

LYNETTE CEGELSKI, PH.D.

DEPARTMENT OF CHEMISTRY - STANFORD UNIVERSITY

EDUCATION

2004: Ph.D. Chemistry, Washington University, St. Louis, MO

1998: B.S. Chemistry, *summa cum laude*, Binghamton University (SUNY), Binghamton, NY

APPOINTMENTS

2024-present: Professor of Chemistry, Stanford University

2024-present: Courtesy Professor of Chemical Engineering, Stanford University

2021-present: Director of Graduate Studies, Department of Chemistry, Stanford University

2019-present: Associated Member, "Matters of Activity" Cluster of Excellence, Humboldt Universität zu Berlin

2018-2023: Courtesy Associate Professor of Chemical Engineering, Stanford University

2017-2023: Associate Professor of Chemistry, Stanford University

2014-present: Faculty Fellow, Sarafan ChEM-H Institute, Stanford University

2009-present: Faculty Member, Biophysics Program, Stanford University

2008-2017: Assistant Professor of Chemistry, Stanford University

2004-2008: Postdoctoral Scholar, Molecular Microbiology and Infectious Diseases, Washington University School of Medicine

HONORS

2023: Emerging Leaders Forum, Participant, National Academy of Medicine

2019: Presidential Early Career Award for Scientists and Engineers (PECASE)

2019: Founder's Medal - International Council on Magnetic Resonance in Biological Systems

2018: Chambers Fellowship, Stanford University

2015: NSF CAREER Award

2012: Hellman Faculty Scholar Award

2010: NIH Director's New Innovator Award

2008: Burroughs Wellcome Fund Career Award at the Scientific Interface

2008: Terman Fellowship, Stanford University

2006-2007: NIH NRSA Institutional Research Training Grant, Infectious Disease Division, Department of Internal Medicine, Washington University

2000-2002: NIH Chemistry Biology Interface Pathway Fellow, Washington University

1998-1999: Dean's Graduate Student Academic Fellowship, Washington University

1998: Honorable Mention: National Science Foundation Predoctoral Fellowship Program

1998: B.S. Chemistry *summa cum laude*

1998: American Chemical Society Senior of the Year Award, Binghamton University

1997: Phi Beta Kappa

EMPLOYMENT HISTORY

2024-present: Professor of Chemistry, Stanford University, Stanford, CA

2017-2023: Associate Professor of Chemistry, Stanford University, Stanford, CA

2008-2017: Assistant Professor of Chemistry, Stanford University, Stanford, CA

2004-2008: Postdoctoral Scholar, Washington University School of Medicine, St. Louis MO

UNIVERSITY SERVICE (RECENT)

Director of Graduate Studies, Department of Chemistry (2021 – Present)

Graduate Student Admissions Committee, Department of Chemistry (2009 – 2021)

Seminar Committee, Department of Chemistry (2012 – 2021)

Chair of the Junior Faculty Search Committee, Department of Chemistry (2018 – 2019)

PROFESSIONAL ASSOCIATIONS

Faculty Fellow, Sarafan ChEM-H Institute

Faculty Member, Stanford Biophysics Program

Faculty Member, Stanford Bio-X Interdisciplinary Biosciences Institute

Associated Member of the Cluster of Excellence, “Matters of Activity,” Humboldt-Universität zu Berlin.

Member: American Chemical Society, American Society of Microbiology, Biophysical Society

PROFESSIONAL SERVICE

Conference Session Organizer. “Recent Advances and Applications in NMR Spectroscopy.” ACS Western Regional Meeting. Santa Clara, CA. August 16, 2013.

Conference Co-organizer. “Transformative Measurements and Experimental Approaches for Bacterial Biofilms” at the Okinawa Institute for Science and Technology (OIST). Okinawa, Japan. June 28-30, 2017.

Guest Editor. Special Issue on “NMR Spectroscopy for Atomistic Views of Biomembranes and Cell Surfaces” in *Biophysica et Biochimica Acta* (2014).

