

Jonathan A. Ellman

Eugene Higgins Professor of Chemistry , Yale University	2010-present
Professor of Pharmacology , Yale University	2010-present
Professor of Cellular and Molecular Pharmacology , UC San Francisco	1999-2010
Professor of Chemistry , UC Berkeley	1999-2010
Associate Professor of Chemistry , UC Berkeley	1997-1998
Assistant Professor of Chemistry , UC Berkeley	1992-1997

Education

National Science Foundation Postdoctoral Fellow University of California, Berkeley; Research mentor, Professor Peter G. Schultz	1989-1992
Ph.D. Organic Chemistry Harvard University; Thesis Advisor, Professor David A. Evans	1984-1989
B.S. Chemistry Massachusetts Institute of Technology	1980-1984

Awards

2025 Yale Faculty Innovation Award	2025
Member, National Academy of Sciences	2025
2023 Yale Faculty Innovation Award	2023
Allan R. Day Award from the Philadelphia Organic Chemists Club	2023
American Chemical Society Award for Creative Work in Synthetic Organic Chemistry	2021
Yale Dylan Hixon '88 Prize for Teaching Excellence in the Natural Sciences (one prize/yr)	2016
Member, American Academy of Arts and Sciences	2015
American Chemical Society Herbert C. Brown Award for Creative Research in Synthetic Methods	2012
Royal Society of Chemistry Pedler Award	2010
GlaxoSmithKline Chemistry Scholars Award	2010
Student selected Member, Golden Key International Honour Society (3-4 Berkeley faculty/year)	2007
Fellow of the American Association for the Advancement of Science	2006
2006 Tetrahedron Young Investigator Award in Bioorganic and Medicinal Chemistry	2006
2003 Scheele Award selected by the Swedish Academy of Pharmaceutical Sciences	2003
2003 Society of Biomolecular Screening Achievement Award	2003
American Chemical Society Arthur C. Cope Scholar Award	2000
University of California at Berkeley 1998 Department of Chemistry Teaching Award	1998
Burroughs Wellcome Fund New Initiatives in Malaria Research Award	1997
Joel H. Hildebrand Associate Professor Chair in Chemistry	1996-1998
Thomson Reuters ISI Top Five Hot Authors in Chemistry/Material Science	1994-1996
Alfred P. Sloan Fellowship	1994-1996
Eli Lilly Grantee Award	1994-1996
Cyanamid Faculty Award	1994
Procter and Gamble Young Investigator	1994-1996
Burroughs Wellcome Fund 1993 Hitchings Award for Drug Design and Discovery	1993-1997
Arnold and Mabel Beckman Foundation Young Investigator Award	1993-1995
National Science Foundation Young Investigator Award	1993-1998
Office of Naval Research Young Investigator Award	1994-1997
National Science Foundation Postdoctoral Fellowship	1989-1991
National Science Foundation Predoctoral Fellowship	1984-1987
James Bryant Conant Scholarship Prize	1984
Texaco Philanthropist Scholarship for excellence in chemistry	1984
DuPont Resident Research Program (awarded by MIT Department of Chemistry)	1984

Activities/Service

Yearly or more frequent service as Ad-Hoc Study Section Member for the NSF or NIH	2007-present
Editorial Advisory Board for <i>Advanced Synthesis and Catalysis</i>	2014-present
Associate Chair, Yale Chemistry Department	2024-2025
Director of Graduate Studies, Yale Chemistry Department	2018-2022
Member, Scientific Advisory Board and/or Consultant, Ardelyx Pharmaceuticals	2009-2022
Consultant, Ono Pharmaceuticals	2002-2021
Editorial Advisory Board for <i>ACS Combinatorial Science</i>	2010-2020
Member of International Advisory Board <i>Organic & Biomolecular Chemistry</i>	2002-2019
Guest Editor, <i>Journal of Organic Chemistry</i> C-H Bond Functionalization special issue	2019
International Advisory Board for <i>European Journal of Organic Chemistry</i>	2010-2019
Chaired and raised funds for Connecticut Organic Chemistry Symposium (New Haven)	2016, 2018
Member, Scientific Advisory Board, Lycera Pharmaceuticals	2009-2018
Committee of Visitors, Triennial Review of NSF Chemistry	2016
Chaired and raised funds for Symposium at fall ACS National Meeting (Boston)	August 19, 2015
Mentor for NIH Workshop for New Faculty in Organic and Biological Chemistry	2013, 2015
Area Chair, Physical Sciences and Engineering at Yale	2014-2015
Director, Division of the Physical Sciences and Engineering at Yale	2012-2014
Member of the Editorial Board <i>Chemical Biology & Drug Design</i>	2005-2012
Member of the NIH Chemical Genomics Center Board of Advisors	2005-2010
Member of the Editorial Board <i>Chemistry & Biology</i>	2004-2015
Member, NIH Medicinal Chemistry then MedChem/SBCB Study Section	2003-2007
Board of Editors <i>Organic Syntheses</i> , Inc.	2003-2011
Consultant, Abbott Laboratories	2002-2015
Instructor for annual ACS Frontiers in Organic Chemistry	2001-2008
Co-Section Head for Chemistry Core of the Faculty of 1000, Web based literature review	2001-2018
Editorial Advisory Board, <i>Journal of Combinatorial Chemistry</i>	2006-2008
Consulting Editor, <i>Journal of Combinatorial Chemistry</i>	2003-2006
Associate Editor, <i>Journal of Combinatorial Chemistry</i>	1998-2003
Cofounder and Chair of Scientific Advisory Board, Sunesis Pharmaceuticals	1998-2005
Guest Editor, <i>Current Opinion in Chemical Biology</i> Special Issue: Combinatorial Chemistry	1998
Member, Board of Directors, Lake Tahoe Symposia	1997-2000
Co-organizer, National Academy of Sciences Symposium on Combinatorial Chemistry	1997
Member, Long Range Planning Committee, Am. Chem. Soc., Medicinal Chemistry Division	1996-1998
Guest Editor, <i>Accounts of Chemical Research</i> Special Issue: Combinatorial Chemistry	1996
Member, Scientific Advisory Board, Symyx Technologies	1996-1999
Member, Scientific Advisory Board, Versicor Pharmaceuticals	1995-1997
Member, Scientific Advisory Board, Argonaut Technologies	1995-2002

>350 Publications, H-Index: >120 (Google Scholar)

1. Ohno, S.; Goodner, R. M.; Confair, D. N.; Mercado, B. Q.; Ellman, J. A. "Visible Light Promoted Alkenyl C-H Bond Addition to Dienes and Aldehydes for the Synthesis of Frameworks Relevant to Polyketide Natural Products" *ACS Catal.* **15**, ASAP (2026).
<https://pubs.acs.org/doi/10.1021/acscatal.5c05961>
2. Patel, S.; Finnigan, J. D.; Lim, J.; Greenwood, N. S.; Ellman, J. A. "Biocatalytic Enantioselective Oxidation of *N*-Acyl-*S*-Methyl Sulfenamides for the Asymmetric Synthesis of *S*-Methyl Sulfoximines" *Org. Lett.* **28**, 304-309 (2026).

- Patel, S.; Cerny, N. P.; Zimmer, L. G.; Chen, S.; Ellman, J. A. "Studies on the Mechanism of Styrene Elimination from Sulfilimines: Hammett and Kinetic Isotope Effect Analysis and Computation" *J. Org. Chem.* **90**, 11597–11604 (2025).
- Vignerón, S. F.; Ohno, S.; Braz, J.; Kim, J. Y.; Kweon, O. S.; Webb, C.; Billesbølle, C. B.; Srinivasan, K.; Bhardwaj, K.; Irwin, J. J.; Manglik, A.; Basbaum, A. I.; Ellman, J. A.; Shoichet, B. K. "Docking 14 Million Virtual Isoquinuclidines against the μ and κ Opioid Receptors Reveals Dual Antagonists–Inverse Agonists with Reduced Withdrawal Effects" *ACS Cent. Sci.* **11**, 770–790 (2025).
- Boyer, Z. W.; Kwon, N. Y.; Ellman, J. A.; Gnam, C. "Ruthenium-Catalyzed Enantioselective Alkylation of Sulfenamides: A General Approach for the Synthesis of Drug Relevant S-Methyl and S-Cyclopropyl Sulfoximines" *J. Am. Chem. Soc.* **147**, 14954–14959 (2025).
- Greenwood, N. S.; Boyer, Z. W.; Ellman, J. A.; Gnam, C. "Sulfilimines from a Medicinal Chemist's Perspective: Physicochemical and in Vitro Parameters Relevant for Drug Discovery" *J. Med. Chem.* **68**, 4079–4100 (2025) [Feature Article with a Viewpoint by Prof. Arvidsson "Sulfilimines: An Underexplored Bioisostere for Drug Design?" *J. Med. Chem.* **68**, 4056–4058 (2025)].
- Goodner, R. M.; Brandes, D. S.; Morais, G. N.; Tao, Q.; Tassone, J. P.; Mercado, B. Q.; Chen, S.; Ellman, J. A. "C–H Activation and Sequential Addition to Dienes and Imines: Synthesis of Amines with β -Quaternary Centers and Mechanistic Studies on the Complex Interplay Between the Catalyst and Three Reactants" *ACS Catal.* **14**, 18124–18133 (2024).
- Yeo, J.; Tassone, J. P.; Ellman, J. A. "Synthesis of α -Quaternary Amides via Cp*Co(III)-Catalyzed Sequential C–H Bond Addition to 1,3-Dienes and Isocyanates" *Org. Lett.* **26**, 9769–9774 (2024).
- Molas, J. C.; Poag, E. M.; Ellman, J. A. "Synthesis of Monodehydro-Diketopiperazines Enabled by Cp*Rh(III)-Catalyzed Amine-Directed N–H Functionalization" *Org. Lett.* **26**, 8527–8531 (2024).
- Moon, M. H.; Vock, I. W.; Streit, A. D.; Connor, L. J.; Senkina, J.; Ellman, J. A.; Simon, M. D. "Disulfide Tethering to Map Small Molecule Binding Sites Transcriptome-wide" *ASC Chem. Biol.* **19**, 2081–2086 (2024).
- Champlin, A. T.; Kwon, N. Y.; Ellman, J. A. "Enantioselective S-Alkylation of Sulfenamides by Phase-Transfer Catalysis" *Angew. Chem. Int. Ed.* **63**, e202408820 (2024).
- Patel, S.; Greenwood, N. S.; Mercado, B. Q.; Ellman, J. A. "Rh(II)-Catalyzed Enantioselective S-Alkylation of Sulfenamides with Acceptor–Acceptor Diazo Compounds Enables the Synthesis of Sulfoximines Displaying Diverse Functionality" *Org. Lett.* **26**, 6295–6300 (2024).
- Chu, D.; Zoll, A. J.; Ellman, J. A. "Copper-Catalyzed Three-Component Synthesis of Highly Substituted Morpholines" *Org. Lett.* **26**, 4803–4807 (2024).
- Greenwood, N. S.; Cerny, N. P.; Deziel, A. P.; Ellman, J. A. "Synthesis of N-Acylsulfenamides from (Hetero)Aryl Iodides and Boronic Acids by One-Pot Sulfur-Arylation and Dealkylation" *Angew. Chem. Int. Ed.* **63**, e202315701 (2024).

15. Vargas-Rivera, M. A.; Ellman, J. A. “Visible-Light-Mediated, Diastereoselective Epimerization of Exocyclic Amines” *Org. Lett.* **25**, 9197–9201 (2023).
16. Greenwood, N. S.; Ellman, J. A. “Sulfur-Arylation of Sulfenamides via Ullmann-Type Coupling with (Hetero)aryl Iodides” *Org. Lett.* **25**, 4759–4764 (2023).
17. Champlin, A. T.; Ellman, J. A. “Preparation of Sulfilimines by Sulfur-Alkylation of *N*-Acyl Sulfenamides with Alkyl Halides” *J. Org. Chem.* **88**, 7607–7614 (2023).
18. Chu, D.; Ellman, J. A. “Stereospecific Synthesis of Unprotected, α,β -Disubstituted Tryptamines and Phenethylamines from 1,2-Disubstituted Alkenes via a One-Pot Reaction Sequence” *Org. Lett.* **25**, 3654–3658 (2023).
19. Greenwood, N. S.; Ellman, J. A. “Sulfur-Arylation of Sulfenamides via Chan–Lam Coupling with Boronic Acids: Access to High Oxidation State Sulfur Pharmacophores” *Org. Lett.* **25**, 2830–2834 (2023).
20. Liu, J. T.; Brandes, D. S.; Greenwood, N. S.; Ellman, J. A. “Synthesis of *N*-Acylsulfenamides from Amides and *N*-Thiosuccinimides” *Synthesis* **55**, 2353–2360 (2023) [Special Issue dedicated to Prof. David A. Evans].
21. Zoll, A. J.; Molas, J. C.; Mercado, B. Q.; Ellman, J. A. “Imine Directed Cp*Rh(III)-Catalyzed *N*–H Functionalization and Annulation with Amino Amides, Aldehydes, and Diazo Compounds” *Angew. Chem. Int. Ed.* **62**, e202210822 (2023).
22. Tassone, J. P.; Yeo, J. Ellman, J. A. “Three-Component Carboformylation: α -Quaternary Aldehyde Synthesis via Co(III)-Catalysed Sequential C–H Bond Addition to Dienes and Acetic Formic Anhydride” *Chem. Sci.* **13**, 14320–14326 (2022).
23. Kaplan, A. L.; Confair, D. N.; Kim, K.; Barros-Alvarez, X.; Rodriguez, R. M.; Yang, Y.; Kweon, O. S.; Che, T.; McCorvy, J. Kamber, D. N.; Phelan, J. P.; Martins, L. C.; Pogorelov, V. M.; DiBerto, J. F.; Slocum, S. T.; Huang, X.-P.; Kumar, J. M.p; Robertson, M. J.; Panova, O.; Seven, A. B.; Wetsel, W. C.; Irwin, J. J.; Skiniotis, G.; Shoichet, B. K.; Roth, B. L.; Ellman, J. A. “Docking a Bespoke Ultra-Large Tetrahydropyridine Library Identifies 5-HT_{2A} Receptor Agonists Conferring New Biology” *Nature* **610**, 582–591 (2022).
24. Shen, Z.; Vargas-Rivera, M.; Rigby, E. L.; Chen, S.; Ellman, J. A. “Visible Light-Mediated, Highly Stereoselective Epimerization of Morpholines and Piperazines to the More Stable Isomers” *ACS Catal.* **12**, 12860–12868 (2022).
25. Greenwood, N. S.; Champlin, A. T.; Ellman, J. A. “Catalytic Enantioselective Sulfur Alkylation of Sulfenamides for the Asymmetric Synthesis of Sulfoximines” *J. Am. Chem. Soc.* **144**, 17808–17814 (2022).
26. Gannam, Z. T. K.; Jamali, H.; Kweon, O. S.; Herrington, J.; Shillingford, S. R.; Papini, C.; Gentzel, E.; Lolis, E.; Bennett, A. M.; Ellman, J. A.; Anderson, K. S. “Defining the Structure-Activity Relationship for a Novel Class of Allosteric MKP5 Inhibitors” *Eur. J. Med. Chem.* **243**, 114712 (2022).

27. Brandes, D. S.; Elman, J. A. “C–H Bond Activation and Sequential Addition to Two Different Coupling Partners: A Versatile Approach to Molecular Complexity” *Chem. Soc. Rev.* **51**, 6738–6756 (2022).
28. Kazerouni, A. M.; Brandes, D. S.; Davies, C. C.; Cotter, L. F.; Mayer, J. M.; Chen, S.; Ellman, J. A. “Visible Light-Mediated, Highly Diastereoselective Epimerization of Lactams from the Most Accessible to the More Stable Stereoisomer” *ACS Catal.* **12**, 7798–7803 (2022).
29. Xu, C.; Tassone, J. P.; Mercado, B. Q.; Ellman, J. A. “Stereoselective Synthesis of Allenyl Alcohols by Cobalt(III)-Catalyzed Sequential C–H Bond Addition to 1,3-Enynes and Aldehydes” *Angew. Chem. Int. Ed.* **61**, e202202364 (2022) [Hot Paper].
30. Chu, D.; Ellman, J. A. “Three-Component Friedel–Crafts Transformations: Synthesis of Alkyl and Alkenyl Trifluoromethyl Sulfides and Alkenyl Iodides” *Org. Lett.* **24**, 2921–2925 (2022).
31. Brandes, D. S.; Muma, A. S.; Elman, J. A. “Synthesis of α -Branched Amines by Three- and Four-Component C–H Functionalization Employing a Readily Diversifiable Hydrazone Directing Group” *Org. Lett.* **23**, 9597–9601 (2021).
32. Chen, S.; Chandra Tjin, C.; Gao, X.; Xue, Y.; Jiao, H.; Zhang, R.; Wu, M.; He, Z.; Ellman, J. A.; Ha, Y. Pharmacological Inhibition of PI5P4K α/β Disrupts Cell Energy Metabolism and Selectively Kills p53-Null Tumor Cells. *Proc. Natl. Acad. Sci. USA* **118**, e2002486118 (2021).
33. Brandes, D. S.; Sirvent, A.; Mercado, B. Q.; Ellman, J. A. “Three-Component 1,2-Carboamidation of Bridged Bicyclic Alkenes via RhIII-Catalyzed Addition of C–H Bonds and Amidating Reagents” *Org. Lett.* **23**, 2836–2840 (2021).
34. Dongbang, S.; Confair, D. N.; Ellman, J. A. “Rhodium-Catalyzed C–H Alkenylation/Electrocyclization Cascade Provides Dihydropyridines That Serve as Versatile Intermediates to Diverse Nitrogen Heterocycles” *Acc. Chem. Res.* **54**, 1766–1778 (2021).
35. Shen, Z.; Walker, M. M.; Chen, S.; Parada, G. A.; Chu, D. M.; Dongbang, S.; Mayer, J. M.; Houk, K. N.; Ellman, J. A. “General Light-Mediated, Highly Diastereoselective Piperidine Epimerization: From Most Accessible to Most Stable Stereoisomer” *J. Am. Chem. Soc.* **143**, 126–131 (2021).
36. Dongbang, S.; Ellman, Jonathan A. “Synthesis of Nitrile Bearing Acyclic Quaternary Centers via Co(III)-Catalyzed Sequential C–H Bond Addition to Dienes and N-Cyanosuccinimide” *Angew. Chem. Int. Ed.* **60**, 2135–2139 (2021).
37. Confair, D. N.; Greenwood, N. S.; Mercado, B. Q.; Ellman, J. A. “Rh(III)-Catalyzed Imidoyl C–H Carbamylation and Cyclization to Bicyclic [1,3,5]Triazinones” *Org. Lett.* **22**, 8993–8997 (2020).
38. Gannam, Z. T. K.; Min, K.; Shillingford, S. R.; Zhang, L.; Herrington, J.; Abriola, L.; Gareiss, P. C.; Pantouris, G.; Tzouvelekis, A.; Kaminski, N.; Zhang, X.; Yu, J.; Jamali, H.; Ellman, J. A.; Lolis, E.; Anderson, K. S.; Bennett, A. M. “An allosteric site on MKP5 reveals a strategy for small molecule inhibition” *Science Signaling* **13**, eaba3043 (2020).

