

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	1983-1984

Awards

Yale Dylan Hixon '88 Prize for Teaching Excellence in the Natural Sciences (one prize/yr)	2016
Thomson Reuters ISI Highly Cited Researcher	2015
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

Committee of Visitors, Triennial Review of NSF Chemistry	2016
Chaired Connecticut Organic Chemistry Symposium (CTOS)	April 7, 2016
Chaired Symposium at fall ACS National Meeting, Boston, MA	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
Editorial Advisory Board for <i>Advanced Synthesis and Catalysis</i>	2014-present
Editorial Advisory Boards for <i>ACS Combinatorial Science</i> and <i>Eur. J. Org. Chem.</i>	2010-present
Member, Scientific Advisory Board, Lycera Pharmaceuticals	2009-present
Member, Scientific Advisory Board, Ardelyx Pharmaceuticals	2009-2014
Member of the Editorial Board <i>Chemical Biology & Drug Design</i>	2005-present
Member of the NIH Chemical Genomics Center Board of Advisors	2005-2010
Member of the Editorial Board <i>Chemistry & Biology</i>	2004-2015
Approximately yearly service as Ad-Hoc Study Section Member for the NSF or NIH	2007-present
Member, NIH Medicinal Chemistry then MedChem/SBCB Study Section	2003-2007
Board of Editors <i>Organic Syntheses</i> , Inc.	2003-2011
Member of International Advisory Board <i>Organic & Biomolecular Chemistry</i>	2002-present
Consultant, Abbott Laboratories	2002-present
Consultant, Ono Pharmaceuticals	2002-present
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-present
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

>290 Publications, H-Index >85

1. 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**, Early View (2017).
2. 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**, Early View (2017).
3. Halskov, K.; 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).
4. 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).

5. 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).
6. 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).
7. 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).
8. 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).
9. 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* **21**, Ahead of Print (2016).
10. Wangweerawong, A.; Kolmar, S.; Ellman, J. A. "Preparation of (S)-Nonafluorobutanesulfinamide" *Org. Synth.* **93**, 319-330 (2016).
11. 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).
12. 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**, 847–851 (2016).
13. 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).
14. 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).
15. Phelan, J. P.; Ellman, J. A. "Conjugate Addition–Enantioselective Protonation Reactions" *Beilstein J. Org. Chem.* **12**, 1203–1228 (2016).
16. 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).
17. 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).

18. Mesganaw, T.; Ellman, J. A. "4-(Diethylphosphino)-N,N-dimethylaniline" *e-EROS Encyclopedia of Reagents for Organic Synthesis* (2016).
19. 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).
20. 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).
21. 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).
22. 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).
23. 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).
24. 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].
25. 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).
26. Chen, S.; Bergman, R. G.; Ellman, J. A. "Facile Rh(III)-Catalyzed Synthesis of Fluorinated Pyridines" *Org. Lett.* 2567–2569 (2015).
27. Hummel, J. R.; Ellman, J. A. "Cobalt(III)-Catalyzed C–H Bond Amidation with Isocyanates" *Org. Lett.* **17**, 2400–2403 (2015).
28. 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).

29. 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).
30. 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).
31. 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].
32. 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).
33. 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).
34. Otley, K. D.; Ellman, J. A. "A Lewis Acid-Catalyzed Annulation to 2,1-Benzisoxazoles" *J. Org. Chem.* **79**, 8296–8303 (2014).
35. 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).
36. 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).
37. 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).
38. Xu, J.; Chatterjee, M.; Baguley, T. D.; Brouillette, J.; Kurup, P.; Ghosh, D.; Kanyo, J.; Zhang, Y.; Seyb, K.; Ononenyi, C.; Foscoe, 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).
39. 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)].
40. 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).
41. 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).

42. 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).
43. 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).
44. 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).
45. Xu, H. C.; Chowdhury, S.; Ellman, J. A. "Asymmetric Synthesis of Amines Using *tert*-Butanesulfinamide" *Nat. Protoc.* **8**, 2271-2280 (2013).
46. 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).
47. 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).
48. 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).
49. 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].
50. 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)].
51. 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).
52. 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).
53. 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).
54. 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).

55. 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).
56. 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).
57. 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).
58. 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).
59. 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).
60. 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).
61. 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).
62. 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).
63. 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).
64. 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).
65. 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).
66. 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).

67. 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].
68. 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).
69. 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).
70. Buesking, A. W.; Baguley, T. D.; Ellman, J. A. "Asymmetric Synthesis of Amines by the Knochel-Type MgCl₂-Enhanced Addition of Benzyl Zinc Reagents to *N-tert*-Butanesulfinyl Aldimines" *Org. Lett.* **13**, 964-967 (2011).
71. 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).
72. 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].
73. 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].
74. 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).
75. Berman, A. M.; Bergman, R. G.; Ellman, J. A. "Rh(I)-Catalyzed Direct Arylation of Azines" *J. Org. Chem.* **75**, 7863-7868 (2010).
76. 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" submitted *J. Am. Chem. Soc.* **132**, 12554-12555 (2010).
77. Datta, G. K.; Ellman, J. A. "Racemization Free Protocol for the Synthesis of *N-tert*-Butanesulfinyl Ketimines" *J. Org. Chem.* **75**, 6283-6285 (2010).
78. 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).
79. 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).

80. 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).
81. 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).
82. 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).
83. 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).
84. Robak, M. T.; Herbage, M. A.; Ellman, J. A. "Synthesis and Applications of *tert*-Butanesulfinamide" *Chem. Rev.* **110**, 3600–3740 (2010).
85. 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).
86. Brak, K.; Ellman, J. A. "Total Synthesis of (-)-Aurantioclavine" *Org. Lett.* **12**, 2004–2007 (2010).
87. 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).
88. 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).
89. 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).
90. 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).
91. 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).
92. 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).
93. 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).
94. 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).

95. 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.
96. 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).
97. 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).
98. 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).
99. 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].
100. 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).
101. 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).
102. 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).
103. 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).
104. 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).
105. 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).
106. 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].
107. 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).
108. 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).
109. 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).

110. 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).
111. 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).
112. 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).
113. 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).
114. 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).
115. 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).
116. 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).
117. 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).
118. 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)].
119. 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).
120. Ellman, J. A. "The Direct Approach" *Science* **316**, 1131-1132 (2007).
121. 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).
122. 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).
123. 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).
124. 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).