Conference Session Organizer. “Biopolymers *in vivo*.” Biophysical Society Annual Meeting. San Diego, CA. February 15, 2020.

Journal Reviewer. ACS Central Science, ACS Infectious Diseases, Applied and Environmental Microbiology; Biochimica et Biophysica Acta, Biochemistry; Biophysical Journal; Chemical Science; eLife; Infection and Immunity; Journal of the American Chemical Society (JACS); Journal of Bacteriology; Journal of Chemical Education; Journal of Magnetic Resonance; Journal of Structural Biology; Magnetic Resonance in Chemistry; mBio; Molecular Microbiology, Nature; Nature Methods; PLoS One; PLoS Pathogens; PNAS; Solid-State Nuclear Magnetic Resonance; Science.

Other Recent Service (since 2017).

- 2023 Member, Selection Committee for Assistant Director/Biosafety Officer, Stanford University
- 2023 Chair, NIH, ZRG1 DCAI-C(90), Topics on Drug Discovery and Molecular Pharmacology A
- 2022 Reviewer, NIH, ZRG1 F07B-U (20): F31-F32 Fellowship Panel (Infect Dis and Immunol B)
- 2022 Ad hoc Reviewer, NSF, DMR Biomaterials Program
- 2022 Reviewer, NSF, Structural and Molecular Biophysics Panel
- 2020 Organizer, Biopolymers *in vivo* (BIV) Symposium and Chair of the BIV Young Investigator Award Selection Committee at the Biophysical Society Annual Meeting, San Diego, CA
- 2020 Reviewer, NIH, ZRG1 IDM-A (02), Topics in Drug Disc, Clinical, and Field Research Inf Dis
- 2020 Ad hoc Reviewer, NIH, P41 (Biomedical Technology Research Resource) Program
- 2020 Reviewer, NIH, MSFA Study Section
- 2019 Reviewer, NIH, MSFA Study Section
- 2019 Ad hoc Reviewer, NSF
- 2019 Ad hoc Reviewer, DOE
- 2018 Chair, Junior Faculty Search Committee, Department of Chemistry, Stanford University
- 2017 Reviewer, NSF, Structural and Molecular Biophysics Panel, and Ad hoc Reviewer
- 2017 Conference Co-Organizer, “Transformative Measurements and Experimental Approaches for Bacterial Biofilms” at the Okinawa Institute for Science and Technology, Okinawa, Japan
- 2017 Reviewer, DoD, Peer Reviewed Medical Research Program Panel

PUBLICATIONS (ALL ARTICLES ARE IN PEER-REVIEWED JOURNALS; 3 BOOK CHAPTERS NOT PEER-REVIEWED AS INDICATED)

1. Li Y, Poliks B, Cegelski L, Poliks M, Gryczynski Z, Piszczek G, Jagtap PG, Studelska DR, Kingston DGI*, Schaefer J*, Bane S*. **Conformation of Microtubule-Bound Paclitaxel Determined by Fluorescence Spectroscopy and REDOR NMR.** *Biochemistry* (2000) 39, 281-291.

