Stanford

KC Huang

LeRa Professor and Professor of Microbiology and Immunology

Bioengineering

NIH Biosketch available Online Curriculum Vitae available Online

CONTACT INFORMATION

- **Alternate Contact**

  Jennifer Gucwa - Administrative Assistant

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Bio

BIO

My laboratory employs diverse interdisciplinary methods of inquiry to understand the relationships among cell shape detection, determination, and maintenance in bacteria. Cell shape plays a critical role in regulating many physiological functions, yet little is known about how the wide variety of cell shapes are determined and maintained. Inside the cell, many proteins organize and segregate, but how they detect and respond to the cellular morphology to end up at the right place at the right time is also largely mysterious. The group uses a combination of analytical, computational, and experimental approaches to probe physical mechanisms of shape-related self-organization in protein networks, membranes, and the cell wall. Current topics of interest are (i) cell-wall biosynthesis, (ii) the regulation and mechanics of cell division, (iii) membrane organization, and (iv) membrane-mediated protein interactions. Ultimately, the manipulation of cell shape may provide a direct tool for engineering complex cellular behaviors.

ACADEMIC APPOINTMENTS

- Professor, Bioengineering
- Professor, Microbiology and Immunology
- Member, Bio-X
- Member, Wu Tsai Human Performance Alliance
- Faculty Fellow, Sarafan ChEM-H

HONORS AND AWARDS

- CAREER Award, National Science Foundation (2012-2017)
- NIH Director's New Innovator Award, National Institutes of Health (2009-2014)
- Helen Hay Whitney Fellowship, Helen Hay Whitney Foundation (2005-2008)

PROFESSIONAL EDUCATION

- Ph. D., MIT , Physics (2004)
- M. Phil., Cambridge University , Physics (1999)
- B.S., Caltech , Physics/Mathematics (1998)

LINKS

- Laboratory of Cellular Organization: http://whatislife.stanford.edu/

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

We primarily focus on bacteria, in which the exquisite patterning of the interior in both space and time is critical for a wide variety of cellular functions. The wide variety of shapes and sizes that bacteria take on can be used as synthetic environment for studying the establishment of intracellular organization and the cellular response to perturbations in morphology. Ultimately, the manipulation of cell shape may provide a direct tool for engineering complex cellular behaviors.

Currently, we are interested in (i) the role of the cell wall in cell-shape determination, (ii) the regulation and mechanics of the cell cycle and cell division, (iii) the spatial and temporal organization of the membrane, (iv) the role of the membrane in transmembrane-protein interactions and ion channel gating, and (v) collective behavior in bacteria.

Teaching

COURSES

2026-27

- Microbiome Data Analysis: 16S, Metagenomics, AI, and Ecological Modeling: BIOE 237 (Spr)
- Physical Biology: BIOE 102 (Spr)

2025-26

- Physical Biology: BIOE 42 (Spr)
- SEMINAR IN BIOPHYSICS: BIOPHYS 250 (Aut)

2024-25

- Physical Biology: BIOE 42 (Spr)
- SEMINAR IN BIOPHYSICS: BIOPHYS 250 (Aut)

2023-24

- SEMINAR IN BIOPHYSICS: BIOPHYS 250 (Aut)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Douglas Henze, Junqin Zhu

Postdoctoral Faculty Sponsor

Achuthan Ambat, Beverly Fu, Jamie Lopez, Saria McKeithen-Mead, Taylor Nguyen, Helen Stone, Andrew Verdegaal

Doctoral Dissertation Advisor (AC)

Kevin Jiang, Kent Kotaka, Jess Liang, Rachel Porter, Morgan Su

Doctoral (Program)

Annabelle Fowler, Qinghua Han, Ian Ho, Matilda Holtz, Huai Ching Hsieh, Arjunn Pradeep, Antonio Salcido-Alcantar JR, Heena Saqib

Postdoctoral Research Mentor

Owen Tuck

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Biochemistry (PhD Program)
- Biophysics (PhD Program)
- Microbiology and Immunology (PhD Program)