39. Walker, M. M.; Koronkiewicz, B.; Chen, S.; Houk, K. N.; Mayer, J. M.; Ellman, J. A. "Highly Diastereoselective Functionalization of Piperidines by Photoredox Catalyzed C–H Arylation and Epimerization" *J. Am. Chem. Soc.* **142**, 8194–8202 (2020).
40. Streit, A. D.; Zoll, A. J.; Hoang, G. L.; Ellman, J. A. "Annulation of Hydrazones and Alkynes via Rhodium(III)-Catalyzed Dual C–H Activation: Synthesis of Pyrrolopyridazines and Azolopyridazines" *Org. Lett.* **22**, 1217–1222 (2020).
41. Scamp, R. J.; deRamon, E.; Paulson, E. K.; Miller, S. J.; Ellman, J. A. "Co(III)-Catalyzed C–H Amidation of Dehydroalanine for the Site-Selective Structural Diversification of Thiostrepton" *Angew. Chem. Int. Ed.* **59**, 890–895 (2020).
42. Shen, Z.; Li, C.; Mercado, B. Q.; Ellman, J. A. "Cobalt(III)-Catalyzed Diastereoselective Three-Component C–H Bond Addition to Butadiene and Activated Ketones" *Synthesis* **51**, 1239–1246 (2020) [Domino C–H functionalization reaction/cascade catalysis in honor of Prof. Mark Lautens].
43. Ellman, J. A.; Ackermann, L.; Shi, B.-F. "The Breadth and Depth of C–H Functionalization" *J. Org. Chem.* **84**, 12701–12704 (2019).
44. Maity, S.; Potter, T. J.; Ellman, J. A. "α-Branched Amines by Catalytic 1,1-Addition of C–H Bonds and Aminating Agents to Terminal Alkenes" *Nat. Catal.* **2**, 756–762 (2019).
45. Dongbang, S.; Shen, Z.; Ellman, J. A. "Synthesis of Homoallylic Alcohols with Acyclic Quaternary Centers via Co(III)-Catalyzed Three-Component C–H Bond Addition to Internally Substituted Dienes and Carbonyls" *Angew. Chem. Int. Ed.* **58**, 12590–12594 (2019).
46. Hoang, G. L.; Zoll, A. J.; Ellman, J. A. "Three-Component Coupling of Aldehydes, 2-Aminopyridines, and Diazo Esters via Rhodium(III)-Catalyzed Imidoyl C–H Activation: Synthesis of Pyrido[1,2-a]pyrimidin-4-ones" *Org. Lett.* **21**, 3886–3890 (2019).
47. Chen, S.; Chan, A. Y.; Walker, M. M.; Ellman, J. A.; Houk, K. N. "π-Facial Selectivities in Hydride Reductions of Hindered Endocyclic Iminium Ions" *J. Org. Chem.* **84**, 273–281 (2019).
48. Dongbang, S.; Pedersen, B.; Ellman, J. A. "Asymmetric Synthesis of (–)-Naltrexone" *Chem. Sci.* **10**, 535–541 (2019).
49. Hoang, G. L.; Streit, A. D.; Ellman, J. A. "Three-Component Coupling of Aldehydes, Aminopyrazoles, and Sulfoxonium Ylides via Rhodium(III)-Catalyzed Imidoyl C–H Activation: Synthesis of Pyrazolo[1,5-a]pyrimidines" *J. Org. Chem.* **83**, 15347–15360 (2018).
50. Boerth, J. A.; Maity, S.; Williams, S. K.; Mercado, B. Q.; Ellman, J. A. "Selective and Synergistic Cobalt(III)-Catalyzed Three-Component C–H Bond Addition to Dienes and Aldehydes" *Nat. Catal.* **1**, 673–679 (2018).
51. Chandra Tjin, C.; Wissner, R.; Jamali, H.; Schepartz, A.; Ellman, J. A. "Synthesis and Biological Evaluation of an Indazole-Based Selective Protein Arginine Deiminase 4 (PAD4) Inhibitor" *ACS Med. Chem. Lett.* **9**, 1013–1018 (2018).
52. Hoang, G. L.; Halskov, K. M.; Ellman, J. A. "Synthesis of Azolo[1,3,5]triazines via Rhodium(III)-

- Catalyzed Annulation of N-Azolo Imines and Dioxazolones” *J. Org. Chem.* **83**, 9522–9529 (2018).
53. Potter, T. J.; Li, Y.; Ward, M. D.; Ellman, J. A. “Rh(III)-Catalyzed Synthesis of Isoquinolones and 2-Pyridones via Annulation of *N*-Methoxyamides and Nitroalkenes” *Eur. J. Org. Chem.* 4381–4388 (2018) [International Advisory Board 20th Anniversary Issue].
54. Walker, M. M.; Chen, S.; Houk, K.; Ellman, J. A. “Formation of Aminocyclopentadienes from Silyldihydropyridines: Ring Contractions Driven by Anion Stabilization” *Angew. Chem. Int. Ed.* **57**, 6605–6609 (2018).
55. Halskov, K. M.; Witten, M. R.; Hoang, G. L.; Mercado, B. Q.; Ellman, J. A. “Rhodium(III)-Catalyzed Imidoyl C–H Activation for Annulations to Azolopyrimidines” *Org. Lett.* **20**, 2464–2467 (2018).
56. Xu, J.; Hartley, B. J.; Kurup, P.; Phillips, A.; Topol, A.; Xu, M.; Ononenyi, C.; Foscue, E.; Ho, S.-M.; Baguley, T. D.; Carty, N.; Barros, C. S.; Muller, U.; Gupta, S.; Gochman, P.; Rapoport, J.; Ellman, J. A.; Pittenger, C.; Aronow, B.; Nairn, A. C.; Nestor, M. W.; Lombroso, P. J.; Brennand, K. J. “Inhibition of STEP61 ameliorates deficits in mouse and hiPSC-based schizophrenia models” *Mol. Psychiatry* **23**, 271–281 (2018).
57. Hoang, G. L.; Ellman, J. A. “Rhodium(III)-Catalyzed C–H Functionalization of C-Alkenyl Azoles with Sulfoxonium Ylides for the Synthesis of Bridgehead N-Fused [5,6]-bicyclic Heterocycles” *Tetrahedron* **74**, 3318–3324 (2018) [Herzon Tetrahedron Award Issue].
58. Tjin, C. C.; Otley, K. D.; Baguley, T. D.; Kurup, P.; Xu, J.; Nairn, A. C.; Lombroso, P. J.; Ellman, J. A. “Glutathione-Responsive Selenosulfide Prodrugs as a Platform Strategy for Potent and Selective Mechanism-Based Inhibition of Protein Tyrosine Phosphatases” *ACS Cent. Sci.* **3**, 1322–1328 (2017).
59. Witten, M. R.; Wissler, L.; Snow, M.; Geschwindner, S.; Read, J.; Brandon, M. J.; Nairn, A. C.; Lombroso, P. J.; Käck, H.; Ellman, J. A. “X-Ray Characterization and Structure-Based Optimization of Striatal-Enriched Protein Tyrosine Phosphatase Inhibitors” *J. Med. Chem.* **60**, 9299–9319 (2017).
60. Tran, G.; Confair, D.; Hesp, K. D.; Mascitti, V.; Ellman, J. A. “C2-Selective Branched Alkylation of Benzimidazoles by Rhodium(I)-Catalyzed C–H Activation” *J. Org. Chem.* **82**, 9243–9252 (2017).
61. Boerth, J. A.; Ellman, J. A. “A Convergent Synthesis of Functionalized Alkenyl Halides via Co(III)-Catalyzed Three-Component C-H Bond Addition” *Angew. Chem. Int. Ed.* **56**, 9976–9980 (2017).
62. Hummel, J. R.; Ellman, J. A. “Convergent Synthesis of α -Branched Amines by Transition-Metal-Catalyzed C–H Bond Additions to Imines” *Isr. J. Chem.* **57**, 916–931 (2017) [honoring Prof Robert Bergman’s Wolf Prize].
63. Halskov, K. M.; Roth, H.; Ellman, J. A. “Synthesis of [5,6]-Bicyclic Heterocycles with a Ring-Junction Nitrogen via Rh(III)-Catalyzed C-H Functionalization of Alkenyl Azoles” *Angew. Chem. Int. Ed.* **56**, 9183–9187 (2017).

64. Potter, T. J.; Ellman, J. A. "Total Synthesis of (+)-Pancratistatin by the Rh(III)-Catalyzed Addition of a Densely Functionalized Benzamide to a Sugar-Derived Nitroalkene" *Org. Lett.* **19**, 2985–2988 (2017).
65. Tran, G.; Hesp, K. D.; Mascitti, V.; Ellman, J. A. "Base-Controlled Completely Selective Linear or Branched Rhodium(I)-Catalyzed C–H ortho-Alkylation of Azines without Preactivation" *Angew. Chem. Int. Ed.* **56**, 5899–5903 (2017).
66. Hummel, J. R.; Boerth, J. A.; Ellman, J. A. "Transition-Metal-Catalyzed C–H Bond Addition to Carbonyls, Imines, and Related Polarized π Bonds" *Chem. Rev.* **117**, 9163–9227 (2017).
67. Potter, T. J.; Kamber, D. N.; Mercado, B. Q.; Ellman, J. A. "Rh(III)-Catalyzed Aryl and Alkenyl C–H Bond Addition to Diverse Nitroalkenes" *ACS Catal.* **7**, 150–153 (2017).
68. Chen, S.; Bacauanu, V.; Knecht, T.; Mercado, B. Q.; Bergman, R. G.; Ellman, J. A. "New Regio- and Stereoselective Cascades via Unstabilized Azomethine Ylide Cycloadditions for the Synthesis of Highly Substituted Tropane and Indolizidine Frameworks" *J. Am. Chem. Soc.* **138**, 12664–12670 (2016).
69. Wangweerawong, A.; Kolmar, S.; Ellman, J. A. "Preparation of (S)-Nonafluorobutanesulfinamide" *Org. Synth.* **93**, 319–330 (2016).
70. Potter, T. J.; Ellman, J. A. "Rh(III)-Catalyzed C–H Bond Addition/Amine-Mediated Cyclization of Bis-Michael Acceptors" *Org. Lett.* **18**, 3838–3841 (2016).
71. Jamali, H.; Khan, H. A.; Tjin, C. C.; Ellman, J. A. "Cellular Activity of New Small Molecule Protein Arginine Deiminase 3 (PAD3) Inhibitors" *ACS Med. Chem. Lett.* **7**, 7847–851 (2016).
72. Weinstein, A. B.; Ellman, J. A. "Convergent Synthesis of Diverse Nitrogen Heterocycles via Rh(III)-Catalyzed C–H Conjugate Addition/Cyclization Reactions" *Org. Lett.* **18**, 3294–3297 (2016).
73. Boerth, J. A.; Hummel, J. R.; Ellman, J. A. "Highly Stereoselective Cobalt(III)-Catalyzed Three-Component C–H Bond Addition Cascade" *Angew. Chem. Int. Ed.* **55**, 12650–12654 (2016).
74. Phelan, J. P.; Ellman, J. A. "Conjugate Addition–Enantioselective Protonation Reactions" *Beilstein J. Org. Chem.* **12**, 1203–1228 (2016).
75. Phelan, J. P.; Ellman, J. A. "Catalytic Enantioselective Addition of Pyrazol-5-ones to Trisubstituted Nitroalkenes with an N-Sulfinylurea Organocatalyst" *Adv. Synth. Catal.* **358**, 1713–1718 (2016).
76. Wangweerawong, A.; Hummel, J. R.; Bergman, R. G.; Ellman, J. A. "Preparation of Enantiomerically Pure Perfluorobutanesulfinamide and Its Application to the Asymmetric Synthesis of α -Amino Acids" *J. Org. Chem.* **81**, 1547–1557 (2016).
77. Mesganaw, T.; Ellman, J. A. "4-(Diethylphosphino)-N,N-dimethylaniline" *e-EROS Encyclopedia of Reagents for Organic Synthesis* (2016).

78. Boerth, J. A.; Ellman, J. A. "Rh(III)-Catalyzed Diastereoselective C–H Bond Addition/Cyclization Cascade of Enone Tethered Aldehydes" *Chem. Sci.* **7**, 1474-1479 (2016).
79. Xu, J.; Kurup, P. K.; Azkona, G. M.; Baguley, T. D.; Saavedra, A. C.; Nairn, A. C.; Ellman, J. A.; Perez-Navarro, E.; Lombroso, P. A. "Down-Regulation of BDNF in Cell and Animal Models Increases Striatal-Enriched Protein Tyrosine Phosphatase STEP₆₁ Levels" *J. Neurochem.* **136**, 285–294 (2016).
80. Xu, J.; Kurup, P.; Baguley, T. D.; Foscue, E.; Ellman, J. A.; Nairn, A. C.; Lombroso, P. J. "Inhibition of the Tyrosine Phosphatase STEP61 Restores BDNF Expression and Reverses Motor and Cognitive Deficits in Phencyclidine-Treated Mice" *Cell. Mol. Life Sci.* **73**, 1503-1514 (2016).
81. Azkona, G.; Saavedra, A.; Aira, Z.; Aluja, D.; Xifró, X.; Baguley, T.; Alberch, J.; Ellman, J. A.; Lombroso, P.J.; Azkue, J.J.; Pérez-Navarro, E. "STEP Modulates Nociception: Evidences from Genetic Deletion and Pharmacological Inhibition" *Pain* **157**, 377-86 (2016).
82. Phillips, E. M.; Mesganaw, T.; Patel, A. Duttwyler, S.; Mercado, B. Q.; Houk, K. N.; Ellman, J. A. "Synthesis of ent-Ketorfanol via a C–H Alkenylation/ Torquoselective 6 π -Electrocyclization Cascade" *Angew. Chem. Int. Ed.* **54**, 12044–12048 (2015).
83. Neitz, R. J.; Bryant, C.; Chen, S.; Gut, J.; Caselli, E. H.; Ponce, S.; Chowdhury, S.; Xu, H.; Arkin, M. R.; Ellman, J. A.; Renslo, A. R. "Tetrafluorophenoxymethyl Ketone Cruzain Inhibitors with Improved Pharmacokinetic Properties as Therapeutic Leads for Chagas' Disease" *Bioorg. Med. Chem. Lett.* **25**, 4834–4837 (2015) [Symposium-in-Print entitled 'Recent Advances in Medicinal Chemistry and Chemical Biology' in celebration of the 25th anniversary of BMCL].
84. Chen, S.; Mercado, B. Q.; Bergman, R. G.; Ellman, J. A. "Regio- and Diastereoselective Synthesis of Highly Substituted, Oxygenated Piperidines from Tetrahydropyridines" *J. Org. Chem.* **80**, 6660–6668 (2015).
85. Chen, S.; Bergman, R. G.; Ellman, J. A. "Facile Rh(III)-Catalyzed Synthesis of Fluorinated Pyridines" *Org. Lett.* 2567–2569 (2015).
86. Hummel, J. R.; Ellman, J. A. "Cobalt(III)-Catalyzed C–H Bond Amidation with Isocyanates" *Org. Lett.* **17**, 2400–2403 (2015).
87. Oresic Bender, K.; Ofori, L.; van der Linden, W. A.; Mock, E. D.; Datta, G.; Chowdhury, S.; Li, H.; Segal, E.; Lopez, M. S.; Ellman, J. A.; Figdor, C. G.; Bogyo, M.; Verdoes, M. "Design of a Highly Selective Quenched Activity-Based Probe and Its Application in Dual Color Imaging Studies of Cathepsin S Activity Localization" *J. Am. Chem. Soc.* **137**, 4771–4777 (2015).
88. Jamali, H.; Khan, H. A.; Stringer, J. A.; Chowdhury, S.; Ellman, J. A. "Identification of Multiple Structurally-Distinct, Nonpeptidic Small Molecule Inhibitors of Protein Arginine Deiminase 3 Using a Substrate-Based Fragment Method" *J. Am. Chem. Soc.* **137**, 3616–3621 (2015).
89. Otley, K. D.; Ellman, J. A. "An Efficient Method for the Preparation of Styrene Derivatives via Rh(III)-Catalyzed Direct C–H Vinylation" *Org. Lett.* **17**, 1332–1335 (2015).

90. Matsushima, Y.; Phillips, E. M.; Bergman, R. G.; Ellman, J. A. "Rh(I)-Catalyzed Cycloisomerization of 1,6-Enynes" *Synlett* **26**, 1533–1536 (2015) [Issue honoring Peter Vollhardt].
91. Baguley, T. D.; Nairn, A. C.; Lombroso, P. J.; Ellman, J. A. "Synthesis of Benzopentathiepin Analogs and Their Evaluation as Inhibitors of the Phosphatase STEP" *Bioorg. Med. Chem. Lett.* **25**, 1050-1052 (2015).
92. Hummel, J. R.; Ellman, J. A. "Cobalt(III)-Catalyzed Synthesis of Indazoles and Furans by C–H Bond Functionalization/Addition/Cyclization Cascades" *J. Am. Chem. Soc.* **137**, 490–498 (2015).
93. Otley, K. D.; Ellman, J. A. "A Lewis Acid-Catalyzed Annulation to 2,1-Benzisoxazoles" *J. Org. Chem.* **79**, 8296–8303 (2014).
94. Mesganaw, T.; Ellman, J. A. "Convergent Synthesis of Diverse Tetrahydropyridines via Rh(I)-Catalyzed C–H Functionalization Sequences" *Org. Process. Res. Dev.* **18**, 1097–1104 (2014).
95. Mesganaw, T.; Ellman, J. A. "Preparative Synthesis of Highly Substituted Tetrahydropyridines via a Rh(I)-Catalyzed C–H Functionalization Sequence" *Org. Process. Res. Dev.* **18**, 1105–1109 (2014).
96. Phelan, J. P.; Patel, E. J.; Ellman, J. A. "Catalytic Enantioselective Addition of Thioacids to Trisubstituted Nitroalkenes" *Angew. Chem. Int. Ed.* **53**, 11329–11332 (2014).
97. Xu, J.; Chatterjee, M.; Baguley, T. D.; Brouillette, J.; Kurup, P.; Ghosh, D.; Kanyo, J.; Zhang, Y.; Seyb, K.; Ononenyi, C.; Foscue, E.; Anderson, G. M.; Gresack, J.; Cuny, G. D.; Glicksman, M. A.; Greengard, P.; Lam, T. T.; Tautz, L.; Nairn, A. C.; Ellman, J. A.; Lombroso, P. A. "Inhibitor of the Tyrosine Phosphatase STEP Reverses Cognitive Deficits in a Mouse Model of Alzheimer's Disease" *PLoS Biol.* **12**, e1001923 (2014).
98. Wangweerawong, A.; Bergman, R. G.; Ellman, J. A. "Asymmetric Synthesis of α -Branched Amines via Rh(III)-Catalyzed C–H Bond Functionalization" *J. Am. Chem. Soc.* **136**, 8520-8523 (2014) [Research highlight *Nature Chem.* **6**, 656 (2014)].
99. Duttwyler, S.; Chen, S.; Lu, C.; Mercado, B. Q.; Bergman, R. G.; Ellman, J. A. "Regio- and Stereoselective 1,2-Dihydropyridine Alkylation/Addition Sequence for the Synthesis of Piperidines with Quaternary Centers" *Angew. Chem. Int. Ed.* **53**, 3877–3880 (2014).
100. Buesking, A. W.; Bacauanu, V.; Cai, I.; Ellman, J. A. "Asymmetric Synthesis of Protected α -Amino Boronic Acid Derivatives with an Air- and Moisture-Stable Cu(II) Catalyst" *J. Org. Chem.* **79**, 3671–3677 (2014).
101. Buesking, A. W.; Ellman, J. A. "Convergent, Asymmetric Synthesis of Vicinal Amino Alcohols via Rh-Catalyzed Addition of α -Amido Trifluoroborates to Carbonyls" *Chem. Sci.* **5**, 1983-1987 (2014).
102. Baguley, T. D.; Xu, H.-C.; Chatterjee, M.; Nairn, A. C.; Lombroso, P. J.; Ellman, J. A. "Substrate-Based Fragment Identification for the Development of Selective, Nonpeptidic Inhibitors of Striatal-Enriched Protein Tyrosine Phosphatase" *J. Med. Chem.* **56**, 7636-7650 (2013).