125. 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).
126. 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).
127. Patterson, A. W.; Wood, W. J. L.; Ellman, J. A. "Substrate Activity Acreening (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).
128. 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).
129. 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).
130. 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).
131. Salisbury, C. M.; Ellman, J. A. "Rapid Identification of Potent Nonpeptidic Serine Protease Inhibitors" *ChemBioChem* **7**, 1034-1037 (2006).
132. Zhang, Y.; Lewis, J. C.; Bergman, R. G.; Ellman, J. A.; Oldfield, E. "NMR Shifts, Orbitals, and M···H-X Bonding in d^8 Square Planar Metal Complexes" *Organometallics* **25**, 3515-3519 (2006).
133. 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).
134. 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).
135. 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).
136. 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).
137. 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).
138. 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).
139. 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).

140. 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 Vasicoline" *J. Org. Chem.* **71**, 1969-1976 (2006).
141. 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)].
142. 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).
143. Weix, D. J.; Ellman, J. A. "(+)-2-Methyl-2-propanesulfinamide" *Org. Synth.* **82**, 157-165 (2005).
144. 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).
145. 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).
146. Peltier, H. M.; Ellman, J. A. "*N*-Sulfinyl Metalloenamine Conjugate Additions: Asymmetric Synthesis of Piperidines" *J. Org. Chem.* **70**, 7342-7345 (2005).
147. 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).
148. 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).
149. 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).
150. 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).
151. 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).
152. Peltier, H. M.; Evans, J. W.; Ellman, J. A. "Catalytic Enantioselective Sulfinyl Transfer Using Cinchona Alkaloid Catalysts" *Org. Lett.* **7**, 1733-1736 (2005).
153. 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).
154. 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).

155. 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).
156. 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).
157. 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).
158. 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).
159. 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).
160. 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).
161. 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).
162. Kochi, T.; Mukade, T. "Asymmetric Synthesis of Amines with *tert*-Butanesulfinamide and Its Application" *J. Syn. Org. Chem. Jpn.* **62**, 128-139 (2004).
163. 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).
164. 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).
165. 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).
166. 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).
167. 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).
168. 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).
169. 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).

170. Boitano, A.; Leonetti, 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).
171. 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).
172. 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).
173. Mukade, T.; Dragoli, D. R.; Ellman, J. A. "Parallel Solution-Phase Asymmetric Synthesis of α -Branched Amines" *J. Comb. Chem.* **5**, 590-596 (2003).
174. 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).
175. 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).
176. Weix, D. J.; Ellman, J. A. "An Improved Synthesis of *tert*-Butanesulfinamide Suitable for Large Scale Production" *Org. Lett.* **5**, 1317-1320 (2003).
177. 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).
178. 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).
179. 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).
180. 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 Plasmeprin II, an Aspartic Protease from *Plasmodium falciparum*" *J. Mol. Biol.* **327**, 173-181 (2003).
181. Schenkel, L. B.; Ellman, J. A. "Novel Sulfinyl Imine Ligands for Asymmetric Catalysis" *Org. Lett.* **5**, 545-548 (2003).
182. 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).
183. 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).
184. Ellman, J. A. "Applications of *tert*-Butanesulfinamide in the Asymmetric Synthesis of Amines" *Pure Appl. Chem.* **75**, 39-46 (2003).

185. Owens, T. D.; Souers, A. J.; Ellman, J. A. "The Preparation and Utility of Bis(sulfinyl)imidoamidine Ligands for the Copper-Catalyzed Diels Alder Reaction" *J. Org. Chem.* **68**, 3-10 (2003).
186. 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).
187. 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).
188. 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).
189. 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).
190. 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).
191. 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).
192. 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).
193. 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).
194. 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).
195. 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).
196. 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).
197. 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).
198. 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).
199. 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).

200. 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).
201. Maly, D. J.; Huang, L.; Ellman, J. A. "Combinatorial Strategies for Targeting Protein Families. Application to the Proteases" *ChemBioChem* **3**, 16-37 (2002).
202. 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).
203. 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).
204. Lee, A.; Ellman, J. A. "Parallel Solution-Phase Synthesis of Mechanism-Based Cysteine Protease Inhibitors" *Org. Lett.* **3**, 3707-3709 (2001).
205. 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).
206. 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).
207. Souers, A. J.; Ellman, J. A. " β -Turn Mimetic Library Synthesis: Scaffolds and Applications" *Tetrahedron* **57**, 7431-7448 (2001).
208. 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).
209. 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).
210. 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).
211. 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).
212. 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).
213. 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).
214. 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).

215. 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).
216. 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).
217. 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.
218. 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.
219. 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).
220. 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).
221. Souers, A. J.; Ellman, J. A. "Asymmetric Synthesis of a C-3 Substituted Pivcolic Acid" *J. Org. Chem.* **65**, 1222-1224 (2000).
222. 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).
223. 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).
224. 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).
225. Dragoli, D. R.; Ellman, J. A. "Parallel Solid-Phase Synthesis of Prostaglandin E Analogs" *J. Comb. Chem.* **1**, 534-539 (1999).
226. 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.
227. 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).
228. 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).

229. 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).
230. 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).
231. 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).
232. 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).
233. 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).
234. 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).
235. Backes, B. J.; Ellman, J. A. "An Alkanesulfonamide "Safety-Catch" Linker for Solid-Phase Synthesis" *J. Org. Chem.* **64**, 2322-2330 (1999).
236. 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).
237. 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).
238. 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).
239. 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).
240. 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).
241. 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).
242. 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).
243. Souers, A. J.; Virgilio, A. A.; Schürer, S. S.; Ellman, J. A.; Vanderslice, P.; Kogan, T. P. "Novel Inhibitors of $\alpha_4\beta_1$ Integrin Receptor Interactions Through Library Synthesis and Screening" *BioMed. Chem. Lett.* **8**, 2297-2303 (1998).

244. 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).
245. Ellman, J. A.; Gallop, M. A. "Combinatorial Chemistry" *Curr. Opin. Chem. Biol.* **2**, 317-319 (1998).
246. 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).
247. 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).
248. Liu, G.; Cogan, D. A.; Ellman, J. A. "Catalytic Asymmetric Synthesis of *tert*-Butanesulfinamide. Application to the Asymmetric Synthesis of Amines" *J. Am. Chem. Soc.* **119**, 9913-9914 (1997).
249. Backes, B. A.; Ellman, J. A. "Solid Support Linker Strategies" *Curr. Opin. Chem. Biol.* **1**, 86-94 (1997).
250. 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).
251. 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).
252. Plunkett, M. J.; Ellman, J. A. "Germanium and Silicon Linking Strategies for Traceless Solid-Phase Synthesis" *J. Org. Chem.* **62**, 2885-2893 (1997).
253. Ellman, J. Stoddard, B.; Wells, J. "Combinatorial Thinking in Chemistry and Biology" *Proc. Natl. Acad. Sci., USA* **94**, 2779-2782 (1997).
254. 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).
255. 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).
256. Plunkett, M. J.; Ellman, J. A. "Combinatorial Chemistry and New Drugs" *Sci. Am.* **276**, 68-73 (1997).
257. 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.
258. 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).
259. Choong, I. C.; Ellman, J. A. "Solid-Phase Synthesis: Application of Combinatorial Libraries" in *Annu. Rep. Med. Chem.* **31**, 309-318 (1996).

