Stanford

Christine Jacobs-Wagner

Dennis Cunningham Professor, Professor of Biology and of Microbiology and Immunology

Bio

BIO

Christine Jacobs-Wagner is a Dennis Cunningham Professor in the Department of Biology and the ChEM-H Institute at Stanford University. She is interested in understanding the fundamental mechanisms and principles by which cells, and, in particular, bacterial cells, are able to multiple. She received her PhD in Biochemistry in 1996 from the University of Liège, Belgium where she unraveled a molecular mechanism by which some bacterial pathogens sense and respond to antibiotics attack to achieve resistance. For this work, she received multiple awards including the 1997 GE & Science Prize for Young Life Scientists. During her postdoctoral work at Stanford Medical School, she demonstrated that bacteria can localize regulatory proteins to specific intracellular regions to control signal transduction and the cell cycle, uncovering a new, unsuspected level of bacterial regulation.

She started her own lab at Yale University in 2001. Over the years, her group made major contributions in the emerging field of bacterial cell biology and provided key molecular insights into the temporal and spatial mechanisms involved in cell morphogenesis, cell polarization, chromosome segregation and cell cycle control. For her distinguished work, she received the Pew Scholars award from the Pew Charitable Trust, the Woman in Cell Biology Junior award from the American Society of Cell Biology and the Eli Lilly award from the American Society of Microbiology. She held the Maxine F. Singer and William H. Fleming professor chairs at Yale. She was elected to the Connecticut academy of Science, the American Academy of Microbiology and the National Academy of Sciences. She has been an investigator of the Howard Hughes Medical Institute since 2008.

Her lab moved to Stanford in 2019. Current research examines the general principles and spatiotemporal mechanisms by which bacterial cells replicate, using Caulobacter crescentus and Escherichia coli as models. Recently, the Jacobs-Wagner lab expanded their interests to the Lyme disease agent Borrelia burgdorferi, revealing unsuspected ways by which this pathogen grows and causes disease

ACADEMIC APPOINTMENTS

- Professor, Biology
- Professor, Microbiology and Immunology
- Member, Bio-X
- Institute Scholar, Sarafan ChEM-H

ADMINISTRATIVE APPOINTMENTS

- Investigator, Howard Hughes Medical Institute, (2008- present)

HONORS AND AWARDS

- Gabilan Fellowship, Stanford University (2019)

- Ely Lilly Award, American Society of Microbiology (2011)
- Finalist, Blavatnik Award for Young Scientists, New York Academy of Sciences (2008)
- Women in Cell Biology Junior Award, American Society of Cell Biology (2007)
- E. Van Beneden Prize, University of Liège, Belgium (2001)
- Wetrems Prize in Natural Sciences, Royal Academy of Sciences, Literature and Arts, Belgium (1998)
- Outstanding Young Person Award in Medical Innovations, Young Economic Chamber of Belgium (1998)
- Grand Prize Winner, GE & Science Prize for Young Life (1997)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, National academy of Sciences (2015 - present)
- Member, the American Academy of Microbiology (2017 - present)
- Member, Connecticut Academy of Science and Engineering (2016 - present)
- Member, Pew Scholars National Advisory Committee (2015 - present)
- Member, Temporary Nominating Group for the National Academy of Sciences (2017 - present)
- Board Member, Belgian American Educational Foundation (2008 - present)
- Member, Scientific Advisory Board of Global Institute of Health, EPFL, Switzerland (2017 - present)

PROFESSIONAL EDUCATION

- Postdoc, Stanford Medical School, Developmental Biology
- PhD, University of Liège, Belgium (1996)
- BS/MS, University of Liège, Belgium (1991)

LINKS

- Lab Website: http://jacobswagnerlab.stanford.edu/

Teaching

COURSES

2025-26

- Microbiology: BIO 111 (Win)

2024-25

- Advanced Seminar in Microbial Biology: BIO 346, CSB 346, GENE 346 (Aut, Spr)

2023-24

- Advanced Seminar in Microbial Molecular Biology: BIO 346, CSB 346, GENE 346 (Aut, Win, Spr)
- Microbiology: BIO 111 (Win)

2022-23

- Advanced Seminar in Microbial Molecular Biology: BIO 346, CSB 346, GENE 346 (Aut, Win)
- Microbiology: BIO 111 (Win)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Siobhan Bridson, Mathis Leblanc, Isaac Paddy, Junqin Zhu

Postdoctoral Faculty Sponsor

Rafael Rivera Lugo, Ady Steinbach

Doctoral Dissertation Advisor (AC)