Publications

PUBLICATIONS

- **Pictures of Tongues Sticking Out.** *Trends in endocrinology and metabolism: TEM*
  Shi, H., Huang, K. C.
  2020
- **Colons or semi-colons: punctuating the regional variation of intestinal microbial-immune interactions.** *Nature reviews. Gastroenterology & hepatology*
  Culver, R. N., Spencer, S. P., Huang, K. C.
  2020
- **Chiral twisting in a bacterial cytoskeletal polymer affects filament size and orientation.** *Nature communications*
  Shi, H., Quint, D. A., Grason, G. M., Gopinathan, A., Huang, K. C.
  2020; 11 (1): 1408
- **Bacterial interspecies interactions modulate pH-mediated antibiotic tolerance.** *eLife*
  Aranda-Diaz, A., Obadia, B., Dodge, R., Thomsen, T., Hallberg, Z. F., Guvener, Z. T., Ludington, W. B., Huang, K. C.
  2020; 9
- **Klebsiella michiganensis transmission enhances resistance to Enterobacteriaceae gut invasion by nutrition competition.** *Nature microbiology*
  Oliveira, R. A., Ng, K. M., Correia, M. B., Cabral, V., Shi, H., Sonnenburg, J. L., Huang, K. C., Xavier, K. B.
  2020
- **Bellymount enables longitudinal, intravital imaging of abdominal organs and the gut microbiota in adult Drosophila.** *PLoS biology*
  Koyama, L. A., Aranda-Díaz, A. n., Su, Y. H., Balachandra, S. n., Martin, J. L., Ludington, W. B., Huang, K. C., O'Brien, L. E.
  2020; 18 (1): e3000567
- **Bellymount enables longitudinal, intravital imaging of abdominal organs and the gut microbiota in adult Drosophila** *PLOS BIOLOGY*
  Koyama, L., Aranda-Diaz, A., Su, Y., Balachandra, S., Martin, J., Ludington, W. B., Huang, K., O'Brien, L.
  2020; 18 (1)
- **AimB Is a Small Protein Regulator of Cell Size and MreB Assembly.** *Biophysical journal*
  Werner, J. N., Shi, H. n., Hsin, J. n., Huang, K. C., Gitai, Z. n., Klein, E. A.
  2020
- **Biosurfactant-Mediated Membrane Depolarization Maintains Viability during Oxygen Depletion in Bacillus subtilis.** *Current biology : CB*
  Arjes, H. A., Vo, L. n., Dunn, C. M., Willis, L. n., DeRosa, C. A., Fraser, C. L., Kearns, D. B., Huang, K. C.
  2020
- **FtsZ-Independent Mechanism of Division Inhibition by the Small Molecule PC190723 in Escherichia coli** *ADVANCED BIOSYSTEMS*
  Khare, S., Hsin, J., Sorto, N. A., Nepomuceno, G. M., Shaw, J. T., Shi, H., Huang, K.
  2019; 3 (11)
- **Decoupling of Rates of Protein Synthesis from Cell Expansion Leads to Supergrowth.** *Cell systems*
  Knapp, B. D., Odermatt, P., Rojas, E. R., Cheng, W., He, X., Huang, K. C., Chang, F.
  2019
- **Mechanically resolved imaging of bacteria using expansion microscopy.** *PLoS biology*

Lim, Y., Shiver, A. L., Khariton, M., Lane, K. M., Ng, K. M., Bray, S. R., Qin, J., Huang, K. C., Wang, B.
2019; 17 (10): e3000268

