

## Curriculum Vitae *Phil S. Baran*

*Appointment:* The Scripps Research Institute  
Department of Chemistry  
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January, **2013** Darlene Shiley Chair in Chemistry

April, **2009** Member, Skaggs Institute for Chemical Biology

June, **2008** Professor of Chemistry

July, **2006** Associate Professor of Chemistry (with Tenure)

June, **2003** Assistant Professor of Chemistry

*Date/Place of Birth:* 10 Aug 1977 / Denville, NJ, USA

*Citizenship:* United States

### Education

2001 – 2003 Postdoctoral Associate  
*Advisor:* Professor E.J. Corey  
Harvard University, Cambridge, Massachusetts

1997 – 2001 Ph.D. Graduate Student in Chemistry  
*Advisor:* Professor K.C. Nicolaou  
The Scripps Research Institute, La Jolla, California

1995 – 1997 B.S. with Honors in Chemistry  
*Advisor:* Professor D.I. Schuster  
New York University, New York, New York

1991 – 1995 Simultaneous high school graduation from Mt. Dora High School and  
A.A. degree with honors, Lake Sumter Community College, Florida

### Awards

- Manhot Research Professorship Award, 2017
- Member, The National Academy of Sciences, 2017
- Emanuel Merck Lectureship, 2017

- Blavatnik National Laureate in Chemistry Award, 2016
- ACS Elias J. Corey Award, 2016
- Member, American Academy of Arts and Sciences, 2015
- College of Arts and Science Alumni Distinguished Service Award, New York University, 2015
- Reagent of the Year Award (EROS), 2015
- Mukaiyama Award, 2014
- MacArthur Fellowship, 2013
- Royal Society of Chemistry Synthetic Organic Chemistry Award, 2013
- Fellow, Royal Society of Chemistry, 2013
- Fellow, AAAS, 2012 – Present
- ACS San Diego Section Distinguished Scientist Award, 2012
- ISHC Katritzky Heterocyclic Chemistry Award, 2011
- Thieme-IUPAC Prize in Synthetic Organic Chemistry, 2010
- ACS Award in Pure Chemistry, 2010
- Raymond and Beverly Sackler Prize in the Physical Sciences, 2009
- National Fresenius Award, ACS, 2007
- Novartis Lecturer, 2007 – 2008
- Hirata Gold Medal, 2007
- Pfizer Award for Creativity in Organic Synthesis, 2006
- Beckman Foundation Fellow, 2006 – 2008
- Alfred P. Sloan Foundation Fellow, 2006 – 2008
- BMS Unrestricted “Freedom to Discover” Grant, 2006 – 2010
- NSF CAREER Award, 2006 – 2010
- Eli Lilly Young Investigator Award, 2005 – 2006
- AstraZeneca Excellence in Chemistry Award, 2005
- DuPont Young Professor Award, 2005
- Roche Excellence in Chemistry Award, 2005
- Amgen Young Investigator Award, 2005
- Searle Scholar Award, 2005
- GlaxoSmithKline Chemistry Scholar Award, 2005 – 2006

#### **Awards (Pre- and Post-Doctoral)**

- ACS Nobel Laureate Signature Award in Chemistry, 2003
- National Institutes of Health Post-Doctoral Fellowship Award, Harvard, 2001 – 2003
- Hoffmann-La Roche Award for Excellence in Organic Chemistry, 2000
- Lesly Starr Shelton Award for Excellence in Chemistry Graduate Studies, Scripps, 2000
- National Science Foundation Pre-Doctoral Research Fellowship Award, Scripps, 1998 – 2001
- William and Sharon Bauce Family Foundation Fellowship Award, Scripps, 1997
- Dean’s Undergraduate Research Fund Award in Chemistry, NYU, 1996 – 1997
- George Granger Brown Award for Excellence in Chemistry, NYU, 1996 – 1997
- College of Art and Sciences Scholarship, NYU 1995 – 1997

- Herman and Margaret Sokol Chemistry Fellowship, NYU, 1995 – 1997

### **Editorial and Editorial Advisory Boards**

1. International Advisory Board, *Angewandte Chemie*, 2014 – 2016
2. Advanced Synthesis and Catalysis Academic Advisory Board, 2014 – present
3. Editorial Advisory Board, *J. Am. Chem. Soc.*, 2015 – 2016
4. Editorial Advisory Board, *ACS Central Science*, 2015 – present
5. Associate Editor, *J. Am. Chem. Soc.*, 2016 – present

### **Professional Activities**

1. NIH Study Section Member, SBC-B, 2008 – 2012
2. NIH Study Section Member, CMLD Special emphasis panel, July 2008
3. NIH Study Section Member, ad-hoc, SBC-B, June 2005
4. Scripps Graduate Student Admissions Committee, 2004 – 2011
5. Discussion Chair, GRC (Heterocycles), July 2006
6. Co-Chair, ACS Western Regional Meeting, 2007
7. Scripps Academic Advisory Committee, 2009 – Present
8. Shanghai Institute of Organic Chemistry, International Evaluation Committee Member, 2013

### **Consulting**

1. Bristol-Myers Squibb (exclusive, all sites), 2005 – present
2. DuPont, 2007 – present
3. TetraPhase (Scientific Advisory Board), 2007 – 2009
4. TEVA, 2010 – present
5. Eisai (Scientific Advisory Board), 2012 – present
6. Sirenas Marine Discovery (Co-founder and consultant), 2012 – present
7. Boehringer Ingelheim Pharmaceuticals, Inc., 2012 - present
8. Abide Therapeutics (Scientific Advisory Board and consultant), 2013 – present
9. AsymChem (Scientific Advisory Board and consultant), 2013 – present
10. AstraZeneca, 2013 – present
11. Kemxtree (Scientific Advisory Board), 2015 – present

