



Paul Wender

Francis W. Bergstrom Professor and Professor, by courtesy, of Chemical and Systems Biology
Chemistry

CONTACT INFORMATION

- **Administrative Contact**

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Bio

BIO

The Wender Group addresses unsolved problems in chemistry, synthesis, biology, medicine, and materials science using new computational tools, new reactions, reagents, strategies and design. Leveraging affiliations with the Medical School, Imaging Center, Chemical Biology Program and Molecular Therapeutics Program as well as numerous internal and external collaborations, the lab emphasizes the use of chemistry, design and synthesis to address problems of significance in biology and medicine, including eradication of HIV/AIDS, overcoming resistant cancer, cancer immunotherapy and treating cognitive disorders such as Alzheimer's disease.

Paul Wender received his B.S. degree from Wilkes University and his Ph.D. in chemistry from Yale University. He was an NIH Postdoctoral Fellow at Columbia University. He served on the faculty at Harvard University and joined the faculty at Stanford University where he is the Francis W. Bergstrom Professor of Chemistry and holds a courtesy appointment in the Department of Chemical and Systems Biology. Professor Wender's research has been recognized with numerous awards including recently the Tetrahedron Prize, Prelog Medal (Swiss Federal Institute of Technology), Arthur Cope Award (American Chemical Society), Cohen Award for Excellence in Medicinal Chemistry (Israel Chemical Society), and Research Award of the German Bioactives and Biotechnology Leibniz Alliance. He has also been recognized with several teaching awards including the Hoagland Prize, Bing Teaching Award, and the Dean's Teaching Award. He is an elected member of the US National Academy of Sciences, a foreign member of the Royal Spanish Academy of Sciences, and a fellow of the American Association for the Advancement of Science and the American Academy of Arts and Sciences.

ACADEMIC APPOINTMENTS

- Professor, Chemistry
- Professor (By courtesy), Chemical and Systems Biology
- Member, Bio-X
- Member, Stanford Cancer Institute

HONORS AND AWARDS

- Research Award of the German Bioactives and Biotechnology, Leibniz Alliance (2016)
- Arthur C. Cope Award, American Chemical Society (2015)

- Cohen Award for Excellence in Medicinal Chemistry, Israel Chemical Society (2015)
- Office of Technology Licensing Innovator Award, Stanford University (2015)
- Prelog Medal, ETH, Switzerland (2013)
- Tetrahedron Prize for Creativity in Organic Chemistry, Tetrahedron Publications (2012)
- Wilbur Lucius Cross Medal (Yale Graduate Alumni), Yale University (2010)
- The Hamilton Award, University of Nebraska (2008)
- MERIT Award, National Institutes of Health (2006)
- H.C. Brown Award for Creative Research in Synthetic Methods, American Chemical Society (2003)
- MERIT Award, National Institutes of Health (2003)
- Member, National Academy of Science (2003)
- Fellow, American Association for the Advancement of Science (2001)
- Dean's Award for Distinguished Teaching, Stanford University (2000)
- Award for Creative work in Synthetic Organic Chemistry, American Chemical Society (1998)
- Pfizer Research Award for Synthetic Organic Chemistry, American Chemical Society (1995)
- Bing Teaching Award, Stanford University (1992)
- Fellow, American Academy of Arts and Sciences (1992)
- ASSU Teaching Award, Stanford University ASSU (1991)
- Alexander von Humboldt Stiftung Award, Alexander von Humboldt Foundation (1991)
- Hoagland Prize for Undergraduate Teaching, Stanford University (1991)
- Arthur C. Cope Scholar Award, American Chemical Society (1990)
- Ernest Guenther Award, American Chemical Society (1988)
- Stuart Award for Excellence in Chemistry, ICI Pharmaceutical Group (1988)
- Dreyfus Teacher Scholar Award, Camille and Henry Dreyfus Foundation (1980)

PROFESSIONAL EDUCATION

- Ph.D., Yale University , Chemistry (1973)
- B.S., Wilkes College , Chemistry (1969)