- **Chromosome Organization: Making Room in a Crowd.** *Current biology : CB*
  Shi, H., Huang, K. C.
  2019; 29 (13): R630–R632
- **tRNA Methylation Is a Global Determinant of Bacterial Multi-drug Resistance** *CELL SYSTEMS*
  Masuda, I., Matsubara, R., Christian, T., Rojas, E. R., Yadavalli, S. S., Zhang, L., Goulian, M., Foster, L., Huang, K., Hou, Y.
  2019; 8 (4): 302-+
- **tRNA Methylation Is a Global Determinant of Bacterial Multi-drug Resistance.** *Cell systems*
  Masuda, I., Matsubara, R., Christian, T., Rojas, E. R., Yadavalli, S. S., Zhang, L., Goulian, M., Foster, L., Huang, K. C., Hou, Y.
  2019
- **Differential modes of crosslinking establish spatially distinct regions of peptidoglycan in Caulobacter crescentus** *MOLECULAR MICROBIOLOGY*
  Stankeviciute, G., Miguel, A. V., Radkov, A., Chou, S., Huang, K., Klein, E. A.
  2019; 111 (4): 995–1008
- **Conservation of conformational dynamics across prokaryotic actins.** *PLoS computational biology*
  Ng, N., Shi, H., Colavin, A., Huang, K. C.
  2019; 15 (4): e1006683
- **Conservation of conformational dynamics across prokaryotic actins** *PLOS COMPUTATIONAL BIOLOGY*
  Ng, N., Shi, H., Colavin, A., Huang, K.
  2019; 15 (4)
- **Conformational Dynamics of a Bacterial Actin Filament Predict In Vivo Filament Length**
  Huang, K. C.
  CELL PRESS.2019: 5A
- **Differential modes of crosslinking establish spatially distinct regions of peptidoglycan in Caulobacter crescentus.** *Molecular microbiology*
  Stankeviciute, G., Miguel, A. V., Radkov, A., Chou, S., Huang, K. C., Klein, E. A.
  2019
- **Cell geometry and leaflet bilayer asymmetry regulate domain formation in plasma membranes** *PHYSICAL REVIEW E*
  Ali, M., Huang, K., Wingreen, N. S., Mukhopadhyay, R.
  2019; 99 (1)
- **Cell geometry and leaflet bilayer asymmetry regulate domain formation in plasma membranes.** *Physical review. E*
  Ali, M. Z., Huang, K. C., Wingreen, N. S., Mukhopadhyay, R.
  2019; 99 (1-1): 012401
- **Recovery of the Gut Microbiota after Antibiotics Depends on Host Diet, Community Context, and Environmental Reservoirs.** *Cell host & microbe*
  Ng, K. M., Aranda-Díaz, A. n., Tropini, C. n., Frankel, M. R., Van Treuren, W. n., O'Laughlin, C. T., Merrill, B. D., Yu, F. B., Pruss, K. M., Oliveira, R. A., Higginbottom, S. K., Neff, N. F., Fischbach, et al
  2019; 26 (5): 650–65.e4
- **When a physicist wanders into biology: an interview with KC Huang.** *BMC biology*
  Huang, K. C.
  2018; 16 (1): 130
- **Who's Your DadA? d-Alanine Levels Regulate Bacterial Stiffness.** *mBio*
  Odermatt, P. D., Arjes, H. A., Chang, F., Huang, K. C.
  2018; 9 (5)
- **A Gut Commensal-Produced Metabolite Mediates Colonization Resistance to Salmonella Infection.** *Cell host & microbe*
  Jacobson, A., Lam, L., Rajendram, M., Tamburini, F., Honeycutt, J., Pham, T., Van Treuren, W., Pruss, K., Stabler, S. R., Lugo, K., Bouley, D. M., Vilches-Moure, J. G., Smith, et al

2018

- **The outer membrane is an essential load-bearing element in Gram-negative bacteria.** *Nature*
  Rojas, E. R., Billings, G., Odermatt, P. D., Auer, G. K., Zhu, L., Miguel, A., Chang, F., Weibel, D. B., Theriot, J. A., Huang, K. C.
  2018

- **Translating the Physical Code of Life.** *Cell*
  Knapp, B. D., Huang, K. C.
  2018; 174 (2): 253–55

- **Transient Osmotic Perturbation Causes Long-Term Alteration to the Gut Microbiota.** *Cell*
  Tropini, C., Moss, E. L., Merrill, B. D., Ng, K. M., Higginbottom, S. K., Casavant, E. P., Gonzalez, C. G., Fremin, B., Bouley, D. M., Elias, J. E., Bhatt, A. S., Huang, K. C., Sonnenburg, et al
  2018; 173 (7): 1742