12. Vividion Therapeutics (Co-founder and consultant), 2016 – present

## Publications

1. Yan, M.; Kawamata, Y.; Baran, P. S. Synthetic Organic Electrochemical Methods since 2000: On the Verge of a Renaissance. *Chem. Rev.* **2017**, (accepted for publication).
2. Li, C.; Kawamata, Y.; Nakamura, H.; Vantourout, J. C.; Liu, Z.; Hou, Q.; Bao, D.; Starr, J. T.; Chen, J.; Yan, M.; Baran, P. S. Electrochemically Enabled, Ni-Catalyzed Amination, *Angew. Chem. Int. Ed.* **2017**, (accepted for publication).
3. Yan, M.; Kawamata, Y.; Baran, P. S. Synthetic Organic Electrochemistry: Calling all Engineers, *Angew. Chem. Int. Ed.* **2017**, (accepted for publication).
4. Trammell, R.; See, Y.; Herrmann, A. T.; Xie, N.; Diaz, D. E.; Siegler, M. A.; Baran, P. S. Garcia-Bosch, I. Decoding the Mechanism of Intramolecular Cu-Directed Hydroxylation of sp<sup>3</sup> C-H Bonds, *J. Org. Chem.* **2017**, *82*, 7887 – 7904.
5. deGruyter, J. N.; Malins, L. R.; Baran, P. S. Residue-Specific Peptide Modification: A Chemist's Guide, *Biochemistry*, **2017**, *56*, 3863 – 3873.
6. Smith, J. M.; Qin, T.; Merchant, R. R.; Edwards, J. T.; Malins, L. R.; Liu, Z.; Che, G.; Shen, Z.; Shaw, S. A.; Eastgate, M. D.; Baran, P. S. Decarboxylative Alkynylation, *Angew. Chem. Int. Ed.* **2017**, *56*, 1 – 6.
7. Kawamata, Y.; Yan, M.; Liu, Z.; Bao, D. –H; Chen, J.; Starr, J.; Baran, P. S. Scalable, Electrochemical Oxidation of Unactivated C-H Bonds, *J. Am Chem Soc.* **2017**, *139*, 7448 – 7451.
8. Edwards, J. T.; Merchant, R. R.; McClymont, K. S.; Knouse, K. W.; Qin, T.; Malins, L. R.; Vokits, B.; Shaw, S. A.; Bao, D. H.; Wei, F. L.; Zhou, T.; Eastgate, M. D.; Baran, P. S. Decarboxylative Alkenylation, *Nature* **2017**, *545*, 213 – 218.
9. Li, C.; Wang, J.; Barton, L. M.; Yu, S.; Tian, M.; Peters, D. S.; Kumar, M.; Yu, A. W.; Johnson, K. A.; Chatterjee, A. K.; Yan, M.; Baran, P. S. Decarboxylative Borylation, *Science* **2017**, *356*, eaam7355.
10. Malins, L. R.; deGruyter, J. N.; Robbins, K. J.; Scola, P.N.; Eastgate, M.; Ghadiri, M. R.; Baran, P. S. Peptide Macrocyclization Inspired by Non-Ribosomal Imine Natural Products, *J. Am. Chem. Soc.* **2017**, *139*, 5233 – 5241.
11. Sandfort, F.; O'Neill, M. J.; Cornella, J.; Wimmer, L.; Baran, P. S. Alkyl-(Hetero)Aryl Bond Formation via Decarboxylative Cross-Coupling: A Systematic Analysis, *Angew. Chem. Int. Ed.* **2017**, *56*, 3319 – 3323.

12. Lopchuk, J. M.; Fjelbye, K.; Kawamata, Y.; Malins, L. R.; Pan, C. M.; Gianatassio, R.; Wang, J.; Prieto, L.; Bradowm J.; Brandt, T. A.; Collins, M. R.; Elleraas, J.; Ewanicki, J.; Farrell, W.; Fadeyl, O. O.; Gallego, G. M.; Mousseau, J. J.; Oliver, R.; Sach, N. W.; Smith, J. K.; Spangler, J. E.; Zhu, H.; Zhu, J.; Baran, P. S. Strain-Release Heteroatom Functionalization: Development, Scope, and Stereospecificity, *J. Am. Chem. Soc.* **2017**, *139*, 3209 – 3226.
13. Lo, J. C.; Kim, D.; Pan, C. M.; Edwards, J. T.; Yabe, Y.; Gui, J.; Qin, T.; Gutierrez, S.; Giacoboni, J.; Smith, M. W.; Holland, P. L.; Baran, P. S. Fe-Catalyzed C-C Bond Construction from Olefins via Radicals, *J. Am. Chem. Soc.* **2017**, *139*, 2484 – 2503.
14. Chu, H.; Smith, J.M.; Felding, J.; Baran, P.S. Scalable Synthesis of (–)-Thapsigargin, *ACS Cent. Sci.* **2017**, *3*, 47 – 51.
15. Qin, T.; Malins, L. R.; Edwards, J. T.; Merchant, R. R.; Novak, A. J. E.; Zhong, J. Z.; Mills, R. B.; Yan, M.; Yuan, C.; Eastgate, M. D.; Baran, P. S. Nickel-Catalyzed Barton Decarboxylation and Giese Reactions: A Practical Take on Classic Transforms, *Angew. Chem. Int. Ed.* **2016**, *129*, 266 – 271.
16. Tian, M.; Yan, M.; Baran, P. S. 11-Step Total Synthesis of Ariasamines, *J. Am. Chem. Soc.* **2016**, 14234 – 14237.
17. Yan, M.; Lo, J. C.; Edwards, J.T.; Baran, P. S. Radicals: Reactive Intermediates with Translational Potential, *J. Am. Chem. Soc.* **2016**, *138*, 12692 – 12714.
18. Toriyama, F.; Cornella, J.; Wimmer, L.; Chen, T.-G.; Dixon, D. D.; Creech, G.; Baran, P. S. Redox-Active Esters in Fe-Catalyzed C – C Coupling, *J. Am. Chem. Soc.* **2016**, 11132 – 11135.
19. Cernijenko, A.; Risgaard, R.; Baran, P. S. 11-Step Total Synthesis of (–) Maoecrystal V, *J. Am. Chem. Soc.* **2016**, *138*, 9425 – 9428.
20. Wang, J.; Qin, T.; Chen, T. G.; Wimmer, L.; Edwards, J. T.; Cornella, J.; Vokits, B.; Shaw, S. A.; Baran, P. S. Nickel-Catalyzed Cross Coupling of Redox-Active Esters with Boronic Acids, *Angew. Chem. Int. Ed.* **2016**, *55*, 9676-9679.
21. Horn, E. J.; Rosen, B. R.; Baran, P. S. Synthetic Organic Electrochemistry: An Enabling and Innately Sustainable Method, *ACS Cent. Sci.* **2016**, *2*, 302 – 308.
22. Yuan, C.; Jin, Y.; Wilde, N. C.; Baran, P. S. Short, Enantioselective Total Synthesis of Highly Oxidized Taxanes, *Angew. Chem. Int. Ed.* **2016**, *55*, 8280-8284.
23. Martinez L. P.; Umemiya S.; Wengryniuk S. E.; Baran P. S. 11-Step Total Synthesis of Pallambins C and D, *J. Am. Chem. Soc.* **2016**, *138*, 24, 7536-7539.
24. Quesnelle, C. A.; Gill, P.; Kim, S. H.; Chen, L.; Zhao, Y.; Fink, B. E.; Saulnier, M.; Frennesson, D.; DeMartino, M. P.; Baran, P. S.; Gavai, A.V. A Practical Approach for Enantio- and Diastereocontrol in the Synthesis of 2,3-Disubstituted Succinic Acid Esters: Synthesis of the pan-Notch Inhibitor BMS-906024, *Synlett* **2016**, *27*, A-E.