PATENTS

- Paul Wender, Jung-Min Kee, Jeffrey Warrington. "United States Patent 8,067,632 A Process to Produce Prostratin and Structural or Functional Analogs Thereof", Leland Stanford Junior University, Nov 29, 2011
- Christina Cooley, Erika Geihe Stanzl, Robert Waymouth, Paul Wender. "United States Patent 61,531,495 Amphipathic Co-Oligomers for the Delivery of SIRNA", Leland Stanford Junior University, Sep 11, 2011
- Paul Wender, Lars Heumann, Rainer Kramer, Carolyn Gauntlett, Elizabeth Beans. "United States Patent 12/839,808 Prostratin Analogs, Bryostatatin Analogs, Prodrugs, Synthetic Methods, and Methods of Use", Leland Stanford Junior University, Jul 20, 2010

LINKS

- The Wender Group: <https://web.stanford.edu/group/pawender/>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Molecular imaging, therapeutics, drug delivery, drug mode of action, synthesis

Teaching

COURSES

2025-26

- Advanced Organic Chemistry III: CHEM 225 (Spr)
- Organic Polyfunctional Compounds: CHEM 123 (Aut)

2024-25

- Advanced Organic Chemistry III: CHEM 225 (Spr)
- Organic Polyfunctional Compounds: CHEM 123 (Aut)

2023-24

- Advanced Organic Chemistry I: CHEM 221 (Aut)

2022-23

- Advanced Organic Chemistry I: CHEM 221 (Aut)
- Structure and Reactivity of Organic Molecules: CHEM 33 (Win)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Dayne Goss, Enrique Moya

Postdoctoral Faculty Sponsor

Adam Cook, Rachita Dash, You Jin Jung, Sukhun Lee, Pavan Yadav

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Chemical and Systems Biology (Phd Program)

Publications

PUBLICATIONS

- **Idiotypic mRNA therapeutic vaccination in a mouse model of B cell lymphoma**
Czerwinski, D., Abu Saleh, N., Khasnavis, S., Huancas, C., Calla, N., Waymouth, R., Wender, P., Levy, R.
ELSEVIER.2025
- **Correlations among quantitative assays that measure the size of HIV reservoirs in people with HIV receiving antiretroviral therapy.** *AIDS (London, England)*
Sewack, A. B., Manning, M. R., Blazkova, J., Justement, J. S., Shi, V., Praiss, L., Dasari, S., Gittens, K., Seamon, C. A., Wender, P. A., Sneller, M. C., Moir, S., Chun, et al
2025; 39 (13): 1982-1984
- **In Vivo mRNA Delivery to the Lung Vascular Endothelium by Dicationic Charge-Altering Releasable Transporters.** *Journal of the American Chemical Society*
AbdElwakil, M. M., Ni, J., Ramsay-Burrough, S., Hurst, P. J., McClellan, R. L., Khasnavis, S. R., Jia, Y., Masud, S. R., Blake, T. R., Sallets, A., Haabeth, O. A., Sagiv-Barfi, I., Czerwinski, et al
2025
- **Discrete Immolative Guanidinium Transporters deliver mRNA to specific organs and red blood cells.** *Nature communications*
Li, Z., Ee, A., Amaya, L., Hamad, J. L., Yadav, P. K., Wang, S. K., Chang, H. Y., Wender, P. A.
2025; 16 (1): 7055
- **Next-generation materials for nucleic acid delivery** *NATURE REVIEWS MATERIALS*

van der Meel, R., Wender, P. A., Merkel, O. M., Lostale-Seijo, I., Montenegro, J., Miserez, A., Laurent, Q., Sleiman, H., Luciani, P.
2025