- **Transient Osmotic Perturbation Causes Long-Term Alteration to the Gut Microbiota** *CELL*
  Tropini, C., Moss, E., Merrill, B., Ng, K., Higginbottom, S., Casavant, E., Gonzalez, C., Fremin, B., Bouley, D., Elias, J., Bhatt, A., Huang, K., Sonnenburg, et al
  2018; 173 (7): 1742-+

- **Lateral interactions between protofilaments of the bacterial tubulin homolog FtsZ are essential for cell division** *ELIFE*
  Guan, F., Yu, J., Yu, J., Liu, Y., Li, Y., Feng, X., Huang, K., Chang, Z., Ye, S.
  2018; 7

- **Cutting the Gordian Knot of the Microbiota** *MOLECULAR CELL*
  Vasquez, K. S., Shiver, A. L., Huang, K.
  2018; 70 (5): 765–67

- **Regulation of microbial growth by turgor pressure** *CURRENT OPINION IN MICROBIOLOGY*
  Rojas, E. R., Huang, K.
  2018; 42: 62–70

- **RodZ modulates geometric localization of the bacterial actin MreB to regulate cell shape** *NATURE COMMUNICATIONS*
  Colavin, A., Shi, H., Huang, K.
  2018; 9: 1280

- **How to Build a Bacterial Cell: MreB as the Foreman of E. coli Construction** *CELL*
  Shi, H., Bratton, B. P., Gitai, Z., Huang, K.
  2018; 172 (6): 1294–1305

- **Membrane Tension Inhibits Wall Synthesis via Electrical Depolarization to Balance Bacterial Cell Envelope Expansion**
  Huang, K., Rojas, E., Theriot, J.
  CELL PRESS.2018: 28A

- **Locked Expansion Microscopy to in Situ Analyze Microbial Communities**
  Lim, Y., Khariton, M., Bray, S., Ng, K., Shiver, A., Huang, K. C., Wang, B.
  CELL PRESS.2018: 532A

- **Translational Reprogramming in Salmonella typhimurium Modifies Environmental pH to Sustain Higher Growth Rates before Entry into Stationary Phase**
  Rajendram, M., Zhu, L., Huang, K. C.
  CELL PRESS.2018: 664A

- **Marine Mammal Microbiota Yields Novel Antibiotic with Potent Activity Against Clostridium difficile** *ACS INFECTIOUS DISEASES*
  Ochoa, J. L., Sanchez, L. M., Koo, B., Doherty, J. S., Rajendram, M., Huang, K., Gross, C. A., Linington, R. G.
  2018; 4 (1): 59–67

- **Single-cell transcriptomics of 20 mouse organs creates a Tabula Muris.** *Nature*
  2018; 562 (7727): 367–72

- **Homeostatic Cell Growth Is Accomplished Mechanically through Membrane Tension Inhibition of Cell-Wall Synthesis** *CELL SYSTEMS*