103. Lian, Y.; Hummel, J. R.; Bergman, R. G.; Ellman, J. A. "Facile Synthesis of Unsymmetrical Acridines and Phenazines by a Rhodium(III)-Catalyzed Amination, Cyclization and Aromatization Cascade" *J. Am. Chem. Soc.* **135**, 12548–12551 (2013).
104. Xu, H. C.; Chowdhury, S.; Ellman, J. A. "Asymmetric Synthesis of Amines Using *tert*-Butanesulfonamide" *Nat. Protoc.* **8**, 2271–2280 (2013).
105. Khan, H. A.; Ellman, J. A. "Asymmetric Synthesis of α -Aminophosphonate Esters by the Addition of Dialkyl Phosphites to *tert*-Butanesulfinyl Imines" *Synthesis* **45**, 3147–3150 (2013).
106. Lian, Y.; Bergman, R. G.; Lavis, L. D.; Ellman, J. A. "Rhodium(III)-Catalyzed Indazole Synthesis by C-H Bond Functionalization and Cyclative Capture" *J. Am. Chem. Soc.* **135**, 7122–7125 (2013).
107. Brasse, M.; Cámpora, J.; Bergman, R. G.; Ellman, J. A. "Mechanistic Study of the Oxidative Coupling of Styrene with 2-Phenylpyridine Derivatives Catalyzed by Cationic Rhodium(III) via C-H Activation" *J. Am. Chem. Soc.* **135**, 6427–6430 (2013).
108. Ischay, M. A.; Takase, M. K.; Bergman, R. G.; Ellman, J. A. "Unstabilized Azomethine Ylides for the Stereoselective synthesis of Substituted Piperidines, Tropanes and Azabicyclo[3.1.0] systems" *J. Am. Chem. Soc.* **135**, 2478–2481 (2013) [*JACS* Spotlight highlighted by the Editors].
109. Duttwyler, S.; Chen, S.; Takase, M. K.; Wiberg, K. B.; Bergman, R. G.; Ellman, J. A. "Proton Donor Acidity Controls Selectivity in Nonaromatic Nitrogen Heterocycle Synthesis" *Science* **339**, 678–982 (2013) [News of the Week *Chem & Eng News* **91**, issue 6, 7 (2013)].
110. Martin, R. M.; Bergman, R. G.; Ellman, J. A. "Synthesis of Isoquinuclidines from Highly Substituted Dihydropyridines via the Diels-Alder Reaction" *Org. Lett.* **15**, 444–447 (2013).
111. Lian, Y.; Huber, T.; Hesp, K. D.; Bergman, R. G.; Ellman, J. A. "Rhodium(III)-Catalyzed Alkenyl C-H Bond Functionalization: Convergent Synthesis of Furans and Pyrroles" *Angew. Chem. Int. Ed.* **52**, 629–633 (2013).
112. Jung, H. H.; Buesking, A. W.; Ellman, J. A. "Rh-Catalyzed Addition of Arylboroxines to Cyclic *N*-(Isopropanesulfinyl)ketimines" *J. Org. Chem.* **77**, 9593–9600 (2012).
113. Lian, Y.; Bergman, R. G.; Ellman, J. A. "Rhodium(III)-Catalyzed Synthesis of Phthalides by Cascade Addition and Cyclization of Benzimidates with Aldehydes" *Chem. Sci.* **3**, 3088–3092 (2012).
114. Verdoes, M.; Edgington, L. E.; Scheeren, F. A.; Leyva, M.; Blum, G.; Weiskopf, K.; Bachmann, M. H.; Ellman, J. A.; Bogoy, M. "A Nonpeptidic Cathepsin S Activity-Based Probe for Noninvasive Optical Imaging of Tumor-Associated Macrophages" *Chem. Biol.* **19**, 619–628 (2012).
115. Kimmel, K. K.; Weaver, J. D.; Lee, M.; Ellman, J. A. "Catalytic Enantioselective Protonation of Nitronates Utilizing an Organocatalyst Chiral Only at Sulfur" *J. Am. Chem. Soc.* **134**, 9058–9061 (2012).

116. Xue, Y.; Chowdhury, S.; Liu, X.; Akiyama, Y.; Ellman, J. A.; Ha, Y. "Conformational Change in Rhomboid Protease GlpG Induced by Inhibitor Binding to Its S' Subsites" *Biochemistry* **51**, 3723–3731 (2012).
117. Hesp, K. D.; Bergman, R. G.; Ellman, J. A. "Rhodium-Catalyzed Synthesis of Branched Amines by Direct Addition of Benzamides to Imines" *Org. Lett.* **14**, 2304-2307 (2012).
118. Duttwyler, S.; Rheingold, A. L.; Bergman, R. G.; Ellman, J. A. "Highly Diastereoselective Synthesis of Tetrahydropyridines by a C–H Activation–Cyclization–Reduction Cascade" *J. Am. Chem. Soc.* **134**, 4064-4067 (2012).
119. Tauchert, M. E.; Incarvito, C. D.; Rheingold, A. L.; Bergman, R. G.; Ellman, J. A. "Mechanism of the Rhodium(III)-Catalyzed Arylation of Imines via C–H Bond Functionalization: Inhibition by Substrate" *J. Am. Chem. Soc.* **134**, 1482–1485 (2012).
120. Kimmel, K. K.; Robak, M. T.; Thomas, S.; Lee, M.; Ellman, J. A. "Enantio- and Diastereoselective Addition of Thioacetic Acid to Nitroalkenes via N-Sulfinyl Urea Catalysis" *Tetrahedron* **68**, 2704-2712 (2012).
121. Colby, D. A.; Tsai, A. S.; Bergman, R. G.; Ellman, J. A. "Rhodium Catalyzed Chelation-Assisted C–H Bond Functionalization Reactions" *Acc. Chem. Res.* **45**, 814–825 (2012).
122. Martin, R. A.; Bergman, R. G.; Ellman, J. A. "Synthesis of Pyridines from Ketoximes and Terminal Alkynes via C–H Bond Functionalization" *J. Org. Chem.* **77**, 2501-2507 (2012).
123. Kimmel, K. K.; Weaver, J. D.; Ellman, J. A. "Enantio- and Diastereoselective Addition of Cyclohexyl Meldrum's Acid to β - and α,β -Disubstituted Nitroalkenes via N-Sulfinyl Urea Catalysis" *Chem. Sci.* **3**, 121-125 (2012).
124. Hesp, K. D.; Bergman, R. G.; Ellman, J. A. "Expedient Synthesis of N-Acyl Anthranilamides and β -Enamine Amides by the Rh(III)-Catalyzed Amidation of Aryl and Vinyl CH Bonds with Isocyanates" *J. Am. Chem. Soc.* **133**, 11430–11433 (2011).
125. Joon, H. H.; Buesking, A. W.; Ellman, J. A. "Highly Functional Group Compatible Rh-Catalyzed Addition of Arylboroxines to Activated N-tert-Butanesulfinyl Ketimines" *Org. Lett.* **13**, 964-967 (2011).
126. Robak, M. T.; Herbage, M. A.; Ellman, J. A. "Development of an N-Sulfinyl Prolinamide for the Asymmetric Aldol Reaction" *Tetrahedron*, **67**, 4412-4416 (2011) [Dean Toste Tetrahedron Young Investigator Award Issue].
127. Brasse, M.; Ellman, J. A.; Bergman, R. G. "A Facile, Metal- and Solvent Free, Autoxidative Coupling of Quinolines with Indoles and Pyrroles" *Chem. Commun.* **47**, 5019-5021 (2011).
128. Mahajan, S. S.; Deu, E.; Lauterwasser, E. M. W.; Leyva, M. J.; Ellman, J. A.; Bogyo, M.; Renslo, A. R. "A Fragmenting Hybrid Approach for Targeted Delivery of Multiple Therapeutic Agents to the Malaria Parasite" *ChemMedChem* **6**, 415–419 (2011).

129. Buesking, A. W.; Baguley, T. D.; Ellman, J. A. "Asymmetric Synthesis of Amines by the Knochel-Type $MgCl_2$ -Enhanced Addition of Benzyl Zinc Reagents to *N*-*tert*-Butanesulfinyl Aldimines" *Org. Lett.* **13**, 964-967 (2011).
130. Tsai, A. S.; Tauchert, M. E.; Bergman, R. G.; Ellman, J. A. "Rhodium(III)-Catalyzed Arylation of Boc-Imines via C-H Bond Functionalization" *J. Am. Chem. Soc.* **133**, 1248-1250 (2011).
131. Tsai, A. S.; Brasse, M.; Bergman, R. G.; Ellman, J. A. "Rh(III)-Catalyzed Oxidative Coupling of Unactivated Alkenes via CH Activation" *Org. Lett.* **13**, 540-542 (2011) [highlighted in Synfacts 2011, 4, 423].
132. Floyd III, W. C.; Datta, G. K.; Imamura, S.; Kieler-Ferguson, H. M.; Jerger, K.; Patterson, A. W.; Fox, M. E.; Szoka, F. C.; Fréchet, J. M. J.; Ellman, J. A. "Chemotherapeutic Evaluation of a Novel Synthetic Tubulysin Analogue-Dendrimer Conjugate in C26 Tumor Bearing Mice" *ChemMedChem* **6**, 49-53 (2011) [selected as Very Important Paper].
133. Crimmin, M. R.; Colby, D. A.; Ellman, J. A.; Bergman, R. G. "Synthesis and Coordination Chemistry of Tri-Substituted Benzamidrazones" *J. Chem. Soc., Dalton Trans.* **40**, 514-522 (2011).
134. Berman, A. M.; Bergman, R. G.; Ellman, J. A. "Rh(I)-Catalyzed Direct Arylation of Azines" *J. Org. Chem.* **75**, 7863-7868 (2010).
135. Nichols, J. M.; Bishop, L. M.; Bergman, R. G.; Ellman, J. A. "Catalytic C-O Bond Cleavage of 2-Aryloxy-1-arylethanol and Its Application to the Depolymerization of Lignin Related Polymers" *J. Am. Chem. Soc.* **132**, 12554-12555 (2010).
136. Datta, G. K.; Ellman, J. A. "Racemization Free Protocol for the Synthesis "N-*tert*-Butanesulfinyl Ketimines" *J. Org. Chem.* **75**, 6283-6285 (2010).
137. Leyva, M. J.; DeGiacomo, F.; Kaltenbach, L. S.; Holcomb, J.; Zhang, N.; Gafni, J.; Park, H.; Lo, D. C.; Salvesen, G. S. Ellerby, L. M.; Ellman, J. A. "Identification and Evaluation of Novel Small Molecule Pan-Caspase Inhibitors in Huntington's Disease Models" *Chem. Biol.* **17**, 1189-1200 (2010).
138. Rawls, K. A.; Grundner, C.; Ellman, J. A. "Design and Synthesis of Novel Inhibitors for the Mycobacterium tuberculosis Phosphatase PtpB" *Org. Biomol. Chem.* **8**, 4066-4070 (2010).
139. Deu, E.; Leyva, M.; Albrow, V.; Rice, M. J.; Ellman, J. A.; Bogyo, M. "Functional studies of the *Plasmodium falciparum* dipeptidyl aminopeptidase I (DPAP1) using small molecule inhibitors and active site" *Chem. Biol.* **17**, 808-819 (2010).
140. Arceo, E.; Ellman, J. A.; Bergman, R. G. "Rhenium-Catalyzed Didehydroxylation of Vicinal Diols to Alkenes Using a Simple Alcohol as a Reducing Agent" *J. Am. Chem. Soc.* **132**, 11408-11409 (2010).
141. Yotphan, S.; Bergman, R. G.; Ellman, J. A. "Synthesis of Multicyclic Pyridine and Quinoline Derivatives via Intramolecular C-H Bond Functionalization" *Org. Lett.* **12**, 2978-2981 (2010).
142. Arceo, E.; Ellman, J. A.; Bergman, R. G. "A Direct, Biomass-Based Synthesis of Benzoic Acid: Formic Acid-mediated Deoxygenation of the Glucose-Derived Materials Quinic Acid and Shikimic Acid" *ChemSusChem* **3**, 811-813 (2010).

143. Robak, M. T.; Herbage, M. A.; Ellman, J. A. "Synthesis and Applications of *tert*-Butanesulfinamide" *Chem. Rev.* **110**, 3600–3740 (2010).
144. Brak, K.; Ellman, J. A. "Asymmetric Rh(I)-Catalyzed Addition of MIDA Boronates to *N*-*tert*-Butanesulfinyl Aldimines: Development and Comparison to Trifluoroborates" *J. Org. Chem.* **75**, 3147–3150 (2010).
145. Brak, K.; Ellman, J. A. "Total Synthesis of (-)-Aurantioclavine" *Org. Lett.* **12**, 2004–2007 (2010).
146. Brak, K.; Kerr, I. D.; Barrett, K. T.; Fuchi, N.; Debnath, M.; Ang, K.; Engel, J. C.; McKerrow, J. H.; Doyle, P. S.; Brinen, L. S.; Ellman, J. A. "Nonpeptidic Tetrafluorophenoxymethyl Ketone Cruzain Inhibitors as Promising New Leads for Chagas Disease Chemotherapy" *J. Med. Chem.* **53**, 1763–1773 (2010).
147. Drag, M.; Bogyo, M.; Ellman, J. A.; Salvesen, G. S. "Aminopeptidase Fingerprints, an Integrated Approach for Identification of Good Substrates and Optimal Inhibitors" *J. Biol. Chem.* **285**, 3310–3318 (2010).
148. Sun, C.; Su, K.-H.; Valentine, J.; Rosa-Bauza, Y. T.; Ellman, J. A.; Elboudwarej, O.; Mukherjee, B.; Craik, C. S.; Shuman, M. A.; Chen, F. F.; Zhang, X. "Time-Resolved Single-Step Protease Activity Quantification Using Nanoplasmonic Resonator Sensors" *ACS Nano* **4**, 978–984 (2010).
149. Colby, D. A.; Bergman, R. G.; Ellman, J. A. "Rhodium-Catalyzed C-C Bond Formation via Heteroatom-Directed C-H Bond Activation" *Chem. Rev.* **110**, 624–655 (2010).
150. Rawls, K. A.; Lang, T. P.; Takeuchi, J.; Imamura, S.; Baguley, T. D.; Grundner, C.; Alber, T.; Ellman, J. A. "Fragment-based discovery of selective inhibitors of the Mycobacterium tuberculosis protein tyrosine phosphatase PtpA" *Bioorg. Med. Chem. Lett.* **19**, 6851–6854 (2009).
151. Storgaard, M.; Ellman, J. A. "Rhodium-Catalyzed Enantioselective Addition of Arylboronic Acids to *In Situ* Generated *N*-Boc Arylimines. Preparation of (*S*)-*tert*-Butyl (4-Chlorophenyl)(Thiophen-2-yl-Methyl)Carbamate" *Org. Synth.* **86**, 360–373 (2009).
152. Kimmel, K. L.; Robak, M. T.; Ellman, J. A. "Enantioselective Addition of Thioacetic Acid to Nitroalkenes via *N*-Sulfinyl Urea Organocatalysis" *J. Am. Chem. Soc.* **131**, 8754–8755 (2009).
153. Arceo, E.; Marsden, P.; Bergman, R. G.; Ellman, J. A. "An Efficient Didehydroxylation Method for the Biomass-Derived Polyols Glycerol and Erythritol. Mechanistic Studies of a Formic Acid-Mediated Deoxygenation" *Chem. Commun.* 3357–3359 (2009).
154. Tsai, A. S.; Wilson, R. M.; Hirada, H.; Bergman, R. G.; Ellman, J. A. "Rhodium Catalyzed Enantioselective Cylation of Substituted Imidazoles via C–H Bond Activation" *Chem. Commun.* 3910–3912 (2009). Special issue: Catalysis in Organic Synthesis.
155. Brak, K.; Barrett, K. T.; Ellman, J. A. "General One-pot Method for the Preparation of *N*-*tert*-Butanesulfinyl Amine Diastereomer Mixtures as Standards for Stereoselectivity Determinations" *J. Org. Chem.* **74**, 3606–3608 (2009).
156. Brak, K.; Ellman, J. A. "Asymmetric Synthesis of α -Branched Allylic Amines by the Rh(I)-Catalyzed Addition of Alkenyltrifluoroborates to *N*-*tert*-Butanesulfinyl Aldimines" *J. Am. Chem. Soc.* **131**, 3850–3851 (2009).
157. Yotphan, S.; Bergman, R. G.; Ellman, J. A. "Application of Daugulis Copper-Catalyzed Direct Arylation to the Synthesis of 5-Aryl Benzotriazepines" *Org. Lett.* **11**, 1511–1514 (2009).

158. Wakayama, M.; Ellman, J. A. "Recycling the *tert*-Butanesulfinyl Group in the Synthesis of Amines Using *tert*-Butanesulfinamide" *J. Org. Chem.* **74**, 2646–2650 (2009) [JOC Feature article and highlighted by Trevor Laird and coauthors in *Org. Proc. Res. Dev.* **2009**, *13*, 364–370].
159. Berman, A. M.; Lewis, J. C.; Bergman, R. G.; Ellman, J. A. "Rh(I)-Catalyzed Direct Arylation of Pyridines and Quinolines" *J. Am. Chem. Soc.* **130**, 14926–14927 (2008).
160. Harada, H.; Thalji, R. K.; Bergman, R. G.; Ellman, J. A. "Enantioselective Intramolecular Hydroarylation of Alkenes via Directed C-H Bond Activation" *J. Org. Chem.* **73**, 6772–6779 (2008).
161. Lewis, J. C.; Bergman, R. G.; Ellman, J. A. "Direct Functionalization of Nitrogen Heterocycles via Rh-Catalyzed CH Bond Activation" *Acc. Chem. Res.* **41**, 1013–1025 (2008).
162. Drag, M.; Mikolajczyk, J.; Bekes, M.; Reyes-Turcu, F.; Ellman, J. A.; Wilkinson, K. D.; Salvesen, G. S. "Positional-Scanning Fluorogenic Substrate Libraries Reveal Unexpected Specificity Determinants of Deubiquitinating Enzymes (DUBs)" *Biochem. J.* **415**, 367–375 (2008).
163. Trincado, M.; Ellman, J. A. "Enantioselective Synthesis of α -Aryl Alkylamines by Rh-Catalyzed Addition Reactions of Arylboronic Acids to Aliphatic Imines" *Angew. Chem. Int. Ed.* **47**, 5623–5626 (2008).
164. Beenen, M. A.; An, C.; Ellman, J. A. "Asymmetric Copper-Catalyzed Synthesis of α -Amino Boronate Esters from *N-tert*-Butanesulfinyl Aldimines" *J. Am. Chem. Soc.* **130**, 6910–6911 (2008).
165. Patterson, A. W.; Peltier, H. M.; Ellman, J. A. "Expedient Synthesis of *N*-Methyl Tubulysin Analogues with High Cytotoxicity" *J. Org. Chem.* **73**, 4362–4369 (2008) [Featured Article].
166. Gribble, M. W.; Ellman, J. A.; Bergman, R. G. "Synthesis of a Benzodiazepine-derived Rhodium NHC Complex by C-H Bond Activation" *Organometallics* **27**, 2152–2155 (2008).
167. Brak, K.; Doyle, P. S.; McKerrow, J. H.; Ellman, J. A. "Identification of a New Class of Nonpeptidic Inhibitors of Cruzain" *J. Am. Chem. Soc.* **130**, 6404–6410 (2008).
168. Tsai, A. S.; Bergman, R. G.; Ellman, J. A. "Asymmetric Synthesis of (–)-Incarvillateine Employing an Intramolecular Alkylation via Rh-Catalyzed Olefinic C–H Bond Activation" *J. Am. Chem. Soc.* **130**, 6316–6317 (2008).
169. Colby, D. A.; Bergman, R. G.; Ellman, J. A. "Synthesis of Dihydropyridines and Pyridines from Imines and Alkynes via C-H Activation" *J. Am. Chem. Soc.* **130**, 3645–3651 (2008).
170. Yotphan, S.; Bergman, R. G.; Ellman, J. A. "The Stereoselective Formation of Bicyclic Enamines with Bridgehead Unsaturation via Tandem C-H Bond Activation/Alkenylation/Electrocyclization" *J. Am. Chem. Soc.* **130**, 2452–2453 (2008).
171. Lewis, J. C.; Berman, A. M.; Bergman, R. G.; Ellman, J. A. "Rh(I)-Catalyzed Arylation of Heterocycles via C-H Bond Activation: Expanded Scope Through Mechanistic Insight." *J. Am. Chem. Soc.* **130**, 2493–2500 (2008).
172. Robak, M. T.; Trincado, M.; Ellman, J. A. "Enantioselective Aza-Henry Reaction with an *N*-Sulfinyl Urea Organocatalyst" *J. Am. Chem. Soc.* **129**, 15110–15111 (2007).