260. 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).
261. 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).
262. 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).
263. 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).
264. 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.
265. Ellman, J. A. "The Solid-Phase Synthesis of Complex Small Molecules" *Chimia* **50**, 260-261 (1996).
266. Ellman, J. A. "Design, Synthesis, and Evaluation of Small-Molecule Libraries" *Acc. Chem. Res.* **29**, 132-143 (1996).
267. Thompson, L. A.; Ellman, J. A. "Synthesis and Applications of Small Molecule Libraries" *Chem. Rev.* **96**, 555-600 (1996).
268. 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).
269. Plunkett, M. J.; Ellman, J. A. "Silicon-Based Linkage Strategy for Traceless Solid-Phase Synthesis" *J. Org. Chem.* **60**, 6006-6007 (1995).
270. Bunin, B. A.; Plunkett, M. J.; Ellman, J. A. "Synthesis and Evaluation of 1,4-Benzodiazepine Libraries" *Methods Enzymol.* **267**, 448-467 (1996).
271. Booramra, 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).
272. 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.
273. Ellman, J. A. "Combinatorial Organic Libraries" *CHEMTRACTS: Org. Chem.* **8**, 1-4 (1995).
274. 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).
275. 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).

276. Thompson, L. A.; Ellman, J. A. "Straightforward and General Method for Coupling Alcohols to Solid-Supports" *Tetrahedron Lett.* **35**, 9333-9336 (1994).
277. 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).
278. 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).
279. Bunin, B. A.; Ellman, J. A. "Increasing the Diversity of a 1,4-Benzodiazepine Library through Side-Chain Functionalization" *Polym. Prepr.* **35**, 983, (1994).
280. 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).
281. 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).
282. 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).
283. Mendel, D.; Ellman, J.; Schultz, P. G. "Protein Biosynthesis with Conformationally Restricted Amino Acids" *J. Am. Chem. Soc.* **115**, 4359-4360 (1993).
284. 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).
285. 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).
286. Ellman, J. A.; Mendel, D.; Schultz, P. G. "Site-Specific Incorporation of Novel Backbone Structures into Proteins" *Science* **255**, 197-200 (1992).
287. 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).
288. 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).
289. 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).
290. 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).
291. 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).

292. 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).
293. 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).
294. Evans, D. A.; Britton, T. C.; Ellman, J. A. "Contrastreric Carboximide Hydrolysis with Lithium Hydroperoxide" *Tetrahedron Lett.* **28**, 6141-6144 (1987).
295. 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. 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.
2. Ellerby; L. M.; Ellman; J. A.; Leyva; M. J. "Caspase inhibitors and uses thereof" U.S. (2016), Patent No. 9,245,290; U.S. (2013), Patent No. 8,518,942; U.S. (2013).
3. Ellman, J. A.; Patterson, A. W.; Peltier, H. "Tubulysin D Analogues" U.S. (2013), Patent No. 8,476,451.
4. 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; U.S. (2013), Patent No. 8,361,932.
5. 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.
6. Ellman, J. A.; Choong, I. "Pharmacophore recombination for the identification of small molecule drug lead compounds" U.S. (2009), Patent No. 7,001,727.
7. 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.
8. Ellman, J. A.; Choong, I. "Pharmacophore Recombination for the Identification of Small Molecule Drug Lead Compounds" U.S. (2002), Patent No. 6,344,334.
9. Ellman, J. A.; Choong, I. "Pharmacophore Recombination for the Identification of Small Molecule Drug Lead Compounds" U.S. (2002), Patent No. 6,344,330.
10. 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.
11. 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.
12. Ellman, J. A. "Solid phase and combinatorial synthesis of compounds on a solid support" U.S. (1996), Patent No. 5,545,568.
13. 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. 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.
2. 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.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. Kim, J. M.; Ellman, J. A.; Goldberg, D. "Preparation of 4-amino-1-benzylpiperidines as antimalarials" PCT Int. Appl. (2001), WO 0114331 A2 2001030.
14. 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.
15. Ellman, J. A.; Choong, I. "Pharmacophore Recombination for the Identification of Small Molecule Drug Lead Compounds" PCT Int. Appl. (1999), WO 9949314 A1 19990930.
11. 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 (>400)

I. Universities/Research Institutions

1. ETH Zurich (Switzerland), May 19, 2017
2. University of Basel (Switzerland), May 18, 2017
3. École Polytechnique Fédérale de Lausanne (Switzerland), May 17, 2017
4. University of Fribourg (Switzerland), May 16, 2017
5. University of Geneva (Switzerland), May 15, 2017
6. UCSF, May 9, 2017
7. Rochester University, Chambers Lectureship (three lectures), March 20-22, 2017
8. Vanderbilt University, January 18, 2017
9. Sheffield University, UK: 49th Annual Meeting “Modern Aspects of Stereochemistry”, January 12, 2016
10. Shanghai Institute of Organic Chemistry (Shanghai, China), June 5, 2015
11. University of California at Los Angeles, May 21, 2015
12. Virginia Tech. March 19, 2015
13. Washington University School of Medicine (St. Louis, MO), March 17, 2015
14. University of Houston, March 12, 2015
15. Oklahoma State University Phi Lambda Upsilon 2015 Research Seminar, March 10, 2015
16. Oklahoma State University Phi Lambda Upsilon 2015 Banquet Presentation, March 10, 2015
17. Scripps Research Institute, June 10, 2014
18. University of Southern California, April 9, 2014
19. University of Kansas, March 13, 2014
20. Yale Cancer Center Grand Rounds, March 5, 2014
21. University of California at Irvine, February 10, 2014
22. Albert Einstein College of Medicine, May 28, 2013
23. Purdue University, H. C. Brown Symposium, April 27, 2013
24. MIT, April 25, 2013
25. University of Washington, March 20, 2013
26. Caltech, January 9, 2013
27. Yale Chemical Biology Symposium, May 11, 2012
28. The Ohio State University, March 8th, 2012
29. Yale University, Chemical Biology Retreat, December 16, 2011
30. University of Chicago, Stieglitz Lecture, November 21, 2011
31. Yale University, Chemical Biology Retreat, May 13, 2011
32. Yale University, “Yale Talks About Opportunities in Drug Discovery Symposium, April 2, 2011
33. University of Leeds, UK, March 31, 2011
34. University of Loughborough, UK, March 30, 2011
35. University of Bristol, UK, March 28, 2011
36. Columbia University, December 2, 2010
37. University of Wisconsin at Madison, November 9, 2010
38. University of New Hampshire, November 2, 2010
39. University of Connecticut, October 27, 2010
40. Boston College, October 12, 2010
41. Purdue University (H. C. Brown Symposium), April 24, 2010
42. University of California at San Francisco, April 15, 2010
43. UT Southwestern Medical Center, April 1, 2010
44. University of Colorado (Roche Lecture), March 1, 2010
45. Rutgers, University, February 5, 2010
46. Yale University, January 22, 2010
47. Genomics Institute of the Novartis Research Foundation, La Jolla, CA, October 23, 2009
48. Scripps Research Institute, Jupiter, FL site, April 22, 2009
49. Scripps Research Institute, La Jolla, CA site, April 7, 2009
50. Northwestern University, March 30, 2009