- **Synthesis and preclinical evaluation of tigilanol tiglate analogs as latency-reversing agents for the eradication of HIV.** *Science advances*
Gentry, Z. O., McAteer, O. D., Hamad, J. L., Moran, J. A., Kim, J. T., Marsden, M. D., Zack, J. A., Wender, P. A.
2025; 11 (4): eads1911
- **Topological Heterogeneity of Protein Kinase C Modulators in Human T-Cells Resolved with In-Cell Dynamic Nuclear Polarization NMR Spectroscopy.** *Journal of the American Chemical Society*
Overall, S. A., Hartmann, S. J., Luu-Nguyen, Q. H., Judge, P., Pinotsi, D., Marti, L., Sigurdsson, S. T., Wender, P. A., Barnes, A. B.
2024
- **Biguanide-Vancomycin Conjugates are Effective Broad-Spectrum Antibiotics against Actively Growing and Biofilm-Associated Gram-Positive and Gram-Negative ESKAPE Pathogens and Mycobacteria.** *Journal of the American Chemical Society*
Rahn, H. P., Liu, X., Chosy, M. B., Sun, J., Cegelski, L., Wender, P. A.
2024
- **Isoprenoid CARTs: In Vitro and In Vivo mRNA Delivery by Charge-Altering Releasable Transporters Functionalized with Archaea-inspired Branched Lipids.** *Biomacromolecules*
Rahn, H. P., Sun, J., Li, Z., Waymouth, R. M., Levy, R., Wender, P. A.
2024
- **Organ- and Cell-Selective Delivery of mRNA In Vivo Using Guanidinylated Serinol Charge-Altering Releasable Transporters.** *Journal of the American Chemical Society*
Li, Z., Amaya, L., Ee, A., Wang, S. K., Ranjan, A., Waymouth, R. M., Chang, H. Y., Wender, P. A.
2024
- **Defining the Effects of PKC Modulator HIV Latency-Reversing Agents on Natural Killer Cells.** *Pathogens & immunity*
Dimapasoc, M., Moran, J. A., Cole, S. W., Ranjan, A., Hourani, R., Kim, J. T., Wender, P. A., Marsden, M. D., Zack, J. A.
2024; 9 (1): 108-137
- **TPPB modulates PKC activity to attenuate neuroinflammation and ameliorate experimental multiple sclerosis.** *bioRxiv : the preprint server for biology*
Shanmukha, S., Godfrey, W. H., Gharibani, P., Lee, J. J., Guo, Y., Deng, X., Wender, P. A., Kornberg, M. D., Kim, P. M.
2024
- **Vancomycin-Polyguanidino Dendrimer Conjugates Inhibit Growth of Antibiotic-Resistant Gram-Positive and Gram-Negative Bacteria and Eradicate Biofilm-Associated S.aureus.** *ACS infectious diseases*
Chosy, M. B., Sun, J., Rahn, H. P., Liu, X., Brcic, J., Wender, P. A., Cegelski, L.
2024
- **TPPB modulates PKC activity to attenuate neuroinflammation and ameliorate experimental multiple sclerosis.** *Frontiers in cellular neuroscience*
Shanmukha, S., Godfrey, W. H., Gharibani, P., Lee, J. J., Guo, Y., Deng, X., Wender, P. A., Kornberg, M. D., Kim, P. M.
2024; 18: 1373557
- **Defining the Effects of PKC Modulator HIV Latency-Reversing Agents on Natural Killer Cells** *Pathogens and Immunity*
Dimapasoc, M., Moran, J. A., Cole, S. W., Ranjan, A., Hourani, R., Kim, J. T., Wender, P. A., Marsden, M. D., Zack, J. A.
2024; 9 (1): 108 - 137
- **Immunologic and virologic parameters associated with HIV DNA reservoir size in people living with HIV receiving antiretroviral therapy.** *The Journal of infectious diseases*
Blazkova, J., Whitehead, E. J., Schneck, R., Shi, V., Justement, J. S., Rai, M. A., Kennedy, B. D., Manning, M. R., Praiss, L., Gittens, K., Wender, P. A., Oguz, C., Lack, et al
2023
- **Charge-altering releasable transporters enhance mRNA delivery in vitro and exhibit in vivo tropism.** *Nature communications*
Li, Z., Amaya, L., Pi, R., Wang, S. K., Ranjan, A., Waymouth, R. M., Blish, C. A., Chang, H. Y., Wender, P. A.
2023; 14 (1): 6983
- **Conjugation of Vancomycin with a Single Arginine Improves Efficacy against Mycobacteria by More Effective Peptidoglycan Targeting.** *Journal of medicinal chemistry*

