

**Please join the online ASM Sweden Finland Lecture series 2025 on Friday December 12, 2025, 16:00 CET by**

**Prof. Mechthild Pohlschröder**, Department of Biology, University of Pennsylvania, Philadelphia, USA

**Title: Uncovering Archaeal Biology: Insights from the Archaeal Proteome Project into the Diversity of Cellular Processes**

**Date: Friday December 12, 2025, 16:00 CET**

<https://ki-se.zoom.us/j/68706690460?pwd=s552iSsRgh6zH2tC0s4gKwVB1efnb8.1>

Meeting-ID: 687 0669 0460, password: 949588

**Prof. Pohlschröder's research deals with prokaryotic cell surface biogenesis and function**

### **Selected recent references**

Chatterjee P, Consoli CE, Schiller H, Winter KK, McCallum ME, Schulze S, Pohlschröder M. Quorum sensing mediates morphology and motility transitions in the model archaeon *Haloferax volcanii*. bioRxiv [Preprint]. 2025 Jan 14:2025.01.14.633064. doi: 10.1101/2025.01.14.633064. PMID: 39868331; PMCID: PMC11760428.

Hong Y, Makarova KS, Xu R, Pfeiffer F, Pohlschröder M. Beyond bacterial paradigms: uncovering the functional significance and first biogenesis machinery of archaeal lipoproteins. bioRxiv [Preprint]. 2024 Aug 27:2024.08.27.609747. doi: 10.1101/2024.08.27.609747. PMID: 39372745; PMCID: PMC11451621.

Curtis Z, Escudeiro P, Mallon J, Leland O, Rados T, Dodge A, Andre K, Kwak J, Yun K, Isaac B, Martinez Pastor M, Schmid AK, Pohlschröder M, Alva V, Bisson A. Halofilins as emerging bactofilin families of archaeal cell shape plasticity orchestrators. Proc Natl Acad Sci U S A. 2024 Oct;121(40):e2401583121. doi: 10.1073/pnas.2401583121. Epub 2024 Sep 25. PMID: 39320913; PMCID: PMC11459167.

Chatterjee P, Garcia MA, Cote JA, Yun K, Legerme GP, Habib R, Tripepi M, Young C, Kulp D, Dyall-Smith M, Pohlschröder M. Involvement of ArlI, ArlJ, and CirA in archaeal type IV pilin-mediated motility regulation. J Bacteriol. 2024 Jun 20;206(6):e0008924. doi: 10.1128/jb.00089-24. Epub 2024 May 31. PMID: 38819156; PMCID: PMC11332145.

Schiller H, Hong Y, Kouassi J, Rados T, Kwak J, DiLucido A, Safer D, Marchfelder A, Pfeiffer F, Bisson A, Schulze S, Pohlschröder M. Identification of structural and regulatory cell-shape determinants in *Haloferax volcanii*. NatCommun. 2024 Feb 15;15(1):1414. doi: 10.1038/s41467-024-45196-0. PMID: 38360755; PMCID: PMC10869688.

Schiller H, Young C, Schulze S, Pohlschröder M. Accessible and Insightful Scientific Learning Experiences Using the Microorganism *Haloferax volcanii*. Methods Mol Biol. 2022;2522:531-545. doi: 10.1007/978-1-0716-2445-6\_34. PMID: 36125773.

Schulze S, Schiller H, Mutan Z, Solomon J, Telhan O, Pohlschröder M. Cost-Effective and Versatile Analysis of Archaeal Surface Adhesion Under Shaking and Standing Conditions. Methods Mol Biol. 2022;2522:397-406. doi: 10.1007/978-1-0716-2445-6\_27. PMID: 36125766.

Mutan Z, Schiller H, Schulze S, Pohlschroder M. Immersed Liquid Biofilm and Honeycomb Formations in *Haloferax volcanii*. *Methods Mol Biol*. 2022;2522:387-395. doi: 10.1007/978-1-0716-2445-6\_26. PMID: 36125765.

Schiller H, Young C, Schulze S, Tripepi M, Pohlschroder M. A Twist to the Kirby-Bauer Disk Diffusion Susceptibility Test: an Accessible Laboratory Experiment Comparing *Haloferax volcanii* and *Escherichia coli* Antibiotic Susceptibility to Highlight the Unique Cell Biology of Archaea. *J Microbiol Biol Educ*. 2022 Jan 31;23(1):e00234-21. doi: 10.1128/jmbe.00234-21. PMID: 35340443; PMCID: PMC8943627.

Schulze S, Schiller H, Solomon J, Telhan O, Costa K, Pohlschroder M. Advanced Understanding of Prokaryotic Biofilm Formation through Use of a Cost- Effective and Versatile Multipanel Adhesion (mPAD) Mount. *Appl Environ Microbiol*. 2022 Feb 22;88(4):e0228321. doi: 10.1128/aem.02283-21. Epub 2022 Jan 5. PMID: 35191778; PMCID: PMC8863052.

Schulze S, Pfeiffer F, Garcia BA, Pohlschroder M. Comprehensive glycoproteomics shines new light on the complexity and extent of glycosylation in archaea. *PLoS Biol*. 2021 Jun 17;19(6):e3001277. doi: 10.1371/journal.pbio.3001277. PMID: 34138841; PMCID: PMC8241124.

de Silva RT, Abdul-Halim MF, Pittrich DA, Brown HJ, Pohlschroder M, Duggin IG. Improved growth and morphological plasticity of *Haloferax volcanii*. *Microbiology (Reading)*. 2021 Feb;167(2):001012. doi: 10.1099/mic.0.001012. PMID: 33459585; PMCID: PMC8131023.

Collins M, Afolayan S, Igiraneza AB, Schiller H, Krespan E, Beiting DP, Dyll-Smith M, Pfeiffer F, Pohlschroder M. Mutations Affecting HVO\_1357 or HVO\_2248 Cause Hypermotility in *Haloferax volcanii*, Suggesting Roles in Motility Regulation. *Genes (Basel)*. 2020 Dec 31;12(1):58. doi: 10.3390/genes12010058. PMID: 33396553; PMCID: PMC7824242.