Rojas, E. R., Huang, K., Theriot, J. A.
2017; 5 (6): 578-+

- **Plasmon-actuated nano-assembled microshells** *SCIENTIFIC REPORTS*
  Quint, M. T., Sarang, S., Quint, D. A., Keshavarz, A., Stokes, B. J., Subramaniam, A., Huang, K., Gopinathan, A., Hirst, L. S., Ghosh, S.
  2017; 7: 17788
- **Dash-and-Recruit Mechanism Drives Membrane Curvature Recognition by the Small Bacterial Protein SpoVM** *CELL SYSTEMS*
  Kim, E. Y., Tyndall, E. R., Huang, K., Tian, F., Ramamurthi, K. S.
  2017; 5 (5): 518-+
- **Deep Phenotypic Mapping of Bacterial Cytoskeletal Mutants Reveals Physiological Robustness to Cell Size** *CURRENT BIOLOGY*
  Shi, H., Colavin, A., Bigos, M., Tropini, C., Monds, R. D., Huang, K.
  2017; 27 (22): 3419-+
- **Sizing up the bacterial cell cycle.** *Nature reviews. Microbiology*
  Willis, L., Huang, K. C.
  2017; 15 (10): 606-620
- **Thinking big: the tunability of bacterial cell size** *FEMS MICROBIOLOGY REVIEWS*
  Cesar, S., Huang, K.
  2017; 41 (5): 672–78
- **Full color palette of fluorescent D-amino acids for in situ labeling of bacterial cell walls** *CHEMICAL SCIENCE*
  Hsu, Y., Rittichier, J., Kuru, E., Yablonowski, J., Pasciak, E., Tekkam, S., Hall, E., Murphy, B., Lee, T. K., Garner, E. C., Huang, K., Brun, Y. V., VanNieuwenhze, et al
  2017; 8 (9): 6313–21
- **Cell Size: Fat Makes Cells Fat.** *Current biology : CB*
  Willis, L., Huang, K. C.
  2017; 27 (12): R592-R594
- **The Gut Microbiome: Connecting Spatial Organization to Function** *CELL HOST & MICROBE*
  Tropini, C., Earle, K. A., Huang, K. C., Sonnenburg, J. L.
  2017; 21 (4): 433-442
- **Coupling between Protein Stability and Catalytic Activity Determines Pathogenicity of G6PD Variants** *CELL REPORTS*
  Cunningham, A. D., Colavin, A., Huang, K. C., Mochly-Rosen, D.
  2017; 18 (11): 2592-2599
- **Emergent Phototactic Responses of Cyanobacteria under Complex Light Regimes** *MBIO*
  Chau, R. M., Bhaya, D., Huang, K. C.
  2017; 8 (2)
- **Rapid, precise quantification of bacterial cellular dimensions across a genomic-scale knockout library.** *BMC biology*
  Ursell, T., Lee, T. K., Shiomi, D., Shi, H., Tropini, C., Monds, R. D., Colavin, A., Billings, G., Bhaya-Grossman, I., Broxton, M., Huang, B. E., Niki, H., Huang, et al
  2017; 15 (1): 17-?
- **GTPase activity-coupled treadmilling of the bacterial tubulin FtsZ organizes septal cell wall synthesis.** *Science*
  Yang, X., Lyu, Z., Miguel, A., McQuillen, R., Huang, K. C., Xiao, J.
  2017; 355 (6326): 744-747
- **Long-term microfluidic tracking of coccoid cyanobacterial cells reveals robust control of division timing** *BMC BIOLOGY*
  Yu, F. B., Willis, L., Chau, R. M., Zambon, A., Horowitz, M., Bhaya, D., Huang, K. C., Quake, S. R.
  2017; 15
- **Strain Library Imaging Protocol for high-throughput, automated single-cell microscopy of large bacterial collections arrayed on multiwell plates.** *Nature protocols*
  Shi, H., Colavin, A., Lee, T. K., Huang, K. C.
  2017; 12 (2): 429-438

- **A Periplasmic Polymer Curves Vibrio cholerae and Promotes Pathogenesis.** *Cell*
  Bartlett, T. M., Bratton, B. P., Duvshani, A., Miguel, A., Sheng, Y., Martin, N. R., Nguyen, J. P., Persat, A., Desmarais, S. M., VanNieuwenhze, M. S., Huang, K. C., Zhu, J., Shaevitz, et al
  2017; 168 (1-2): 172-185 e15

- **Staying in Touch while on the Go.** *Cell*
  Huang, K. C.
  2017; 168 (1-2): 15-17

- **Cell size and growth regulation in the Arabidopsis thaliana apical stem cell niche.** *Proceedings of the National Academy of Sciences of the United States of America*
  Willis, L., Refahi, Y., Wightman, R., Landrein, B., Teles, J., Huang, K. C., Meyerowitz, E. M., Jönsson, H.
  2016; 113 (51): E8238-E8246

- **Single-molecule imaging reveals modulation of cell wall synthesis dynamics in live bacterial cells** *NATURE COMMUNICATIONS*
  Lee, T. K., Meng, K., Shi, H., Huang, K. C.
  2016; 7

- **FtsZ-Dependent Elongation of a Coccoid Bacterium** *MBIO*
  Pereira, A. R., Hsin, J., Krol, E., Tavares, A. C., Flores, P., Hoiczyk, E., Ng, N., Dajkovic, A., Brun, Y. V., VanNieuwenhze, M. S., Roemer, T., Carballido-Lopez, R., Scheffers, et al
  2016; 7 (5)