2. Kim SJ, Cegelski L, Studelska DR, O'Connor RD, Mehta AK, Schaefer J*. **REDOR Characterization of Vancomycin Binding Sites in *S. aureus*.** *Biochemistry* (2002) 41, 6967-6977.
3. Cegelski L, Hing AW, Kim SJ, Studelska DR, O'Connor RD, Mehta AK, Schaefer J*. **REDOR Characterization of Vancomycin Mode of Action in *S. aureus*.** *Biochemistry* (2002) 41, 13053-13058.
4. Mehta AK, Cegelski L, O'Connor RD, Schaefer J*. **REDOR with a Relative Full-Echo Reference.** *Journal of Magnetic Resonance* (2003) 163, 182-187.
5. Cegelski L, Rice CV, O'Connor RD, Caruano AL, Tochtrop GP, Cai ZY, Covey DF*, Schaefer J*. **Mapping the Locations of Estradiol and Potent Neuroprotective Analogues in Phospholipid Bilayers by REDOR.** *Drug Development Research* (2005) 66, 93-102.
6. Cegelski L and Schaefer J*. **Glycine Metabolism in Intact Leaves by *in vivo* ¹³C₂ and ¹⁵N Labeling.** *Journal of Biological Chemistry* (2005) 280, 39238-39245.
7. Cegelski L and Schaefer J*. **Photorespiration in Intact Leaves by *in vivo* ¹³C₂ Labeling.** *From the cover. Journal of Magnetic Resonance* (2006) 178, 1-10.
8. Toke O*, Cegelski L*, Schaefer J. **Peptide Antibiotics in Action: Investigation of Polypeptide Chains in Insoluble Environments by REDOR.** Review: *Biochimica et Biophysica Acta* (2006) 1758, 1314-1329.
9. Cegelski L, Steuber D, Mehta AK, Kulp DW, Axelsen PH, Schaefer J*. **Conformational and Quantitative Characterization of Oritavancin–Peptidoglycan Complexes in Whole Cells of *Staphylococcus aureus* by *in vivo* ¹³C and ¹⁵N Labeling.** *Journal of Molecular Biology* (2006) 357, 1253-62.
10. Kim SJ, Cegelski L, Preobrazhenskaya MN, Schaefer J*. **Structures of *Staphylococcus aureus* Cell-wall Complexes with Vancomycin, Eremomycin, and Oritavancin Analogues by ¹³C{¹⁹F} and ¹⁵N{¹⁹F} Rotational-echo Double Resonance.** *Biochemistry* (2006) 45, 5235-5250.