173. Nakagawa, H.; Rech, J. C.; Sindelar, R. W.; Ellman, J. A. "Catalytic Enantioselective Addition of Arylboronic Acids to N-Boc Imines Generated in Situ" *Org. Lett.* **9**, 5155-5157 (2007).
174. Patterson, A. W.; Peltier, H. M.; Sasse, F.; Ellman, J. A. "Design, Synthesis, and Biological Properties of Highly Potent Tubulysin D Analogues" *Chem. Eur. J.* **13**, 9534-9541 (2007).
175. Tanuwidjaja, J.; Peltier, H. M.; Lewis, J. C.; Schenkel, L. B.; Ellman, J. A. "One-Pot Microwave-Promoted Synthesis of Nitriles from Aldehydes via *tert*-Butanesulfinyl Imines" *Synthesis* 3385-3389 (2007).
176. Watzke, A.; Wilson, R. M.; O'Malley, S. J.; Bergman, R. G.; Ellman, J. A. "Asymmetric Intramolecular Alkylation of Chiral Aromatic Imines via Catalytic C-H Bond Activation" *Synlett* 2383-2389 (2007).
177. Soellner, M. B.; Rawles, K. A.; Grundner, C.; Alber, T.; Ellman, J. A. "Fragment-Based Substrate Activity Screening method for the Identification of Potent Inhibitors of the *M. tuberculosis* Phosphatase PtpB" *J. Am. Chem. Soc.* **129**, 9613-9615 (2007) [Research Highlight in *Nat. Chem. Biol.* **3**, 539 (2007)].
178. Rosa-Bauza, Y. T.; Berst, F.; Ellman, J. A. "Straightforward Preparation and Assay of Aspartyl Protease Substrates with an Internal Thioester Linkage" *ChemBioChem* **8**, 981-984 (2007).
179. Ellman, J. A. "The Direct Approach" *Science* **316**, 1131-1132 (2007).
180. Inagaki, H.; Tsuruoka, H.; Hornsby, M.; Lesley, S. A.; Spraggon, G.; Ellman, J. A. "Nonpeptidic Inhibitors of Cathepsin S with an Unprecedented Binding Mode" *J. Med. Chem.* **50**, 2693-2699 (2007).
181. Lewis, J. C.; Bergman, R. G.; Ellman, J. A. "Rh(I)-Catalyzed Alkylation of Quinolines and Pyridines via C-H Bond Activation" *J. Am. Chem. Soc.* **129**, 5332-5333 (2007).
182. Rech, J. C.; Yato, M.; Duckett, D.; Ember, Brian; LoGrasso, P. V.; Bergman, R. G.; Ellman, J. A. "Synthesis of Potent Bicyclic Bisarylimidazole c-Jun N-Terminal Kinase Inhibitors by Catalytic C-H Bond Activation" *J. Am. Chem. Soc.* **129**, 490-491 (2007).
183. Tanuwidjaja, J.; Peltier, H. M.; Ellman, J. A. "One-Pot Asymmetric Synthesis of Either Diastereomer of *tert*-Butanesulfinyl-protected Amines from Ketones" *J. Org. Chem.* **72**, 626-629 (2007).
184. Liu, G. L.; Rosa-Bauza, Y. T.; Salisbury, C. T.; Lu, Y.; Kim, J.; Craik, C.; Ellman, J. A.; Lee, L. P.; Chen, F. F. "Peptide-Nanocrescent Hybrid SERS Probe for Optical Detection of Protease Activity" *J. Nanoscience Nanotech.* **7**, 2323-2330 (2007).
185. Peltier, H. M.; McMahon, J. P.; Patterson, A. W.; Ellman, J. A. "The Total Synthesis of Tubulysin D" *J. Am. Chem. Soc.* **128**, 16018-16019 (2006). Critique: Sasse, F.; Menche, D. "Success in Tubulysin D Synthesis" *Nat. Chem. Biol.* **3**, 87-89 (2007).
186. Patterson, A. W.; Wood, W. J. L.; Ellman, J. A. "Substrate Activity Screening (SAS): a General Procedure for the Preparation and Screening of a Fragment-based Non-peptidic Protease Substrate Library for Inhibitor Discovery" *Nat. Protoc.* **2**, 424 - 433 (2007).
187. Patterson, A. W.; Wood, W. J. L.; Hornsby, M.; Lesley, S.; Spraggon, G.; Ellman, J. A. "Identification of Selective, Nonpeptidic Nitrile Inhibitors of Cathepsin S using the Substrate Activity Screening Method" *J. Med. Chem.* **49**, 6298-6307 (2006).

188. Watzke, A.; O'Malley, S. J.; Bergman, R. G.; Ellman, J. A. "Reassignment of Configuration for Salvianolic Acid B and Establishment of Its Identity with Lithospermic Acid B" *J. Nat. Prod.* **69**, 1231-1233 (2006).
189. Patterson, A. W.; Ellman, J. A. "Asymmetric Synthesis of α,α -Dibranched Propargylamines by Acetylide Additions to *N-tert*-Butanesulfinyl Ketimines" *J. Org. Chem.* **71**, 7110-7112 (2006).
190. Salisbury, C. M.; Ellman, J. A. "Rapid Identification of Potent Nonpeptidic Serine Protease Inhibitors" *ChemBioChem* **7**, 1034-1037 (2006).
191. Zhang, Y.; Lewis, J. C.; Bergman, R. G.; Ellman, J. A.; Oldfield, E. "NMR Shifts, Orbitals, and $M\cdots H-X$ Bonding in d^8 Square Planar Metal Complexes" *Organometallics* **25**, 3515-3519 (2006).
192. Choe, Y.; Leonetti, F.; Greenbaum, D. C.; Lecaille, F.; Bogyo, M.; Bromme, D.; Ellman, J. A.; Craik, C. S. "Substrate Profiling of Cysteine Proteases Using a Combinatorial Peptide Library Identifies Functionally Unique Specificities" *J. Biol. Chem.* **281**, 12824 - 12832 (2006).
193. Gosalia, D. N.; Denney, W. S.; Salisbury, C. M.; Ellman, J. A.; Diamond, S. L. "Functional Phenotyping of Human Plasma Using a 361-Fluorogenic Substrate Biosensing Microarray" *Biotechnol. Bioeng.* **94**, 1099-1110 (2006).
194. Wilson, R. M.; Thalji, R. K.; Bergman, R. G.; Ellman, J. A. "Enantioselective Synthesis of a PKC Inhibitor via Catalytic C-H Bond Activation" *Org. Lett.* **8**, 1745-1747 (2006).
195. Beenen, M. A.; Weix, D. J.; Ellman, J. A. "Asymmetric Synthesis of Protected Arylglycines by Rhodium-Catalyzed Addition of Arylboronic Acids to *N-tert*-Butanesulfinyl Imino Esters" *J. Am. Chem. Soc.* **128**, 6304-6305 (2006).
196. Colby, D. A.; Bergman, R. G.; Ellman, J. A. "Stereoselective Alkylation of α,β -Unsaturated Imines via C-H Bond Activation" *J. Am. Chem. Soc.* **128**, 5604-05 (2006).
197. Lewis, J. C.; Wu, J. Y.; Ellman, J. A.; Bergman, R. G. "Microwave-Promoted Rhodium-Catalyzed Arylation of Heterocycles through CH Bond Activation" *Angew. Chem. Int. Ed.* **45**, 1589-1591 (2006).
198. Wiedemann, S. H.; Lewis, J. C.; Ellman, J. A.; Bergman, R. G. "Experimental and Computational Studies on the Mechanism of *N*-Heterocycle C-H Activation by Rh(I)" *J. Am. Chem. Soc.* **128**, 2452-2462 (2006).
199. Wiedemann, S. H.; Ellman, J. A.; Bergman, R. G. "Rhodium-Catalyzed Direct C-H Addition of 3,4-Dihydroquinazolines to Alkenes and Their Use in the Total Synthesis of Vasicoiline" *J. Org. Chem.* **71**, 1969-1976 (2006).
200. Wood, W. J. L.; Patterson, A. W.; Tsuruoka, H.; Jain, R. K.; Ellman, J. A. "Substrate Activity Screening: A Fragment-Based Method for the Rapid Identification of Nonpeptidic Protease Inhibitors" *J. Am. Chem. Soc.* **127**, 15521-15527 (2005) [Research Highlight in *Nat. Chem. Biol.* **1**, 359 (2005)].
201. McMahon, J. P.; Ellman, J. A. "Asymmetric Conjugate Addition of Copper Reagents to α,β -Unsaturated *tert*-Butanesulfinyl Imines" *Org. Lett.* **7**, 5393-5396 (2005).
202. Weix, D. J.; Ellman, J. A. "(+)-2-Methyl-2-propanesulfinamide" *Org. Synth.* **82**, 157-165 (2005).

203. Lewis, J. C.; Wu, J.; Bergman, R. G.; Ellman, J. A. "Preagostic Rh-H Interactions and C-H Bond Functionalization: A Combined Experimental and Theoretical Investigation of Rhodium(I) Phosphinite Complexes" *Organometallics* **24**, 5737-5746 (2005).
204. O'Malley, S. J.; Tan, K. L.; Watzke, A.; Bergman, R. G.; Ellman, J. A. "Total Synthesis of (+)-Lithospermic Acid by Asymmetric Intramolecular Alkylation via Catalytic C-H Bond Activation" *J. Am. Chem. Soc.* **127**, 13496-13497 (2005).
205. Peltier, H. M.; Ellman, J. A. "N-Sulfinyl Metalloenamine Conjugate Additions: Asymmetric Synthesis of Piperidines" *J. Org. Chem.* **70**, 7342-7345 (2005).
206. Thalji, R. K.; Ahrendt, K. A.; Bergman, R. G.; Ellman, J. A. "Annulation of Aromatic Imines via Directed C-H Bond Activation" *J. Org. Chem.* **70**, 6775-6781 (2005).
207. Brinner, K. M.; Ellman, J. A. "A Rapid and General Method for the Asymmetric Synthesis of 2-Substituted Pyrrolidines Using *tert*-Butanesulfinamide" *Org. Biomol. Chem.* **3**, 2109-2113 (2005).
208. Ghosalia, D. N.; Salisbury, C. M.; Maly, D. J.; Ellman, J. A.; Diamond, S. L. "Profiling Serine Protease Substrate Specificity with Solution Phase Fluorogenic Peptide Microarrays" *Proteomics* **5**, 1292-1298 (2005).
209. Wiedemann, S. H.; Ellman, J. A.; Bergman, R. G. Catalytic Functionalization of N-Heterocycles via their Rhodium-Carbene Complexes. In *Handbook of C-H Transformations*; Dyker, G., Ed.: Wiley-VCH Verlag GmbH & Co. KGaA; Weinheim, 187-193 (2005).
210. Gosalia, D. N.; Salisbury, C. M.; Ellman, J. A.; Diamond, S. L. "High Throughput Substrate Specificity Profiling of Serine and Cysteine Proteases Using Solution-Phase Fluorogenic Peptide Microarrays" *Molec. Cell. Proteomics* **4**, 626-636 (2005).
211. Peltier, H. M.; Evans, J. W.; Ellman, J. A. "Catalytic Enantioselective Sulfinyl Transfer Using Cinchona Alkaloid Catalysts" *Org. Lett.* **7**, 1733-1736 (2005).
212. Brinner, K.; Ellman, J. A. Asymmetric Synthesis of β -Amino Acids by Enolate Additions to *tert*-Butanesulfinyl Imines. In *Enantioselective Synthesis of β -Amino Acids*, 2nd Edition; Juaristi, E., Soloshonok, V., Eds.; John Wiley & Sons, Hoboken, NJ; pp 181-194 (2005).
213. Brinner, K. M.; Powles, M. A.; Schmatz, D. M.; Ellman, J. A. "Potent 4-Aminopiperidine Based Antimalarial Agents" *Bioorg. Med. Chem. Lett.* **15**, 345-348 (2005).
214. Weix, D. J.; Shi, Y.; Ellman, J. A. "Diastereoselective and Enantioselective Rh(I)-Catalyzed Additions of Arylboronic Acids to *N-tert*-Butanesulfinyl and *N*-Diphenylphosphinoyl Aldimines" *J. Am. Chem. Soc.* **127**, 1092-1093 (2005).
215. Kochi, T.; Ellman, J. A. "Asymmetric α -Alkylation of *N'*-*tert*-Butanesulfinyl Amidines. Application to the Total Synthesis of (6*R*,7*S*)-7-Amino-7,8-dihydro- α -bisabolene" *J. Am. Chem. Soc.* **126**, 15652-15653 (2004).
216. Tan, K. L.; Park, S.; Ellman, J. A.; Bergman, R. G. "Intermolecular Coupling of Alkenes to Heterocycles via C-H Bond Activation" *J. Org. Chem.* **69**, 7329-7335 (2004).
217. Evans, J. W.; Fierman, M. B.; Miller, S. J.; Ellman, J. A. "Catalytic Enantioselective Synthesis of Sulfinate Esters Through the Dynamic Resolution of *tert*-Butanesulfinyl Chloride" *J. Am. Chem. Soc.* **126**, 8134-8135 (2004).

218. Schenkel, L. B.; Ellman, J. A. "Self-Condensation of *N-tert*-Butanesulfinyl Aldimines: Application to the Asymmetric Synthesis of Biologically Important Amine-Containing Compounds" *Org. Lett.* **6**, 3621-3624 (2004).
219. Klei, S. R.; Tan, K. L.; Golden, J. T.; Yung, C. M.; Thalji, R. K.; Ahrendt, K. A.; Ellman, J. A.; Tilley, T. D.; Bergman, R. G. "C-H Bond activation by iridium and rhodium complexes: Catalytic hydrogen-deuterium exchange and C-C bond-forming reactions." *In Activation and Functionalization of C-H Bonds*; Goldberg, K. I.; Goldman, A. S., Ed.; ACS Symposium Series 885; American Chemical Society; Washington, DC, 46-55 (2004).
220. Thalji, R. K.; Ellman, J. A.; Bergman, R. G. "Highly Efficient and Enantioselective Cyclization of Aromatic Imines via Directed C-H Bond Activation" *J. Am. Chem. Soc.* **126**, 7192-7193 (2004).
221. Kochi, T.; Mukade, T. "Asymmetric Synthesis of Amines with *tert*-Butanesulfinamide and Its Application" *J. Syn. Org. Chem. Jpn.* **62**, 128-139 (2004).
222. McMahon, J. P.; Ellman, J. A. "Highly Stereoselective Addition of Organometallic Reagents to *N-tert*-Butanesulfinyl Imines Derived from 3- and 4-Substituted Cyclohexanones" *Org. Lett.* **6**, 1645-1647 (2004).
223. Wiedemann, S. H.; Bergman, R. G.; Ellman, J. A. "Rhodium-Catalyzed Direct C-H Addition of 4,4-Dimethyl-2-oxazoline to Alkenes" *Org. Lett.* **6**, 1685-1687 (2004).
224. Schenkel, L. B.; Ellman, J. A. "Application of *P,N*-Sulfinyl Imine Ligands to Iridium-Catalyzed Asymmetric Hydrogenation of Olefins" *J. Org. Chem.* **69**, 1800-1802 (2004).
225. Lewis, J. C. Wiedemann, S. H.; Bergman, R. G.; Ellman, J. A. "Arylation of Heterocycles via Rhodium-Catalyzed C-H Bond Functionalization" *Org. Lett.* **6**, 35-38 (2004).
226. Evans, J. W.; Ellman, J. A. "Stereoselective Synthesis of 1,2-Disubstituted β -Amino Alcohols by Nucleophilic Addition to *N-tert*-Butanesulfinyl aldimines" *J. Org. Chem.* **68**, 9948-9957 (2003).
227. Wood, W.; Huang, L.; Ellman, J. A. "Synthesis of a Diverse Library of Mechanism-Based Cysteine Protease Inhibitors" *J. Comb. Chem.* **5**, 869-880 (2003).
228. Boitano, A.; Ellman, J. A.; Glick, G. D.; Opipari, A. W. "The Proapoptotic Benzodiazepine BZ-423 Affects the Growth and Survival of Malignant B Cells" *J. Cancer Res.* **63**, 6870-6876 (2003).
229. Boitano, A.; Leonetii, F.; Emal, C.; Ellman, J. A.; Roush, W. R.; Opipari, A. W.; Glick, G. D. "Structure Activity Studies of a Novel Cytotoxic Benzodiazepine" *Bioorg. Med. Chem. Lett.* **13**, 3327-3330 (2003).
230. Kochi, T.; Tang, T. P.; Ellman, J. A. "Development and Application of a New General Method for the Asymmetric Synthesis of syn- and anti-1,3-Amino Alcohols" *J. Am. Chem. Soc.* **125**, 11276-11282 (2003).
231. Jain, R. K.; Trias, J.; Ellman, J. A. "D-Ala-D-Lac Binding is Not Required for the High Activity of Vancomycin Dimers Against Vancomycin Resistant Enterococci" *J. Am. Chem. Soc.* **125**, 8740-8741 (2003).
232. Mukade, T.; Dragoli, D. R.; Ellman, J. A. "Parallel Solution-Phase Asymmetric Synthesis of α -Branched Amines" *J. Comb. Chem.* **5**, 590-596 (2003).