51. Wayne State University, February 23, 2009
52. Oregon State University, August 11, 2008
53. Cambridge University, UK, July 11, 2008
54. University of Guelph-Waterloo Pfizer Lectureship, May 15, 2008
55. National Institutes of Health, Bethesda, MD, April 25, 2008
56. University of Pittsburgh, Pittsburgh, PA, March 19, 2005
57. University of Pennsylvania, Philadelphia, PA, December 13, 2008
58. University of California at Berkeley, Structural and Quantitative Biology Seminar, October 1, 2008
59. Keio University, Yokohama, Japan, May 11, 2007
60. Santa Clara University, Santa Clara, CA, April 13, 2007
61. University of Illinois (BMS Symposium Lecturer), Urbana, IL, February 12, 2007
62. North Carolina State University, Raleigh, NC, January 19, 2007
63. Northwestern University, Evanston, IL, April 21, 2006
64. Stanford University, Palo Alto, CA, March 23, 2006
65. MIT (George Buchi Lectureship, Seminar #2), Cambridge, MA, February 2, 2006
66. MIT (George Buchi Lectureship, Seminar #1), Cambridge, MA, February 1, 2006
67. Brandeis University, Waltham, MA, January 30, 2006
68. University of California at Berkeley, QB3 Seminar Series, November 10, 2005
69. University of Michigan (Bristol-Myers Squibb Lecturer), September 10, 2005
70. Technical University of Denmark (Lundbeck Lectureship), Copenhagen, Denmark, June 6, 2005
71. University of Toronto, Toronto, Canada, May 4, 2005
72. University of Chicago, Chicago, IL, May 2, 2005
73. Yale University, Hartford, CN, April 28, 2005
74. Organic Chemistry Day Symposium at University of Missouri, Columbia, MO, April 15, 2005
75. Chemical Biology Seminar at University of Missouri, Columbia, MO, April 15, 2005
76. University of Alberta, Edmonton, Canada, April 11, 2005
77. University of Calgary, Calgary, Canada, April 8, 2005
78. University of Kansas, Lawrence KS, March 17, 2005
79. Cherry Emerson Seminar Series at Georgia Tech, Atlanta, GA, March 8, 2005
80. Department of Energy Lawrence Livermore Labs, Livermore, CA, January 10, 2005
81. UC Irvine Chemical Biology Symposium, Irvine, CA, September 17, 2004
82. Michigan State, East Lansing, MI, March 25, 2004
83. Chemistry-Biology Symposium at the University of Michigan, Ann Arbor, MI, December 1, 2003
84. Université Rouen, Rouen, France, November 22, 2003
85. Université Paul Sabatier, Toulouse, France, November 20, 2003
86. Professor Irwin Kuntz Retirement Symposium, University of California at San Francisco, October 18, 2003
87. University of California at San Francisco, Mission Bay Site, May 22, 2003
88. Princeton University, April 10, 2003
89. Ohio State University, February 20, 2003
90. University of Minnesota, January 28, 2003
91. Boston University Combinatorial Chemistry Symposium, June 28, 2002
92. Caltech, May 8, 2002
93. Southwestern Medical Center (Dallas), April 25, 2002
94. Northwestern University, April 23, 2002
95. University of Oregon, May 15, 2002
96. University of Illinois (Champaign-Urbana site), March 13, 2002
97. University of Illinois (Chicago site), February 26, 2002
98. University of Geneva, February 7, 2002
99. Columbia University Pharmacology Department (NY), October 4, 2001
100. Columbia University Chemistry Department (NY), October 5, 2001
101. University of California at Davis, April 24, 2001
102. Chemical Biology Retreat (UCSF), Asilomar, January 4, 2001

103. University of Rochester, NY, April 18, 2000
104. Scripps Research Institute, San Diego, CA, March 17, 2000
105. Florida State University, February 29, 2000
106. 2000 UCSF Cancer Center Meeting, February 22, 2000
107. University of Washington, February 18, 2000
108. University of Sherbrook, *BioMega/Boehringer Ingelheim Research Inc. Distinguished Lecturer*, Canada, January 19, 2000
109. The Carlsburg Institute, Copenhagen, Denmark, November 2, 1999
110. Boston College, October 7, 1999
111. Tufts University, October 5, 1999
112. The Gallo Center, UCSF, April 28, 1999
113. University of North Carolina, April 17, 1999
114. Purdue University, April 6, 1999
115. University of Michigan, October 1, 1998
116. Colorado University/Syntex-Roche Symposium on Organic Synthesis, May 22, 1998
117. University of Illinois Monsanto Symposium, April 18
118. University of Madison, Wisconsin, March 24, 1998
119. Cal State Sacramento 50th Anniversary Celebration, February 14, 1998
120. Yale University, February 13, 1998
121. University of Montreal, October 3, 1997
122. University of Copenhagen, August 15, 1997
123. Stanford University, May 23, 1997
124. University of Kentucky - NAFF Symposium, April 8, 1997
125. Notre Dame, March 19, 1997
126. Indiana University, March 17, 1997
127. Princeton University, January 30, 1997
128. University of Texas at Austin, December 13, 1996
129. Texas A & M, December 12, 1996
130. Rice University, December 11, 1996
131. Cornell University, November 18, 1996
132. UCLA, June 6, 1996
133. University of Utah, May 16, 1996
134. University of Michigan, April 16, 1996
135. University of Virginia, April 12, 1996
136. Vanderbilt University, *5th Annual Symposium on Drug Development*, March 27, 1996
137. Harvard University, March 18, 1996
138. University of Nottingham, UK, February 28, 1996
139. Oxford University, UK, February 26, 1996
140. Scripps Research Institute, *Seventh Annual Symposium on Frontiers in Chemistry*, February 23, 1996
141. MIT, February 1, 1996
142. Brandeis, January 30, 1996
143. Sloan Kettering Cancer Institute, January 17, 1996
144. Caltech, November 29, 1995
145. Stanford University, November 15, 1995
146. Case Western, November 9, 1995
147. University of Toronto, October 20, 1995
148. University of California, Berkeley, September 26, 1995
149. University of California, Davis, May 30, 1995
150. Colorado State University, April 24, 1995
151. M.D. Anderson Cancer Institute, January 19, 1995
152. University of California, Santa Cruz, January 10, 1995
153. University of California, Irvine, *1994 University of California Irvine Synthesis Symposium*, December 10, 1994