11. Bann JG, Cegelski L, Hultgren SJ*. **LRP6 Holds the Key for the Entry of Anthrax Toxin.** *Cell* (2006) 124, 3-5.
12. Paik Y, Yang C, Metaferia B, Tang S, Bane S, Ravindra R, Shanker N, Alcaraz AA, Johnson SA, Schaefer J, O'Connor RD, Cegelski L, Snyder JP, Kingston DGI*. **REDOR NMR Distance Measurements for the Tubulin-Bound Paclitaxel Conformation.** *Journal of the American Chemical Society* (2007) 129, 361-370.
13. Kim SJ, Cegelski L, Stueber D, Singh M, Dietrich E, Tanaka KS, Parr TR, Farand AR, Schaefer J*. **Oritavancin Exhibits Dual Mode of Action to Inhibit *S. aureus* Peptidoglycan Biosynthesis.** *Journal of Molecular Biology* (2008) 377, 281-293.
14. Cegelski L, Marshall GR, Eldridge GR, Hultgren SJ*. **The Biology and Future Prospects of Anti-Virulence Therapies.** *Nature Reviews Microbiology* (2008) 6, 17-27.
15. Justice SJ, Hunstad DH, Cegelski L, Hultgren SJ*. **Morphological Plasticity as a Bacterial Survival Strategy.** *Nature Reviews Microbiology* (2008) 6, 162-168.
16. Cegelski L, Pinkner JS, Hammer ND, Cusumano CK, Hung CS, Chorell E, Åberg V, Walker JN, Seed PC, Almqvist F, Chapman MR, Hultgren SJ*. **Small Molecule Inhibitors Target *E. coli* Amyloid Biogenesis and Biofilm Formation.** *Nature Chemical Biology* (2009) 5, 913-919.
17. Cegelski L, Smith CL, Hultgren SJ*. **Adhesion, Microbial.** In *The Encyclopedia of Microbiology*, 3rd Edition, edited by Moselio Schaechter, Elsevier (2009) 2-10. (Book chapter; not peer reviewed)
18. Cegelski L*, O'Connor RD, Stueber D, Singh M, Poliks B, Schaefer J. **Plant Cell-Wall Cross-Links by REDOR NMR Spectroscopy.** *Journal of the American Chemical Society* (2010) 132, 16052-16057.
19. Toke O and Cegelski L*. **REDOR Applications in Biology: an Overview.** In *Solid-State NMR Studies of Biopolymers* (2010). McDermott, AE and Polenova, T (eds). John Wiley & Sons Ltd, Chichester, UK, pp 473-490. (Book chapter; not peer reviewed)