25. Qin, T.; Cornella, J.; Li, C.; Malins, L. R.; Edwards, J. T.; Kawamura, S.; Maxwell, B. D.; Eastgate, M. D.; Baran, P.S. A General Alkyl-Alkyl Cross-coupling Enabled by Redox-active Esters and Alkylzinc Reagents, *Science* **2016**, *352*, 6287, 801-805.
26. Horn, E. J.; Rosen, B. R.; Chen, Y.; Tang, J.; Chen, K.; Eastgate, M.D.; Baran, P. S. Scalable and Sustainable Electrochemical Allylic C-H Oxidation, *Nature* **2016**, *533*, 7601, 77-81.
27. Kawamura, S.; Chu, H.; Felding, J.; Baran, P. S. Nineteen-Step Total Synthesis of (+)-Phorbel, *Nature* **2016**, *532*, 90-93.
28. Cornella, J.; Edwards, J. T.; Qin, T.; Kawamura, S.; Wang, J.; Pan, C. M.; Gianatassio, R.; Schmidt, M.; Eastgate, M. D.; Baran, P. S. Practical Ni-catalyzed Aryl-Alkyl Cross-coupling of Secondary Redox-active Esters, *J. Am. Chem. Soc.* **2016**, *138*, 2174-2177.
29. Gianatassio, R.; Lopchuk, J. M.; Wang, J.; Pan, C. M.; Malins, L. R.; Prieto, L.; Brandt, T. A.; Collins, M. R.; Gallego, G. M.; Sach, N. W.; Spangler, J. E.; Zhu, H.; Zhu, J.; Baran, P. S. Strain Release Animation, *Science* **2016**, *351*, 241-246.
30. O'Brien, A. G.; Luca, O. R.; Baran, P. S.; Blackmond, D. G. In Situ FTIR Spectroscopic Monitoring of Electrochemically Controlled Organic Reactions in a Recycle Reactor, *React. Chem. Eng.* **2016**, *1*, 90-95.
31. Jin, Y.; Yeh, C. H.; Kuttruff, C. A.; Jorgensen, L.; Dünstl, G.; Felding, J.; Natarajan, S. R.; Baran, P. S. C-H Oxidation of Ingenanes Enables Potent and Selective Protein Kinase C Isoform Activation, *Angew. Chem. Int. Ed.* **2015**, *54*, 14044 – 14048.
32. Feng, Y.; Holte, D.; Zoller, J.; Umemiya, S.; Simke, L. R.; Baran, P. S. Total Synthesis of Verruculogen and Fumitremorgin A Enabled by Ligand-Controlled C–H Borylation, *J. Am. Chem. Soc.* **2015**, *137*, 10160 – 10163.
33. Gui, J.; Pan, C-M.; Jin, Y.; Qin, T.; Lo, J. C.; Lee, B. J.; Spengel, S. H.; Mertzman, M. E.; Pitts, W. J.; La Cruz, T. E.; Schmidt, M. A.; Darvatkar, N.; Natarajan, S. R.; Baran, P. S. Practical Olefin Hydroamination with Nitroarenes, *Science* **2015**, *348*, 886 – 891.
34. Michaudel, Q.; Ishihara, Y.; Baran, P. S. Academia-Industry Symbiosis in Organic Chemistry, *Acc. Chem. Res.* **2015**, *48*, 712 – 721.
35. Renata, H.; Zhou, Q.; Dünstl, G.; Felding, J.; Merchant, R. R.; Yeh, C.-H.; Baran, P. S. Development of a Concise Synthesis of Ouabagenin and Hydroxylated Corticosteroid Analogues, *J. Am. Chem. Soc.* **2015**, *137*, 1330 – 1340.
36. Dao, H. T.; Li, C.; Michaudel, Q.; Maxwell, B. D.; Baran, P. S. Hydromethylation of Unactivated Olefins, *J. Am. Chem. Soc.* **2015**, *137*, 8046 – 8049.
37. Gavai, A.V.; Quesnelle, C.; Norris, D.; Han, W-C.; Gill, P.; Shan, W.; Balog, A.; Chen, K.; Tebben, A.; Rampulla, R.; Wu, D-R.; Zhang, Y.; Mathur, A.; White, R.; Rose, A.; Wang, H.; Yang, Z.; Ranasinghe, A.; D'Arienzo, C.; Gaurino, V.; Xiao, L.; Su, C.; Everlof, G.; Vinod, A.; Shen, D.R.; Cvijic, M.E.; Menard, K.; Wen, M-L.; Meredith, J.;

- Trainor, G.; Lombardo, L.J.; Olson, R.; Baran, P.S.; Hunt, J.T.; Vite, G.D.; Fischer, B.S.; Westhouse, R.A.; Lee, F.Y. Discovery of Clinical Candidate BMS-906024: A Potent Pan-Notch Inhibitor for the Treatment of Leukemia and Solid Tumors, *Med. Chem. Lett.* **2015**, *6*, 523 – 527.
38. Maimone, T.J.; Ishihara, Y.; Baran, P.S. Scalable Total Syntheses of (–)-Hapalindole U and (+)-Ambiguine H, *Tetrahedron*. **2015**, *71*, 3652 – 3665.
39. Ma, Z.; Wang, X.; Wang, X.; Rodriguez, R. A.; Moore, C. E.; Gao, S.; Tan, X.; Ma, Y.; Rheingold, A. L.; Baran, P. S.; Chen, C. Response to Comment on “Asymmetric Syntheses of Scepterin and Massadine and Evidence for Biosynthetic Enantiodivergence”, *Science* **2015**, *349*, 149.
40. Shaw, S. A.; Balasubramanian, B.; Bonacorsi, S.; Cortes, J. C.; Cao, K.; Chen, B. C.; Dai, J.; Decicco, C.; Goswami, A.; Guo, Z.; Hanson, R.; Humphreys, W. G.; Lam, P.Y.S.; Li, W.; Mathur, A.; Maxwell, B.D.; Michaudel, Q.; Peng, L.; Pudzianowski, A.; Qiu, F.; Su, S.; Sun, D.; Tymiak, A.A.; Vokits, B.P.; Wang, B.; Wexler, R.; Wu, D.; Zhang, Y.; Zhao, R., Baran, P.D. Synthesis of Biologically Active Piperidine Metabolites of Clopidogrel: Determination of Structure and Analyte Development, *J. Org. Chem.* **2015**, *80*, 7019 – 7032.
41. See, Y. Y., Herrmann, A. T., Aihara, Y., Baran, P. S. Scalable C-H Oxidation with Copper: Synthesis of Polyoxypregnanes, *J. Am. Chem. Soc.* **2015**, *137*, 13776 – 13779.
42. Hong, X.; Holte, D.; Goetz, D.; Baran, P.S. Houk, K. On the Mechanism, Reactivity and Selectivity of Ni-Catalyzed [4+4+2] Cycloadditions of Dienes and Alkynes, *J. Org. Chem.* **2014**, *79*, 12177 – 12184.
43. Lo, J.C.; Gui, J.; Yabe, Y.; Pan, C.-M.; Baran, P.S. Functionalized Olefin Cross-Coupling: A Powerful New C–C Bond Construction, *Nature* **2014**, *516*, 343 – 348.
44. Rodriguez, R.A.; Barrios Steed, D.; Kawamata, Y.; Su, S.; Smith, P.A.; Steed, T.C., Romesberg, F.E.; Baran, P.S. Axinellamines as Broad Spectrum Antibacterial Agents: Scalable Synthesis and Biology, *J. Am. Chem. Soc.* **2014**, *136*, 15403 – 15413.
45. Dao, H.T.; Baran, P.S. Quinone Diazides for Olefin Functionalization, *Angew. Chem. Int. Ed.* **2014**, *53*, 14382 – 14386.
46. Michaudel, Q.; Journot, G.; Regueiro-Ren, A.; Goswami, A.; Guo, Z.; Tulley, T.P.; Zou, L.; Ramabhadran, R.O.; Houk, K.N.; Baran, P.S. Improving Physical Properties via C–H Oxidation: Chemical and Enzymatic Approaches, *Angew. Chem. Int. Ed.* **2014**, *53*, 12091 – 12096.
47. Ma, Z.; Wang, X.; Rodriguez, R.A.; Moore, C.E.; Gao, S.; Tan, X.; Ma, Y.; Rheingold, A.L.; Baran, P.S.; Chen, C. Asymmetric Syntheses of Scepterin and Massadine and Evidence for Biosynthetic Enantiodivergence, *Science* **2014**, *346*, 219 – 224.