154. University of California, San Francisco, November 5, 1994
155. University of California, Berkeley, September 27, 1994
156. University of Alberta, April 20, 1994
157. University of Texas, Southwest Medical Center, May 19, 1994

II. Plenary Lectures at Conferences and Meetings

1. 100th Canadian Society for Chemistry Conference, Toronto, Canada, May 30, 2017
2. Symposium honoring Peter G. Schultz 60th birthday, Scripps Research Institute, CA, July 30, 2016
3. International Conference on "Transition Metal Catalysis for Organic Synthesis," Nankai University, China, July 16, 2016
4. International (Henan) Forum on Drug Discovery and Technology, Zhengzhou China, June 6, 2015
5. American Chemical Society National Meeting, Symposium titled "C-H Functionalization in the Preparation of Biologically Active Compounds" Denver, March 21, 2015
6. Gordon Research Conference on Natural Products, New Hampshire, July 21, 2014
7. American Chemical Society National Meeting, Symposium titled "Advances in C-H Bond Functionalization" Dallas, March 18, 2014
8. 7th Catalysis Research Laboratory Winter School (Heidelberg, Germany), Research Seminar, February 28, 2014
9. 7th Catalysis Research Laboratory Winter School (Heidelberg, Germany), Tutorial on Rh(III)-catalyzed C-H bond functionalization, February 28, 2014
10. Treat B. Johnson Symposium, American Chemical Society North East Regional Meeting, New Haven, CT, October 24, 2013
11. American Chemical Society National Meeting "C-H Activation Symposium" New Orleans, LA, April 10, 2013
12. European Molecular Biology Laboratory Chemical Biology Conference, Heidelberg, Germany, September 28, 2012
13. Gordon Research Conference on Natural Products, New Hampshire, July 9, 2012
14. Royal Society of Chemistry symposium entitled "Challenges in Organic Chemistry and Chemical Biology" Edinburgh, UK, June 15, 2012
15. Herbert C. Brown Award Symposium at the American Chemical Society National Meeting, San Diego, CA, March 26, 2012
16. The 132nd Annual Meeting, Pharmaceutical Society of Japan, Hokkaido, Japan, March 29, 2012
17. Modern Catalysis for Sustainable Chemistry Symposium sponsored by Syngenta, Switzerland, October 28, 2011
18. American Chemical Society National Meeting, E.B. Herschberg Award Symposium, Boulder, CO August 29, 2011
19. American Chemical Society National Meeting, Symposium titled "Catalyst needs for drug discovery, development, and commercialization," Boulder, CO, August 28, 2011
20. Gordon Research Conference on Heterocyclic Chemistry, RI, June 28, 2011
21. Gordon Research Conference on High Throughput Chemistry & Chemical Biology, NH, June 20, 2011
22. New Jersey Biotechnology Chemistry Consortium Symposium, December 8, 2010
23. New Jersey Section of the American Chemical Society Symposium for Molecular Design & Synthesis, November 17, 2010
24. Natural Products Gordon Research Conference, Tilton, New Hampshire, July 28, 2010
25. Stereochemistry Gordon Research Conference, Newport, RI, August 8, 2010
26. National Medicinal Chemistry Symposium, Minneapolis, MN, June 9, 2010
27. 2009 Symposium for the Society of Combinatorial Sciences, Beijing, China, September 20, 2009
28. 3rd International Symposium on Advances in Synthesis and Medicinal Chemistry, Kiev, Ukraine, August 25th, 2009
29. 21st American Peptide Symposium, Bloomington, Indiana, June 9, 2009
30. 19th Lakeland Symposium on Heterocyclic Chemistry, Grasmere, UK, May 15, 2009