233. Tan, K. L.; Vasudevan, A.; Bergman, R. G.; Ellman, J. A.; Souers, A. J. "Microwave Assisted C-H Bond Activation: A Rapid Entry into Functionalized Heterocycles" *Org. Lett.* **5**, 2131-2134 (2003).
234. Ahrendt, K. A.; Bergman, R. G.; Ellman, J. A. "Synthesis of a Tricyclic Mescaline Analog by Catalytic C-H Bond Activation" *Org. Lett.* **5**, 1301-1303 (2003).
235. Weix, D. J.; Ellman, J. A. "An Improved Synthesis of *tert*-Butanesulfinamide Suitable for Large Scale Production" *Org. Lett.* **5**, 1317-1320 (2003).
236. Leiting, B.; Pryor, K. D.; Wu, J. K.; Marsilio, F.; Patel, R. A.; Craik, C. S.; Ellman, J. A.; Cummings, R. T.; Thornberry, N. "Catalytic Properties and Inhibition of Proline-Specific Dipeptidyl Peptidases II, IV and VII" *Biochem. J.* **371**, 525-532 (2003).
237. Ahrendt, K. A.; Olsen, J. A.; Wakao, M.; Trias, J. Ellman, J. A. "Identification of Potent and Broad-Spectrum Antibiotics from SAR Studies of a Synthetic Vancomycin Analog" *Bioorg. Med. Chem. Lett.* **13**, 1683-1686 (2003).
238. Cawley, N. X.; Chino, M.; Maldonado, A.; Rodriguez, Y. M.; Loh, Y. P.; Ellman, J. A. "Synthesis and Characterization of the First Potent Inhibitor of Yapsin 1. Implications for the Study of Yapsin-Like Enzymes" *J. Biol. Chem.* **278**, 5523-5530 (2003).
239. Asojo, O. A.; Gulnik, S. V.; Afonina, E.; Yu, B.; Ellman, J. A.; Haque, T. S.; Silva, A. M. "Novel Uncomplexed and Complexed Structures of Plasmepsin II, an Aspartic Protease from *Plasmodium falciparum*" *J. Mol. Biol.* **327**, 173-181 (2003).
240. Schenkel, L. B.; Ellman, J. A. "Novel Sulfinyl Imine Ligands for Asymmetric Catalysis" *Org. Lett.* **5**, 545-548 (2003).
241. Bednarski, J. J.; Warner, R. E.; Rao, T.; Leonetti, F.; Yung, R.; Richardson, B. C.; Johnson, K. J.; Ellman, J. A. Opipari, A. W.; Glick, G. D. "Attenuation of Autoimmune Disease in Fas-Deficient Mice by Treatment with a Cytotoxic Benzodiazepine" *Arthritis & Rheumatism* **48**, 757-766 (2003).
242. Huang, L.; Brinen, L. S.; Ellman, J. A. "Crystal Structures of Reversible Ketone-Based Inhibitors of the Cysteine Protease Cruzain" *Bioorg. Med. Chem.* **11**, 21-29 (2003).
243. Ellman, J. A. "Applications of *tert*-Butanesulfinamide in the Asymmetric Synthesis of Amines" *Pure Appl. Chem.* **75**, 39-46 (2003).
244. Owens, T. D.; Souers, A. J.; Ellman, J. A. "The Preparation and Utility of Bis(sulfinyl)imidoamidate Ligands for the Copper-Catalyzed Diels Alder Reaction" *J. Org. Chem.* **68**, 3-10 (2003).
245. Blum, S. A.; Bergman, R. G.; Ellman, J. A. "Enantioselective Oxidation of Di-*tert*-Butyl Disulfide with a Vanadium Catalyst: Progress toward Mechanism Elucidation" *J. Org. Chem.* **68**, 150-155 (2003).
246. Salisbury, C. M.; Maly, D. J.; Ellman, J. A. "Peptide Microarrays for the Determination of Substrate Specificity" *J. Am. Chem. Soc.* **124**, 14868-14870 (2002).
247. Ellman, J. A.; Owens, T. D.; Tang, T. P. "*N-tert*-Butanesulfinyl Imines: Versatile Intermediates for the Asymmetric Synthesis of Amines" *Acc. Chem. Res.* **35**, 984-995 (2002).

248. Tang, T. P.; Ellman, J. A. "Asymmetric Synthesis of β -Amino Acid Derivatives Incorporating a Broad Range of Substitution Patterns by Enolate Additions to *tert*-Butanesulfinyl Imines" *J. Org. Chem.* **67**, 7819-7832 (2002).
249. Blatt, N. B.; Bednarski, J. J.; Warner, R. E.; Leonetti, F.; Johnson, K. M.; Boitano, A.; Yung, R.; Richardson, B. C.; Johnson, K. J.; Ellman, J. A. Opipari, A. W.; Glick, G. D. "Benzodiazepine-Induced Superoxide Signals B Cell Apoptosis: Mechanistic Insight and Potential Therapeutic Utility" *J. Clin. Invest.* **110**, 1123-1132 (2002).
250. Tan, K. L.; Bergman, R. G.; Ellman, J. A. "Intermolecular Coupling of Alkenes to Heterocycles via Rhodium-Catalyzed C-H Bond Activation" *J. Am. Chem. Soc.* **124**, 13964-13965 (2002).
251. Huang, L.; Ellman, J. A. "General Solid-Phase Procedure to Prepare Novel Cyclic Ketone Inhibitors of the Cysteine Protease Cruzain" *Bioorg. Med. Chem. Lett.* **12**, 2993-2996 (2002).
252. Choi, C. Y. H.; Schneider, E. L.; Kim, J. M.; Gluzman, I. Y.; Goldberg, D. E.; Ellman, J. A.; Marletta, A. "Interference with Heme Binding to Histidine-Rich Protein-2 As an Antimalarial Strategy" *Chem. Biol.* **9**, 881-889 (2002).
253. Chino, M.; Wakao, M.; Ellman, J. A. "Efficient Method to prepare hydroxyethylamine-based aspartyl protease inhibitors with diverse P1 side chains" *Tetrahedron* **58**, 6305-6310 (2002).
254. Brinner, K. M.; Kim, J. M.; Habashita, H.; Gluzman, I. Y.; Goldberg, D. E.; Ellman, J. A. "Novel and Potent Anti-Malarial Agents" *Bioorg. Med. Chem.* **10**, 3649-3661 (2002).
255. Kochi, T.; Tang, T. P.; Ellman, J. A. "Asymmetric Synthesis of *syn*- and *anti*-1,3-Amino Alcohols" *J. Am. Chem. Soc.* **124**, 6518-6519 (2002).
256. Wang, X.; Choe, Y.; Craik, C. S.; Ellman, J. A. "Design and Synthesis of Novel Inhibitors of Gelatinase B" *Bioorg. Med. Chem. Lett.* **12**, 2201-2204 (2002).
257. Tan, K. L.; Bergman, R. G.; Ellman, J. A. "Intermediacy of an *N*-Heterocyclic Carbene in the Catalytic C-H Activation of Benzimidazole" *J. Am. Chem. Soc.* **124**, 3202-3203 (2002).
258. Kehoe, J. W.; Maly, D. J.; Verdugo, D. E.; Armstrong, J. I.; Cook, B. N.; Ouyang, Y.-B.; Moore, K. L.; Ellman, J. A.; Bertozzi, C. R. "Tyrosylprotein Sulfotransferase Inhibitors Generated by Combinatorial Target-Guided ligand Assembly" *Bioorg. Med. Chem. Lett* **12**, 329-332 (2002).
259. Maly, D. J.; Leonetti, F.; Backes, B. J.; Dauber, D. S.; Harris, J. L.; Craik, C. S.; Ellman, J. A. "Expedient Solid-Phase Synthesis of Fluorogenic Protease Substrates Using the 7-Amino-4-Carbamoylmethylcoumarin (ACC) Fluorophore" *J. Org. Chem.* **67**, 910-915 (2002).
260. Maly, D. J.; Huang, L.; Ellman, J. A. "Combinatorial Strategies for Targeting Protein Families. Application to the Proteases" *ChemBioChem* **3**, 16-37 (2002).
261. Huang, L.; Lee, A.; Ellman, J. A. "Identification of Potent and Selective Mechanism-Based Inhibitors of the Cysteine Protease Cruzain Using Solid-Phase Parallel Synthesis" *J. Med. Chem.* **45**, 676-684 (2002).
262. Dauber, D. S.; Ziermann, R. Parkin, N.; Maly, D. J.; Mahrus, S.; Harris, J. L.; Ellman, J. A.; Petropoulos, C.; Craik, C. S. "Altered Substrate Specificity of Drug-Resistant Human Immunodeficiency Virus Type 1 Protease" *J. Virol.* **76**, 1359-1368 (2002).

263. Lee, A.; Ellman, J. A. "Parallel Solution-Phase Synthesis of Mechanism-Based Cysteine Protease Inhibitors" *Org. Lett.* **3**, 3707-3709 (2001).
264. Tang, T. P.; Volkman, S. K.; Ellman, J. A. "Asymmetric Synthesis of 1,2-Amino Alcohols Using *tert*-Butanesulfinyl Aldimines and Ketimines" *J. Org. Chem.* **66**, 8772-8778 (2001).
265. Thalji, R.; Ahrendt, K. A.; Bergman, R. G.; Ellman, J. A. "Annulation of Aromatic Imines via Directed C-H Activation with Wilkinson's Catalyst" *J. Am. Chem. Soc.* **123**, 9692-9693 (2001).
266. Souers, A. J.; Ellman, J. A. "β-Turn Mimetic Library Synthesis: Scaffolds and Applications" *Tetrahedron* **57**, 7431-7448 (2001).
267. Souers, A. J.; Owens, T. D.; Oliver, A. G.; Hollander, F. J.; Ellman, J. A. "Synthesis and Crystal Structure of a Unique and Homochiral N,S-Bonded N,N-Bis(*tert*-Butanesulfinyl)amidinate Rhodium(I) Complex" *Inorg. Chem.* **40**, 5299-5301 (2001).
268. Dragoli, D. R.; Burdett, M. T.; Ellman, J. A. "Design, Synthesis, and Utility of Support-Bound *tert*-Butanesulfinamide" *J. Am. Chem. Soc.* **123**, 10127-10128 (2001).
269. Harris, J. L.; Niles, A.; Burdick, K.; Maffitt, M.; Backes, B. J.; Ellman, J. A.; Kuntz, I.; Haak-Frendscho, M.; Craik, C. S. "Definition of the Extended Substrate Specificity Determinants for β-Tryptases I and II" *J. Biol. Chem.* **276**, 34941-34947 (2001).
270. Tan, K. L.; Bergman, R. G.; Ellman, J. A. "Annulation of Alkenyl-Substituted Heterocycles via Rhodium-Catalyzed Intramolecular C-H Activated Coupling Reactions" *J. Am. Chem. Soc.* **123**, 2685-2686 (2001).
271. Borg, G.; Chino, M.; Ellman, J. A. "Asymmetric Synthesis of Pre-Protected α,α-Disubstituted Amino Acids from *tert*-Butanesulfinyl Ketimines" *Tetrahedron Lett.* **42**, 1433-1436 (2001).
272. Owens, T. D.; Hollander, F. J.; Oliver, A. G.; Ellman, J. A. "Synthesis, Utility, and Structure of Novel Bis(sulfinyl)imidoamidinate Ligands for Asymmetric Lewis Acid Catalysis" *J. Am. Chem. Soc.* **123**, 1539-1540 (2001).
273. Szewczyk, J. W.; Zuckermann, R. L.; Bergman, R. G.; Ellman, J. A. "A Mass Spectrometric Labeling Strategy for High-Throughput Reaction Evaluation and Optimization: Exploring C-H Activation" *Angew. Chem. Int. Ed.* **40**, 216-219 (2001).
274. Backes, B. J.; Harris, J. L.; Leonetti, F.; Ellman, J. A.; Craik, C. "Rapid and General Profiling of Protease Specificity by Using Combinatorial Fluorogenic Substrate Libraries" *Proc. Natl. Acad. Sci.* **97**, 7754-7759 (2000).
275. Souers, A. J.; Rosenquist, A.; Jarvie, E. M.; Ladlow, M.; Fenuik, W.; Ellman, J. A. "Optimization of a Somatostatin Mimetic via Constrained amino acid and Backbone Incorporation" *Biorg. Med. Chem. Lett.* **10**, 2731-2733 (2000).
276. Lee, A.; Szewczyk, J. W.; Ellman, J. A. "Combinatorial Libraries for Drug Development" in "Stimulating Concepts in Chemistry" Vogtle, F.; Stoddart, J. F.; Shibasaki, M. Ed.; Wiley-VCH, Weinheim, 2000, pp. 65-78.
277. Ellman, J. A. "Combinatorial Methods to Engineer Small Molecules for Functional Genomics", in Ernst Schering Research Foundation Workshop 32, "The Role of Natural Products in Drug Discovery" Mulzer, J. and Bohlmann, R. Ed.; Springer, New York, 2000, pp. 183-204.

278. Bi, X.; Lin, B. Haque, T.; Lee, C. E.; Skillman, A. G.; Kuntz, I. D.; Ellman, J. A.; Lynch, G. "Novel Cathepsin D Inhibitors Block the Formation of Hyperphosphorylated Tau Fragments in Hippocampus" *J. Neurochem.* **74**, 1469-1477 (2000).
279. Maly, D. J.; Choong, I. C.; Ellman, J. A. "Combinatorial Target-Guided Ligand Assembly. Identification of Potent, Sub-type Selective c-Src Inhibitors" *Proc. Natl. Acad. Sci.* **97**, 2419-2424 (2000).
280. Souers, A. J.; Ellman, J. A. "Asymmetric Synthesis of a C-3 Substituted Pivcolic Acid" *J. Org. Chem.* **65**, 1222-1224 (2000).
281. Backes, B. J.; Harris, J. L.; Leonetti, F.; Craik, C.; Ellman, J. A. "Strategy to Prepare Positional Scanning Libraries of Fluorogenic Peptide Substrates that Incorporate Diverse P1 Substituents: Facile and Accurate Specificity Determination of Thrombin and Plasmin" *Nat. Biotechnology* **18**, 187-194 (2000).
282. Shin, Y.; Winans, K. A.; Backes, B. J.; Kent, S. B. H.; Ellman, J. A.; Bertozzi, C. R. "Fmoc-Based Synthesis of Peptide-Thioesters: Application to the Total Chemical Synthesis of a Glycoprotein by Native Chemical Ligation" *J. Am. Chem. Soc.* **121**, 11684-11689 (1999).
283. Lee, A.; Huang, L.; Ellman, J. A. "General Solid-phase Method for the Preparation of Mechanism-based Cysteine Protease Inhibitors" *J. Am. Chem. Soc.* **121**, 9907-9914 (1999).
284. Dragoli, D. R.; Ellman, J. A. "Parallel Solid-Phase Synthesis of Prostaglandin E Analogs" *J. Comb. Chem.* **1**, 534-539 (1999).
285. Huang, L.; Lee, A.; Ellman, J. A. "Targeted Libraries", in *Proceedings of the 16th American Peptide Symposium*, Fields, G. B.; Tam, J. P.; and Kerwin, J. F. Ed.; Kluwer Academic Publishers, Inc.: Boston, 2000, pp. 161-163.
286. Haskell-Leuvano, C.; Souers, A. J.; Rosenquist, A.; Ellman, J. A.; Cone, R. D. "Identification of Agonists at the Human Melanocortin Receptor MC1R By the Evaluation of a Library of Small Molecules Based upon the β -Turn" *J. Med. Chem.* **42**, 4380-4387 (1999).
287. Ramdas, L.; Bunin, B. A.; Plunkett, M. J.; Sun, G.; Ellman, J. A.; Gallick, G.; Budde, R. J. A. "Benzodiazepine Compounds as Inhibitors of the Src Protein Tyrosine Kinase: Screening of a Combinatorial Library of 1,4-Benzodiazepines" *Archives of Biochem. And Biophys.* **368**, 394-400 (1999).
288. Choong, I. C.; Ellman, J. A. "Expedient Synthesis of Alkoxyamines Using *tert*-Butyl Oxaziridine: The First Direct Amination of Alcohols" *J. Org. Chem.* **64**, 6528-6529 (1999).
289. Borg, G.; Cogan, D. A.; Ellman, J. A. "One-Pot Asymmetric Reductive Amination of Ketones to Prepare *tert*-Butanesulfinyl Protected Amines" *Tetrahedron Lett.* **40**, 6709-6712 (1999).
290. Backes, B. J.; Dragoli, D. R.; Ellman, J. A. "Chiral *N*-Acyl-*tert*-Butanesulfinamides: The "Safety-Catch" Principle Applied to Diastereoselective Enolate Alkylations" *J. Org. Chem.* **64**, 5472-5478 (1999).
291. Xu, R.; Greiveldinger, G.; Marenus, L. E.; Cooper, A. G.; Ellman, J. A. "Combinatorial Library Approach to the Development of Synthetic Receptors Targeting Vancomycin Resistant Bacteria" *J. Am. Chem. Soc.* **121**, 4898-4899 (1999).

292. Cogan, D. A.; Liu, G.; Ellman, J. "Asymmetric Synthesis of Chiral Amines by Highly Diastereoselective 1,2-Additions of Organometallic Reagents to *N-tert*-Butanesulfinyl Imines" *Tetrahedron* **55**, 8883-8904 (1999).
293. Haque, T. S.; Skillman, A. G.; Lee, C. E.; Habashita, H.; Gluzman, I. Y.; Ewing, T. J. A.; Goldberg, D. E.; Kuntz, I. D.; Ellman, J. A. "Single Digit Nanomolar, Low Molecular Weight Non-Peptide Inhibitors of Malarial Aspartyl Protease Plasmeprin II" *J. Med. Chem.* **42**, 1428-1440 (1999).
294. Backes, B. J.; Ellman, J. A. "An Alkanesulfonamide "Safety-Catch" Linker for Solid-Phase Synthesis" *J. Org. Chem.* **64**, 2322-2330 (1999).
295. Souers, A. J.; Schürer, Kwack, H.; Virgilio, A. A.; Ellman, J. A. "Preparation of Enantioenriched α -Bromo Acids with Diverse Side Chain Functionality" *Synthesis*, 583-585 (1999).
296. Liu, G.; Cogan, D. A.; Owens, T. D.; Tang, T. P.; Ellman, J. A. "The Synthesis of Enantiomerically Pure *N-tert*-Butanesulfinyl Imines (*tert*-Butanesulfinimines) by the Direct Condensation of *tert*-Butanesulfinamide with Aldehydes and Ketones" *J. Org. Chem.* **64**, 1278-1284 (1999).
297. Souers, A. J.; Virgilio, A. A.; Rosenquist, A.; Fenuik, W. Ellman, J. A. "Identification of a Potent Heterocyclic Ligand to Somatostatin Receptor Sub-Type 5 by the Synthesis and Screening of β -Turn Mimetic Libraries" *J. Am. Chem. Soc.* **121**, 1817-1825 (1999).
298. Cogan, D. A.; Ellman, J. A. "The Asymmetric Synthesis of α,α -Dibranched Amines by the Trimethylaluminum Mediated 1,2-Addition of Organolithiums to *tert*-Butanesulfinyl Ketimines" *J. Am. Chem. Soc.* **121**, 268-269 (1999).
299. Tang, T. P.; Ellman, J. A. "The *tert*-Butanesulfinyl Group: An Ideal Chiral Directing Group and Boc-Surrogate for Asymmetric β -Amino Acid Synthesis and Applications" *J. Org. Chem.* **64**, 12-13 (1999).
300. Kim, K.; Volkman, S. K.; Ellman, J. A. "Synthesis of 3-Substituted 1,4-Benzodiazepin-2-ones" *J. Braz. Chem. Soc.* **9**, 375-379 (1998).
301. Lee, C. E.; Kick, E. K.; Ellman, J. A. "General Solid-Phase Synthesis Approach to Prepare Mechanism-Based Aspartyl Protease Inhibitor Libraries. Identification of Potent Cathepsin D Inhibitors" *J. Am. Chem. Soc.* **120**, 9735-9748 (1998).
302. Souers, A. J.; Virgilio, A. A.; Schürer, S. S.; Ellman, J. A.; Vanderslice, P.; Kogan, T. P. "Novel Inhibitors of $\alpha4\beta1$ Integrin Receptor Interactions Through Library Synthesis and Screening" *BioMed. Chem. Lett.* **8**, 2297-2303 (1998).
303. Cogan, D. A.; Liu, G.; Kim, K.; Backes, B. A.; Ellman, J. A. "Catalytic Asymmetric Oxidation of *tert*-Butyl Disulfide. Synthesis of *tert*-Butanesulfinamides, *tert*-Butyl Sulfoxide, and *tert*-Butanesulfinimines" *J. Am. Chem. Soc.* **120**, 8011-8019 (1998).
304. Ellman, J. A.; Gallop, M. A. "Combinatorial Chemistry" *Curr. Opin. Chem. Biol.* **2**, 317-319 (1998).
305. Thompson, L. A.; Moore, F. L.; Moon, Y.-C.; Ellman, J. A. "Solid-Phase Synthesis of Diverse E- F-Series Prostaglandins" *J. Org. Chem.* **63**, 2066-2067 (1998).
306. Woolard, F. X.; Paetsch, J.; Ellman, J. A. "A Silicon Linker for the Direct Loading of Aromatic Compounds onto Solid Supports. Traceless Synthesis of Pyridyl-Based Tricyclics" *J. Org. Chem.* **62**, 6102-6103 (1997).

