

# Jennifer K. Herman

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## EDUCATION

**Doctor of Philosophy**, Microbiology 2005  
Indiana University, Bloomington, IN

**Bachelor of Science**, Biochemistry 2000  
University of North Texas, Denton, TX

**Bachelor of Science**, Biology 2000  
University of North Texas, Denton, TX

## POSITIONS & EMPLOYMENT

**Associate Professor** 2017-present  
Texas A&M University, Department of Biochemistry and Biophysics  
and the Center for Phage Technology

**Assistant Professor** 2011-2017  
Texas A&M University, Department of Biochemistry and Biophysics  
and the Center for Phage Technology

**Postdoctoral Research Associate** 2007-2011  
Harvard Medical School, Department of Microbiology and Molecular Genetics  
Advisor: Dr. David Z. Rudner  
Regulation of DNA replication and cell division during *Bacillus* sporulation

**Postdoctoral Fellow** 2005-2007  
Harvard Medical School, Microbiology and Molecular Genetics  
Massachusetts General Hospital, Division of Infectious Diseases  
Advisor: Dr. Marcia B. Goldberg  
Secretion and folding of the *Shigella flexneri* autotransporter IcsA

**Graduate Research Assistant** 2000-2005  
Indiana University, Department of Biology  
Advisor: Dr. Yves V. Brun  
Structure and function of the *Caulobacter crescentus* stalk

## TEACHING

**Texas A&M, Department of Biochemistry and Biophysics**

**Co-Instructor** 2018  
BICH689 (Graduate Student Seminar)

**Instructor**

BICH631 Biochemical Genetics 2023-present  
BICH676 (Bacteriophage/Bacterial Cell Biology Journal Club) 2022-2023  
BICH689/658 (Application of Scientific Values in Daily Research Practice) 2017-present  
BICH689 (Methods of Biochemical Analysis) 2013-2016  
BICH/GENE431 (Molecular Genetics & Honor's Mol Gen) 2012-2023

**Other**

**Associate Instructor** 2009-2011

Genetics 360 (Genetics Bootcamp) Harvard Medical School, Microbiology and Molecular Genetics	2004
<b>Associate Instructor</b> M360 Bacterial Biochemistry and Physiology Laboratory Indiana University, Department of Biology	2003

## SERVICE

### Texas A&M, Department of Biochemistry and Biophysics

Faculty Lecturer Search Committee	2024
Awards Committee	2023-present
Undergraduate Program Committee	2023-present
Graduate Recruitment Committee	2023-present
Recruiting and Outreach (Chair)	2021-2023
Seminar Committee	2020-2021
Executive Committee (Elected)	2019-2021
Biochemistry Graduate Student Association Mentor (Elected)	2019-2022
Department Head Search Committee	2017-2019
Website Committee (Head 2019-2020)	2013-2020
Graduate Program Committee	2012-2018
Biochemistry Graduate Student Association Mentor (Elected)	2012-2014
Graduate Recruitment Committee	2012-2014

### Texas A&M University, College of Agrilife

AgGIE graduate student leadership panel	2022
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### Texas A&M University, College Station

Founded/run a monthly microbiology seminar series "First Fridays"	2022-present
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### National/International Service

Co-chair, International Conference on Bacilli and Gram-Positive Bacteria, Bloomington IN	2024
Session Chair, Gordon Research Conference on Bacterial Cell Biology & Development	2023
External Reviewer for tenure application, University of Groningen, The Netherlands	2022
External Reviewer for tenure application, Oklahoma State University, Stillwater	2022
Session Chair, Subtillery Virtual Conference	2021
Women in Science Roundtable, Molecular Genetics of Bacteria and Phages Meeting	2019
Session Chair, Molecular Genetics of Bacteria and Phages Meeting	2019
Poster Judge, The International Conference on Bacilli and Gram-Positive Bacteria	2019
Session Chair, The International Conference on Bacilli and Gram-Positive Bacteria	2019
Tenure-track faculty Roundtable, Molecular Genetics of Bacteria and Phages Meeting	2018
Poster Judge, Molecular Genetics of Bacteria and Phages Meeting	2014