Brčić, J., Tong, A., Wender, P. A., Cegelski, L.
2023

- **Detection of intact vancomycin-arginine as the active antibacterial conjugate in E. coli by whole-cell solid-state NMR.** *RSC medicinal chemistry*
Werby, S. H., Brčić, J., Chosy, M. B., Sun, J., Rendell, J. T., Neville, L. F., Wender, P. A., Cegelski, L.
2023; 14 (6): 1192-1198
- **Detection of intact vancomycin-arginine as the active antibacterial conjugate in E. coli by whole-cell solid-state NMR** *RSC MEDICINAL CHEMISTRY*
Werby, S. H., Brčić, J., Chosy, M. B., Sun, J., Rendell, J. T., Neville, L. F., Wender, P. A., Cegelski, L.
2023
- **Circular RNA vaccine induces potent T cell responses.** *Proceedings of the National Academy of Sciences of the United States of America*
Amaya, L., Grigoryan, L., Li, Z., Lee, A., Wender, P. A., Pulendran, B., Chang, H. Y.
2023; 120 (20): e2302191120
- **Lysine-Derived Charge-Altering Releasable Transporters: Targeted Delivery of mRNA and siRNA to the Lungs.** *Bioconjugate chemistry*
Blake, T. R., Haabeth, O. A., Sallets, A., McClellan, R. L., Del Castillo, T. J., Vilches-Moure, J. G., Ho, W. C., Wender, P. A., Levy, R., Waymouth, R. M.
2023
- **Secreted factors induced by PKC modulators do not indirectly cause HIV latency reversal.** *Virology*
Moran, J. A., Ranjan, A., Hourani, R., Kim, J. T., Wender, P. A., Zack, J. A., Marsden, M. D.
2023; 581: 8-14
- **Comprehensive analysis of HIV reservoirs in elite controllers.** *The Journal of clinical investigation*
Kennedy, B. D., Blazkova, J., Justement, J. S., Shi, V., Rai, M. A., Manning, M. R., Praiss, L., Gittens, K., Wender, P. A., Patro, S., Wu, X., Moir, S., Chun, et al
2023; 133 (3)
- **Trimethylene Methane Dianion Equivalent for the Asymmetric Consecutive Allylation of Aldehydes: Applications to Prins-Driven Macrocyclizations for the Synthesis of Bryostatin 1 and Analogues.** *The Journal of organic chemistry*
Wender, P. A., Luu-Nguyen, Q. H., Sloane, J. L., Ranjan, A.
2022
- **Practical synthesis of the therapeutic leads tigilanol tiglate and its analogues.** *Nature chemistry*
Wender, P. A., Gentry, Z. O., Fanelli, D. J., Luu-Nguyen, Q. H., McAteer, O. D., Njoo, E.
2022
- **Author Correction: Engineering circular RNA for enhanced protein production.** *Nature biotechnology*
Chen, R., Wang, S. K., Belk, J. A., Amaya, L., Li, Z., Cardenas, A., Abe, B. T., Chen, C., Wender, P. A., Chang, H. Y.
2022
- **Engineering circular RNA for enhanced protein production.** *Nature biotechnology*
Chen, R., Wang, S. K., Belk, J. A., Amaya, L., Li, Z., Cardenas, A., Abe, B. T., Chen, C., Wender, P. A., Chang, H. Y.
2022
- **Fingolimod-Conjugated Charge-Altering Releasable Transporters Efficiently and Specifically Deliver mRNA to Lymphocytes In Vivo and In Vitro.** *Biomacromolecules*
Testa, S., Haabeth, O. A., Blake, T. R., Del Castillo, T. J., Czerwinski, D. K., Rajapaksa, R., Wender, P. A., Waymouth, R. M., Levy, R.
2022
- **Latency reversal plus natural killer cells diminish HIV reservoir in vivo.** *Nature communications*
Kim, J. T., Zhang, T., Carmona, C., Lee, B., Seet, C. S., Kostelny, M., Shah, N., Chen, H., Farrell, K., Soliman, M. S., Dimapasoc, M., Sinani, M., Blanco, et al
1800; 13 (1): 121
- **An mRNA SARS-CoV-2 Vaccine Employing Charge-Altering Releasable Transporters with a TLR-9 Agonist Induces Neutralizing Antibodies and T Cell Memory.** *ACS central science*