20. Lim JY, May J, Cegelski L*. **DMSO and Ethanol Elicit Increased Amyloid Biogenesis and Amyloid-integrated Biofilm Formation in *E. coli*.** *Journal of Applied and Environmental Microbiology* (2012) 78, 3369-3378.
21. Wu C, Lim JY, Fuller G, Cegelski L*. **Quantitative Analysis of Amyloid-integrated Biofilms Formed by Uropathogenic *E. coli* at the Air-liquid Interface.** *Biophysical Journal* (2012) 103, 464-471.
22. Zhou X and Cegelski L*. **Nutrient-Dependent Structural Changes in *S. aureus* Peptidoglycan Revealed by Solid-State NMR Spectroscopy.** *Biochemistry* (2012) 51, 8143-8153.
23. Wu C, Lim JY, Fuller G*, Cegelski L*. **Disruption of *E. coli* Amyloid-Integrated Biofilm Formation at the Air-Liquid Interface by a Polysorbate Surfactant.** *Langmuir* (2013) 29, 920–926.
24. McCrate OA, Zhou X, Cegelski L*. **Curcumin as an Amyloid-specific Dye.** *Chemical Communications* (2013) 49, 4193-4195.
25. McCrate OA, Zhou X, Reichhardt, CCR, Cegelski L*. **Sum of the Parts: Composition and Architecture of the Bacterial Extracellular Matrix.** *Journal of Molecular Biology* (2013) 425: 4286-4294.
26. Cegelski L*. **REDOR NMR for Drug Discovery.** *Bioorganic & Medicinal Chemistry Letters* (2013) 23, 5767-5775.
27. Lim JY, Pinkner J, and Cegelski L*. **Community Behavior and Amyloid-associated Phenotypes, among a Panel of Uropathogenic *E. coli*.** *Biochemical and Biophysical Research Communications* (2014) 443, 345-350.
28. Reichhardt C and Cegelski L*. **Solid-State NMR for Bacterial Biofilms.** *Molecular Physics* (2014) 112, 887-894.
29. Saggiu M, Carter B, Zhou X, Faries K, Cegelski L, Holten D, Boxer SG, Kirmaier C*. **Putative Hydrogen Bond to Tyrosine M208 in Photosynthetic Reaction Centers from *Rhodobacter capsulatus* Significantly Slows Primary Charge Separation.** *Journal of Physical Chemistry B* (2014) 118, 6721-6732.
30. Hollenbeck E, Fong JCN, Lim JY, Yildiz F*, Fuller GG*, Cegelski L*. **Molecular Determinants of Mechanical Properties of *V. cholerae* Biofilms at the Air-Liquid Interface.** *Biophysical Journal* (2014) 107, 2245-2252.
31. Reichhardt C, Fong JCN, Yildiz F, Cegelski L*. **Characterization of the *Vibrio cholerae* Extracellular Matrix: A Top-Down Solid-State NMR Approach.** *Biochimica et Biophysica Acta* - Special Issue on "NMR Spectroscopy for Atomistic Views of Biomembranes and Cell Surfaces" (2015) 1848, 378-383.
32. Cegelski L* and Weliky D*. **NMR Spectroscopy for Atomistic Views of Biomembranes and Cell Surfaces.** *Biochimica et Biophysica Acta* (2015) 1848, 201-202.
33. Loy BA, Lesser AB, Staveness D, Billingsley KL, Cegelski L, Wender PA*. **Toward a Biorelevant Structure of Protein Kinase C Bound Modulators: Design, Synthesis, and Evaluation of Labeled Bryostatins Analogues for Analysis with Rotational Echo Double Resonance NMR Spectroscopy.** *JACS* (2015) 137, 3678-3685.
34. Cegelski L*. **Bottom-Up and Top-Down Solid-State NMR Approaches for Bacterial Biofilm Matrix Composition.** *Journal of Magnetic Resonance* (2015) 253, 91-97.
35. Nygaard R, Romaniuk JAH, Rice DM, Cegelski L*. **Spectral Snapshots of Bacterial Cell-Wall Composition and the Influence of Antibiotics by Whole-Cell NMR.** *Biophysical Journal* (2015) 108, 1380-1389.
36. Reichhardt C, Ferreira JAG, Joubert L, Clemons KV, Stevens DA, Cegelski L*. **Analysis of the *Aspergillus fumigatus* Biofilm Extracellular Matrix by Solid-State Nuclear Magnetic Resonance Spectroscopy.** *Eukaryotic Cell* (2015) 14, 1064-1072.