Kelli Ann Lynch, Meghan Nolan, Emily Tamkin, Miles Tuncel

Undergraduate Major Advisor

Nora Knudsen

Publications

PUBLICATIONS

- **Explosive cytotoxicity of ruptoblasts bridges hormone surveillance and immune defense.** *Cell*
  Chai, C., Sultan, E., Sarkar, S. R., Zhong, L., Nanes Sarfati, D., Gershoni-Yahalom, O., Jacobs-Wagner, C., Thiam, H. R., Rosental, B., Wang, B.
  2026
- **Priority effects drive fungal and nematode emergence from insect larvae.** *FEMS microbiology ecology*
  Payelleville, A., Warren, M., Golde, C., Sasai, D., Pan, B., Cleary, P., Gomez, A., Shrestha, R., Ogier, J. C., Gaudriault, S., Jacobs-Wagner, C., Fukami, T.
  2026
- **Glycogen phase-separation drives macromolecular rearrangement and asymmetric division in E. coli.** *The EMBO journal*
  Thappeta, Y., Cañas-Duarte, S. J., Wang, H., Kallem, T., Fragasso, A., Xiang, Y., Gray, W., Lee, C., Hardo, G., Cegelski, L., Jacobs-Wagner, C.
  2025
- **Explosive cytotoxicity of 'ruptoblasts' bridges hormonal surveillance and immune defense.** *bioRxiv : the preprint server for biology*
  Chai, C., Sultan, E., Sarkar, S. R., Zhong, L., Sarfati, D. N., Gershoni-Yahalom, O., Jacobs-Wagner, C., Thiam, H. R., Rosental, B., Wang, B.
  2025
- **Bacterial and host enzymes modulate the pro-inflammatory response elicited by the peptidoglycan of Lyme disease agent Borrelia burgdorferi.** *PLoS pathogens*
  McCausland, J. W., Kloos, Z. A., Irnov, I., Sonnert, N. D., Zhou, J., Putnik, R., Mueller, E. A., Steere, A. C., Palm, N. W., Grimes, C. L., Jacobs-Wagner, C.
  2025; 21 (7): e1013324
- **Nonequilibrium polysome dynamics promote chromosome segregation and its coupling to cell growth in Escherichia coli.** *eLife*
  Papagiannakis, A., Yu, Q., Govers, S. K., Lin, W. H., Wingreen, N. S., Jacobs-Wagner, C.
  2025; 14
- **The polyadenylase PAPI is required for virulence plasmid maintenance in pathogenic bacteria.** *PLoS pathogens*
  Schubert, K., Zhang, J., Muscolo, M. E., Braly, M., McCausland, J. W., Lam, H. N., Hug, K., Loven, M., Solis, S. R., Escobar, M. E., Moore, H., Terciano, D., Pacheco, et al
  2025; 21 (5): e1012655
- **Bactofilins are essential spatial organizers of peptidoglycan insertion in the Lyme disease spirochete Borrelia burgdorferi.** *bioRxiv : the preprint server for biology*
  Zinck, C. B., Carracoi, V., Kloos, Z. A., Wachter, J., Schwartz, C. L., Stewart, P. E., Jacobs-Wagner, C., Rosa, P. A., Takacs, C. N.
  2025
- **Nonequilibrium polysome dynamics promote chromosome segregation and its coupling to cell growth in Escherichia coli.** *bioRxiv : the preprint server for biology*
  Papagiannakis, A., Yu, Q., Govers, S. K., Lin, W. H., Wingreen, N. S., Jacobs-Wagner, C.
  2025
- **Borrelia burgdorferiloses essential genetic elements and cell proliferative potential during stationary phase in culture but not in the tick vector.** *Journal of bacteriology*
  Zhang, J., Takacs, C. N., McCausland, J. W., Mueller, E. A., Buron, J., Thappeta, Y., Wachter, J., Rosa, P. A., Jacobs-Wagner, C.
  2025: e0045724

