



## Christine Jacobs-Wagner

Dennis Cunningham Professor and Professor of Biology

### Bio

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#### 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 multiply. 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
- Faculty Fellow, Stanford 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://jacobs-wagnerlab.stanford.edu/>

## Teaching

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### STANFORD ADVISEES

#### Postdoctoral Faculty Sponsor

Alexandros Papagiannakis, Nick Takacs

## Publications

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### PUBLICATIONS

- **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+
- **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