- Haabeth, O. A., Lohmeyer, J. J., Sallets, A., Blake, T. R., Sagiv-Barfi, I., Czerwinski, D. K., McCarthy, B., Powell, A. E., Wender, P. A., Waymouth, R. M., Levy, R.
2021; 7 (7): 1191-1204
- **Designed PKC-targeting bryostatin analogs modulate innate immunity and neuroinflammation.** *Cell chemical biology*
Abramson, E. n., Hardman, C. n., Shimizu, A. J., Hwang, S. n., Hester, L. D., Snyder, S. H., Wender, P. A., Kim, P. M., Kornberg, M. D.
2021
 - **In vivo targeting of E. coli with vancomycin-arginine.** *Antimicrobial agents and chemotherapy*
Neville, L. F., Shalit, I. n., Wam, P. A., Scheetz, M. H., Sun, J. n., Chosy, M. B., Wender, P. A., Cegelski, L. n., Rendell, J. T.
2021
 - **Tracking HIV Rebound following Latency Reversal Using Barcoded HIV.** *Cell reports. Medicine*
Marsden, M. D., Zhang, T., Du, Y., Dimapasoc, M., Soliman, M. S., Wu, X., Kim, J. T., Shimizu, A., Schrier, A., Wender, P. A., Sun, R., Zack, J. A.
2020; 1 (9): 100162
 - **Function-Oriented Synthesis: Design, Synthesis, and Evaluation of Highly Simplified Bryostatin Analogues.** *The Journal of organic chemistry*
Wender, P. A., Sloane, J. L., Luu-Nguyen, Q. H., Ogawa, Y., Shimizu, A. J., Ryckbosch, S. M., Tyler, J. H., Hardman, C.
2020
 - **In Situ Detection of Endogenous HIV Activation by Dynamic Nuclear Polarization NMR and Flow Cytometry.** *International journal of molecular sciences*
Overall, S. A., Price, L. E., Albert, B. J., Gao, C., Alaniva, N., Judge, P. T., Sesti, E. L., Wender, P. A., Kyei, G. B., Barnes, A. B.
2020; 21 (13)
 - **Prodrugs of PKC modulators show enhanced HIV latency reversal and an expanded therapeutic window.** *Proceedings of the National Academy of Sciences of the United States of America*
Sloane, J. L., Benner, N. L., Keenan, K. N., Zang, X., Soliman, M. S., Wu, X., Dimapasoc, M., Chun, T., Marsden, M. D., Zack, J. A., Wender, P. A.
2020
 - **Synthesis and evaluation of designed PKC modulators for enhanced cancer immunotherapy.** *Nature communications*
Hardman, C., Ho, S., Shimizu, A., Luu-Nguyen, Q., Sloane, J. L., Soliman, M. S., Marsden, M. D., Zack, J. A., Wender, P. A.
2020; 11 (1): 1879
 - **Synthesis and mechanistic investigations of pH-responsive cationic poly(aminoester)s** *CHEMICAL SCIENCE*
Blake, T. R., Ho, W. C., Turlington, C. R., Zang, X., Huttner, M. A., Wender, P. A., Waymouth, R. M.
2020; 11 (11): 2951–66
 - **Clinical Correlates of Human Immunodeficiency Virus-1 (HIV-1) DNA and Inducible HIV-1 RNA Reservoirs in Peripheral Blood in Children With Perinatally Acquired HIV-1 Infection With Sustained Virologic Suppression for at Least 5 Years** *CLINICAL INFECTIOUS DISEASES*
Bitnun, A., Ransy, D. G., Brophy, J., Kakkar, F., Hawkes, M., Samson, L., Annabi, B., Pagliuzza, A., Morand, J., Sauve, L., Chomont, N., Lavoie, S., Kim, et al
2020; 70 (5): 859–66
 - **Synthesis and mechanistic investigations of pH-responsive cationic poly(aminoester)s.** *Chemical science*
Blake, T. R., Ho, W. C., Turlington, C. R., Zang, X., Huttner, M. A., Wender, P. A., Waymouth, R. M.
2020; 11 (11): 2951-2966
 - **Reversible RNA acylation for control of CRISPR-Cas9 gene editing** *CHEMICAL SCIENCE*
Habibian, M., McKinlay, C., Blake, T. R., Kietrys, A. M., Waymouth, R. M., Wender, P. A., Kool, E. T.
2020; 11 (4): 1011–16
 - **Charge-altering releasable transporters enable phenotypic manipulation of natural killer cells for cancer immunotherapy.** *Blood advances*
Wilk, A. J., Weidenbacher, N. L., Vergara, R. n., Haabeth, O. A., Levy, R. n., Waymouth, R. M., Wender, P. A., Blish, C. A.
2020; 4 (17): 4244–55
 - **Bryostatin 1 Promotes Synaptogenesis and Reduces Dendritic Spine Density in Cortical Cultures through a PKC-Dependent Mechanism.** *ACS chemical neuroscience*
Ly, C. n., Shimizu, A. J., Vargas, M. V., Duim, W. C., Wender, P. A., Olson, D. E.
2020