48. O'Brien, A.G.; Maruyama, A.; Inokuma, Y.; Fujita, M.; Baran, P.S.; Blackmond, D.G. Radical C–H Functionalization of Heteroarenes Under Electrochemical Control, *Angew. Chem. Int. Ed.* **2014**, *53*, 11868 – 11871.
49. Cherney, E.C.; Lopchuk, J.M.; Green, J.C.; Baran, P.S. A Unified Approach to *ent*-Atisane Diterpenes and Related Alkaloids: Synthesis of (–)-Methyl Atisenoate, (–)-Isoatisine, and the Hetidine Skeleton, *J. Am. Chem. Soc.* **2014**, *136*, 12592 – 12595.
50. Gianatassio, R.; Kawamura, S.; Eprile, C.L.; Foo, K.; Ge, J.; Burns, A.C.; Collines, M.R.; Baran, P.S. Simple Sulfinato Synthesis Enables C–H Trifluoromethylcyclopropanation, *Angew. Chem. Int. Ed.* **2014**, *53*, 9851 – 9855.
51. Teufel, R.; Kaysser, L.; Villaume, M.T.; Diethelm, S.; Carbullido, M.K.; Baran, P.S.; Moore, B.S. One-Pot Enzymatic Synthesis of Merochlorin A and B, *Angew. Chem. Int. Ed.* **2014**, *53*, 11019 – 11022.
52. Rodriguez, R.A.; Pan, C.-M.; Yabe, Y.; Kawamata, Y.; Eastgate, M.D.; Baran, P.S. Palau'chlor: A Practical and Reactive Chlorinating Reagent, *J. Am. Chem. Soc.* **2014**, *136*, 6908 – 6911.
53. Rosen, B.R.; Werner, E.W.; O'Brien, A.G.; Baran, P.S. Total Synthesis of Dixiamycin B by Electrochemical Oxidation, *J. Am. Chem. Soc.* **2014**, *136*, 5571 – 5574.
54. McKerrall, S. J.; Jorgensen, L.; Kuttruff, C.A.; Ungeheuer, F.; Baran, P.S. Development of a Concise Synthesis of (+)-Ingenol, *J. Am. Chem. Soc.* **2014**, *136*, 5799 – 5810.
55. Foo, K.; Sella, E.; Thome, I.; Eastgate, M.D.; Baran, P.S. A Mild Ferrocene-catalyzed C–H Imidation of (Hetero)Arenes, *J. Am. Chem. Soc.* **2014**, *136*, 5279 – 5282.
56. Wilde, N.C.; Isomura, M.; Mendoza, A.; Baran, P.S. Two-Phase Synthesis of (–)-Taxuyunnanin D, *J. Am. Chem. Soc.* **2014**, *136*, 4909 – 4912.
57. Gui, J.; Zhou, Q.; Pan, C.-M.; Yabe, Y.; Burns, A.C.; Collins, M.R.; Ornelas, M.A.; Ishihara, Y.; Baran, P.S. A C–H Methylation Reaction of Heteroarenes Inspired by Radical SAM Methyl Transferase, *J. Am. Chem. Soc.* **2014**, *136*, 4853 – 4856.
58. Gutekunst, W. R.; Baran, P. S. Applications of C–H Functionalization Logic to Cyclobutane Synthesis, *J. Org. Chem.* **2014**, *79*, 2430 – 2452.
59. O'Hara, F.; Burns, A. C.; Collins, M. R.; Dalvie, D.; Omelas, M.A.; Vaz, A.D.N.; Fujiwara, Y.; Baran, P. S. A Simple Litmus Test for Aldehyde Oxidase Metabolism of Heteroarenes, *J. Med. Chem.* **2014**, *57*, 1616 – 1620.
60. Lo, J. C.; Yabe, Y.; Baran, P.S. A Practical and Catalytic Reductive Olefin Coupling, *J. Am. Chem. Soc.* **2014**, *136*, 1304 – 1307.
61. Kuttruff, C.A.; Eastgate, M.D.; Baran, P.S. Natural Product Synthesis in the Age of Scalability, *Nat. Prod. Rep.* **2014**, *31*, 419 – 432.



62. Teufel, R.; Miyanaga, A.; Michaudel, Q.; Stull, F.; Louie, G.; Noel, J.P.; Baran, P.S.; Palfey, B.; Moore, B.S. Flavin-mediated dual oxidation controls an enzymatic Favorskii-type rearrangement, *Nature* **2013**, *503*, 552 – 556.
63. Zhou, Q.; Gui, J.; Pam, C.-M.; Albone, E.; Cheng, X.; Suh, E.M.; Grasso, L.; Ishihara, Y.; Baran, P.S. Bioconjugation by Native Chemical Tagging of C–H Bonds, *J. Am. Chem. Soc.* **2013**, *135*, 12994 – 12997.
64. O'Hara, F.; Blackmond, D. G.; Baran, P. S. Radical-based Regioselective C–H Functionalization of Heterocycles: Prediction, Scope and Tunability. *J. Am. Chem. Soc.* **2013**, *135*, 12122 – 12134.
65. Jørgensen, L.; McKerrall, S.J.; Kuttruff, C.A.; Ungeheuer, F.; Felding, J.; Baran, P.S. 14-step Synthesis of (+)-Ingenol from (+)-3-Carene. *Science* **2013**, *341*, 878 – 882.
66. Cherney, E.C.; Green, J.C.; Baran, P.S. Synthesis of *ent*-Kaurane and Beyerane Diterpenoids via Controlled Fragmentations of Overbred Intermediates. **2013**, *52*, 9019 – 9022.
67. Rosen, B.R.; Simke, L.R.; Thuy-Boun, P.S.; Dixon, D.D.; Yu, J.-Q.; Baran, P.S. C-H Functionalization Logic Enables Synthesis of (+)-Hongoquercin A and Related Compounds, **2013**, *52*, 7317 – 7320.
68. Zou, L.; Paton, R. S.; Eschenmoser, A.; Newhouse, T. R.; Baran, P. S.; Houk, K. N. Enhanced Reactivity in Dioxirane C–H Oxidations via Strain Release: A Computational and Experimental Study, *J. Org. Chem.* **2013**, *78*, 4037 – 4048.
69. Usui, I.; Lin, D.W.; Masuda, T.; Baran, P. S. Convergent Synthesis and Structural Confirmation of Phellodonin and Sarcodonin  $\epsilon$ , *Org. Lett.* **2013**, *15*, 2080 – 2083.
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71. Ishihara, Y.; Mendoza, A.; Baran, P. S. Total Synthesis of Taxane Terpenes: Cyclase Phase, *Tetrahedron*. **2013**, *69*, 5685 – 5701.
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73. Wengryniuk, S.E.; Weickgenannt, A.; Relher, C.; Strotman, N.A.; Chen, K.; Eastgate, M.D.; Baran, P. S. Regioselective Bromination of Fused Heterocyclic *N*-Oxides, *Org. Lett.* **2013**, *15*, 792 – 795.
74. Renata, H.; Zhou, Q.; Baran, P. S. Strategic Redox Relay Enables A Scalable Synthesis of Ouabagenin, A Bioactive Cardenolide, *Science* **2013**, *339*, 59 – 63.