- **Mechanical Genomics Identifies Diverse Modulators of Bacterial Cell Stiffness.** *Cell systems*
  Auer, G. K., Lee, T. K., Rajendram, M., Cesar, S., Miguel, A., Huang, K. C., Weibel, D. B.
  2016; 2 (6): 402-411

- **A Comprehensive, CRISPR-based Functional Analysis of Essential Genes in Bacteria** *CELL*
  Peters, J. M., Colavin, A., Shi, H., Czarny, T. L., Larson, M. H., Wong, S., Hawkins, J. S., Lu, C. H., Koo, B., Marta, E., Shiver, A. L., Whitehead, E. H., Weissman, et al
  2016; 165 (6): 1493-1506

- **The effect of microbial colonization on the host proteome varies by gastrointestinal location** *ISME JOURNAL*
  Lichtman, J. S., Alsentzer, E., Jaffe, M., Sprockett, D., Masutani, E., Ikwa, E., Fragiadakis, G. K., Clifford, D., Huang, B. E., Sonnenburg, J. L., Huang, K. C., Elias, J. E.
  2016; 10 (5): 1170-1181

- **Disruption of lipid homeostasis in the Gram-negative cell envelope activates a novel cell death pathway** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Sutterlin, H. A., Shi, H., May, K. L., Miguel, A., Khare, S., Huang, K. C., Silhavy, T. J.
  2016; 113 (11): E1565-E1574

- **Disruption of lipid homeostasis in the Gram-negative cell envelope activates a novel cell death pathway.** *Proceedings of the National Academy of Sciences of the United States of America*
  Sutterlin, H. A., Shi, H., May, K. L., Miguel, A., Khare, S., Huang, K. C., Silhavy, T. J.
  2016; 113 (11): E1565-74

- **High-throughput, Highly Sensitive Analyses of Bacterial Morphogenesis Using Ultra Performance Liquid Chromatography** *JOURNAL OF BIOLOGICAL CHEMISTRY*
  Desmarais, S. M., Tropini, C., Miguel, A., Cava, F., Monds, R. D., de Pedro, M. A., Huang, K. C.
  2015; 290 (52): 31090-31100

- **Cytoskeletal Network Morphology Regulates Intracellular Transport Dynamics** *BIOPHYSICAL JOURNAL*
  Ando, D., Korabel, N., Huang, K. C., Gopinathan, A.
  2015; 109 (8): 1574-1582

- **Quantitative Imaging of Gut Microbiota Spatial Organization** *CELL HOST & MICROBE*
  Earle, K. A., Billings, G., Sigal, M., Lichtman, J. S., Hansson, G. C., Elias, J. E., Amieva, M. R., Huang, K. C., Sonnenburg, J. L.
  2015; 18 (4): 478-488

- **Applications of imaging for bacterial systems biology** *CURRENT OPINION IN MICROBIOLOGY*

Huang, K. C.
2015; 27: 114-120

- **How Does the Xenopus laevis Embryonic Cell Cycle Avoid Spatial Chaos?** *CELL REPORTS*
  Gelens, L., Huang, K. C., Ferrell, J. E.
  2015; 12 (5): 892-900

- **Nanoengineering: Super symmetry in cell division.** *Nature nanotechnology*
  Huang, K. C.
  2015; 10 (8): 655-6

- **The bacterial tubulin FtsZ requires its intrinsically disordered linker to direct robust cell wall construction** *NATURE COMMUNICATIONS*
  Sundararajan, K., Miguel, A., Desmarais, S. M., Meier, E. L., Huang, K. C., Goley, E. D.
  2015; 6

- **Coordination of peptidoglycan synthesis and outer membrane constriction during Escherichia coli cell division** *ELIFE*
  Gray, A. N., Egan, A. J., Van't Veer, I. L., Verheul, J., Colavin, A., Koumoutsi, A., Biboy, J., Altelaar, A. F., Damen, M. J., Huang, K. C., Simorre, J., Breukink, E., den Blaauwen, et al
  2015; 4