31. Sandler Day "Symposium on Drug Discovery to Treat Neglected Diseases" UCSF, April 2, 2009
32. ACS National Meeting Symposium entitled "Organic Chemistry Collaborations" March 22, 2009
33. Gordon Research Conference on Chemical & Biological Terrorism Defense, Galveston, Texas, Canada, January 20, 2009
34. The 2nd International Symposium on Catalysis as the Basis for Innovation of Materials Science, Sapporo, Japan, December 19, 2008
35. Catalysis Joint Workshop (University of Heidelberg, Northwestern, and UC Berkeley) Heidelberg, Germany, September 14, 2008
36. 11th Belgian Organic Synthesis Symposium, Ghent, Belgium, July 16, 2008
37. Pacific Northwest Undergraduate Research Symposium, Portland, OR, August 11, 2008
38. Canadian Society of Chemistry, Alberta, Canada, May 24, 2008
39. Gordon Research Conference on Peptides and Proteins, Ventura, CA, February 20, 2008
40. Zing Small Molecule Drug Discovery Conference, Antigua, January 17, 2008
41. Microwave Assisted Organic Synthesis Conf., South San Francisco, CA, October 3, 2007
42. 5th Johnson & Johnson Symposium on Drug Discovery, San Diego, CA, June 19, 2007
43. Annual Meeting Japanese Society for Chemical Biology, Kyoto, Japan, May 10, 2007
44. American Society for Biochemistry and Molecular Biology (ASBMB) 2007 National Meeting, Washington, D.C., April 28, 2007
45. 2nd Hellenic Symposium on Organic Synthesis, Athens, Greece, April 19, 2007
46. Novartis Symposium (Honoring David Evans), Cambridge, MA, December 5, 2006
47. Peter G. Schultz 50th Birthday Symposium, San Diego, CA, June 2, 2006
48. Tetrahedron Prize Award Lecture at Tetrahedron Symposium, Kyoto, Japan, May 25, 2006
49. American Chemistry Society Perspectives in Organic Reactions, Miami, FL, March 8, 2006
50. Combinatorial Chemistry Gordon Research Conference, NH, August 21, 2005
51. Organic Reactions and Processes Gordon Research Conference, RI, August 1, 2005
52. Eurocombi-3 Conference, Winchester, UK, July 18, 2005
53. Protease Symposium at the American Society for Biochemistry and Molecular Biology National Meeting, San Diego, CA, April 6, 2005
54. Eli Lilly Award Symposium honoring Benjamin Cravatt at the National Meeting of the American Chemical Society, Philadelphia, PA, August 24, 2004
55. Symposium on Microwave Chemistry at the National Meeting of the American Chemical Society, Philadelphia, PA, August 23, 2004
56. 21st International Symposium on the Organic Chemistry of Sulfur, Madrid, Spain, July 9, 2004
57. Proteinase 2004 (sponsored jointly by the Royal Society of Chemistry and the Society of Chemical Industry), London, UK, May 10, 2004.
58. 39th EUCHEM Conference on Stereochemistry 2004, Burgenstock, Switzerland, April 19, 2004
59. Symposium For Hirschman Award honoring Richard Houghten at the National Meeting of the American Chemical Society, Anaheim, CA, March 31, 2004
60. NIH Chemical Genomics Symposium, Bethesda, MD, March 15, 2004
61. 5th Florida Heterocycles Conference, Gainesville, FL, March 10, 2004
62. Presentation for acceptance of the "Scheele Award" at the Biotech Forum 2003 Science Conference, Stockholm, Sweden, November 27, 2003
63. Presentation of "Rhodia-Chirex Lectureship Award" at the Société Française de Chimie Division De Chimie Organique 2003 Meeting, November 25, 2003
64. Presentation for acceptance of the "Society of Biomolecular Screening Achievement Award" at the National SBS Meeting, Portland, OR, September 23, 2003
65. ACS Prospectives Conference, "Combinatorial Chemistry: New Methods, New Discoveries", Leesburg, VA, September 21, 2003
66. Medicinal Chemistry Gordon Conference, Newport, RI, August 6, 2003
67. Heterocycles Gordon Conference, New London, NH, July 7, 2003
68. Chaired and presented at the Symposium on Microwave Chemistry, South San Francisco, CA, June 12, 2003
69. Award Symposium in Industrial Chemistry honoring Bruce Maryanoff at the National Meeting of the American Chemical Society, New Orleans, LA, March 24, 2003

70. LabAutomation2003 (Annual national conference of the Association for Laboratory Automation), Palm Springs, CA, February 3, 2003
71. Chemistry Meets Technology II (sponsored jointly by the Royal Society of Chemistry and the Society of Chemical Industry), London, UK, December 9, 2002
72. "NIGMS 40th Anniversary Symposium" sponsored by the NIH and held during the fall 2003 American Chemical Society National Meeting, Boston, MA, August 20, 2002
73. 14th International Conference on Organic Synthesis (sponsored by IUPAC), Christchurch, New Zealand, July 17, 2002
74. 11th Federation of European Chemical Societies Conference on Heterocycles in Bio-organic Chemistry, Sitges, Spain, June 10, 2002
75. French American Chemical Society IX, Paris, France, June 6, 2002
76. 2nd Conference on Coherent Synthesis, San Diego, CA, May 31, 2002
77. Molecular Foundry Workshop (DOE, Lawrence Berkeley Labs), April 4, 2002
78. ACS Prospectives Conference, "Combinatorial Chemistry: Applying Technology", Zurich, Switzerland, November 4-7, 2001
79. 18th International Congress of Heterocyclic Chemistry, Yokohama, Japan, August 1, 2001
80. Royal Society Conference on "Combinatorial Approaches to Chemistry and Biology III", Cambridge, UK, July 17, 2001
81. David Evans 60th Birthday Symposium, Harvard University, Cambridge, MA, June 16, 2001
82. 84th Annual Canadian Society of Chemistry Conference, Symposia on "Combinatorial Chemistry: Synthesis and Analysis", Montreal, Canada, May 30, 2001
83. International Conference on Fundamental Sciences: Biological and Chemical Sciences, Singapore, May 21, 2001
84. National ACS Meeting, Symposium on "Selectivity in Organic Chemistry and Catalysis", San Diego, CA, April 4, 2001
85. 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
86. LabAutomation 2000 sponsored by the Association for Laboratory Automation, Palm Springs, CA, Monday January 27, 2001
87. 11th International Biotechnology Symposium "Biotechnology 2000", Berlin, Germany, September 4, 2000
88. ACS National Meeting, ACS Cope Scholar Award Presentation, Washington D.C., August 22, 2000
89. Fourteenth Symposium of the Protein Society, San Diego, CA, August 8, 2000
90. Pacificchem 2000, Symposium on "Combinatorial and Parallel Synthesis: Applications to Medicinal Chemistry, Honolulu Hawaii, January 18, 2000
91. Combinatorial Approaches to Chemistry and Biology II, The Royal Society, Cambridge, UK, June 30, 1999
92. The 16th American Peptide Symposium, Minneapolis, Minnesota, June 28, 1999
93. The American Society for Biochemistry and Molecular Biology National Meeting, San Francisco, CA, May 17, 1999
94. The 5th Michigan Symposium on Contemporary Challenges in Molecular Medicine Ann Arbor, Michigan, May 7, 1999
95. The 8th Conference on Combinatorial Chemistry, Osaka, Japan, April 27, 1998
96. The East Bay Regional ACS Meeting, Berkeley, CA, March 11, 1999
97. 2nd International Conference on Combinatorial Library Methods for Basic Research and Drug Discovery, Tuscon AZ, January 11, 1999
98. UCSF Proteolysis Symposium, San Francisco, CA, November 6, 1998
99. 8th Brazilian Meeting on Organic Synthesis, Sao Paulo, Brazil, September 8, 1998
100. 34th ACS Western Regional Meeting, San Francisco, CA, October 29, 1998
101. National Institutes of Health, General Medical Sciences, Bethesda, MD, May 17, 1998
102. American Chemical Society Northeastern Regional Seminar Series, Nutley, NJ, May 11, 1998
103. Frontiers in Biomedical Research (Organized by Scripps), Palm Springs, CA, February 3, 1998
104. Tahoe Molecular Diversity Conference, Tahoe, CA, January 24, 1998