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189. Nicolaou, K.C.; Zhong, Y.-L.; Baran, P.S. New Synthetic Technology for the Rapid Construction of Novel Heterocycles- Part 1: The Reaction of Dess – Martin Periodinane with Anilides and Related Compounds, *Angew. Chem. Int. Ed.* **2000**, *39*, 622 – 625.
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191. Nicolaou, K.C.; Vourloumis, D.; Winssinger, N.; Baran, P.S. The Art and Science of Total Synthesis at the Dawn of the Twenty-First Century, *Angew. Chem. Int. Ed.* **2000**, *39*, 44 – 122.
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193. Nicolaou, K.C.; Simonsen, K.S.; Vassilikogiannakis, G.; Baran, P.S.; Vidali, V.P.; Pitsinos, E.N.; Couladouros, E.A. Biomimetic Explorations Towards the Bisorbicillinoids: Total Synthesis of Bisorbicillinol, Bisorbibutenolide, and Trichodimerol, *Angew. Chem. Int. Ed.* **1999**, *38*, 3555 – 3559.
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195. Nicolaou, K.C.; Baran, P.S.; Zhong, Y.-L.; Choi, H.-S.; Yoon, W.H.; He, Y.; Fong, K.C. Total Synthesis of the CP Molecules CP-263,114 and CP-225,917 - Part 1: Synthesis of Key Intermediates and Intelligence Gathering, *Angew. Chem. Int. Ed.* **1999**, *38*, 1699 – 1675.
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198. Nicolaou, K.C.; Baran, P.S.; Jautelat, R.; He, Y.; Fong, K.C.; Choi, H.-S.; Yoon, W.H.; Zhong, Y.-L. A Novel Route to the Fused Maleic Anhydride Moiety of CP Molecules, *Angew. Chem. Int. Ed.* **1999**, *38*, 549 – 552.
199. Schuster, D.I.; Baran, P.S.; Hatch, R.K.; Khan, A.U.; Wilson, S.R. The Role of Singlet Oxygen in the Photochemical Formation of C<sub>60</sub>O, *Chem. Commun. (Cambridge)* **1998**, *22*, 2493 – 2494.
200. Safonov, I.G.; Baran, P.S.; Schuster, D.I. Synthesis and Photophysics of a Novel Porphyrin-C<sub>60</sub> Hybrid, *Tetrahedron Lett.* **1997**, *38*, 8133 – 8136.
201. Baran, P.S.; Monaco, R.R.; Khan, A.U.; Schuster, D.I.; Wilson, S.R. Synthesis and Cation-mediated Electronic Interactions of Two Novel Classes of Porphyrin-fullerene Hybrids, *J. Am. Chem. Soc.* **1997**, *119*, 8363 – 8364.
202. Baran, P.S.; Monaco, R.R.; Khan, A.U.; Schuster, D.I.; Soulas, P.; Echegoyen, L. Synthesis and Cation-mediated Electronic Interactions of Two Novel Classes of Porphyrin-fullerene Hybrids. *Proc. - Electrochem. Soc.* **1997**, 97 – 14. (Recent Advances in the Chemistry and Physics of Fullerenes and Related Materials), 25 – 36.

## Patents

1. Nicolaou, K.C.; Zhong, Y.-L.; Baran, P.S. Formation of Heterocycles Using *o*-Iodoxy Benzoic Acid (IBX), *PCT Int. Appl.* WO 01/14348 2001, 39pp.

2. Baran, P.S.; O'Malley, D.P.; Zografos, A.L. Synthesis of ( $\pm$ )-Sceptrin and Ageliferin, Provisional U.S. Patent Filed.
3. Chen, K.; Richter, J.M.; Baran, P.S. 1,3-Diol Synthesis via Controlled, Radical-Mediated C–H Functionalization, Provisional U.S. Patent Filed.
4. Shenvi, R.A.; Guerrero, C.A.; Shi, J.; Li, C.; Baran, P. S. Synthesis of (+)-Cortistatin A and related compounds *PCT Int. Appl.* WO 12/991081, 2012.
5. Baran, P. S., Horn, E., Waldmann, D.; Closure for an Electrochemical Vessel, Electrochemical Vessel and Laboratory Device, Provisional U.S. Patent Filed.

### Educational Short Courses

1. Celgene, Heterocyclic Chemistry, **2009 – 2010**.
2. Genentech, Heterocyclic Chemistry, **2014**.

### Books

1. Ishihara, Y.; Montero, A.; Baran, P.S. *The Portable Chemist's Consultant: A Survival Guide for Discovery, Process, and Radiolabeling*. Macintosh Publishing, 2013. (electronic book) Link: <https://itunes.apple.com/us/book/portable-chemists-consultant/id618463142?ls=1>

### Book Chapters

1. Gianatassio, R.; Ishihara, Y.; Baran, P. S. Sodium 1,1-Difluoroethanesulfinate. In *Encyclopedia of Reagents for Organic Synthesis*; Paquette, L. A., Ed.; Wiley: Chichester, 2014, DOI: 10.1002/047084289X.rn01783.
2. Nicolaou, K. C.; Montagnon, T.; Baran, P. S.; Uyanik, M.; Ishihara, K. 1,2-Benziodoxol-3(1*H*)-one, 1-Hydroxy, 1-oxide. In *Encyclopedia of Reagents for Organic Synthesis*; Paquette, L. A., Ed.; Wiley: Chichester, 2014, DOI: 10.1002/047084289X.rn01787.
3. Gianatassio, R.; Ishihara, Y.; Baran, P. S. Zinc Difluoromethanesulfinate. In *Encyclopedia of Reagents for Organic Synthesis*; Paquette, L. A., Ed.; Wiley: Chichester, 2014, DOI: 10.1002/047084289X.rn01787.
4. Ishihara, Y.; Gianatassio, R.; Baran, P. S. Zinc Isopropylsulfinate. In *Encyclopedia of Reagents for Organic Synthesis*; Paquette, L. A., Ed.; Wiley: Chichester, 2014, DOI: 10.1002/047084289X.rn01785.

5. Ishihara, Y.; Gianatassio, R.; Baran, P. S. Zinc Trifluoromethanesulfinate. In *Encyclopedia of Reagents for Organic Synthesis*; Paquette, L. A., Ed.; Wiley: Chichester, 2014, DOI: 10.1002/047084289X.rn01786.
6. Pan, C.-M.; Ishihara, Y.; Baran, P. S. Zinc Palau'chlor. In *Encyclopedia of Reagents for Organic Synthesis*; Paquette, L. A., Ed.; Wiley: Chichester, 2016, DOI: 10.1002/047084289X.rn01901

### Miscellaneous

1. Baran, P.S. Dead Ends and Detours. Direct Ways to Successful Total Synthesis. Book by Sierra, M.A.; de la Torre, M.C. *Angew. Chem. Int. Ed.* **2005**, *44*, 3338 – 3339. (Book Review)
2. Baran, P. S.; Maimone, T. J. Organic chemistry: A tuxedo for iodine atoms. *Nature* **2007**, *445*, 826-827.
3. McKerrall, S.; Baran, P.S. More Dead Ends and Detours. En Route to Successful Total Synthesis. Book by Sierra, M.A.; de la Torre, M.C.; Cossio, F.P. *Angew. Chem. Int. Ed.* **2014**, *53*, 1740. (Book Review)
4. Baran, P.S. Carlos F. Barbas, III (1964-2014). *Angew. Chem. Int. Ed.* **2014**, *53*, 9704 – 9705. (Obituary).
5. Smith, M. W.; Baran, P.S. As simple as [2+2]. *Science* **2015**, *349*, 925-926.
6. Villaume, M. T.; Baran P. S. Organic Chemistry: Reactivity tamed one bond at a time. *Nature* **2015**, *513*, 324-325.
7. Farmer, M. E.; Baran, P. S. Organic Chemistry: A cure for catalyst poisoning. *Nature* **2015**, *524*, 164-165.
8. Yan, M; Baran, P. S. Drug Discovery: Fighting evolution with chemical synthesis. *Nature* **2016**, *533*, 326-327.