- **Reversible RNA acylation for control of CRISPR-Cas9 gene editing.** *Chemical science*
Habibian, M., McKinlay, C., Blake, T. R., Kietrys, A. M., Waymouth, R. M., Wender, P. A., Kool, E. T.
2019; 11 (4): 1011-1016
- **Synthesis of Modified Nucleoside Oligophosphates Simplified: Fast, Pure, and Protecting Group Free.** *Journal of the American Chemical Society*
Singh, J., Ripp, A., Haas, T. M., Qiu, D., Keller, M., Wender, P. A., Siegel, J. S., Baldrige, K. K., Jessen, H. J.
2019
- **Impact of Treatment Interruption on HIV Reservoirs and Lymphocyte Subsets in Individuals Who Initiated Antiretroviral Therapy During the Early Phase of Infection** *JOURNAL OF INFECTIOUS DISEASES*
Huiting, E. D., Gittens, K., Justement, J., Shi, V., Blazkova, J., Benko, E., Kovacs, C., Wender, P. A., Moir, S., Sneller, M. C., Fauci, A. S., Chun, T.
2019; 220 (2): 270-74
- **Oligo(serine ester) Charge-Altering Releasable Transporters: Organocatalytic Ring-Opening Polymerization and their Use for in Vitro and in Vivo mRNA Delivery** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Benner, N. L., McClellan, R. L., Turlington, C. R., Haabeth, O. A. W., Waymouth, R. M., Wender, P. A.
2019; 141 (21): 8416-21
- **Local Delivery of Ox40l, Cd80, and Cd86 mRNA Kindles Global Anticancer Immunity** *CANCER RESEARCH*
Haabeth, O., Blake, T. R., McKinlay, C. J., Tveita, A. A., Sallets, A., Waymouth, R. M., Wender, P. A., Levy, R.
2019; 79 (7): 1624-34
- **Therapeutic function through synthesis-informed design: Approaches to HIV/AIDS eradication, Alzheimer's disease, and enhanced cancer immuno-therapy**
Wender, P.
AMER CHEMICAL SOC.2019
- **Clinical correlates of HIV-1 DNA and inducible HIV-1 RNA reservoirs in peripheral blood in children with perinatally acquired HIV-1 infection with sustained virologic suppression for at least 5 years.** *Clinical infectious diseases : an official publication of the Infectious Diseases Society of America*
Bitnun, A., Ransy, D. G., Brophy, J., Kakkar, F., Hawkes, M., Samson, L., Annabi, B., Pagliuzza, A., Morand, J., Sauve, L., Chomont, N., Lavoie, S., Kim, et al
2019
- **A Phosphoramidite Analogue of Cyclotriphosphate Enables Iterative Polyphosphorylations** *ANGEWANDTE CHEMIE-INTERNATIONAL EDITION*
Singh, J., Steck, N., De, D., Hofer, A., Ripp, A., Captain, I., Keller, M., Wender, P. A., Bhandari, R., Jessen, H. J.
2019; 58 (12): 3928-3933
- **Impact of treatment interruption on HIV reservoirs and lymphocyte subsets in individuals who had initiated antiretroviral therapy during the early phase of infection.** *The Journal of infectious diseases*
Huiting, E. D., Gittens, K., Justement, J. S., Shi, V., Blazkova, J., Benko, E., Kovacs, C., Wender, P. A., Moir, S., Sneller, M. C., Fauci, A. S., Chun, T.
2019
- **Local delivery of OX40L, CD80, and CD86 mRNA kindles global anti-cancer immunity.** *Cancer research*
Haabeth, O. A., Blake, T. R., McKinlay, C. J., Tveita, A. A., Sallets, A., Waymouth, R. M., Wender, P. A., Levy, R.
2019
- **A Phosphoramidite Analogue of Cyclotriphosphate Enables Iterative Polyphosphorylations.** *Angewandte Chemie (International ed. in English)*
Singh, J., Steck, N., De, D., Hofer, A., Ripp, A., Captain, I., Keller, M., Wender, P. A., Bhandari, R., Jessen, H. J.
2019
- **Oligo(serine ester) Charge-Altering Releasable Transporters: Organocatalytic Ring-Opening Polymerization and their Use for in Vitro and in Vivo mRNA Delivery.** *Journal of the American Chemical Society*
Benner, N. L., McClellan, R. L., Turlington, C. R., Haabeth, O. A., Waymouth, R. M., Wender, P. A.
2019
- **Vancomycin-Arginine Conjugate Inhibits Growth of Carbapenem-Resistant E. coli and Targets Cell-Wall Synthesis.** *ACS chemical biology*
Antonopolis, A. n., Zang, X. n., Wegner, T. n., Wender, P. A., Cegelski, L. n.
2019