### Academic Editor

PLOS Genetics	2024-present
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### Editorial Board

Journal of Bacteriology	2021-present
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### Invited Editor

mBio	2020
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### Ad Hoc Reviewer, Peer-reviewed Journals

mBio	2021-present
Scientific Reports	2020-present
Journal of Basic Microbiology	2019-present
Microbiology	2016-present
Developmental Cell	2016-present
PLoS One	2015-present
PLoS Genetics	2015-present
Molecular Microbiology	2015-present
Journal of Bacteriology	2013-present

### Ad Hoc Reviewer, Grant Funding Agencies

German Research Foundation (Deutsche Forschungsgemeinschaft)	2023
Estonia Research Council	2018
NSF (Molecular and Cellular Biosciences)	2017-present
NIH (NIGMS-PCMB)	2017
Science Foundation of Ireland (Spokes Programme)	2017

### PROFESSIONAL ORGANIZATIONS

American Society of Cell Biology	2020-2023
Texas Branch ASM	2014-present
American Society of Microbiology	2000-present

### FELLOWSHIPS

Harold G. Ernst Fellowship in Bacteriology and Immunology	2008-2009
NIH T32 AI07061 Postdoctoral Training Grant	2005-2007
Floyd Fellowship in Microbiology	2002-2005
American Society for Microbiology Student Travel Grant	2002
NIH T32 GM007757 Predoctoral Training Grant	2000-2003

### AWARDS/RECOGNITION

<b>Named as a top reviewer by Editor in Chief</b> Journal of Bacteriology	2022
<b>Vice Chancellor's Award for Excellence for Teaching</b> Texas A&M University	2020
<b>Biochemistry Graduate Student Association (Appreciation Award)</b> Texas A&M University	2012 & 2013
<b>Floyd Outstanding Publication in Microbiology</b> Indiana University, Department of Biology	2007
<b>Outstanding Associate Instructor in Biology</b> Indiana University, Department of Biology	2003-2004
<b>Walter Konetzka Fellowship for Teaching and Research in Microbiology</b> Indiana University, Department of Biology	2003
<b>NSF Graduate Research Fellowship Honorable Mention</b> Indiana University, Department of Biology	2001, 2002

### PUBLICATIONS

1. Guo, T. A.M. Sperber, I.V. Kriger, Y. Duan, V.R. Chemelewski, J.C. Sacchettini, and **J.K. Herman** (2023). [Bacillus subtilis YisK possesses oxaloacetate decarboxylase activity and exhibits Mbl-dependent localization](#). J. Bacteriol. 205(1): e0037522. PMID: 36515540. ("Editor's pick")

