P. H., G. H. Kelemen, G. E. Dale, M. J. Buttner, and C. J. Thompson (2003) Specialized osmotic response systems involve multiple SigB-like sigma factors in *Streptomyces coelicolor*. *Mol. Microbiol.*, 47(3): 699-714.
- Nguyen, K. T., J. M. Willey, L. D. Nguyen, L. T. Nguyen, P. H. **Viollier**, and C. J. Thompson (2002) A central regulator of morphological differentiation in the multicellular bacterium *Streptomyces coelicolor*. *Mol. Microbiol.*, 46(5): 1223-38.
- Viollier**, P. H., N. Sternheim, and L. Shapiro (2002) Identification of a localization factor for the polar positioning of bacterial structural and regulatory proteins. *Proc. Natl. Acad. Sci. USA*, 99(21): 13831-6.
- Viollier**, P. H., N. Sternheim, and L. Shapiro (2002) A dynamically localized histidine kinase controls the asymmetric distribution of polar pili proteins. *EMBO J.*, 21(17):4420-8.
- Viollier**, P. H., K. T. Nguyen, W. Minas, M. Folcher, G. E. Dale, and C. J. Thompson (2001) Roles of aconitase in growth, metabolism, and morphological differentiation of *Streptomyces coelicolor*. *J. Bacteriol.*, 183(10):3193-203.
- Viollier**, P. H., W. Minas, G. E. Dale, M. Folcher, and C. J. Thompson (2001) Role of acid metabolism in *Streptomyces coelicolor* morphological differentiation and antibiotic biosynthesis. *J. Bacteriol.*, 183(10):3184-92.
- Viollier**, P. H., G. H. Kelemen, J. Tenor (equal contributors), L. Marri, M. J. Buttner, and C. J. Thompson (2001) A connection between stress and development in the multicellular prokaryote *Streptomyces coelicolor* A3(2). *Mol. Microbiol.*, 40(4):804-14.
- Folcher, M., R. P. Morris, G. Dale, K. Salah-Bey-Hocini, P. H. **Viollier**, and C. J. Thompson (2001) A transcriptional regulator of a pristina mycin resistance gene in *Streptomyces coelicolor*. *J. Biol. Chem.*, 276(2):1479-85.
- Chiu, M. L., P. H. **Viollier**, T. Katoh, J. J. Ramsden, and C. J. Thompson (2001) Ligand-induced changes in the *Streptomyces lividans* TipAL protein imply an alternative mechanism of transcriptional activation for MerR-like proteins. *Biochemistry*, 40(43):12950-8.
- Vohradsky, J., X. M. Li, G. Dale, M. Folcher, L. Nguyen, P. H. **Viollier**, and C. J. Thompson (2000) Developmental control of stress stimulons in *Streptomyces coelicolor* revealed by statistical analyses of global gene expression patterns. *J. Bacteriol.*, 182 (17):4979-86.
- Rozsa, F. W., P. **Viollier**, M. Fussenegger, R. Hiestand-Nauer, and W. Arber (1995) Cin-mediated recombination at secondary crossover sites on the *Escherichia coli* chromosome. *J. Bacteriol.*, 177(5):1159-68.

### Publications: Review Articles

- Viollier**, P. H. and L. Shapiro (2004) Spatial complexity of mechanisms controlling a bacterial cell cycle. *Curr. Opin. Microbiol.*, in press.
- McGrath, P. T., P. **Viollier**, and H. H. McAdams (2004) Setting the pace: mechanisms tying *Caulobacter* cell cycle progression to macroscopic cellular events. *Curr. Opin. Microbiol.*, 7(2): 192-7.