307. Liu, G.; Cogan, D. A.; Ellman, J. A. "Catalytic Asymmetric Synthesis of *tert*-Butanesulfonamide. Application to the Asymmetric Synthesis of Amines" *J. Am. Chem. Soc.* **119**, 9913-9914 (1997).
308. Backes, B. A.; Ellman, J. A. "Solid Support Linker Strategies" *Curr. Opin. Chem. Biol.* **1**, 86-94 (1997).
309. Kick, E. K.; Roe, D. C.; Skillman, A. G.; Liu, G.; Ewing, T. J. A.; Sun, Y.; Kuntz, I. D.; Ellman, J. A. "Structure-Based Design and Combinatorial Chemistry Yield Low Nanomolar Inhibitors of Cathepsin D" *Chem. Biol.* **4**, 297-309 (1997).
310. Virgilio, A. A.; Bray, A. A.; Zhang, W.; Ellman, J. A. "Synthesis and Evaluation of a Library of Peptidomimetics Based upon the β -Turn" *Tetrahedron* **53**, 6635-6644 (1997).
311. Plunkett, M. J.; Ellman, J. A. "Germanium and Silicon Linking Strategies for Traceless Solid-Phase Synthesis" *J. Org. Chem.* **62**, 2885-2893 (1997).
312. Ellman, J. Stoddard, B.; Wells, J. "Combinatorial Thinking in Chemistry and Biology" *Proc. Natl. Acad. Sci., USA* **94**, 2779-2782 (1997).
313. Evans, D. A.; Barrow, J. C.; Watson, P. S.; Ratz, A. M.; Dinsmore, C. J.; Evrard, D. A.; DeVries, K.; Ellman, J. A.; Rychnovsky, S. D.; Lacour, J. "Synthesis and Conformational Properties of the M(4-6)(5-7) Bicyclic Tetrapeptide Common to the Vancomycin Antibiotics" *J. Am. Chem. Soc.* **119**, 3419-3420 (1997).
314. Booramra, C. G.; Burow, K. M.; Thompson, L. A.; Ellman, J. A. "The Solid-Phase Synthesis of 1,4-Benzodiazepine-2,5-diones. Library Preparation and Demonstration of Synthesis Generality" *J. Org. Chem.* **62**, 1240-1257 (1997).
315. Plunkett, M. J.; Ellman, J. A. "Combinatorial Chemistry and New Drugs" *Sci. Am.* **276**, 68-73 (1997).
316. Plunkett, M. J.; Ellman, J. A. "Combinatorial Chemistry" *McGraw-Hill Yearbook of Science & Technology 1997* Parker, S. P., Ed.; McGraw-Hill Book Co.: New York, New York, 1997, pp. 95-99.
317. Bunin, B. A.; Plunkett, M. J.; Bray, A. M.; Ellman, J. A. "The Synthesis of a 1680 Compound 1,4-Benzodiazepine Library" *New J. Chem.* **21**, 125 (1997).
318. Choong, I. C.; Ellman, J. A. "Solid-Phase Synthesis: Application of Combinatorial Libraries" in *Annu. Rep. Med. Chem.* **31**, 309-318 (1996).
319. Stevens, S. Y.; Bunin, B. A.; Plunkett, M. J.; Swanson, P. C.; Ellman, J. A.; Glick, G. D. "Non-Nucleic Acid Inhibitors of Protein-DNA Interactions Identified through Combinatorial Chemistry" *J. Am. Chem. Soc.* **118**, 10650-10651 (1996).
320. Virgilio, A. A.; Schürer, S.; Ellman, J. A. "Expedient Synthesis of β -Turn Mimetics Incorporating the $i + 1$, $i + 2$, and $i + 3$ Sidechains" *Tetrahedron Lett.* **37**, 6961-6964 (1996).
321. Backes, B. J.; Virgilio, A. A.; Ellman, J. A. "Activation Method to Prepare a Highly Reactive Acylsulfonamide "Safety-Catch" Linker for Solid-Phase Synthesis" *J. Am. Chem. Soc.* **118**, 3055-3057 (1996).
322. Koh, J. S.; Ellman, J. A. "Palladium-Mediated Three-Component Coupling Strategy for the Solid-Phase Synthesis of Tropane Derivatives" *J. Org. Chem.* **61**, 4494-4495 (1996).

323. Virgilio, A. A.; Ellman, J. A. "Conformationally Restricted Peptide and Peptidomimetic Libraries" in *Combinatorial Chemistry and Molecular Diversity in Drug Discovery*; Gordon, E. M. and Kerwin, J. F. Ed.; John Wiley & Sons, Inc.: New York, New York, 1998, pp. 133-151.
324. Ellman, J. A. "The Solid-Phase Synthesis of Complex Small Molecules" *Chimia* **50**, 260-261 (1996).
325. Ellman, J. A. "Design, Synthesis, and Evaluation of Small-Molecule Libraries" *Acc. Chem. Res.* **29**, 132-143 (1996).
326. Thompson, L. A.; Ellman, J. A. "Synthesis and Applications of Small Molecule Libraries" *Chem. Rev.* **96**, 555-600 (1996).
327. Liu, G.; Ellman, J. A. "Combinatorial Asymmetric Catalyst Development. General Solid-Phase Synthesis Strategy for the Preparation of 2-Pyrrolidinemethanol Ligands" *J. Org. Chem.* **60**, 7712-7713 (1995).
328. Plunkett, M. J.; Ellman, J. A. "Silicon-Based Linkage Strategy for Traceless Solid-Phase Synthesis" *J. Org. Chem.* **60**, 6006-6007 (1995).
329. Bunin, B. A.; Plunkett, M. J.; Ellman, J. A. "Synthesis and Evaluation of 1,4-Benzodiazepine Libraries" *Methods Enzymol.* **267**, 448-467 (1996).
330. Boojamra, C G.; Burow, K. J.; Ellman, J. A. "A General and Straightforward Method for the Solid-Phase Synthesis of 1,4-Benzodiazepine-2,5-diones" *J. Org. Chem.* **60**, 5742-5743 (1995).
331. Ellman, J. A. "Synthesis and Evaluation of 1,4-Benzodiazepine Libraries" in *Combinatorial Peptide and Nonpeptide Libraries*; Jung, G. Ed.; VCH Verlagsgesellschaft mbH: Weinham, Germany, 1996, pp. 405-424.
332. Ellman, J. A. "Combinatorial Organic Libraries" *CHEMTRACTS: Org. Chem.* **8**, 1-4 (1995).
333. Kick, E. K.; Ellman, J. A. "Expedient Method for the Solid-Phase Synthesis of Aspartic Acid Protease Inhibitors Directed toward the Generation of Libraries" *J. Med. Chem.* **38**, 1427-1430 (1995).
334. Plunkett, M. J.; Ellman, J. A. "Stille Coupling in the Solid Phase Synthesis of Structurally Diverse 1,4-Benzodiazepine Derivatives" *J. Am. Chem. Soc.* **117**, 3306-3307 (1995).
335. Thompson, L. A.; Ellman, J. A. "Straightforward and General Method for Coupling Alcohols to Solid-Supports" *Tetrahedron Lett.* **35**, 9333-9336 (1994).
336. Virgilio, A. A.; Ellman, J. A. "Simultaneous Solid-Phase Synthesis of β -Turn Mimetics Incorporating Side-chain Functionality" *J. Am. Chem. Soc.* **116**, 11580-11581 (1994).
337. Backes, B. J.; Ellman, J. A. "Carbon-Carbon Bond Forming Methods on Solid Support. Utilization of Kenner's "Safety-Catch" Linker" *J. Am. Chem. Soc.* **116**, 11171-11172 (1994).
338. Bunin, B. A.; Ellman, J. A. "Increasing the Diversity of a 1,4-Benzodiazepine Library through Side-Chain Functionalization" *Polym. Prepr.* **35**, 983, (1994).
339. Bunin, B. A.; Plunkett, M. J.; Ellman, J. A. "The Combinatorial Synthesis, and Chemical and Biological Evaluation of a 1,4-Benzodiazepine Library" *Proc. Natl. Acad. Sci USA*, **91**, 4708-4712 (1994).

340. Bunin, B. A.; Ellman, J. A. "General and Expedient Method for the Solid-Phase Synthesis of 1,4-Benzodiazepine Derivatives" *J. Am. Chem. Soc.* **114**, 10997-10998 (1992). Commentaries on the publication were reported in both *Chemical and Engineering News* **71**, 33-34 (1993) and in the *New Scientist* **137**, 14 (1993).
341. Cook, S. N.; Jack, W. E.; Xiong, X.; Danley, L. E.; Ellman, J. A.; Schultz, P. G.; Noren, C. J. "Photochemically-Initiated Protein Splicing" *Angew. Chem., Int. Ed. Engl.* **34**, 1629-1630 (1995).
342. Mendel, D.; Ellman, J.; Schultz, P. G. "Protein Biosynthesis with Conformationally Restricted Amino Acids" *J. Am. Chem. Soc.* **115**, 4359-4360 (1993).
343. Ellman, J. A.; Volkman, B. F.; Mendel, D.; Schultz, P. G.; Wemmer, D. E. "Site-Specific Isotopic Labeling of Proteins for NMR Studies" *J. Am. Chem. Soc.* **114**, 7959-7961 (1992).
344. Mendel, D.; Ellman, J. A.; Chang, Z.; Veenstra, D. L.; Kollman, P. A.; Schultz, P. G. "Probing Protein Stability with Unnatural Amino Acids" *Science* **256**, 1798-1802 (1992).
345. Ellman, J. A.; Mendel, D.; Schultz, P. G. "Site-Specific Incorporation of Novel Backbone Structures into Proteins" *Science* **255**, 197-200 (1992).
346. Ellman, J.; Mendel, D.; Noren, C. J.; Anthony-Cahill, S. J.; Schultz, P. G. "A Biosynthetic Method for Introducing Unnatural Amino Acids Site-Specifically into Proteins" *Methods Enzymol.* **202**, 301-336 (1991).
347. Mendel, D.; Ellman, J. A.; Schultz, P. G. "Construction of a Caged Protein by Site-Specific Unnatural Amino Acid Mutagenesis" *J. Am. Chem. Soc.* **113**, 2758-2760 (1991).
348. Robertson, S. A.; Ellman, J. A.; Schultz, P. G. "A General and Efficient Route for Chemical Aminoacylation of Transfer RNAs" *J. Am. Chem. Soc.* **113**, 2722-2729 (1991).
349. Evans, D. A.; Britton, T. C.; Ellman, J. A.; Dorow, R. L. "The Asymmetric Synthesis of α -Amino Acids. Electrophilic Azidation of Chiral Imide Enolates, a Practical Approach to the Synthesis of (R)- and (S)- α -Azido Carboxylic Acids" *J. Am. Chem. Soc.* **112**, 4011-4030 (1990).
350. Evans, D. A.; Ellman, J. A.; DeVries, K. M. "The Oxidative Macrocyclization of Phenolic Peptides. A Biomimetic Approach to the Synthesis of the Vancomycin Family of Antibiotics" *J. Am. Chem. Soc.* **111**, 8912-8914 (1989).
351. Evans, D. A.; Ellman, J. A. "The Total Synthesis of the Isodityrosine-Derived Cyclic Tripeptides OF4949-III and K-13. Determination of the Absolute Configuration of K-13" *J. Am. Chem. Soc.* **111**, 1063-1072 (1989).
352. Evans, D. A.; Ellman, J. A.; Dorow, R. L. "Asymmetric Halogenation of Chiral Imide Enolates. A General Approach to the Synthesis of Enantiomerically Pure α -Amino Acids" *Tetrahedron Lett.* **28**, 1123-1126 (1987).
353. Evans, D. A.; Britton, T. C.; Ellman, J. A. "Contrasteric Carboximide Hydrolysis with Lithium Hydroperoxide" *Tetrahedron Lett.* **28**, 6141-6144 (1987).
354. Evans, D. A.; Weber, A. E.; Britton, T. C.; Ellman, J. A.; Sjogren, E. B. "Asymmetric Synthesis of Amino Acids" in *Peptides: Chemistry And Biology; Tenth American Peptide Symposium*; Marshall, G. R. (Ed.); Escom Science Publishers B.V.: Leiden, Netherlands. Illus. 143-148 (1988).

U.S. Patents

1. Ha, Y.; Ellman, J.; Chen, S.; Chandra-Tjin, C.; Micheli, F.; Cianciulli, A.; Beato, C. "Small Molecule PI5P4K Alpha/Beta Inhibitors and Methods of Treatment Using Same" US (2023), Patent No. US 11,773,096.
2. Ellerby; L. M.; Ellman; J. A.; Leyva; M. J. "Caspase inhibitors and uses thereof" U.S. (2016), Patent No. 9,245,290.
3. Liu, G. L.; Ellman, J. A.; Lee, L. P.; Chen, F. "Detection of Protease and Protease Activity Using a Single Nanoscale SERS Probe" U.S. (2015), Patent No. 9,145,575.
4. Zhang, X.; Chen, F.; Ellman, J. A.; Sun, C.; Su, K.-H.; Wei, Q.-H. "Real-Time, Single-Step Bioassay using Nanoplasmonic Resonator with Ultra-High Sensitivity" U.S. (2014), Patent No. 8,685,743.
5. Ellerby; L. M.; Ellman; J. A.; Leyva; M. J. "Caspase inhibitors and uses thereof" U.S. (2013), Patent No. 8,518,942.
6. Ellman, J. A.; Patterson, A. W.; Peltier, H. "Tubulysin D Analogues" U.S. (2013), Patent No. 8,476,451.
7. Liu, G. L.; Ellman, J. A.; Lee, L. P.; Chen, F. "Detection of Protease and Protease Activity Using a Single Nanoscale SERS Probe" U.S. (2013), Patent No. 8,361,932.
8. Bergman, R. G.; Ellman, J. A.; Rebollo, E. A.; Marsden, P. C. "Method of Converting a Polyol to an Olefin" U.S. (2012), Patent No. 8,273,926.
9. Harris, J. L.; Backes, B. J.; Ellman, J. A.; Craig, C. S. "Fluorogenic Materials and Uses Thereof" U.S. (2009), Patent No. 7,629,437.
10. Ellman, J. A.; Lynch, G.; Kuntz, I. D.; Bi, X.; Lee, C. E.; Skillman, A. G.; Haque, T. "Methods for Treating Neurodegenerative Disorders using Aspartyl Protease Inhibitors" U. S. (2006), Patent No. 7,119,105.
11. Ellman, J. A.; Choong, I. "Pharmacophore recombination for the identification of small molecule drug lead compounds" U.S. (2009), Patent No. 7,001,727.
12. Harris, J. L.; Backes, B. J.; Ellman, J. A.; Craig, C. S. "Profiling of protease specificity using combinatorial fluorogenic substrate libraries" U.S. (2004) Patent No. 6,680,178.
13. Ellman, J. A.; Choong, I. "Pharmacophore Recombination for the Identification of Small Molecule Drug Lead Compounds" U.S. (2002), Patent No. 6,344,334.
14. Ellman, J. A.; Choong, I. "Pharmacophore Recombination for the Identification of Small Molecule Drug Lead Compounds" U.S. (2002), Patent No. 6,344,330.
15. Kick, E. K.; Ellman, J. A.; Kuntz, I. D.; Lee, C. E.; Liu, G.; Roe, D. C.; Skillman, A. G. "Nanomolar, Non-Peptide Inhibitors of Cathepsin D" U.S. (2000), Patent No. 6,150,416.
16. Budde, R. J. A.; Ellman, J. A.; Levin, V. A.; Gallick, G. E.; Newman, R. A.; "Inhibitors of protein tyrosine kinases" U.S. (2000), Patent No. 6,100,254.

17. Ellman, J. A. "Solid phase and combinatorial synthesis of compounds on a solid support" U.S. (1996), Patent No. 5,545,568.
18. Ellman, J. A. "Solid phase and combinatorial synthesis of benzodiazepines on a solid support" U.S. (1996), Patent No. 5,288,514.

Patent Applications

1. Ellman, J.; Confair, D.; Kweon, O. S.; Roth, B.; Kim, K.; Shoichet, B.; Levit, A.; Irwin, J. J. "Tetrahydropyridine derivatives as selective agonists of 5-HT_{2A} receptor and methods of use" PCT Int. Appl. (2022), WO2022067165 A1 20220331.
2. Ellman, J.; Scamp, R.; Miller, S. J.; De Ramon, E. "Thiostrepton analogs and methods of making and using same" PCT Int. Appl. (2020), WO 2020232048 A1 20201119.
3. Ha, Y.; Ellman, J.; Chen, S.; Tjin, C. C.; Micheli, F.; Cianciulli, A.; Beato, C. "Preparation of 2-amino-dihydropteridinones as PI5P4K α/β inhibitors for the treatment of metabolic diseases such as diabetes, obesity and cancer" PCT Int. Appl. (2020), WO 2020033823 A1 20200213.
4. Bennett, A.; Ellman, J.; Jamali, H.; Anderson, K. S.; Lolis, E.; Hoyer, D. "Dihydrothieno[3,4-h]quinazoline and related compounds and compositions for treating fibrosis" PCT Int. Appl. (2019), WO 2019126141 A1 20190627.
5. Bergman, R.; Ellman, J.; Nichols, J.; Bishop, L.; Volkman, J.; Toste, D.; Son, S.; Hartwig, J.; Sergeev, A. "Catalytic disproportionation and catalytic reduction of carbon-carbon and carbon-oxygen bonds of lignin and other organic substrate" PCT Int. Appl. (2011), WO 2011003029 A2 20110106.
6. Ellerby, L. M.; Ellman, J. A.; Leyva, M. J. "Preparation of 1,2,3-triazole substituted aryloxy methyl ketones as caspase inhibitors" PCT Int. Appl. (2010), WO 2010017408 A1 20100211.
7. Bergman, R. G.; Ellman, J. A.; Arceo Rebollo, E.; Marsden, P. C. "Method of converting a polyol to olefin" U.S. Pat. Appl. Publ. (2009), US 20090287004 A1 20091119.
8. Chen, F. F.; Ellman, J. A.; Zhang, X. "Real-time, single-step bioassay using nanoplasmonic resonator comprising metallic nanodisks and having a tagged biomol" PCT Int. Appl. (2009), WO 2009094058 A2 20090730.
9. Chen, F. F.; Liu, G. L.; Ellman, J. A. "SERS-based, single step, real-time detection of protein kinase and/or phosphatase activity utilizing Raman active surface comprising nanoscale features" PCT Int. Appl. (2009), WO 2009088779 A2 20090716.
10. Ellman, J. A.; Brak, K. "Triazole derivatives and aminocoumarin derivatives as nonpeptidic inhibitors of cruzain and their preparation and use in the treatment of Chagas disease" PCT Int. Appl. (2009), WO 2009075778 A2 20090618.
11. Ellman, J. A.; Patterson, A. W.; Peltier, H. "Preparation of tubulysin D analogs as highly potent cell-growth inhibitors for treating cancer and psoriasis" PCT Int. Appl. (2009), WO 2009012958 A2 20090129.
12. Bergman, R. G.; Ellman, J. A.; Arceo Rebollo, E. "Conversion of glycerol from biodiesel production to allyl alcohol" PCT Int. Appl. (2008), WO 2008092115 A1 20080731.