### Book Forewords

1. Li, J.J. *From Lipitor to Viagra: Stories Behind the Drugs We Use*, Oxford Press, **2006**
2. Li, J.J.; Limberakis, C.; Pflum, D.A. *Modern Organic Synthesis in the Laboratory*, Oxford Press, **2006**
3. Li, J.J. *Name Reactions*, Springer, 3<sup>rd</sup> edition, **2006**
4. Li, J.J. *Name Reactions*, Springer, 4<sup>th</sup> edition, **2009**

### Named and Plenary Lectureships and Visiting Professorships

1. Closs Lecturer, University of Chicago, Chicago, IL (January, 2005)
2. Plenary Lecturer, Roche Excellence in Chemistry Symposium, Nutley, NJ (May, 2005)
3. Visiting Professor, University of Strasbourg, Alsace, France (2 lectures, July, 2005)
4. Plenary Lecturer, Amgen Young Investigators Symposium, Thousand Oaks, CA (September, 2005)
5. Plenary Lecturer, GlaxoSmithKline Chemistry Scholars Symposium, Chapel Hill, NC (September, 2005)
6. Plenary Lecturer, AstraZeneca Award & Symposium, Wilmington, DE (October, 2005)
7. Foster Lecturer, University of New York, Buffalo, NY (December, 2005)
8. Bristol-Myers Squibb Lecturer, Princeton University, Princeton, NJ (March, 2006)
9. Novartis Lecturer, Boston University, Boston, MA (March, 2006)
10. Pfizer Lecturer, Harvard University, Boston, MA (April, 2006)
11. Plenary Lecturer, CMB Cyprus '06, Cyprus (May, 2006)
12. Plenary Lecturer, Visions in Chemistry Symposium, Bridgewater, NJ (May, 2006)
13. Plenary Lecturer, Roche Symposium, University of Colorado, Denver, CO (June, 2006)
14. Plenary Lecturer, ORCHEM Conference, Bad Nauheim, Germany (September, 2006)
15. Plenary Lecturer, University of Western Ontario Symposium, Ontario, Canada (November, 2006)
16. Merck Frosst Lecturer, Merck Frosst, Montreal, Quebec, Canada (November, 2006)
17. Merck Frosst Lecturer, University of Toronto, Toronto, Ontario, Canada (November, 2006)
18. Plenary Lecturer, Hirata Memorial Lecture, Nagoya, Japan (February, 2007)
19. Abbott Lecturer, University of California, Berkeley, Berkeley, CA (March, 2007)
20. Roche Lecturer, Colorado State University, Fort Collins, CO (March, 2007)
21. National Fresenius Award Symposium, 23<sup>rd</sup> ACS Meeting, Chicago, IL (March, 2007)
22. Abbot Lecturer, University of California, Berkeley, Berkeley, CA (March, 2007)
23. Plenary Lecturer, Bürgenstock Conference on Stereochemistry, Geneva, Switzerland (April, 2007)
24. Keynote Speaker, Pfizer, Groton, CT (August, 2007)
25. Keynote Speaker, Pfizer Green Chemistry Symposiums, La Jolla, CA (December, 2007)
26. National Fresenius Award Lecture, Purdue University, West Lafayette, IN (January, 2008)
27. Plenary Lecturer, Sheffield Stereochemistry Meeting, Sheffield, United Kingdom (January, 2008)
28. Abbott Lecturer, University of Kansas, Lawrence, KS (February, 2008)

29. Plenary Lecturer, Chemistry as a Life Sciences Symposium, Newark, NJ (March, 2008)
30. Abbott Lecturer, University of Notre Dame, Notre Dame, IN (April, 2008)
31. Plenary Lecturer, Lilly Symposium, Madrid, Spain (April, 2008)
32. Rothchild Lecturer, University of Rochester, Rochester, NY (May, 2008)
33. Plenary Lecturer, BOSS Symposium, Ghent, Belgium (July, 2008)
34. LEO Pharma Lecturer, Technical University of Denmark, Copenhagen, Denmark (July, 2008)
35. Novartis Lecturer, Novartis, Emeryville, CA (August, 2008)
36. Merck Lecturer, IASOC Conference, Ischia, Naples, Italy (September, 2008)
37. Merck-Frosst Lecturer, Université de Montréal, Montreal, Quebec, Canada (October, 2008)
38. Eli Lilly Lecturer, Yale University, New Haven, CT (November, 2008)
39. Novartis Lecturer, Cambridge University, Cambridge, United Kingdom (March, 2009)
40. Plenary Lecture, Munich Synthesis Fest, University of Munich, Munich, Germany (March, 2009)
41. Plenary Lecturer, 9<sup>th</sup> Bristol Synthesis Meeting, University of Bristol, Bristol, United Kingdom (March, 2009)
42. Distinguished Lecture Series, Genomics Institute of the Novartis Research Foundation, La Jolla, CA (March, 2009)
43. Sackler Prize Symposium, Tel Aviv University, Tel Aviv, Israel (May, 2009)
44. Plenary Lecture, National Organic Symposium, Boulder, CO (June, 2009)
45. Lecture Series, ICIQ Summer School, Tarragona, Spain (July, 2009)
46. Plenary Lecturer, Princeton American Chemical Society Symposium, Princeton, NJ (September, 2009)
47. Plenary Lecturer, Johnson Symposium, Stanford University, Palo Alto, CA (October 2009)
48. Plenary Lecturer, Welch Conference, Houston, TX (October, 2009)
49. Plenary Lecturer, IKCOC-11, Kyoto, Japan (November, 2009)
50. Japan Society for the Promotion of Science Fellowship Lecturer, University of Tokyo, Tokyo, Japan (November, 2009)
51. Plenary Lecturer, Visions in Organic Chemistry, Copenhagen, Denmark (January, 2010)
52. Plenary Lecturer, Frontiers in Biomedical Research Symposium, Indian Wells, CA (February, 2010)
53. Boehringer-Ingelheim Lecturer, University of Ottawa, Ontario, Canada (March, 2010)
54. Inaugural Lecturer of the Student Selected Seminar Series, Indiana University, Bloomington, IN (March, 2010)