- **Mechanical crack propagation drives millisecond daughter cell separation in Staphylococcus aureus** *SCIENCE*
  Zhou, X., Halladin, D. K., Rojas, E. R., Koslover, E. F., Lee, T. K., Huang, K. C., Theriot, J. A.
  2015; 348 (6234): 574-578

- **Bacterial division. Mechanical crack propagation drives millisecond daughter cell separation in Staphylococcus aureus.** *Science*
  Zhou, X., Halladin, D. K., Rojas, E. R., Koslover, E. F., Lee, T. K., Huang, K. C., Theriot, J. A.
  2015; 348 (6234): 574-578

- **Structural basis for the geometry-driven localization of a small protein** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Gill, R. L., Castaing, J., Hsin, J., Tan, I. S., Wang, X., Huang, K. C., Tian, F., Ramamurthi, K. S.
  2015; 112 (15): E1908-E1915

- **Maintenance of Motility Bias during Cyanobacterial Phototaxis** *BIOPHYSICAL JOURNAL*
  Chau, R. M., Ursell, T., Wang, S., Huang, K. C., Bhaya, D.
  2015; 108 (7): 1623-1632

- **Variations in the binding pocket of an inhibitor of the bacterial division protein FtsZ across genotypes and species.** *PLoS computational biology*
  Miguel, A., Hsin, J., Liu, T., Tang, G., Altman, R. B., Huang, K. C.
  2015; 11 (3)

- **Variations in the Binding Pocket of an Inhibitor of the Bacterial Division Protein FtsZ across Genotypes and Species** *PLOS COMPUTATIONAL BIOLOGY*
  Miguel, A., Hsin, J., Liu, T., Tang, G., Altman, R. B., Huang, K. C.
  2015; 11 (3)

- **The contractile ring coordinates curvature-dependent septum assembly during fission yeast cytokinesis.** *Molecular biology of the cell*
  Zhou, Z., Munteanu, E. L., He, J., Ursell, T., Bathe, M., Huang, K. C., Chang, F.
  2015; 26 (1): 78-90

- **Physics of Intracellular Organization in Bacteria** *ANNUAL REVIEW OF MICROBIOLOGY, VOL 69*
  Wingreen, N. S., Huang, K. C.
  2015; 69: 361-379

- **Principles of Bacterial Cell-Size Determination Revealed by Cell-Wall Synthesis Perturbations** *CELL REPORTS*
  Tropini, C., Lee, T. K., Hsin, J., Desmarais, S. M., Ursell, T., Monds, R. D., Huang, K. C.
  2014; 9 (4): 1520-1527

- **Principles of bacterial cell-size determination revealed by cell-wall synthesis perturbations.** *Cell reports*
  Tropini, C., Lee, T. K., Hsin, J., Desmarais, S. M., Ursell, T., Monds, R. D., Huang, K. C.

2014; 9 (4): 1520-1527

- **Systematic perturbation of cytoskeletal function reveals a linear scaling relationship between cell geometry and fitness.** *Cell reports*
  Monds, R. D., Lee, T. K., Colavin, A., Ursell, T., Quan, S., Cooper, T. F., Huang, K. C.
  2014; 9 (4): 1528-1537
- **Systematic Perturbation of Cytoskeletal Function Reveals a Linear Scaling Relationship between Cell Geometry and Fitness** *CELL REPORTS*
  Monds, R. D., Lee, T. K., Colavin, A., Ursell, T., Quan, S., Cooper, T. F., Huang, K. C.
  2014; 9 (4): 1528-1537
- **De novo morphogenesis in L-forms via geometric control of cell growth.** *Molecular microbiology*
  Billings, G., Ouzounov, N., Ursell, T., Desmarais, S. M., Shaevitz, J., Gitai, Z., Huang, K. C.
  2014; 93 (5): 883-896
- **How and why cells grow as rods** *BMC BIOLOGY*
  Chang, F., Huang, K. C.
  2014; 12
- **Response of Escherichia coli growth rate to osmotic shock** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Rojas, E., Theriot, J. A., Huang, K. C.
  2014; 111 (21): 7807-7812
- **A dynamically assembled cell wall synthesis machinery buffers cell growth.** *Proceedings of the National Academy of Sciences of the United States of America*
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