13. Liu, G. L.; Ellman, J. A.; Lee, L. P.; Chen, F. F. "Detection of protease using a single peptide-nanocrescent hybrid SERS probe, and diagnostic applications" PCT Int. Appl. (2008), WO 2008018933 A2 20080214.
14. Kim, J. M.; Ellman, J. A.; Goldberg, D. "Preparation of 4-amino-1-benzylpiperidines as antimalarials" PCT Int. Appl. (2001), WO 0114331 A2 2001030.
15. Ellman, J. A.; Lynch, G.; Kuntz, I. D.; Bi, X.; Lee, C. E.; Skillman, A. G.; Haque, T. "Methods for treating neurodegenerative disorders using aspartyl protease inhibitors" PCT Int. Appl. (2000), WO 0056335 A1 20000928.
16. Ellman, J. A.; Choong, I. "Pharmacophore Recombination for the Identification of Small Molecule Drug Lead Compounds" PCT Int. Appl. (1999), WO 9949314 A1 19990930.
17. Budde, R. J. A.; Ellman, J. A.; Levin, V. A.; Gallick, G. E.; Newman, R. A.; "Preparation of Benzodiazepinones as Protein Tyrosine Kinase Inhibitors" PCT Int. Appl. (1999), WO 9919306 A2 19990422.

Presentations (>450)

I. Universities/Research Institutions

1. Texas Tech, Shine Lecture I, October 8, 2025
2. Texas Tech, Shine Lecture II, October 8, 2025
3. Nanyang Technological University (Singapore), April 17, 2025
4. National University of Singapore, Faculty of Science Distinguished Visitor, Presentation #1, April 15, 2025
5. National University of Singapore, Faculty of Science Distinguished Visitor, Presentation #1, April 14, 2025
6. University of Michigan, December 5, 2024
7. Emory University, Plenary Lecture for Merck Symposium, November 8, 2024
8. University of Rhode Island, October 23, 2023
9. University of California at Riverside, CA, April 26, 2023
10. Indiana University, Bloomington, IN, April 10, 2023
11. Silvestri Lecture, Villanova University, Villanova, PA, March 17, 2023
12. Northwestern (virtual presentation), April 29, 2020
13. Kyoto University, June 28, 2019 [International Organization of Organic Chemistry (IOFC) Lectureship]
14. Osaka University, July 1, 2019 [International Organization of Organic Chemistry (IOFC) Lectureship]
15. University of California at Berkeley, October 16, 2018
16. New York University (McNelis Lecture – General Audience), April 6, 2018
17. New York University (chemical biology), April 5, 2018
18. New York University (organic chemistry), April 4, 2018
19. Emory University, February 21, 2018
20. Northeastern University, January 31, 2018
21. Memorial Sloan Kettering, January 26, 2018
22. Yale Pharmacology Retreat, September 8, 2017
23. ETH Zurich (Switzerland), May 19, 2017
24. University of Basel (Switzerland), May 18, 2017
25. École Polytechnique Fédérale de Lausanne (Switzerland), May 17, 2017
26. University of Fribourg (Switzerland), May 16, 2017

27. University of Geneva (Switzerland), May 15, 2017
28. UCSF, May 9, 2017
29. Rochester University, Victor J. Chambers Lectureship (three lectures), March 22, 2017
30. Rochester University, Victor J. Chambers Lectureship (three lectures), March 21, 2017
31. Rochester University, Victor J. Chambers Lectureship (three lectures), March 20, 2017
32. Keynote lecture Yale Undergraduate Research Conference, New Haven, February 12, 2017
33. Vanderbilt University, January 18, 2017
34. Sheffield University, UK: 49th Annual Meeting “Modern Aspects of Stereochemistry”, January 12, 2016
35. Shanghai Institute of Organic Chemistry (Shanghai, China), June 5, 2015
36. University of California at Los Angeles, May 21, 2015
37. Virginia Tech. March 19, 2015
38. Washington University School of Medicine (St. Louis, MO), March 17, 2015
39. University of Houston, March 12, 2015
40. Oklahoma State University Phi Lambda Upsilon 2015 Research Seminar, March 10, 2015
41. Oklahoma State University Phi Lambda Upsilon 2015 Banquet Presentation, March 10, 2015
42. Scripps Research Institute, June 10, 2014
43. University of Southern California, April 9, 2014
44. University of Kansas, March 13, 2014
45. Yale Cancer Center Grand Rounds, March 5, 2014
46. University of California at Irvine, February 10, 2014
47. Albert Einstein College of Medicine, May 28, 2013
48. Purdue University, H. C. Brown Symposium, April 27, 2013
49. MIT, April 25, 2013
50. University of Washington, March 20, 2013
51. Caltech, January 9, 2013
52. Yale Chemical Biology Symposium, May 11, 2012
53. The Ohio State University, March 8th, 2012
54. Yale University, Chemical Biology Retreat, December 16, 2011
55. University of Chicago, Stieglitz Lecture, November 21, 2011
56. Yale University, Chemical Biology Retreat, May 13, 2011
57. Yale University, “Yale Talks About Opportunities in Drug Discovery Symposium, April 2, 2011
58. University of Leeds, UK, March 31, 2011
59. University of Loughborough, UK, March 30, 2011
60. University of Bristol, UK, March 28, 2011
61. Columbia University, December 2, 2010
62. University of Wisconsin at Madison, November 9, 2010
63. University of New Hampshire, November 2, 2010
64. University of Connecticut, October 27, 2010
65. Boston College, October 12, 2010
66. Purdue University (H. C. Brown Symposium), April 24, 2010
67. University of California at San Francisco, April 15, 2010
68. UT Southwestern Medical Center, April 1, 2010
69. University of Colorado (Roche Lecture), March 1, 2010
70. Rutgers, University, February 5, 2010
71. Yale University, January 22, 2010
72. Genomics Institute of the Novartis Research Foundation, La Jolla, CA, October 23, 2009
73. Scripps Research Institute, Jupiter, FL site, April 22, 2009
74. Scripps Research Institute, La Jolla, CA site, April 7, 2009
75. Northwestern University, March 30, 2009
76. Wayne State University, February 23, 2009
77. Oregon State University, August 11, 2008
78. Cambridge University, UK, July 11, 2008
79. University of Guelph-Waterloo Pfizer Lectureship, May 15, 2008

80. National Institutes of Health, Bethesda, MD, April 25, 2008
81. University of Pittsburgh, Pittsburgh, PA, March 19, 2005
82. University of Pennsylvania, Philadelphia, PA, December 13, 2008
83. University of California at Berkeley, Structural and Quantitative Biology Seminar, October 1, 2008
84. Keio University, Yokohama, Japan, May 11, 2007
85. Santa Clara University, Santa Clara, CA, April 13, 2007
86. University of Illinois (BMS Symposium Lecturer), Urbana, IL, February 12, 2007
87. North Carolina State University, Raleigh, NC, January 19, 2007
88. Northwestern University, Evanston, IL, April 21, 2006
89. Stanford University, Palo Alto, CA, March 23, 2006
90. MIT (George Buchi Lectureship, Seminar #2), Cambridge, MA, February 2, 2006
91. MIT (George Buchi Lectureship, Seminar #1), Cambridge, MA, February 1, 2006
92. Brandeis University, Waltham, MA, January 30, 2006
93. University of California at Berkeley, QB3 Seminar Series, November 10, 2005
94. University of Michigan (Bristol-Myers Squibb Lecturer), September 10, 2005
95. Technical University of Denmark (Lundbeck Lectureship), Copenhagen, Denmark, June 6, 2005
96. University of Toronto, Toronto, Canada, May 4, 2005
97. University of Chicago, Chicago, IL, May 2, 2005
98. Yale University, Hartford, CN, April 28, 2005
99. Organic Chemistry Day Symposium at University of Missouri, Columbia, MO, April 15, 2005
100. Chemical Biology Seminar at University of Missouri, Columbia, MO, April 15, 2005
101. University of Alberta, Edmonton, Canada, April 11, 2005
102. University of Calgary, Calgary, Canada, April 8, 2005
103. University of Kansas, Lawrence KS, March 17, 2005
104. Cherry Emerson Seminar Series at Georgia Tech, Atlanta, GA, March 8, 2005
105. Department of Energy Lawrence Livermore Labs, Livermore, CA, January 10, 2005
106. UC Irvine Chemical Biology Symposium, Irvine, CA, September 17, 2004
107. Michigan State, East Lansing, MI, March 25, 2004
108. Chemistry-Biology Symposium at the University of Michigan, Ann Arbor, MI, December 1, 2003
109. Université Rouen, Rouen, France, November 22, 2003
110. Université Paul Sabatier, Toulouse, France, November 20, 2003
111. Professor Irwin Kuntz Retirement Symposium, University of California at San Francisco, October 18, 2003
112. University of California at San Francisco, Mission Bay Site, May 22, 2003
113. Princeton University, April 10, 2003
114. Ohio State University, February 20, 2003
115. University of Minnesota, January 28, 2003
116. Boston University Combinatorial Chemistry Symposium, June 28, 2002
117. Caltech, May 8, 2002
118. Southwestern Medical Center (Dallas), April 25, 2002
119. Northwestern University, April 23, 2002
120. University of Oregon, May 15, 2002
121. University of Illinois (Champaign-Urbana site), March 13, 2002
122. University of Illinois (Chicago site), February 26, 2002
123. University of Geneva, February 7, 2002
124. Columbia University Pharmacology Department (NY), October 4, 2001
125. Columbia University Chemistry Department (NY), October 5, 2001
126. University of California at Davis, April 24, 2001
127. Chemical Biology Retreat (UCSF), Asilomar, January 4, 2001
128. University of Rochester, NY, April 18, 2000
129. Scripps Research Institute, San Diego, CA, March 17, 2000
130. Florida State University, February 29, 2000
131. 2000 UCSF Cancer Center Meeting, February 22, 2000

132. University of Washington, February 18, 2000
133. University of Sherbrook, *BioMega/Boehringer Ingelheim Research Inc. Distinguished Lecturer*, Canada, January 19, 2000
134. The Carlsburg Institute, Copenhagen, Denmark, November 2, 1999
135. Boston College, October 7, 1999
136. Tufts University, October 5, 1999
137. The Gallo Center, UCSF, April 28, 1999
138. University of North Carolina, April 17, 1999
139. Purdue University, April 6, 1999
140. University of Michigan, October 1, 1998
141. Colorado University/Syntex-Roche Symposium on Organic Synthesis, May 22, 1998
142. University of Illinois Monsanto Symposium, April 18
143. University of Madison, Wisconsin, March 24, 1998
144. Cal State Sacramento 50th Anniversary Celebration, February 14, 1998
145. Yale University, February 13, 1998
146. University of Montreal, October 3, 1997
147. University of Copenhagen, August 15, 1997
148. Stanford University, May 23, 1997
149. University of Kentucky - NAFF Symposium, April 8, 1997
150. Notre Dame, March 19, 1997
151. Indiana University, March 17, 1997
152. Princeton University, January 30, 1997
153. University of Texas at Austin, December 13, 1996
154. Texas A & M, December 12, 1996
155. Rice University, December 11, 1996
156. Cornell University, November 18, 1996
157. UCLA, June 6, 1996
158. University of Utah, May 16, 1996
159. University of Michigan, April 16, 1996
160. University of Virginia, April 12, 1996
161. Vanderbilt University, *5th Annual Symposium on Drug Development*, March 27, 1996
162. Harvard University, March 18, 1996
163. University of Nottingham, UK, February 28, 1996
164. Oxford University, UK, February 26, 1996
165. Scripps Research Institute, *Seventh Annual Symposium on Frontiers in Chemistry*, February 23, 1996
166. MIT, February 1, 1996
167. Brandeis, January 30, 1996
168. Sloan Kettering Cancer Institute, January 17, 1996
169. Caltech, November 29, 1995
170. Stanford University, November 15, 1995
171. Case Western, November 9, 1995
172. University of Toronto, October 20, 1995
173. University of California, Berkeley, September 26, 1995
174. University of California, Davis, May 30, 1995
175. Colorado State University, April 24, 1995
176. M.D. Anderson Cancer Institute, January 19, 1995
177. University of California, Santa Cruz, January 10, 1995
178. University of California, Irvine, *1994 University of California Irvine Synthesis Symposium*, December 10, 1994
179. University of California, San Francisco, November 5, 1994
180. University of California, Berkeley, September 27, 1994
181. University of Alberta, April 20, 1994
182. University of Texas, Southwest Medical Center, May 19, 1994

II. Plenary Lectures at Conferences and Meetings

1. American Chemical Society National Meeting, Global Virtual Session on Emerging Landscape of Organometallic Chemistry & Catalysis, August 18, 2024
2. International Conference on Organometallic Chemistry, Keynote Lecture, Agra, India, July 16, 2024
3. Heterocycles Gordon Research Conference, Newport, RI, June 16, 2024
4. Organic Reactions and Processes Gordon Research Conference, Smithfield, RI, July 16, 2023
5. Allan R. Day Award from the Philadelphia Organic Chemists Club, Philadelphia, PA, January 26, 2023
6. American Chemical Society National Meeting, Symposium for ACS Award for Creative Work in Synthetic Organic Chemistry (virtual symposium), April 8, 2021.
7. Chemical Sciences for Drug Discovery & Therapy (virtual), VNIT, India July 24, 2020
8. 85th Annual Meeting of the Israel Chemical Society, Jerusalem, Israel, February 18, 2020
9. The Future of C-H Functionalization (TSRC), Telluride, CO, August 1, 2019
10. Naito Conference on C-H Bond Activation and Transformation, Sapporo, Japan, July 5, 2019
11. Symposium honoring Ann Weber for North Jersey ACS Section 2018 Award for Creativity in Design and Synthesis, November 29, 2018
12. Connecticut Valley American Chemical Society Symposium on Applied Synthesis, Connecticut College, September 21, 2018
13. The 4th International Symposium on C-H Activation (ISCHA4), Yokohama, Japan, September 1, 2018
14. 19th Tetrahedron Symposium, Lake Garda Italy, June 27, 2018
15. Center for Selective C-H Functionalization Virtual Symposium (international broadcast), March 13, 2018
16. 100th Canadian Society for Chemistry Conference, Toronto, Canada, May 30, 2017
17. Symposium honoring Peter G. Schultz 60th birthday, Scripps Research Institute, CA, July 30, 2016
18. International Conference on “Transition Metal Catalysis for Organic Synthesis,” Nankai University, China, July 16, 2016
19. International (Henan) Forum on Drug Discovery and Technology, Zhengzhou China, June 6, 2015
20. American Chemical Society National Meeting, Symposium titled “c-H Functionalization in the Preparation of Biologically Active Compounds” Denver, March 21, 2015
21. Gordon Research Conference on Natural Products, New Hampshire, July 21, 2014
22. American Chemical Society National Meeting, Symposium titled “Advances in C-H Bond Functionalization” Dallas, March 18, 2014
23. 7th Catalysis Research Laboratory Winter School (Heidelberg, Germany), Research Seminar, February 28, 2014
24. 7th Catalysis Research Laboratory Winter School (Heidelberg, Germany), Tutorial on Rh(III)-catalyzed C-H bond functionalization, February 28, 2014
25. Treat B. Johnson Symposium, American Chemical Society North East Regional Meeting, New Haven, CT, October 24, 2013
26. American Chemical Society National Meeting “C-H Activation Symposium” New Orleans, LA, April 10, 2013
27. European Molecular Biology Laboratory Chemical Biology Conference, Heidelberg, Germany, September 28, 2012
28. Gordon Research Conference on Natural Products, New Hampshire, July 9, 2012
29. Royal Society of Chemistry symposium entitled “Challenges in Organic Chemistry and Chemical Biology” Edinburgh, UK, June 15, 2012
30. Herbert C. Brown Award Symposium at the American Chemical Society National Meeting, San Diego, CA, March 26, 2012
31. The 132nd Annual Meeting, Pharmaceutical Society of Japan, Hokkaido, Japan, March 29, 2012

32. Modern Catalysis for Sustainable Chemistry Symposium sponsored by Syngenta, Switzerland, October 28, 2011
33. American Chemical Society National Meeting, E.B. Herschberg Award Symposium, Boulder, CO August 29, 2011
34. American Chemical Society National Meeting, Symposium titled "Catalyst needs for drug discovery, development, and commercialization," Boulder, CO, August 28, 2011
35. Gordon Research Conference on Heterocyclic Chemistry, RI, June 28, 2011
36. Gordon Research Conference on High Throughput Chemistry & Chemical Biology, NH, June 20, 2011
37. New Jersey Biotechnology Chemistry Consortium Symposium, December 8, 2010
38. New Jersey Section of the American Chemical Society Symposium for Molecular Design & Synthesis, November 17, 2010
39. Natural Products Gordon Research Conference, Tilton, New Hampshire, July 28, 2010
40. Stereochemistry Gordon Research Conference, Newport, RI, August 8, 2010
41. National Medicinal Chemistry Symposium, Minneapolis, MN, June 9, 2010
42. 2009 Symposium for the Society of Combinatorial Sciences, Beijing, China, September 20, 2009
43. 3rd International Symposium on Advances in Synthesis and Medicinal Chemistry, Kiev, Ukraine, August 25th, 2009
44. 21st American Peptide Symposium, Bloomington, Indiana, June 9, 2009
45. 19th Lakeland Symposium on Heterocyclic Chemistry, Grasmere, UK, May 15, 2009
46. Sandler Day "Symposium on Drug Discovery to Treat Neglected Diseases" UCSF, April 2, 2009
47. ACS National Meeting Symposium entitled "Organic Chemistry Collaborations" March 22, 2009
48. Gordon Research Conference on Chemical & Biological Terrorism Defense, Galveston, Texas, Canada, January 20, 2009
49. The 2nd International Symposium on Catalysis as the Basis for Innovation of Materials Science, Sapporo, Japan, December 19, 2008
50. Catalysis Joint Workshop (University of Heidelberg, Northwestern, and UC Berkeley) Heidelberg, Germany, September 14, 2008
51. 11th Belgian Organic Synthesis Symposium, Ghent, Belgium, July 16, 2008
52. Pacific Northwest Undergraduate Research Symposium, Portland, OR, August 11, 2008
53. Canadian Society of Chemistry, Alberta, Canada, May 24, 2008
54. Gordon Research Conference on Peptides and Proteins, Ventura, CA, February 20, 2008
55. Zing Small Molecule Drug Discovery Conference, Antigua, January 17, 2008
56. Microwave Assisted Organic Synthesis Conf., South San Francisco, CA, October 3, 2007
57. 5th Johnson & Johnson Symposium on Drug Discovery, San Diego, CA, June 19, 2007
58. Annual Meeting Japanese Society for Chemical Biology, Kyoto, Japan, May 10, 2007
59. American Society for Biochemistry and Molecular Biology (ASBMB) 2007 National Meeting, Washington, D.C., April 28, 2007
60. 2nd Hellenic Symposium on Organic Synthesis, Athens, Greece, April 19, 2007
61. Novartis Symposium (Honoring David Evans), Cambridge, MA, December 5, 2006
62. Peter G. Schultz 50th Birthday Symposium, San Diego, CA, June 2, 2006
63. Tetrahedron Prize Award Lecture at Tetrahedron Symposium, Kyoto, Japan, May 25, 2006
64. American Chemistry Society Perspectives in Organic Reactions, Miami, FL, March 8, 2006
65. Combinatorial Chemistry Gordon Research Conference, NH, August 21, 2005
66. Organic Reactions and Processes Gordon Research Conference, RI, August 1, 2005
67. Eurocombi-3 Conference, Winchester, UK, July 18, 2005
68. Protease Symposium at the American Society for Biochemistry and Molecular Biology National Meeting, San Diego, CA, April 6, 2005
69. Eli Lilly Award Symposium honoring Benjamin Cravatt at the National Meeting of the American Chemical Society, Philadelphia, PA, August 24, 2004
70. Symposium on Microwave Chemistry at the National Meeting of the American Chemical Society, Philadelphia, PA, August 23, 2004
71. 21st International Symposium on the Organic Chemistry of Sulfur, Madrid, Spain, July 9, 2004