2. Guo, T. and **J.K. Herman** (2023). [Magnesium modulates \*Bacillus subtilis\* cell division frequency](#). J. Bacteriol. 205(1): e0037522. PMID: 36515540. ([Highlighted on ASM's "This week in Microbiology" beginning 5:00 min](#))
3. Miller, A.K. and **J.K. Herman**. (2022). [RefZ and Noc act synthetically to prevent aberrant divisions during \*Bacillus subtilis\* sporulation](#). J. Bacteriol. 204(6): :e0002322. PMID: 35506695.
4. Brown, E.E., A.K. Miller, I.V. Krieger, R.M. Otto, J.C. Sacchettini, and **J.K. Herman**. (2019). [A DNA-binding protein tunes septum placement during \*Bacillus subtilis\* sporulation](#). J. Bacteriol. 201(16): pii: e00287-19. PMID: 27489185.
5. Sperber, A.M. and **J.K. Herman**. (2017). [Metabolism shapes the cell](#). J. Bacteriol. 199(11): e00039-17. PMID: 28320879. Review.
6. Duan, Y., J.D. Huey, and **J.K. Herman**. (2016). [The DnaA inhibitor SirA acts in the same pathway as Soj \(ParA\) to facilitate \*oriC\* segregation during \*Bacillus subtilis\* sporulation](#). Mol Microbiol. 102(3): 530-544. PMID: 27489185.
7. Duan, Y., A.M. Sperber, and **J.K. Herman**. (2016). [YodL and YisK possess shape-modifying activities that are suppressed by mutations in \*Bacillus subtilis mreB\* and \*mbI\*](#). J. Bacteriol. 198(15): 2074-2088. PMID: 27215790.
8. Miller, A.K., E.E. Brown, B.T. Mercado, and **J.K. Herman**. (2016). [A DNA-binding protein defines the precise region of chromosome capture during \*Bacillus\* sporulation](#). Mol Microbiol. 99(1): 111-122. PMID: 26360512.
9. Ababneh, Q.A. and **J.K. Herman**. (2015). [A secreted factor coordinates environmental quality with \*Bacillus\* development](#). PLoS One. 10(12): e0144168. PMID: 26657919.
10. Ababneh, Q.A. and **J.K. Herman**. (2015). [CodY regulates SigD levels and activity by binding to three sites in the \*fla/che\* operon](#). J. Bacteriol. 197(1): 128-37. PMID: 26170408.
11. Ababneh, Q.A. and **J.K. Herman**. (2015). [RelA Inhibits \*Bacillus subtilis\* motility and chaining](#). J. Bacteriol. 197(1): 128-137. PMID: 25331430.
12. **Wagner-Herman, J.K.**, R. Bernard, R. Dunne, A.W. Bisson-Filho, K. Kumar, T. Nyguen, L. Mulcahy, J. Koullias, F.J. Gueiros-Filho, and D.Z. Rudner. (2012). [RefZ facilitates the switch from medial to polar division during spore formation in \*Bacillus subtilis\*](#). J. Bacteriol. 169(17): 4608-4618. PMID: 22730127.
13. **Wagner, J.K.** , K. A. Marquis, and D. Z. Rudner. (2009). [SirA enforces diploidy by inhibiting the replication initiator DnaA during spore formation in \*Bacillus subtilis\*](#). Mol Microbiol. 73(5): 963-974. PMID: 19682252.
14. **Wagner, J.K.**, J.E. Heindl, A.N. Gray, S. Jain, and M.B. Goldberg. (2009). [Contribution of the periplasmic chaperone Skp to efficient presentation of the autotransporter IcsA on the surface of \*Shigella flexneri\*](#). J Bacteriol. 191(3): 815-21. PMID: 19047350.
15. **Wagner, J.K.** and Y.V. Brun. (2007). [Out on a limb: how the \*Caulobacter\* stalk can boost the study of bacterial cell shape](#). Mol Microbiol. 64: 28–33. PMID: 17376069.
16. **Wagner, J.K.**, S. Setayeshgar, L. Sharon, J. Reilly, and Y.V. Brun. (2006). [A nutrient uptake role for bacterial cell envelope extensions](#). PNAS. 103(31): 11772-11777. PMID: 16861302.  
**Featured article:** See [comment](#) by H.H. McAdams, PNAS. 103(31): 11435-6. PMID

17. **Wagner, J.K.**, C.D. Galvani, and Y.V. Brun. (2005). [Caulobacter crescentus requires RodA and MreB for stalk synthesis and prevention of ectopic pole formation](#). J. Bacteriol. 187(2): 544-553. PMID: 15629926
18. **Wagner, J.K.** and Y.V. Brun. 2004. Regulation of cell division in differentiating bacteria. *Molecules in time and space: bacterial shape, division, and phylogeny*. M. Vicente, A. Valencia, J. Tamames, and J. Mingorance (eds). Kluwer Academic/Plenum Publishers.
19. He, X., W. Chang, D. L. Pierce, L. Seib, **J. Wagner**, and C. Fuqua. 2003. [Quorum-sensing in Rhizobium sp. NGR234 regulates conjugal transfer \(tra\) gene expression and influences growth rate](#). J. Bacteriol. 185: 809-822. PMID: 12533456
20. Danhorn, T., W. Ng, A. Richardson, J. Santos, J. Stumpf, M. Trimble, **J. Wagner**, and C. Kao. 2003. All's well that ends well: Creative solutions viruses use to ensure proper ends of linear genomes. Rec. Res. Dev. Virol. 5: 45-66.