37. Jones C, Utada A, Davis KR, Thongsomboon W, Sanchez DZ, Banakar V, Cegelski L, Wong GCL*, Yildiz FH*. **Cyclic-di-GMP Regulates Motile to Sessile Transition by Modulating MshA Pili Biogenesis and Near-Surface Motility Behavior in *Vibrio cholerae*.** *PLoS Pathogens* (2015) 11, e1005068.
38. Romaniuk JAH and Cegelski L*. **Bacterial Cell Wall Composition and the Influence of Antibiotics by Cell-Wall and Whole-Cell NMR.** *Philosophical Transactions of the Royal Society* (2015) 370:20150024.
39. Maher MC, Lim JY, Gunawan C, Cegelski L*. **Cell-Based High-Throughput Screening Identifies Rifampentine as an Inhibitor of Amyloid and Biofilm Formation in *E. coli*.** *ACS Infectious Diseases* (2015) 1, 460-468.
40. Rice DM, Romaniuk JAH, Cegelski L*. **Frequency selective REDOR-Spin Diffusion Relays in Uniformly Labeled Whole Cells.** *Solid-state Nuclear Magnetic Resonance* (2015) 72, 132-139.
41. Reichhardt C, Jacobson AN, Maher MC, Uang J, McCrate OA, Eckart M, Cegelski L*. **Congo Red Interactions with Curli-producing *E. coli* and Native Curli Amyloid Fibers.** *PLoS One* (2015) DOI: 10.1371/journal.pone.0140388.
42. Hollenbeck E, Douarche C, Allain J, Roger P, Regeard C, Cegelski L, Fuller GG, Respaud E*. **Mechanical Behavior of a *Bacillus subtilis* Pellicle.** *Journal of Physical Chemistry B* (2016) 120, 6080-6088.
43. Reichhardt C, DA Stevens, and Cegelski L*. **Fungal Biofilm Composition and Opportunities in Drug Discovery.** *Future Medicinal Chemistry* (2016) 8, 1455-1468.
44. Reichhardt C, McCrate OA, Zhou X, Lee J, Thongsomboon W, Cegelski L*. **Influence of the Amyloid Dye Congo Red on Curli, Cellulose, and the Extracellular Matrix in *E. coli* during Growth and Matrix Purification.** *Analytical and Bioanalytical Chemistry* (2016) 408, 7709-7717.
45. Joubert L*, Ferreira JAG, Stevens DA, Cegelski L. **Visualization of *Aspergillus fumigatus* Biofilms with Scanning Electron Microscopy and Variable Pressure-Scanning Electron Microscopy: a Comparison of Processing Techniques.** *Journal of Microbiological Methods* (2016) 132, 46-55.
46. Cegelski L*. **Disentangling Nanonets: Human α -Defensin 6 Targets *C. albicans* Virulence.** *Biochemistry* (2017) 56, 1027-1028.
47. Chen Z, Mercer JAM, Zhu X, Romaniuk JAH, Pfattner R, Cegelski L, Martinez TJ*, Burns NZ*, Xia Y*. **Mechanochemical Unzipping of Insulating Poly ladderene to Semiconducting Polyacetylene.** *Science* (2017) 357, 475-479.
48. Nygaard R, Romaniuk JAH, Rice DM, Cegelski L*. **Whole Ribosome NMR: Dipolar Couplings and Contributions to Whole Cells.** *Journal of Physical Chemistry B* (2017) 121, 9331-9335.
49. Nazik H, Joubert LM, Secor PR, Sweere JM, Bollyky PL, Sass G, Cegelski L, Stevens DA*. ***Pseudomonas* Phage Inhibition of *Candida albicans*.** *Microbiology* (2017) 163, 1568-1577.
50. Bartlett C, Bansal S, Burnett A, Suits M, Schaefer J, Cegelski L*, Horsman G*, Weadge J*. **Whole-cell Detection of C-P bonds in Bacteria.** *Biochemistry* (2017) 56, 5870-5873.
51. Yang H, Staveness D, Ryckbosch SM, Loy BA, Axtman AD, Barnes AB, Pande VS, Schaefer J*, Wender PA*, Cegelski L*. **REDOR NMR Reveals Multiple Conformers for a Protein Kinase C Ligand in a Membrane Environment.** *ACS Central Science* (2018) 4, 89-96.
52. Thongsomboon W, Serra DO, Possling A, Hadjineophytou C, Hengge R*, Cegelski L*. **Phosphoethanolamine Cellulose: a Naturally Produced Chemically Modified Cellulose.** *Science* (2018) 359, 334-338.
53. Romaniuk JAH and Cegelski L*. **Peptidoglycan and Teichoic Acid Levels and Alterations in *S. aureus* by Cell-Wall and Whole-Cell NMR.** *Biochemistry* (2018) 57, 3966-3975.
54. Reichhardt C and Cegelski L*. **The Congo Red Derivative FSB Binds to Curli Amyloid Fibers and Specifically Stains Curliated *E. coli*.** *PLoS One* (2018) 13(8):e0203226.