- **Bacterial and host enzymes modulate the inflammatory response produced by the peptidoglycan of the Lyme disease agent.** *bioRxiv : the preprint server for biology*
  McCausland, J. W., Kloos, Z. A., Irnov, I., Sonnert, N. D., Zhou, J., Putnick, R., Mueller, E. A., Steere, A. C., Palm, N. W., Grimes, C. L., Jacobs-Wagner, C.
  2025
- **Genome concentration limits cell growth and modulates proteome composition in Escherichia coli.** *eLife*
  Mäkelä, J., Papagiannakis, A., Lin, W. H., Lanz, M. C., Glenn, S., Swaffer, M., Marinov, G. K., Skotheim, J. M., Jacobs-Wagner, C.
  2024; 13
- **Borrelia burgdorferi loses essential genetic elements and cell proliferative potential during stationary phase in culture but not in the tick vector.** *bioRxiv : the preprint server for biology*
  Zhang, J., Takacs, C. N., McCausland, J. W., Mueller, E. A., Buron, J., Thappeta, Y., Wachter, J., Rosa, P. A., Jacobs-Wagner, C.
  2024
- **The polyadenylase PAPI is required for virulence plasmid maintenance in pathogenic bacteria.** *bioRxiv : the preprint server for biology*
  Schubert, K., Braly, M., Zhang, J., Muscolo, M. E., Lam, H. N., Hug, K., Moore, H., McCausland, J. W., Terciano, D., Lowe, T., Lesser, C. F., Jacobs-Wagner, C., Wang, et al
  2024
- **Coupling of cell growth modulation to asymmetric division and cell cycle regulation inCaulobacter crescentus.** *Proceedings of the National Academy of Sciences of the United States of America*
  Glenn, S., Fragasso, A., Lin, W., Papagiannakis, A., Kato, S., Jacobs-Wagner, C.
  2024; 121 (41): e2406397121
- **Synthesis of a Borrelia burgdorferi-Derived Muropeptide Standard Fragment Library.** *Molecules (Basel, Switzerland)*
  Putnik, R., Zhou, J., Irnov, I., Garner, E., Liu, M., Bersch, K. L., Jacobs-Wagner, C., Grimes, C. L.
  2024; 29 (14)
- **Glycogen phase separation drives macromolecular rearrangement and asymmetric division in E. coli.** *bioRxiv : the preprint server for biology*
  Thappeta, Y., Cañas-Duarte, S. J., Kallem, T., Fragasso, A., Xiang, Y., Gray, W., Lee, C., Cegelski, L., Jacobs-Wagner, C.
  2024
- **Through the looking glass: An adventure into the metastable world of the bacterial cytoplasm.** *Cell*
  Jacobs-Wagner, C.
  2024; 187 (2): 228-234
- **Apparent simplicity and emergent robustness in the control of the Escherichia coli cell cycle.** *Cell systems*
  Govers, S. K., Campos, M., Tyagi, B., Laloux, G., Jacobs-Wagner, C.
  2023
- **Targeting Borrelia burgdorferi HtpG with a berserker molecule, a strategy for anti-microbial development.** *Cell chemical biology*
  Carlson, D. L., Kowalewski, M., Bodoor, K., Lietzan, A. D., Hughes, P. F., Gooden, D., Loiselle, D. L., Alcorta, D., Dingman, Z., Mueller, E. A., Irnov, I., Modla, S., Chaya, et al
  2023
- **Author Correction: Polyploidy, regular patterning of genome copies, and unusual control of DNA partitioning in the Lyme disease spirochete.** *Nature communications*
  Takacs, C. N., Wachter, J., Xiang, Y., Ren, Z., Karaboja, X., Scott, M., Stoner, M. R., Irnov, I., Jannetty, N., Rosa, P. A., Wang, X., Jacobs-Wagner, C.
  2023; 14 (1): 6298
- **Organization and replicon interactions within the highly segmented genome of Borrelia burgdorferi.** *PLoS genetics*
  Ren, Z., Takacs, C. N., Brandao, H. B., Jacobs-Wagner, C., Wang, X.
  2023; 19 (7): e1010857
- **Organization and replicon interactions within the highly segmented genome of Borrelia burgdorferi.** *bioRxiv : the preprint server for biology*
  Ren, Z., Takacs, C. N., Brandão, H. B., Jacobs-Wagner, C., Wang, X.
  2023
- **Polyploidy, regular patterning of genome copies, and unusual control of DNA partitioning in the Lyme disease spirochete.** *Nature communications*

Takacs, C. N., Wachter, J., Xiang, Y., Ren, Z., Karaboja, X., Scott, M., Stoner, M. R., Irnov, I., Jannetty, N., Rosa, P. A., Wang, X., Jacobs-Wagner, C.
2022; 13 (1): 7173