- **A Dual-Function Antibiotic-Transporter Conjugate Exhibits Superior Activity in Sterilizing MRSA Biofilms and Killing Persister Cells** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Antonoplis, A., Zang, X., Huttner, M. A., Chong, K. K. L., Lee, Y. B., Co, J. Y., Amieva, M. R., Kline, K. A., Wender, P. A., Cegelski, L.
2018; 140 (47): 16140-16151
- **Delivery of Inorganic Polyphosphate into Cells Using Amphipathic Oligocarbonate Transporters.** *ACS central science*
Fernandes-Cunha, G. M., McKinlay, C. J., Vargas, J. R., Jessen, H. J., Waymouth, R. M., Wender, P. A.
2018; 4 (10): 1394-1402
- **mRNA vaccination with charge-altering releasable transporters elicits human T cell responses and cures established tumors in mice** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Haabeth, O. A. W., Blake, T. R., McKinlay, C. J., Waymouth, R. M., Wender, P. A., Levy, R.
2018; 115 (39): E9153–E9161
- **mRNA vaccination with charge-altering releasable transporters elicits human T cell responses and cures established tumors in mice.** *Proceedings of the National Academy of Sciences of the United States of America*
Haabeth, O. A., Blake, T. R., McKinlay, C. J., Waymouth, R. M., Wender, P. A., Levy, R.
2018
- **Functional DNA Delivery Enabled by Lipid-Modified Charge-Altering Releasable Transporters (CARTs)** *BIOMACROMOLECULES*
Benner, N. L., Near, K. E., Bachmann, M. H., Contag, C. H., Waymouth, R. M., Wender, P. A.
2018; 19 (7): 2812–24
- **Characterization of designed, synthetically accessible bryostatin analog HIV latency reversing agents** *VIROLOGY*
Marsden, M. D., Wu, X., Navab, S. M., Loy, B. A., Schrier, A. J., DeChristopher, B. A., Shimizu, A. J., Hardman, C. T., Ho, S., Ramirez, C. M., Wender, P. A., Zack, J. A.
2018; 520: 83–93
- **Enhanced mRNA delivery into lymphocytes enabled by lipid-varied libraries of charge-altering releasable transporters.** *Proceedings of the National Academy of Sciences of the United States of America*
McKinlay, C. J., Benner, N. L., Haabeth, O. A., Waymouth, R. M., Wender, P. A.
2018; 115 (26): E5859–E5866
- **Enhanced mRNA delivery into lymphocytes enabled by lipid-varied libraries of charge-altering releasable transporters** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
McKinlay, C. J., Benner, N. L., Haabeth, O. A., Waymouth, R. M., Wender, P. A.
2018; 115 (26): E5859–E5866
- **REDOR NMR Reveals Multiple Conformers for a Protein Kinase C Ligand in a Membrane Environment** *ACS CENTRAL SCIENCE*
Yang, H., Staveness, D., Ryckbosch, S. M., Axtman, A. D., Loy, B. A., Barnes, A. B., Pande, V. S., Schaefer, J., Wender, P. A., Cegelski, L.
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