105. The Seventh International Kyoto Conference on New Aspects of Organic Chemistry, Kyoto, Japan, November 14, 1997
106. 2nd Canadian Combinatorial Chemistry Conference, October 5, 1997
107. 19th Annual Princeton ACS Fall Symposium, Princeton, NJ, September 26, 1997
108. American Chemical Society National Meeting Las Vegas, Nevada, September 8, 1997
109. Molecular Pharmacology Gordon Conference, Ventura, CA, February 13, 1997
110. Short Course Presentation on Combinatorial Chemistry, Lund, Sweden, August 14, 1997
111. Royal Society Meeting, Combinatorial Approaches to Chemistry and Biology, Cambridge, UK, July 30, 1997
112. National Organic Symposium, Trinity College, Texas, June 22-26, 1997
113. Frontiers in Science Symposium, Munich, Germany, June 19-22, 1997
114. American Association for the Advancement of Science, Seattle, Washington, February 14, 1997
115. Frontiers in Chemistry, National Academy of Sciences, CA, November 7, 1996
116. Organic Reactions and Processes Gordon Conference, New Hampshire, July 17, 1996
117. Bioorganic Chemistry Gordon Conference, New Hampshire, June 24, 1996
118. New Swiss Chemical Society Conference on "Synthesis of Small Molecules on the Solid Phase," Basel, Switzerland, May 9, 1996
119. Society of Chemical Industry (U.K.) conference, London, UK, February 27, 1996
120. CHI conference on combinatorial libraries, Coronado, CA, January 25, 1996
121. 1995 International Chemical Congress of the Pacific Rim Societies, Honolulu, Hawaii, December 19, 1995
122. Arizona Cancer Center Molecular Diversity Conference, Tuscon, AZ, December 2, 1995
123. 1rst Canadian Conference on Combinatorial Chemistry, October 21, 1995
124. Heterocycles Gordon Conference, New Hampshire, July 12, 1995
125. The Ninth Symposium of the Protein Society, Boston, MA, July 10, 1995
126. The Natural Products Gordon Conference, New Hampshire, July 5, 1995
127. The Nagoya International Conference of Organic Chemistry (10th Nozaki Conference), Nagoya, Japan, June 16-18, 1995
128. 1995 Worchester Foundation Symposium on Neurodegenerative Disease - Molecular Insights and Emerging Therapies, Worchester, MA, May 6, 1995
129. Symposium on Combinatorial Libraries at the ACS National Meeting, Anaheim, CA, April 2, 1995
130. Rhone Poulenc Third Annual Visions in Chemistry Symposium, PA, April 27, 1995
131. Symposium on Combinatorial Libraries at the ACS National Meeting, Anaheim, CA, April 2, 1995
132. Symposium on Exploiting Molecular Diversity sponsored by Cambridge Healthtech Institute, La Jolla, CA, January 25, 1995
133. "Biomolecular Recognition at ONR" meeting, October 29, 1994
134. Advanced Laboratory Exposition and Conference, San Jose, CA, October 25, 1994
135. Polymer Division Symposia at the ACS National Meeting, Washington D.C., August 24, 1994
136. Beckman Young Investigator Symposium, Irvine, CA, August 16, 1994
137. Symposium on Combinatorial Libraries for Molecular Diversity sponsored by International Business Communications, San Francisco, CA, August 12, 1994
138. National Science Foundation Workshop in Organic Synthesis and Natural Products Chemistry, Flat Rock, North Carolina, July 16, 1994
139. 24th National Medicinal Chemistry Symposium, Salt Lake City, Utah, June 23, 1994
140. Seminar speaker chosen for the annual meeting of the Section on Medicinal Chemistry of the New Swiss Chemical Society, Basel, Switzerland, June 1994
141. Molecular Diversity Symposium at University of North Carolina on June 4, 1994
142. Chemistry and Biology of Peptides Gordon Conference, Ventura, CA, February 14, 1994
143. Exploiting Molecular Diversity sponsored by Cambridge Healthtech Institute, La Jolla, January 14, 1994
144. Drug Discovery Section of the Annual Meeting of the Pharmaceutical Manufacturers Association, Philadelphia, PA, September 20, 1993

145. Science Innovation Conference held by the AAAS, Boston, MA, August, 1993

III. Companies

1. Ono Pharmaceuticals, Osaka, Japan, June 13, 2016
2. Vertex, Cambridge, UK, January 14, 2016.
3. Cytec Industries, Stamford, CT, November 10, 2015
4. Yale Chemical Biology Off-Site, October 9, 2015
5. Gilead Pharmaceuticals, Foster City, CA, June 9, 2014
6. Dupont Crop Protection, Wilmington, DE, January 14, 2014
7. Biogen-Idec, Boston, MA, November 5, 2013
8. Pfizer, Groton, CT, October 8, 2013
9. AbbVie Inc, Chicago, IL, May 8, 2013
10. Takeda Pharmaceuticals, Cambridge, MA, March 13, 2013
11. Amgen, Thousand Oaks, California, January 10, 2013
12. Ono Pharmaceuticals, Osaka, Japan, June 7, 2012
13. Bristol Myers Squibb, Wallingford, CT, May 22, 2012
14. Bristol Myers Squibb, Princeton, NJ, May 8, 2012
15. Roche Pharmaceuticals, Nutley, NJ, March 15, 2012
16. Cubist Pharmaceuticals, Lexington, MA, March 6, 2012
17. Janssen Pharmaceuticals (Belgium), June 14, 2011
18. Novartis (East Hanover, NJ site), May 23, 2011
19. Boehringer Ingelheim (Ridgefield, CT), May 9, 2011
20. Merck (Rahway, NJ site), May 4, 2011
21. Sunovion (formerly Sepracor, MA), December 13, 2010
22. Bristol Myers Squibb (Process Research, NJ), November 16, 2010
23. GlaxoSmithKline Chemistry Scholars Symposium, Durham, NC, September 24, 2010
24. Johnson & Johnson Pharmaceutical Research & Development, Jolla, CA, April 12, 2010
25. Amgen, Boston, MA, February 23, 2010
26. Abbott Laboratories, Chicago, IL, July 14, 2009
27. GlaxoSmithKline, Collegeville site, PA, June 10, 2009
28. Ono Pharmaceuticals, Osaka, Japan, May 24, 2009
29. Ardelyx, Inc. (Pharma Company), Fremont, CA, February 4, 2009
30. Takeda Pharmaceuticals, La Jolla, CA, August 7, 2008
31. GlaxoSmithKline, Stevenage site, UK, July 10, 2008
32. GlaxoSmithKline, Harlow site, UK, July 9, 2008
33. Takeda Pharmaceuticals, San Diego, CA, August 7, 2008
34. GlaxoSmithKline, Stevenage, UK, July 10, 2008
35. GlaxoSmithKline, Harlow, UK, July 9, 2008
36. Merck, West Point, PA, June 13, 2008
37. Amgen, Thousand Oaks, CA, June 5, 2008
38. Abbott Laboratories, Chicago, IL, July 26, 2008
39. Elan Pharmaceuticals, South San Francisco, CA, May 17, 2007
40. Mitsubishi (Seminar 2. Synthetic Methods), Yokohama, Japan, May 11, 2007
41. Mitsubishi (Seminar 1. Chemical Biology), Yokohama, Japan, May 11, 2007
42. Novacal (now NovaBay), Emeryville, CA, January 5, 2007
43. Merck, Rahway, NJ, December 5, 2006
44. Amgen, South San Francisco, CA, September 28, 2006
45. Ono Pharmaceuticals, Osaka, Japan, May 23, 2006
46. Bristol-Myers Squibb, Wallingford, CT, March 28, 2006
47. Gilead Pharmaceuticals, Foster City, CA, March 16, 2006
48. Wyeth Pharmaceuticals, Cambridge, MA, January 31, 2006
49. Astra-Zeneca, Waltham, MA, November 21, 2005
50. Sunesis Pharmaceuticals, South San Francisco, CA, November 7, 2005