- **Connecting single-cell ATP dynamics to overflow metabolism, cell growth, and the cell cycle in Escherichia coli.** *Current biology : CB*
  Lin, W. H., Jacobs-Wagner, C.
  2022
- **Cas9-mediated endogenous plasmid loss in Borrelia burgdorferi.** *PloS one*
  Takacs, C. N., Nakajima, Y., Haber, J. E., Jacobs-Wagner, C.
  2022; 17 (11): e0278151
- **Christine Jacobs-Wagner.** *Current biology : CB*
  Jacobs-Wagner, C.
  2021; 31 (14): R882-R883
- **Proximity labeling reveals non-centrosomal microtubule-organizing center components required for microtubule growth and localization.** *Current biology : CB*
  Sanchez, A. D., Branon, T. C., Cote, L. E., Papagiannakis, A., Liang, X., Pickett, M. A., Shen, K., Jacobs-Wagner, C., Ting, A. Y., Feldman, J. L.
  2021
- **Interconnecting solvent quality, transcription, and chromosome folding in Escherichia coli.** *Cell*
  Xiang, Y., Surovtsev, I. V., Chang, Y., Govers, S. K., Parry, B. R., Liu, J., Jacobs-Wagner, C.
  2021
- **A human secretome library screen reveals a role for Peptidoglycan Recognition Protein 1 in Lyme borreliosis.** *PLoS pathogens*
  Gupta, A., Arora, G., Rosen, C. E., Kloos, Z., Cao, Y., Cerny, J., Sajid, A., Hoornstra, D., Golovchenko, M., Rudenko, N., Munderloh, U., Hovius, J. W., Booth, et al
  2020; 16 (11): e1009030
- **Caulobacter crescentus: model system extraordinaire** *CURRENT BIOLOGY*
  Govers, S. K., Jacobs-Wagner, C.
  2020; 30 (19): R1151–R1158
- **Caulobacter crescentus: model system extraordinaire.** *Current biology : CB*
  Govers, S. K., Jacobs-Wagner, C. n.
  2020; 30 (19): R1151–R1158
- **A CRISPR interference platform for selective downregulation of gene expression in Borrelia burgdorferi.** *Applied and environmental microbiology*
  Takacs, C. N., Scott, M. n., Chang, Y. n., Kloos, Z. A., Irnov, I. n., Rosa, P. A., Liu, J. n., Jacobs-Wagner, C. n.
  2020
- **Origin of exponential growth in nonlinear reaction networks.** *Proceedings of the National Academy of Sciences of the United States of America*
  Lin, W. H., Kussell, E. n., Young, L. S., Jacobs-Wagner, C. n.
  2020
- **Long-Distance Cooperative and Antagonistic RNA Polymerase Dynamics via DNA Supercoiling** *CELL*
  Kim, S., Beltran, B., Irnov, I., Jacobs-Wagner, C.
  2019; 179 (1): 106-+
- **Borrelia burgdorferi peptidoglycan is a persistent antigen in patients with Lyme arthritis** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Jutras, B. L., Lochhead, R. B., Kloos, Z. A., Biboy, J., Strle, K., Booth, C. J., Govers, S. K., Gray, J., Schumann, P., Vollmer, W., Bockenstedt, L. K., Steere, A. C., Jacobs-Wagner, et al
  2019; 116 (27): 13498–507
- **Nucleoid Size Scaling and Intracellular Organization of Translation across Bacteria** *CELL*
  Gray, W. T., Govers, S. K., Xiang, Y., Parry, B. R., Campos, M., Kim, S., Jacobs-Wagner, C.
  2019; 177 (6): 1632-+

- **Fluorescent Proteins, Promoters, and Selectable Markers for Applications in the Lyme Disease Spirochete Borrelia burgdorferi** *APPLIED AND ENVIRONMENTAL MICROBIOLOGY*
  Takacs, C. N., Kloos, Z. A., Scott, M., Rosa, P. A., Jacobs-Wagner, C.
  2018; 84 (24)

- **De novo design of self-assembling helical protein filaments** *SCIENCE*
  Shen, H., Fallas, J. A., Lynch, E., Sheffler, W., Parry, B., Jannetty, N., Decarreau, J., Wagenbach, M., Vicente, J., Chen, J., Wang, L., Dowling, Q., Oberdorfer, et al
  2018; 362 (6415): 705-+

- **mTORC1 Controls Phase Separation and the Biophysical Properties of the Cytoplasm by Tuning Crowding** *CELL*
  Delarue, M., Brittingham, G. P., Pfeffer, S., Surovtsev, I. V., Pinglay, S., Kennedy, K. J., Schaffer, M., Gutierrez, J. I., Sang, D., Poterewicz, G., Chung, J. K., Plitzko, J. M., Groves, et al
  2018; 174 (2): 338-+

- **Genomewide phenotypic analysis of growth, cell morphogenesis, and cell cycle events in Escherichia coli** *MOLECULAR SYSTEMS BIOLOGY*
  Campos, M., Govers, S. K., Irnov, I., Dobihal, G. S., Cornet, F., Jacobs-Wagner, C.
  2018; 14 (6): e7573