55. Su JK, Feist JD, Yang J, Mercer JAM, Romaniuk JAH, Chen Z, Cegelski L, Burns NZ, Xia Y*. **Synthesis and Mechanochemical Activation of Ladderene-Norbornene Block Copolymers.** *Journal of the American Chemical Society* (2018) 140, 12388-12391.
56. Hollenbeck EC, Antonoplis A, Chai C, Thongsomboon W, Fuller G*, Cegelski L*. **Phosphoethanolamine Cellulose Enhances Curli-Mediated Adhesion of Uropathogenic *Escherichia coli* to Bladder Epithelial Cells.** *PNAS* (2018) 115, 10106-10111.
57. Antonoplis A, Zang X, Huttner MA, Chong K, Lee YB, Co JY, Amieva M, Kline KA, Wender PA*, Cegelski L*. **A Dual Function Antibiotic-Transporter Conjugate Exhibits Superior Activity in Sterilizing MRSA Biofilms and Killing Persister Cells.** *Journal of the American Chemical Society* (2018) 140, 16140-16151.
58. Reichhardt C, Joubert LM, DA Stevens, and Cegelski L*. **Integration of Electron Microscopy and Solid-state NMR Analysis for New Views and Compositional Parameters of *Aspergillus fumigatus* Biofilms.** *Medical Mycology* (2019) 57, S239-S244.
59. Beebout CJ, Eberly AR, Werby SH, Reasoner S, Brannon JR, De S, Fitzgerald MJ, Huggins MM, Clayton DB, Cegelski L, Hadjifrangiskou M*. **Respiratory Heterogeneity Shapes Biofilm Formation and Host Colonization in Uropathogenic *Escherichia coli*.** *mBio* (2019) 10(2) e02400-18.
60. Zamorano-Sanchez D, Xian W, Lee C, Salinas M, Thongsomboon W, Cegelski L, Wong G, Yildiz F*. **Functional Specialization in *Vibrio cholerae* Diguanilate Cyclases: Distinct Modes of Motility Suppression and c-di-GMP Production.** *mBio* (2019) 10(2) e00670-19.
61. Yang J, Horst M, Romaniuk JAH, Jin Z, Cegelski L, Xia Y*. **Benzoladderene Mechanophores: Synthesis, Polymerization, and Mechanochemical Transformation.** *Journal of the American Chemical Society* (2019) 141, 6479-6483.
62. Werby S and Cegelski L*. **Spectral Comparisons of Mammalian Cells and Intact Organelles by Solid-State NMR.** *Journal of Structural Biology* (2019) 206, 49-54.
63. Werby S and Cegelski L*. **Design and Implementation of a Six-Session CURE Module using Biofilms to Explore the Chemistry-Biology Interface.** Werby SH and Cegelski L*. *Journal of Chemical Education* (2019) 96, 2050-2054.
64. Rabiah NI, Romaniuk JAH, Fuller GG, Scales CW, Cegelski L*. **Carbon Compositional Analysis of Hydrogel Contact Lenses by Solid-State NMR Spectroscopy.** *Solid-State NMR* (2019) 102, 47-52.
65. Jeffries J, Fuller GG, Cegelski L*. **Unraveling *E. coli*'s Cloak: Identification of Phosphoethanolamine Cellulose, its Functions, and Applications.** *Microbiology Insights* (2019) <https://doi.org/10.1177/1178636119865234>.
66. Antonoplis A, Zang X, Wegner T, Wender PA*, Cegelski L*. **A Vancomycin-Arginine Conjugate Inhibits Growth of Carbapenem-resistant *E. coli* and Targets Cell-Wall Synthesis.** *ACS Chemical Biology* (2019) 14, 2065-2070.
67. Shen J, Gurtner GC, Cegelski L, Yang YP*. **Mechanisms of Action and Chemical Origins of Biologically Active Antimicrobial Polymers.** Book chapter in *Racing for the Surface: Pathogenesis of Implant Infection and Advanced Antimicrobial Strategies* (2019). (Book chapter; not peer reviewed)
68. Abriat C, Enriquez K, Virgilio N, Cegelski L, Fuller GG, Daigle F, Heuzey M*. **Mechanical and Microstructural Insights of *Vibrio cholerae* and *Escherichia coli* Dual-species Biofilm at the Air-liquid Interface.** *Colloids and Surfaces B: Biointerfaces* (2020) 188, 110786.
69. Thongsomboon W, Werby SH, Cegelski L*. **Evaluation of Phosphoethanolamine Cellulose Production among Bacterial Communities using Congo Red Fluorescence.** *Journal of Bacteriology* (2020) 202, e00030-20.
70. Yang H, Horst M, Werby SH, Cegelski L, Burns NZ, Xia Y*. **Bicyclohexene-*peri*-naphthalenes: Scalable Synthesis, Diverse Functionalization, Efficient Polymerization, and Facile**