51. Symyx Technologies, Santa Clara, CA, October 7, 2005
52. Genomics Institute of the Novartis Research Foundation, La Jolla, CA, July 8, 2005
53. Lundbeck, Copenhagen, Denmark, June 7, 2005
54. Ono Pharmaceuticals, Osaka, Japan, April 23, 2005
55. Albany Molecular, Albany, NY, February 23, 2005
56. Wyeth, Pearl River, NY, October 15, 2004
57. Elan, South San Francisco, CA, July 20, 2004
58. Boehringer Ingelheim, Ridgefield, CT, May 18, 2004
59. Roche, Palo Alto, CA, February 23, 2004
60. Rhodia-Chirex, Lyon, France, November 24, 2003
61. Johnson & Johnson Pharmaceuticals, Spring House, PA, May 29, 2003
62. 3D Pharmaceuticals (division of Johnson & Johnson Pharmaceuticals), Exton, PA, April 11, 2003
63. GlaxoSmithKline, Collegeville, PA, April 9, 2003
64. Merck, Rahway, NJ, April 8, 2003
65. R.W. Johnson (San Diego site), May 9, 2002
66. Novartis (Vienna, Austria site), February 8, 2002
67. Novartis (Basil, Switzerland), February 6, 2002
68. Abbott Laboratories, Chicago, January 18, 2002
69. Genentech, South San Francisco, CA, July 7, 2001
70. Bristol Myers Squibb, Process Research Site New Jersey, January 18, 2001
71. Hoffman La Roche, Nutley, New Jersey, November 2, 2000
72. Eastman Kodak, Rochester, NY, April 19, 2000
73. Pharmacia International Chemistry Symposium, Orlando, FL, March 1, 2000
74. BioMega (Division of Boehringer Ingelheim), Montreal, Canada, January 20, 2000
75. Glaxo-Wellcome, Brisbane, Australia, December 9, 1999
76. Institut of Recherche Pierre Fabre, Castres, France, October 29, 1999
77. Gilead Pharmaceuticals, San Francisco, CA, September 24, 1999
78. Hoffman LaRoche, Palo Alto, CA, December 15, 1998
79. Zeneca, Richmond, CA, November 8, 1998
80. Zeneca, Jealot Hill, England, July 31, 1998
81. Arris Pharmaceuticals, South San Francisco, CA, July 15, 1998
82. Merck, West Point, PA, June 5, 1998
83. Johnson and Johnson, Springhouse, PA, June 4, 1998
84. Rohm and Haas, Pennsylvania, May 4, 1998
85. Dupont, Newark, DE, April 16, 1998
86. Merck, Rahway, NJ, April 15, 1998
87. Zeneca Pharmaceuticals, Wilmington, Delaware, April 8, 1998
88. Amgen Pharmaceuticals, Thousand Oaks, CA, March 23, 1998
89. Boehringer Ingelheim, Ridgefield, CT, February 12, 1998
90. Bayer Pharmaceuticals, CT, May 16, 1997
91. Bristol Myers-Squibb, CT, May 15, 1997
92. Schering Plough, NJ, May 13, 1997
93. Procter and Gamble, Cincinnati, OH, May 12, 1997
94. Bristol Myers-Squibb, Princeton, NJ, January 31, 1997
95. Abbott Laboratories, IL, April 19, 1996
96. Parke Davis, Ann Arbor, MI, April 17, 1996
97. Eli Lilly Young Investigator Award Symposium, Indianapolis, IN, March 4, 1996
98. Hoffman LaRoche, Nutley, NJ, December 14, 1995
99. Procter and Gamble, Cincinnati, OH, September 18, 1995
100. Molecular Devices, CA, September 6, 1995
101. Ono Pharmaceutical Company at the Mimase Research Institute, Osaka, Japan, June 26, 1995
102. Banyu Pharmaceutical Company, Tsukuba, Japan, June 20, 1995
103. Upjohn Pharmaceuticals, Kalamazoo, MI, April 25, 1995
104. Tularik Pharmaceuticals, South San Francisco, CA, February 23, 1995

105. Dupont Merck Pharmaceuticals, Wilmington, DE, February 9, 1995
106. Berlex Pharmaceuticals, Richmond, CA, January 26, 1995
107. Pfizer, Groton, CT, November 14, 1994
108. Genentech, South San Francisco, CA, November 7, 1994
109. MDL Information Systems, San Leandro, CA, October 17, 1994
110. Chiron Corporation, Emeryville, CA, August, 1994
111. Cadus Pharmaceuticals, New York City, NY, July 28, 1994
112. Eli Lilly, Indianapolis, IN, July 27, 1994
113. Merck, West Point, PA, June 27, 1994
114. Smith Kline and Beecham, King of Prussia, PA, June 26, 1994
115. Agouron, San Diego, CA, April 7, 1994
116. Procter and Gamble, Cincinnati, OH, March 8, 1994
117. Genetics Institute, Cambridge, Massachusetts, August 1993