- **Effects of mRNA Degradation and Site-Specific Transcriptional Pausing on Protein Expression Noise** *BIOPHYSICAL JOURNAL*
  Kim, S., Jacobs-Wagner, C.
  2018; 114 (7): 1718–29

- **Subcellular Organization: A Critical Feature of Bacterial Cell Replication** *CELL*
  Surovtsev, I. V., Jacobs-Wagner, C.
  2018; 172 (6): 1271–93

- **Combinatorial Origin of Protein Expression Noise**
  Kim, S., Jacobs-Wagner, C.
  CELL PRESS.2018: 395A

- **Crosstalk between the tricarboxylic acid cycle and peptidoglycan synthesis in Caulobacter crescentus through the homeostatic control of alpha-ketoglutarate** *PLOS GENETICS*
  Irnov, I., Wang, Z., Jannetty, N. D., Bustamante, J. A., Rhee, K. Y., Jacobs-Wagner, C.
  2017; 13 (8): e1006978

- **A Tick Antivirulence Protein Potentiates Antibiotics against Staphylococcus aureus** *ANTIMICROBIAL AGENTS AND CHEMOTHERAPY*
  Abraham, N. M., Liu, L., Jutras, B. L., Murfin, K., Acar, A., Yarovinsky, T. O., Sutton, E., Heisig, M., Jacobs-Wagner, C., Fikriga, E.
  2017; 61 (7)

- **Replication fork passage drives asymmetric dynamics of a critical nucleoid-associated protein in Caulobacter** *EMBO JOURNAL*
  Arias-Cartin, R., Dobihal, G. S., Campos, M., Surovtsev, I. V., Parry, B., Jacobs-Wagner, C.
  2017; 36 (3): 301–18

- **Pathogen-mediated manipulation of arthropod microbiota to promote infection** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Abraham, N. M., Liu, L., Jutras, B., Yadav, A. K., Narasimhan, S., Gopalakrishnan, V., Ansari, J. M., Jefferson, K. K., Cava, F., Jacobs-Wagner, C., Fikrig, E.
  2017; 114 (5): E781–E790

- **DNA-relay mechanism is sufficient to explain ParA-dependent intracellular transport and patterning of single and multiple cargos** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Surovtsev, I. V., Campos, M., Jacobs-Wagner, C.
  2016; 113 (46): E7268–E7276

- **Lyme disease and relapsing fever Borrelia elongate through zones of peptidoglycan synthesis that mark division sites of daughter cells** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Jutras, B., Scott, M., Parry, B., Biboy, J., Gray, J., Vollmer, W., Jacobs-Wagner, C.
  2016; 113 (33): 9162–70

- **Ultra-High Resolution 3D Imaging of Whole Cells** *CELL*
  Huang, F., Sirinakis, G., Allgeyer, E. S., Schroeder, L. K., Duim, W. C., Kromann, E. B., Phan, T., Rivera-Molina, F. E., Myers, J. R., Irnov, I., Lessard, M., Zhang, Y., Handel, et al
  2016; 166 (4): 1028–40

- **The Slow Mobility of the ParA Partitioning Protein Underlies Its Steady-State Patterning in Caulobacter** *BIOPHYSICAL JOURNAL*
  Surovtsev, I. V., Lim, H., Jacobs-Wagner, C.
  2016; 110 (12): 2790–99

- **Oufti: an integrated software package for high-accuracy, high-throughput quantitative microscopy analysis** *MOLECULAR MICROBIOLOGY*
  Paintdakhi, A., Parry, B., Campos, M., Irnov, I., Elf, J., Surovtsev, I., Jacobs-Wagner, C.
  2016; 99 (4): 767–77

- **Bacterial Evolution: What Goes Around Comes Around** *CURRENT BIOLOGY*
  Jutras, B. L., Jacobs-Wagner, C.
  2015; 25 (12): R496–R498

- **Transferred interbacterial antagonism genes augment eukaryotic innate immune function** *NATURE*
  Chou, S., Daugherty, M. D., Peterson, S., Biboy, J., Yang, Y., Jutras, B. L., Fritz-Laylin, L. K., Ferrin, M. A., Harding, B. N., Jacobs-Wagner, C., Yang, X., Vollmer, W., Malik, et al
  2015; 518 (7537): 98-+