55. Plenary Award Lecture, 239<sup>th</sup> National Meeting of the American Chemical Society, San Francisco, CA (March, 2010)
56. Francis Clifford Phillips Lecture, University of Pittsburgh, Pittsburgh, PA (April, 2010)
57. Plenary Lecturer, Balticum Organicum Syntheticum, Riga, Latvia (June, 2010)
58. Plenary Lecturer, IUPAC's 18<sup>th</sup> International Conference on Organic Synthesis, Bergen, Norway (August, 2010)
59. Keynote Lecturer, Gregynog Meeting, Wales, United Kingdom (September, 2010)
60. Life Science Lecturer, Bayer Schering Pharma AG, Berlin and Wuppertal, Germany (September, 2010)
61. Fuson Visiting Professor, University of Illinois, Urbana, IL (October, 2010)
62. Chemistry Graduate Student Society Distinguished Speaker, University of British Columbia, Vancouver, British Columbia, Canada (October, 2010)
63. Joel C. Huff Lecturer, Harvard University, Cambridge, MA (October, 2010)
64. Bristol-Myers Squibb Lecturer in Organic Chemistry, University of Michigan, Ann Arbor, MI (December, 2010)
65. Plenary Lecturer, Indian Organic Chemistry Conference, Goa, India (December, 2010)
66. Scynexis Lecturer, The University of North Carolina at Chapel Hill, Chapel Hill, NC (March, 2011)
67. Senior Speaker, American Chemical Society Meeting, Organic Division, Anaheim, CA (March, 2011)
68. AstraZeneca Distinguished Lecturer, Université de Sherbrooke, Sherbrooke, Quebec, Canada (May, 2011)
69. Plenary Lecturer, 17<sup>th</sup> European Symposium on Organic Chemistry, Crete, Greece (July, 2011)
70. AstraZeneca École Polytechnique Lecturer, Palaiseau, France (July, 2011)
71. Plenary Award Lecturer, 23<sup>rd</sup> International Congress on Heterocyclic Chemistry, Glasgow, Scotland (August, 2011)
72. Plenary Lecturer, 52<sup>nd</sup> American Society of Pharmacology Meeting, San Diego, CA (August, 2011)
73. Plenary Lecturer, 14<sup>th</sup> Brazilian Meeting on Organic Synthesis, Brasília, Brazil (September, 2011)
74. Plenary Lecturer, Symposium on Advanced Organic Synthesis and Catalysis, Hefei, China (October, 2011)
75. Keynote Lecturer, Vertex Day, University of California, Irvine, Irvine, CA (October, 2011)
76. Plenary Lecturer, 21<sup>st</sup> Symposium on Optically Active Compounds, Tokyo, Japan (November, 2011)
77. Plenary Lecturer, 13<sup>th</sup> Florida Heterocyclic and Synthetic Conference, Gainesville, FL



- (March, 2012)
78. Lecturer for the Frontiers in Chemistry Lecture Series, Case Western Reserve University, Cleveland, OH (March, 2012)
  79. Lecturer, 2012 Medicinal Chemistry Colloquium Series, Gilead, Foster City, CA (March, 2012)
  80. Lecturer for the Frontiers in Chemical Research Lecture Series, Texas A&M University, College Station, TX (April, 2012)
  81. Plenary Lecturer, French American Chemical Society XIV Meeting, Nantasket, MA (June, 2012)
  82. Plenary Lecturer, 24<sup>th</sup> Organic Chemistry Biannual Meeting of the Spanish Royal Chemical Society, San Sebastián, Spain (July, 2012)
  83. Plenary Lecturer, RSEQ Organic Chemistry Symposium, Santiago de Compostela, Spain (July, 2012)
  84. Plenary Lecturer, Gordon Research Conference, Organic Reaction and Processes, Smithfield, RI (July, 2012)
  85. Plenary Lecturer, National American Chemical Society Meeting, Philadelphia, PA (August, 2012)
  86. Plenary Lecturer, The 6<sup>th</sup> Takeda Science Foundation Symposium on Pharma Sciences, Osaka, Japan (September, 2012)
  87. Howard Memorial Lecturer, Sydney University, University of New South Wales, Sydney, Australia (September, 2012)
  88. Plenary Lecturer, 10<sup>th</sup> Lilly Research Awards for Graduate Students, Madrid, Spain (September, 2012)
  89. Student Invited Speaker, Virginia Polytechnic Institute and State University, Blacksburg, VA (November, 2012)
  90. Plenary Lecturer, Creativity Award Symposium for K.C. Nicolaou, NJ (November, 2012)
  91. Plenary Lecturer, Novartis Chemical Sciences Lectureship, UT Southwestern Medical Center, Dallas, TX (December, 2012)
  92. Student Invited Speaker, University of Houston, Houston, TX (December, 2012)
  93. Lilly Lecturer 2013, Imperial College London, London, United Kingdom (January, 2013)
  94. Samuel M. McElvian Academic Lecturer in Organic Chemistry, University of Wisconsin, Madison, WI (January, 2013)
  95. Plenary Lecturer, E.B. Hershberg Award Symposium to honor Bruce Maryanoff, New Orleans, LA (April, 2013)
  96. Plenary Lecturer, Bristol-Myers Squibb Symposium, Princeton, NJ (April, 2013)
  97. Plenary Lecturer, Sackler Symposium, Tel Aviv, Israel (June, 2013)
  98. Keynote Lecturer, Tetrahedron Conference, Vienna, Italy (June, 2013)
  99. Plenary Lecturer, Synthesis in Organic Chemistry Symposium, University of Oxford,

- Oxford, United Kingdom (July, 2013)
100. Student Invited Organic Seminar Speaker, Harvard University, Cambridge, MA (August, 2013)
  101. Plenary Lecturer, Princeton University, Princeton, NJ (September, 2013)
  102. Plenary Lecturer, Pharmaron Symposium, Beijing, China (September, 2013)
  103. Bristol-Myers Squibb Lecturer, Columbia University, New York, NY (January, 2014)
  104. George Büchi Visiting Lecturer in Organic Chemistry for 2013-2014, Massachusetts Institute of Technology, Cambridge, MA (February, 2014)
  105. Organic/Bristol-Myers Squibb Lecturer, U.C. Berkeley, Berkeley, CA (April, 2014)
  106. Plenary Speaker, Institute of Chemical Research of Catalonia, Tarragona, Spain (July, 2014)
  107. Plenary Lecturer, 2<sup>nd</sup> International Symposium on Natural Product Synthesis and Process Methods for Drug Manufacture, Nanjing University, China (September, 2014)
  108. Mukaiyama Award Lecturer, The Committee of The Society of Synthetic Organic Chemistry, Fukuoka, Kyusyu, Japan (September, 2014)
  109. 2014 Aldrich-UCLA Lecturer, Organic Colloquium, University of California, Los Angeles, Los Angeles, CA (October, 2014)
  110. Plenary Lecturer, AbbVie Global Synthesis Summit, North Chicago, IL (October, 2014)
  111. Plenary Speaker, Pauling Medal Award Symposium, Bellingham, WA (October, 2014)
  112. The Ferrier Lecturer, Victoria University, Wellington, New Zealand (December, 2014)
  113. Plenary Speaker, Royal Australian Chemical Institute National Congress, Adelaide, Australia (December, 2014)
  114. 2015 5-College Lectures in Chemistry, Smith College, Northampton, MA (March, 2015)
  115. Paul Gassman Memorial Seminar Speaker, Canisius College, Buffalo, NY (March, 2015)
  116. Plenary Speaker, 32<sup>nd</sup> Annual HC Brown Lectures, Purdue University, West Lafayette, IN (April, 2015)
  117. Morris S. Kharasch Visiting Professor, University of Chicago, Chicago, IL (April, 2015)
  118. Bristol-Myers Squibb Lecturer, University of Pennsylvania, Philadelphia, PA (May, 2015)
  119. College of Arts and Science Alumni Distinguished Service Award Recipient at the CAS Baccalaureate Graduation Ceremony, New York University, New York, NY (May, 2015)
  120. Plenary Speaker, 15<sup>th</sup> Annual Symposium on Molecular Discovery, Boston University, Boston, MA (June, 2015)
  121. Plenary Speaker, Yale University, New Haven, CT (June, 2015)
  122. Plenary Speaker, Professor Stephen L. Buchwald's 60<sup>th</sup> Birthday, Massachusetts Institute of Technology, Cambridge, MA (August, 2015)
  123. Plenary Speaker, International Society of Heterocyclic Chemistry Congress, Santa Barbara, CA (August, 2015)