Mechanoactivation of Their Polymers. *Journal of the American Chemical Society* (2020) 142, 14619-14626.

71. Jeffries J, Thongsomboon W, Visser JA, Enriquez K, Yager D, Cegelski L*. **Variation in the Ratio of Curli and Phosphoethanolamine Cellulose Associated with Biofilm Architecture and Properties.** *Biopolymers* (2020) e23395.
72. Boswell BR, Mansson CMF, Cox JM, Jin Z, Romaniuk JAH, Lindquist KP, Cegelski L, Xia Y, Lopez SA, Burns NZ*. **Mechanochemical Synthesis of an Elusive Fluorinated Polyacetylene.** *Nature Chemistry* (2021) 13, 41-46.
73. Neville LF, Shalit I, Warn PA, Scheetz MH, Sun J, Chosy MB, Wender PA, Cegelski L, Rendell JT*. **In vivo Targeting of *E. coli* with Vancomycin-arginine.** *Antimicrobial Agents and Chemotherapy* (2021) 65, e02416-20.
74. Acheson JF, Ho R, Goularte NF, Cegelski L, Zimmer J*. **Molecular Organization of the *E. coli* Cellulose Synthase Macrocomplex.** *Nature Structural and Molecular Biology* (2021) 28, 310-318.
75. Wells DH, Goularte NF, Barnette MJ, Cegelski L*, Long SR*. **Identification of a Novel Pyruvyltransferase using ¹³C Solid-state NMR to Analyze Rhizobial Exopolysaccharides.** *Journal of Bacteriology* (2021) 203, e00403-21.
76. Goularte NF, Kallem T, Cegelski L*. **Chemical and Molecular Composition of the Chrysalis Reveals Common Chitin-rich Structural Framework for Monarchs and Swallowtails.** *Journal of Molecular Biology* (2022). 434, 167456.
77. Joshi CS, Cegelski L, Mysorekar IM*. **PITing it forward: A new link in the journey of uropathogenic *E. coli* in the urothelium.** *Cell Reports* (2022) 39(4), 110758.
78. Kallem T and Cegelski L*. **Catching Threads in Bacterial Cell Walls.** *ACS Central Science* (2022) 8, 1376-1379.
79. Visser JA, Yager D, Chambers SA, Lim JY, Cao X, Cegelski L. **Nordihydroguaiaretic Acid (NDGA) Inhibits CsgA Polymerization, Bacterial Amyloid Biogenesis, and Biofilm Formation.** *ChemBioChem* (2023) e202300266.
80. Werby SH, Brčić J, Chosy MB, Sun J, Render JT, Neville LF, Wender PA, Cegelski L. **Detection of Intact Vancomycin-Arginine as the Active Antibacterial Conjugate in *E. coli* by Whole Cell Solid-State NMR.** *RSC Medicinal Chemistry* (2023) 14, 1192-1198.
81. Liu X, Brčić J, Cassell G, Cegelski L*. **CPMAS NMR Platform for Direct Compositional Analysis of Mycobacterial Cell-wall Complexes and Whole Cells.** *Journal of Magnetic Resonance Open* 16-17 (2023) 100127.
82. Brčić J, Tong A, Wender PA*, Cegelski L*. **Conjugation of Vancomycin with a Single Arginine Improves Efficacy Against Mycobacteria by More Effective Peptidoglycan Targeting.** *Journal of Medicinal Chemistry* (2023) 66(15), 10226-10237.
83. Chosy MB, Sun J, Rahn HP, Brčić J, Wender PA*, Cegelski L*. **Vancomycin-Polyguanidino Dendrimer Conjugates Inhibit Growth of Antibiotic-Resistant Gram-Positive and Gram-Negative Bacteria and Eradicate Biofilm-Associated *S. aureus*.** *ACS Infectious Diseases* (2024) doi: 10.1021/acsinfecdis.3c00168.

PATENTS AND PATENT APPLICATIONS

1. **“Methods for Microbial Biofilm Destruction.”** Cegelski L, Lim J. U.S. Patent No: 9,271,493 (2016).
2. **“Production and Use of Phosphoethanolamine Cellulose and Derivatives.”** Cegelski L, Thongsomboon W. International Patent Application: U.S. Patent No: 11667898 (2023).
3. **“Composition and Method for New Antimicrobial Agents with Secondary Mode(s) of Action Provided by Conjugation of an Antimicrobial to a Guanidinium-rich Molecular Transporter.”** Huttner M, Wender PA, Cegelski L, Zang X, Antonoplis A. Patent Application: US 62/633,368 (2018).