- **Mycofumigation by the Volatile Organic Compound-Producing Fungus Muscodor albus Induces Bacterial Cell Death through DNA Damage** *APPLIED AND ENVIRONMENTAL MICROBIOLOGY*
  Alpha, C. J., Campos, M., Jacobs-Wagner, C., Strobela, S. A.
  2015; 81 (3): 1147–56

- **A Constant Size Extension Drives Bacterial Cell Size Homeostasis** *CELL*
  Campos, M., Surovtsev, I. V., Kato, S., Paintdakhi, A., Beltran, B., Ebmeier, S. E., Jacobs-Wagner, C.
  2014; 159 (6): 1433-1446

- **G1-arrested newborn cells are the predominant infectious form of the pathogen Brucella abortus** *NATURE COMMUNICATIONS*
  Deghelt, M., Mullier, C., Sternon, J., Francis, N., Laloux, G., Dotreppe, D., Van der Henst, C., Jacobs-Wagner, C., Letesson, J., De Bolle, X.
  2014; 5: 4366

- **Evidence for a DNA-relay mechanism in ParABS-mediated chromosome segregation** *ELIFE*
  Lim, H. C., Surovtsev, I. V., Beltran, B. G., Huang, F., Bewersdorf, J., Jacobs-Wagner, C.
  2014; 3

- **The Bacterial Cytoplasm Has Glass-like Properties and Is Fluidized by Metabolic Activity** *CELL*
  Parry, B. R., Surovtsev, I. V., Cabeen, M. T., O'Hem, C. S., Dufresne, E. R., Jacobs-Wagner, C.
  2014; 156 (1-2): 183–94

- **How do bacteria localize proteins to the cell pole?** *JOURNAL OF CELL SCIENCE*
  Laloux, G., Jacobs-Wagner, C.
  2014; 127 (1): 11–19

- **Suppression of Amber Codons in Caulobacter crescentus by the Orthogonal Escherichia coli Histidyl-tRNA Synthetase/tRNA(His) Pair** *PLOS ONE*
  Ko, J., Llopis, P., Heinritz, J., Jacobs-Wagner, C., Soell, D.
  2013; 8 (12): e83630

- **Transcriptomic and phylogenetic analysis of a bacterial cell cycle reveals strong associations between gene co-expression and evolution** *BMC GENOMICS*
  Fang, G., Passalacqua, K. D., Hocking, J., Llopis, P., Gerstein, M., Bergman, N. H., Jacobs-Wagner, C.
  2013; 14: 450

- **Spatiotemporal control of PopZ localization through cell cycle-coupled multimerization** *JOURNAL OF CELL BIOLOGY*
  Laloux, G., Jacobs-Wagner, C.
  2013; 201 (6): 827–41