72. Proteinase 2004 (sponsored jointly by the Royal Society of Chemistry and the Society of Chemical Industry), London, UK, May 10, 2004
73. 39th EUCHEM Conference on Stereochemistry 2004, Burgenstock, Switzerland, April 19, 2004
74. Symposium For Hirschman Award honoring Richard Houghten at the National Meeting of the American Chemical Society, Anaheim, CA, March 31, 2004
75. NIH Chemical Genomics Symposium, Bethesda, MD, March 15, 2004
76. 5th Florida Heterocycles Conference, Gainesville, FL, March 10, 2004
77. Presentation for acceptance of the "Scheele Award" at the Biotech Forum 2003 Science Conference, Stockholm, Sweden, November 27, 2003
78. Presentation of "Rhodia-Chirex Lectureship Award" at the Société Française de Chimie Division De Chimie Organique 2003 Meeting, November 25, 2003
79. Presentation for acceptance of the "Society of Biomolecular Screening Achievement Award" at the National SBS Meeting, Portland, OR, September 23, 2003
80. ACS Prospectives Conference, "Combinatorial Chemistry: New Methods, New Discoveries", Leesburg, VA, September 21, 2003
81. Medicinal Chemistry Gordon Conference, Newport, RI, August 6, 2003
82. Heterocycles Gordon Conference, New London, NH, July 7, 2003
83. Chaired and presented at the Symposium on Microwave Chemistry, South San Francisco, CA, June 12, 2003
84. Award Symposium in Industrial Chemistry honoring Bruce Maryanoff at the National Meeting of the American Chemical Society, New Orleans, LA, March 24, 2003
85. LabAutomation2003 (Annual national conference of the Association for Laboratory Automation), Palm Springs, CA, February 3, 2003
86. Chemistry Meets Technology II (sponsored jointly by the Royal Society of Chemistry and the Society of Chemical Industry), London, UK, December 9, 2002
87. "NIGMS 40th Anniversary Symposium" sponsored by the NIH and held during the fall 2003 American Chemical Society National Meeting, Boston, MA, August 20, 2002
88. 14th International Conference on Organic Synthesis (sponsored by IUPAC), Christchurch, New Zealand, July 17, 2002
89. 11th Federation of European Chemical Societies Conference on Heterocycles in Bio-organic Chemistry, Sitges, Spain, June 10, 2002
90. French American Chemical Society IX, Paris, France, June 6, 2002
91. 2nd Conference on Coherent Synthesis, San Diego, CA, May 31, 2002
92. Molecular Foundry Workshop (DOE, Lawrence Berkeley Labs), April 4, 2002
93. ACS Prospectives Conference, "Combinatorial Chemistry: Applying Technology", Zurich, Switzerland, November 4-7, 2001
94. 18th International Congress of Heterocyclic Chemistry, Yokohama, Japan, August 1, 2001
95. Royal Society Conference on "Combinatorial Approaches to Chemistry and Biology III", Cambridge, UK, July 17, 2001
96. David Evans 60th Birthday Symposium, Harvard University, Cambridge, MA, June 16, 2001
97. 84th Annual Canadian Society of Chemistry Conference, Symposia on "Combinatorial Chemistry: Synthesis and Analysis", Montreal, Canada, May 30, 2001
98. International Conference on Fundamental Sciences: Biological and Chemical Sciences, Singapore, May 21, 2001
99. National ACS Meeting, Symposium on "Selectivity in Organic Chemistry and Catalysis", San Diego, CA, April 4, 2001
100. National ACS Meeting, Symposium in honor of Peter Schultz receiving the Alfred Bader Award in Bioinorganic and Bioorganic Chemistry", San Diego, CA, April 2, 2001
101. LabAutomation 2000 sponsored by the Association for Laboratory Automation, Palm Springs, CA, Monday January 27, 2001
102. 11th International Biotechnology Symposium "Biotechnology 2000", Berlin, Germany, September 4, 2000
103. ACS National Meeting, ACS Cope Scholar Award Presentation, Washington D.C., August 22, 2000

104. Fourteenth Symposium of the Protein Society, San Diego, CA, August 8, 2000
105. Pacificchem 2000, Symposium on "Combinatorial and Parallel Synthesis: Applications to Medicinal Chemistry, Honolulu Hawaii, January 18, 2000
106. Combinatorial Approaches to Chemistry and Biology II, The Royal Society, Cambridge, UK, June 30, 1999
107. The 16th American Peptide Symposium, Minneapolis, Minnesota, June 28, 1999
108. The American Society for Biochemistry and Molecular Biology National Meeting, San Francisco, CA, May 17, 1999
109. The 5th Michigan Symposium on Contemporary Challenges in Molecular Medicine Ann Arbor, Michigan, May 7, 1999
110. The 8th Conference on Combinatorial Chemistry, Osaka, Japan, April 27, 1998
111. The East Bay Regional ACS Meeting, Berkeley, CA, March 11, 1999
112. 2nd International Conference on Combinatorial Library Methods for Basic Research and Drug Discovery, Tuscon AZ, January 11, 1999
113. UCSF Proteolysis Symposium, San Francisco, CA, November 6, 1998
114. 8th Brazilian Meeting on Organic Synthesis, Sao Paulo, Brazil, September 8, 1998
115. 34th ACS Western Regional Meeting, San Francisco, CA, October 29, 1998
116. National Institutes of Health, General Medical Sciences, Bethesda, MD, May 17, 1998
117. American Chemical Society Northeastern Regional Seminar Series, Nutley, NJ, May 11, 1998
118. Frontiers in Biomedical Research (Organized by Scripps), Palm Springs, CA, February 3, 1998
119. Tahoe Molecular Diversity Conference, Tahoe, CA, January 24, 1998
120. The Seventh International Kyoto Conference on New Aspects of Organic Chemistry, Kyoto, Japan, November 14, 1997
121. 2nd Canadian Combinatorial Chemistry Conference, October 5, 1997
122. 19th Annual Princeton ACS Fall Symposium, Princeton, NJ, September 26, 1997
123. American Chemical Society National Meeting Las Vegas, Nevada, September 8, 1997
124. Molecular Pharmacology Gordon Conference, Ventura, CA, February 13, 1997
125. Short Course Presentation on Combinatorial Chemistry, Lund, Sweden, August 14, 1997
126. Royal Society Meeting, Combinatorial Approaches to Chemistry and Biology, Cambridge, UK, July 30, 1997
127. National Organic Symposium, Trinity College, Texas, June 22-26, 1997
128. Frontiers in Science Symposium, Munich, Germany, June 19-22, 1997
129. American Association for the Advancement of Science, Seattle, Washington, February 14, 1997
130. Frontiers in Chemistry, National Academy of Sciences, CA, November 7, 1996
131. Organic Reactions and Processes Gordon Conference, New Hampshire, July 17, 1996
132. Bioorganic Chemistry Gordon Conference, New Hampshire, June 24, 1996
133. New Swiss Chemical Society Conference on "Synthesis of Small Molecules on the Solid Phase," Basel, Switzerland, May 9, 1996
134. Society of Chemical Industry (U.K.) conference, London, UK, February 27, 1996
135. CHI conference on combinatorial libraries, Coronado, CA, January 25, 1996
136. 1995 International Chemical Congress of the Pacific Rim Societies, Honolulu, Hawaii, December 19, 1995
137. Arizona Cancer Center Molecular Diversity Conference, Tuscon, AZ, December 2, 1995
138. 1st Canadian Conference on Combinatorial Chemistry, October 21, 1995
139. Heterocycles Gordon Conference, New Hampshire, July 12, 1995
140. The Ninth Symposium of the Protein Society, Boston, MA, July 10, 1995
141. The Natural Products Gordon Conference, New Hampshire, July 5, 1995
142. The Nagoya International Conference of Organic Chemistry (10th Nozaki Conference), Nagoya, Japan, June 16-18, 1995
143. 1995 Worcester Foundation Symposium on Neurodegenerative Disease - Molecular Insights and Emerging Therapies, Worcester, MA, May 6, 1995
144. Symposium on Combinatorial Libraries at the ACS National Meeting, Anaheim, CA, April 2, 1995
145. Rhone Poulenc Third Annual Visions in Chemistry Symposium, PA, April 27, 1995
146. Symposium on Combinatorial Libraries at the ACS National Meeting, Anaheim, CA, April 2, 1995

147. Symposium on Exploiting Molecular Diversity sponsored by Cambridge Healthtech Institute, La Jolla, CA, January 25, 1995
148. "Biomolecular Recognition at ONR" meeting, October 29, 1994
149. Advanced Laboratory Exposition and Conference, San Jose, CA, October 25, 1994
150. Polymer Division Symposia at the ACS National Meeting, Washington D.C., August 24, 1994
151. Beckman Young Investigator Symposium, Irvine, CA, August 16, 1994
152. Symposium on Combinatorial Libraries for Molecular Diversity sponsored by International Business Communications, San Francisco, CA, August 12, 1994
153. National Science Foundation Workshop in Organic Synthesis and Natural Products Chemistry, Flat Rock, North Carolina, July 16, 1994
154. 24th National Medicinal Chemistry Symposium, Salt Lake City, Utah, June 23, 1994
155. Seminar speaker chosen for the annual meeting of the Section on Medicinal Chemistry of the New Swiss Chemical Society, Basel, Switzerland, June 1994
156. Molecular Diversity Symposium at University of North Carolina on June 4, 1994
157. Chemistry and Biology of Peptides Gordon Conference, Ventura, CA, February 14, 1994
158. Exploiting Molecular Diversity sponsored by Cambridge Healthtech Institute, La Jolla, January 14, 1994
159. Drug Discovery Section of the Annual Meeting of the Pharmaceutical Manufacturers Association, Philadelphia, PA, September 20, 1993
160. Science Innovation Conference held by the AAAS, Boston, MA, August, 1993

III. Companies

1. Pfizer, Groton, CT, March 20, 2025
2. Boehringer Ingelheim (Virtual Presentation), European Research Sites, June 27, 2023
3. Bristol Myers Squibb, New Brunswick, NJ, November 10, 2022
4. Pharmaron, Virtual presentation to multiple sites across world, October 26, 2022
5. Ono Pharmaceuticals, Osaka, JP, June 27, 2019
6. Merck, West Point, PA, June 4, 2019
7. Vertex, Boston Massachusetts, May 16, 2018
8. Eli Lilly, Indianapolis, February 6, 2018
9. Gateway Park BioHub (Astrazeneca, Alkermes, Morphic Therapeutics, Arrakis Therapeutics, Entasis Therapeutics), December 11, 2017
10. Ono Pharmaceuticals, Osaka, Japan, June 13, 2016
11. Vertex, Cambridge, UK, January 14, 2016.
12. Cytec Industries, Stamford, CT, November 10, 2015
13. Yale Chemical Biology Off-Site, October 9, 2015
14. Gilead Pharmaceuticals, Foster City, CA, June 9, 2014
15. Dupont Crop Protection, Wilmington, DE, January 14, 2014
16. Biogen-Idec, Boston, MA, November 5, 2013
17. Pfizer, Groton, CT, October 8, 2013
18. AbbVie Inc, Chicago, IL, May 8, 2013
19. Takeda Pharmaceuticals, Cambridge, MA, March 13, 2013
20. Amgen, Thousand Oaks, California, January 10, 2013
21. Ono Pharmaceuticals, Osaka, Japan, June 7, 2012
22. Bristol Myers Squibb, Wallingford, CT, May 22, 2012
23. Bristol Myers Squibb, Princeton, NJ, May 8, 2012
24. Roche Pharmaceuticals, Nutley, NJ, March 15, 2012
25. Cubist Pharmaceuticals, Lexington, MA, March 6, 2012
26. Janssen Pharmaceuticals (Belgium), June 14, 2011
27. Novartis (East Hanover, NJ site), May 23, 2011
28. Boehringer Ingelheim (Ridgefield, CT), May 9, 2011
29. Merck (Rahway, NJ site), May 4, 2011

30. Sunovion (formerly Sepracor, MA), December 13, 2010
31. Bristol Myers Squibb (Process Research, NJ), November 16, 2010
32. GlaxoSmithKline Chemistry Scholars Symposium, Durham, NC, September 24, 2010
33. Johnson & Johnson Pharmaceutical Research & Development, La Jolla, CA, April 12, 2010
34. Amgen, Boston, MA, February 23, 2010
35. Abbott Laboratories, Chicago, IL, July 14, 2009
36. GlaxoSmithKline, Collegeville site, PA, June 10, 2009
37. Ono Pharmaceuticals, Osaka Japan, May 24, 2009
38. Ardelyx, Inc. (Pharma Company), Fremont, CA, February 4, 2009
39. Takeda Pharmaceuticals, La Jolla, CA, August 7, 2008
40. GlaxoSmithKline, Stevenage site, UK, July 10, 2008
41. GlaxoSmithKline, Harlow site, UK, July 9, 2008
42. Takeda Pharmaceuticals, San Diego, CA, August 7, 2008
43. GlaxoSmithKline, Stevenage, UK, July 10, 2008
44. GlaxoSmithKline, Harlow, UK, July 9, 2008
45. Merck, West Point, PA, June 13, 2008
46. Amgen, Thousand Oaks, CA, June 5, 2008
47. Abbott Laboratories, Chicago, IL, July 26, 2008
48. Elan Pharmaceuticals, South San Francisco, CA, May 17, 2007
49. Mitsubishi (Seminar 2. Synthetic Methods), Yokohama, Japan, May 11, 2007
50. Mitsubishi (Seminar 1. Chemical Biology), Yokohama, Japan, May 11, 2007
51. Novacal (now NovaBay), Emeryville, CA, January 5, 2007
52. Merck, Rahway, NJ, December 5, 2006
53. Amgen, South San Francisco, CA, September 28, 2006
54. Ono Pharmaceuticals, Osaka, Japan, May 23, 2006
55. Bristol-Myers Squibb, Wallingford, CT, March 28, 2006
56. Gilead Pharmaceuticals, Foster City, CA, March 16, 2006
57. Wyeth Pharmaceuticals, Cambridge, MA, January 31, 2006
58. Astra-Zeneca, Waltham, MA, November 21, 2005
59. Sunesis Pharmaceuticals, South San Francisco, CA, November 7, 2005
60. Symyx Technologies, Santa Clara, CA, October 7, 2005
61. Genomics Institute of the Novartis Research Foundation, La Jolla, CA, July 8, 2005
62. Lundbeck, Copenhagen, Denmark, June 7, 2005
63. Ono Pharmaceuticals, Osaka, Japan, April 23, 2005
64. Albany Molecular, Albany, NY, February 23, 2005
65. Wyeth, Pearl River, NY, October 15, 2004
66. Elan, South San Francisco, CA, July 20, 2004
67. Boehringer Ingelheim, Ridgefield, CT, May 18, 2004
68. Roche, Palo Alto, CA, February 23, 2004
69. Rhodia-Chirex, Lyon, France, November 24, 2003
70. Johnson & Johnson Pharmaceuticals, Spring House, PA, May 29, 2003
71. 3D Pharmaceuticals (division of Johnson & Johnson Pharmaceuticals), Exton, PA, April 11, 2003
72. GlaxoSmithKline, Collegeville, PA, April 9, 2003
73. Merck, Rahway, NJ, April 8, 2003
74. R.W. Johnson (San Diego site), May 9, 2002
75. Novartis (Vienna, Austria site), February 8, 2002
76. Novartis (Basel, Switzerland), February 6, 2002
77. Abbott Laboratories, Chicago, January 18, 2002
78. Genentech, South San Francisco, CA, July 7, 2001
79. Bristol Myers Squibb, Process Research Site New Jersey, January 18, 2001
80. Hoffman La Roche, Nutley, New Jersey, November 2, 2000
81. Eastman Kodak, Rochester, NY, April 19, 2000
82. Pharmacia International Chemistry Symposium, Orlando, FL, March 1, 2000
83. BioMega (Division of Boehringer Ingelheim), Montreal, Canada, January 20, 2000

84. Glaxo-Wellcome, Brisbane, Australia, December 9, 1999
85. Institut of Recherche Pierre Fabre, Castres, France, October 29, 1999
86. Gilead Pharmaceuticals, San Francisco, CA, September 24, 1999
87. Hoffman LaRoche, Palo Alto, CA, December 15, 1998
88. Zeneca, Richmond, CA, November 8, 1998
89. Zeneca, Jealot Hill, England, July 31, 1998
90. Arris Pharmaceuticals, South San Francisco, CA, July 15, 1998
91. Merck, West Point, PA, June 5, 1998
92. Johnson and Johnson, Springhouse, PA, June 4, 1998
93. Rohm and Haas, Pennsylvania, May 4, 1998
94. Dupont, Newark, DE, April 16, 1998
95. Merck, Rahway, NJ, April 15, 1998
96. Zeneca Pharmaceuticals, Wilmington, Delaware, April 8, 1998
97. Amgen Pharmaceuticals, Thousand Oaks, CA, March 23, 1998
98. Boehringer Ingelheim, Ridgefield, CT, February 12, 1998
99. Bayer Pharmaceuticals, CT, May 16, 1997
100. Bristol Myers-Squibb, CT, May 15, 1997
101. Schering Plough, NJ, May 13, 1997
102. Procter and Gamble, Cincinnati, OH, May 12, 1997
103. Bristol Myers-Squibb, Princeton, NJ, January 31, 1997
104. Abbott Laboratories, IL, April 19, 1996
105. Parke Davis, Ann Arbor, MI, April 17, 1996
106. Eli Lilly Young Investigator Award Symposium, Indianapolis, IN, March 4, 1996
107. Hoffman LaRoche, Nutley, NJ, December 14, 1995
108. Procter and Gamble, Cincinnati, OH, September 18, 1995
109. Molecular Devices, CA, September 6, 1995
110. Ono Pharmaceutical Company at the Mimase Research Institute, Osaka, Japan, June 26, 1995
111. Banyu Pharmaceutical Company, Tsukuba, Japan, June 20, 1995
112. Upjohn Pharmaceuticals, Kalamazoo, MI, April 25, 1995
113. Tularik Pharmaceuticals, South San Francisco, CA, February 23, 1995
114. Dupont Merck Pharmaceuticals, Wilmington, DE, February 9, 1995
115. Berlex Pharmaceuticals, Richmond, CA, January 26, 1995
116. Pfizer, Groton, CT, November 14, 1994
117. Genentech, South San Francisco, CA, November 7, 1994
118. MDL Information Systems, San Leandro, CA, October 17, 1994
119. Chiron Corporation, Emeryville, CA, August, 1994
120. Cadus Pharmaceuticals, New York City, NY, July 28, 1994
121. Eli Lilly, Indianapolis, IN, July 27, 1994
122. Merck, West Point, PA, June 27, 1994
123. Smith Kline and Beecham, King of Prussia, PA, June 26, 1994
124. Agouron, San Diego, CA, April 7, 1994
125. Procter and Gamble, Cincinnati, OH, March 8, 1994
126. Genetics Institute, Cambridge, Massachusetts, August 1993