### INVITED ORAL PRESENTATIONS

1. Mg<sup>2+</sup> modulates *Bacillus subtilis* cell division frequency. June 2022. International Conference on Bacilli and Gram-positive Bacteria. Prague, Czech Republic.
2. Elucidating functions for those pesky uncharacterized genes. March 2020. Department of Microbiology and Molecular Genetics, Oklahoma State University.
3. Mbl-dependent localization of a stationary phase enzyme. August 2019. Molecular Biology of Bacteria and Phages Meeting, Madison, WI.
4. Mbl-dependent localization of a stationary phase enzyme. July 2018. Gordon Research Conference (Bacterial Stress Response), Mt. Holyoke, MA.
5. Regulation in the 3D landscape of a cell. November 2017. Baylor University, Department of Chemistry and Biochemistry, Waco, TX.
6. Regulation of essential cell processes during *Bacillus* development. October 2017. University of Arkansas for the Medical Sciences, Department of Microbiology and Immunology, Little Rock, AR.
7. Regulation of essential cell processes during *Bacillus* development. (Keynote) October 2017. Indiana University Section of Microbiology Retreat, Knaw Bone, IN.
8. Regulation of essential cell processes during *Bacillus* development. March 2017. Department of Molecular Virology and Microbiology, Baylor College of Medicine, Houston.
9. Regulation of essential cell processes during *Bacillus* development. February 2017. Department of Molecular Biology, University of Wyoming, Laramie.
10. Regulation of essential cell processes during *Bacillus* development. September 2016. Texas. Bayou Science and Mathematics Colloquium. College of Science and Engineering at the University of Houston-Clear Lake.
11. Subcellular Organization in Bacteria. August 2015. Texas A&M Biochemistry and Genetics Society monthly meeting. Texas A&M University.
12. Navigating a career in academic research. June 2016. Biochemistry Graduate Student Association, Career Development Series. Texas A&M University.
13. Protein-based regulators of MreB and Mbl activity. August 2015. Molecular Biology of Bacteria and Phages Meeting, Madison, WI.

14. DNA motifs define the precise region of chromosome capture during *Bacillus* sporulation. June 2015. American Society of Microbiology, Prokaryotic Cell Biology and Development, Washington, D.C.
15. Identification and characterization of RefZ, a new regulator of FtsZ assembly. April 2013. Texas A&M, Department of Biology.
16. Identification and characterization of RefZ, a new regulator of FtsZ assembly. March 2013. Texas A&M University Health Science Center, Institute of Bioscience and Technology.
17. Characterization of RefZ, a new regulator of FtsZ assembly during *Bacillus subtilis* sporulation. Lost Pines Conference, November 2012. University of Texas, MD Anderson Cancer Center.

### **GRANTS/FUNDING**

DARPA/Signature Science (subcontract)

*Spore-Phage Amplified Detection (SPADe) for Subterranean Chemical Threats*

Role: PI

08/15/2019-03/15/2021

\$361,382 Total Costs

NSF Investigator-Initiated (MCB-1514629)

*Positional Regulation of Cell Division*

Role: PI

08/01/2015 - 07/31/2020

\$650,466 Total Costs

Bill and Melinda Gates Foundation (06-505129)

*Phagocins: Precision Tools for the Remodeling the Microbiota*

Role: Co-PI

5/01/2016-10/31/2017

\$100,000 Direct Costs