- **Cellular organization of the transfer of genetic information** *CURRENT OPINION IN MICROBIOLOGY*
  Campos, M., Jacobs-Wagner, C.
  2013; 16 (2): 171–76
- **Growth Medium-Dependent Glycine Incorporation into the Peptidoglycan of Caulobacter crescentus** *PLOS ONE*
  Takacs, C. N., Hocking, J., Cabeen, M. T., Bui, N., Poggio, S., Vollmer, W., Jacobs-Wagner, C.
  2013; 8 (2): e57579
- **In Vivo Biochemistry in Bacterial Cells Using FRAP: Insight into the Translation Cycle** *BIOPHYSICAL JOURNAL*
  Llopis, P., Sliusarenko, O., Heinritz, J., Jacobs-Wagner, C.
  2012; 103 (9): 1848–59
- **The evolution of new lipoprotein subunits of the bacterial outer membrane BAM complex** *MOLECULAR MICROBIOLOGY*
  Anwari, K., Webb, C. T., Poggio, S., Perry, A. J., Belousoff, M., Celik, N., Ramm, G., Lovering, A., Sockett, R., Smit, J., Jacobs-Wagner, C., Lithgow, T.
  2012; 84 (5): 832–44
- **Osmolality-Dependent Relocation of Penicillin-Binding Protein PBP2 to the Division Site in Caulobacter crescentus** *JOURNAL OF BACTERIOLOGY*
  Hocking, J., Priyadarshini, R., Takacs, C. N., Costa, T., Dye, N. A., Shapiro, L., Vollmer, W., Jacobs-Wagner, C.
  2012; 194 (12): 3116-3127
- **Probing Spatial Organization of mRNA in Bacterial Cells using 3D Super-Resolution Microscopy**
  Kim, S., Mlodzianoski, M., Bewersdorf, J., Jacobs-Wagner, C.
  CELL PRESS.2012: 278A
- **Localization of GroEL determined by in vivo incorporation of a fluorescent amino acid** *BIOORGANIC & MEDICINAL CHEMISTRY LETTERS*
  Charbon, G., Wang, J., Brustad, E., Schultz, P. G., Horwich, A. L., Jacobs-Wagner, C., Chapman, E.
  2011; 21 (20): 6067–70
- **Subcellular Protein Localization by Using a Genetically Encoded Fluorescent Amino Acid** *CHEMBIOCHEM*
  Charbon, G., Brustad, E., Scott, K. A., Wang, J., Lobner-Olesen, A., Schultz, P. G., Jacobs-Wagner, C., Chapman, E.
  2011; 12 (12): 1818–21
- **High-throughput, subpixel precision analysis of bacterial morphogenesis and intracellular spatio-temporal dynamics** *MOLECULAR MICROBIOLOGY*
  Sliusarenko, O., Heinritz, J., Emonet, T., Jacobs-Wagner, C.
  2011; 80 (3): 612–27
- **The Domain Organization of the Bacterial Intermediate Filament-Like Protein Crescentin is Important for Assembly and Function** *CYTOSKELETON*
  Cabeen, M. T., Herrmann, H., Jacobs-Wagner, C.
  2011; 68 (4): 205–19
- **Cell cycle coordination and regulation of bacterial chromosome segregation dynamics by polarly localized proteins** *EMBO JOURNAL*
  Schofield, W. B., Lim, H., Jacobs-Wagner, C.
  2010; 29 (18): 3068–81
- **A metabolic assembly line in bacteria** *NATURE CELL BIOLOGY*
  Cabeen, M. T., Jacobs-Wagner, C.
  2010; 12 (8): 731–33
- **A protein critical for cell constriction in the Gram-negative bacterium Caulobacter crescentus localizes at the division site through its peptidoglycan-binding LysM domains** *MOLECULAR MICROBIOLOGY*
  Poggio, S., Takacs, C. N., Vollmer, W., Jacobs-Wagner, C.
  2010; 77 (1): 74–89
- **Mutations in the Lipopolysaccharide Biosynthesis Pathway Interfere with Crescentin-Mediated Cell Curvature in Caulobacter crescentus** *JOURNAL OF BACTERIOLOGY*
  Cabeen, M. T., Murolo, M. A., Briegel, A., Bui, N., Vollmer, W., Ausmees, N., Jensen, G. J., Jacobs-Wagner, C.

2010; 192 (13): 3368–78

- **Spatial organization of the flow of genetic information in bacteria** *NATURE*
  Llopis, P., Jackson, A. F., Sliusarenko, O., Surovtsev, I., Heinritz, J., Emonet, T., Jacobs-Wagner, C.
  2010; 466 (7302): 77–U90
- **Processivity of peptidoglycan synthesis provides a built-in mechanism for the robustness of straight-rod cell morphology** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Sliusarenko, O., Cabeen, M. T., Wolgemuth, C. W., Jacobs-Wagner, C., Emonet, T.
  2010; 107 (22): 10086–91
- **MreB Drives De Novo Rod Morphogenesis in Caulobacter crescentus via Remodeling of the Cell Wall** *JOURNAL OF BACTERIOLOGY*
  Takacs, C. N., Poggio, S., Charbon, G., Pucheault, M., Vollmer, W., Jacobs-Wagner, C.
  2010; 192 (6): 1671–84
- **A Modular BAM Complex in the Outer Membrane of the alpha-Proteobacterium Caulobacter crescentus** *PLOS ONE*
  Anwari, K., Poggio, S., Perry, A., Gatsos, X., Ramarathinam, S., Williamson, N. A., Noinaj, N., Buchanan, S., Gabriel, K., Purcell, A. W., Jacobs-Wagner, C., Lithgow, T.
  2010; 5 (1): e8619
- **Function and Regulation of the Bacterial Cytoskeleton**
  Jacobs-Wagner, C.
  CELL PRESS.2010: 3A
- **Polar Localization of the CckA Histidine Kinase and Cell Cycle Periodicity of the Essential Master Regulator CtrA in Caulobacter crescentus** *JOURNAL OF BACTERIOLOGY*
  Angelastro, P. S., Sliusarenko, O., Jacobs-Wagner, C.
  2010; 192 (2): 539–52
- **The Bacterial Cytoskeleton** *ANNUAL REVIEW OF GENETICS, VOL 44*
  Cabeen, M. T., Jacobs-Wagner, C.
  edited by Campbell, A., Lichten, M., Schupbach, G.
  2010; 44: 365–92
- **The reducible complexity of a mitochondrial molecular machine** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Clements, A., Bursac, D., Gatsos, X., Perry, A. J., Civciristov, S., Celik, N., Likic, V. A., Poggio, S., Jacobs-Wagner, C., Strugnell, R. A., Lithgow, T.
  2009; 106 (37): 15791–95
- **Bacterial cell curvature through mechanical control of cell growth** *EMBO JOURNAL*
  Cabeen, M. T., Charbon, G., Vollmer, W., Born, P., Ausmees, N., Weibel, D. B., Jacobs-Wagner, C.
  2009; 28 (9): 1208–19
- **Bacterial intermediate filaments: in vivo assembly, organization, and dynamics of crescentin** *GENES & DEVELOPMENT*
  Charbon, G., Cabeen, M. T., Jacobs-Wagner, C.
  2009; 23 (9): 1131–44
- **RodZ, a component of the bacterial core morphogenic apparatus** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Alyahya, S., Alexander, R., Costa, T., Henriques, A. O., Emonet, T., Jacobs-Wagner, C.
  2009; 106 (4): 1239–44
- **Localization of PBP3 in Caulobacter crescentus is highly dynamic and largely relies on its functional transpeptidase domain** *MOLECULAR MICROBIOLOGY*
  Costa, T., Priyadarshini, R., Jacobs-Wagner, C.
  2008; 70 (3): 634–51
- **A self-associating protein critical for chromosome attachment, division, and polar organization in Caulobacter** *CELL*
  Ebersbach, G., Briegel, A., Jensen, G. J., Jacobs-Wagner, C.
  2008; 134 (6): 956–68

- **PflI, a protein involved in flagellar positioning in Caulobacter crescentus** *JOURNAL OF BACTERIOLOGY*
  Obuchowski, P. L., Jacobs-Wagner, C.
  2008; 190 (5): 1718–29

- **Skin and bones: the bacterial cytoskeleton, cell wall, and cell morphogenesis** *JOURNAL OF CELL BIOLOGY*
  Cabeen, M. T., Jacobs-Wagner, C.
  2007; 179 (3): 381–87

- **The tubulin homologue FtsZ contributes to cell elongation by guiding cell wall precursor synthesis in Caulobacter crescentus** *MOLECULAR MICROBIOLOGY*
  Aaron, M., Charbon, G., Lam, H., Schwarz, H., Vollmer, W., Jacobs-Wagner, C.
  2007; 64 (4): 938–52

- **The asymmetric distribution of the essential histidine kinase PdhS indicates a differentiation event in Brucella abortus** *EMBO JOURNAL*
  Hallez, R., Mignolet, J., Van Mullem, V., Wery, M., Vandenhaute, J., Letesson, J., Jacobs-Wagner, C., De Bolle, X.
  2007; 26 (5): 1444–55

- **Exploration into the spatial and temporal mechanisms of bacterial polarity** *TRENDS IN MICROBIOLOGY*
  Ebersbach, G., Jacobs-Wagner, C.
  2007; 15 (3): 101–8

- **A landmark protein essential for establishing and perpetuating the polarity of a bacterial cell** *CELL*
  Lam, H., Schofield, W. B., Jacobs-Wagner, C.
  2006; 124 (5): 1011–23

- **Bacterial cell shape** *NATURE REVIEWS MICROBIOLOGY*
  Cabeen, M. T., Jacobs-Wagner, C.
  2005; 3 (8): 601–10

- **Cytokinesis monitoring during development: Rapid pole-to-pole shuttling of a signaling protein by localized kinase and phosphatase in Caulobacter** *CELL*
  Matroule, J. Y., Lam, H., Burnette, D. T., Jacobs-Wagner, C.
  2004; 118 (5): 579–90

- **Regulatory proteins with a sense of direction: cell cycle signalling network in Caulobacter** *MOLECULAR MICROBIOLOGY*
  Jacobs-Wagner, C.
  2004; 51 (1): 7–13

- **The bacterial cytoskeleton: An intermediate filament-like function** *CELL*
  Ausmees, N., Kuhn, Jacobs-Wagner, C.
  2003; 115 (6): 705–13

- **The asymmetric spatial distribution of bacterial signal transduction proteins coordinates cell cycle events** *DEVELOPMENTAL CELL*
  Lam, H., Matroule, J. Y., Jacobs-Wagner, C.
  2003; 5 (1): 149–59

- **Spatial and temporal control of differentiation and cell cycle progression in Caulobacter crescentus** *ANNUAL REVIEW OF MICROBIOLOGY*
  Ausmees, N., Jacobs-Wagner, C.
  2003; 57: 225–47