124. Plenary Speaker, C&EN Virtual Symposium, Advances in Drug Discovery & Development, Virtual (September, 2015)
125. Plenary Speaker, 2015 Bristol-Myers Squibb Lecturer, Boston College, Chestnut Hill, MA (October, 2015)
126. Plenary Speaker, World ACD, San Diego, CA (October, 2015)
127. Bohlmann Lecturer, Institut für Chemie at the Technische Universität Berlin, Berlin, Germany (November, 2015)
128. Elias J. Corey Award for Outstanding Original Contribution in Organic Synthesis by a Young Investigator, Society's 251<sup>st</sup> ACS National Meeting, San Diego, CA (March, 2016)
129. Actelion Sandmeyer Lecturer, Actelion Pharmaceuticals Ltd., Allschwil, Switzerland (November, 2016)
130. EROS Reagent of the Year Lecturer, University of Basel, Basel, Switzerland (November, 2016)
131. Emanuel Merck Lectureship, TU Darmstadt, Darmstadt, Germany (May, 2017)
132. Keynote Speaker, Gordon Research Conference, New London, NH (August, 2017)
133. Plenary Speaker, IKA Works, Inc., ACS 254<sup>th</sup> National Meeting, Washington, D.C. (August, 2017)

### **Research Presentations**

1. Pfizer, St. Louis, MO (March, 2004)
2. Gordon Research Conference, Heterocyclic Compounds, Newport, RI (July, 2004)
3. San Diego Section of American Chemical Society, La Jolla, CA (August, 2004)
4. Pfizer, Ann Arbor, MI (September, 2004)
5. University of Michigan, Ann Arbor, MI (September, 2004)
6. Microwave Assisted Organic Synthesis Symposium, La Jolla, CA (October, 2004)
7. University of California, Los Angeles, Los Angeles, CA (November, 2004)
8. DuPont, Wilmington, DE (November, 2004)
9. Abbott Laboratories, Chicago, IL (February, 2005)
10. University of California, Santa Cruz, Santa Cruz, CA (March, 2005)
11. Brandeis University, Boston, MA (April, 2005)
12. Millenium Pharmaceuticals, Cambridge, MA (April, 2005)
13. Novartis, Cambridge, MA (April, 2005)
14. Eisai Pharmaceuticals, Cambridge, MA (April, 2005)
15. University of California, Los Angeles, Los Angeles, CA (May, 2005)

16. Schuster Symposium, New York University, New York, NY (June, 2005)
17. National Science Foundation Synthesis Workshop, Lake Arrowhead, CA (June, 2005)
18. Eli Lilly and Co., Indianapolis, IN (July, 2005)
19. International Conference Heterocyclic Chemistry Lecture, Palermo, Italy (July, 2005)
20. GlaxoSmithKline, Philadelphia, PA (August, 2005)
21. Bristol-Myers Squibb Pharmaceutical Research Institute, Lawrenceville, NJ (September, 2005)
22. Bristol-Myers Squibb Pharmaceutical Research Institute, Hopewell, NJ (September, 2005)
23. Kyoto Pharmaceutical University, Kyoto, Japan (September, 2005)
24. Tokyo Institute of Technology, Tokyo, Japan (September, 2005)
25. Tokyo University of Science, Tokyo, Japan (September, 2005)
26. Pennsylvania State University, State College, PA (November, 2005)
27. Hoffmann La Roche, Palo Alto, CA (December, 2005)
28. University of Wisconsin, Madison, WI (January, 2006)
29. Bristol-Myers Squibb, Process Research, East Brunswick, NJ (January, 2006)
30. University of California, Santa Barbara, Santa Barbara, CA (February, 2006)
31. University of Illinois, Urbana, IL (February, 2006)
32. University of Texas, Dallas, TX (February, 2006)
33. Lexicon Pharmaceuticals, Princeton, NJ (March, 2006)
34. Merck Research Laboratories, Whitehouse Station, NJ (March, 2006)
35. Pfizer La Jolla, San Diego, CA (March, 2006)
36. University of Alabama, Tuscaloosa, AL (March, 2006)
37. University of Utah, Salt Lake City, UT (April, 2006)
38. Brigham Young University, Provo, UT (April, 2006)
39. Searle Scholars Annual Meeting, Chicago, IL (April, 2006)
40. Cytokinetics, Inc., San Francisco, CA (April, 2006)
41. Genentech, San Francisco, CA (April, 2006)
42. Stanford University, Palo Alto, CA (April, 2006)
43. Scios Pharmaceuticals, San Francisco, CA (April, 2006)
44. Gilead, San Francisco, CA (April, 2006)
45. University of California, Irvine, Irvine, CA (April, 2006)
46. Schering-Plough Research Institute, Kenilwood, NJ (May, 2006)
47. Scripps Institute of Oceanography, Fenical Symposium, San Diego, CA (June, 2006)

48. Gordon Research Conference, Newport, RI (July, 2006)
49. Tokushima Pre-symposium – Natural Product Chemistry, Tokushima, Japan (July, 2006)
50. IUPAC International Conference on Biodiversity and Natural Products, Kyoto, Japan (July, 2006)
51. IUPAC Post-symposium, Sendai, Japan (July, 2006)
52. Helsinki University of Technology, Espoo, Finland (September, 2006)
53. University of Marburg, Marburg, Germany (September, 2006)
54. Max-Planck-Institute, Mulheim/Ruhr, Germany (September, 2006)
55. Schering Berlin, Berlin, Germany (September, 2006)
56. Johnson & Johnson, La Jolla, CA (December, 2006)
57. Eli Lilly, Madrid, Spain (January, 2007)
58. Columbia University, New York, NY (February, 2007)
59. Texas A&M University, College Station, TX (March, 2007)
60. Massachusetts Institute of Technology, Cambridge, MA (March, 2007)
61. 1<sup>st</sup> Annual Chemistry Graduate Student Seminar, University of Connecticut, Storrs, CT (March, 2007)
62. University of Missouri, Columbia, MI (April, 2007)
63. Amgen, Cambridge, MA (April, 2007)
64. Boston College, Boston, MA (May, 2007)
65. Sepracor, Marlborough, MA (May, 2007)
66. Bristol-Myers Squibb Symposium, New Brunswick, NJ (May, 2007)
67. Heterocyclic Compounds Gordon Research Conference, Newport, RI (June, 2007)
68. GlaxoSmithKline, Madrid, Spain (July, 2007)
69. Natural Products Gordon Research Conference, Tilton, NH (July, 2007)
70. Boston American Chemical Society Symposium, Joullie 80<sup>th</sup> Birthday Celebration, Boston, MA (August, 2007)
71. Beckman Young Investigator Symposium, Irvine, CA (August, 2007)
72. CSS Symposium, Wyeth, Collegeville, PA (September, 2007)
73. Johnson & Johnson PRD, Spring House, PA (October, 2007)
74. Novartis, Cambridge, MA (October, 2007)
75. POCC, University of Pennsylvania, Philadelphia, PA (October, 2007)
76. DuPont, Newark, DE (October, 2007)
77. Schering-Plough, Cambridge, MA (October, 2007)
78. California Institute of Technology, Organic Chemistry Seminar, Pasadena, CA

- (November, 2007)
79. Sanofi-Aventis, Frankfurt, Germany (January, 2008)
  80. Novartis, Basel, Switzerland (January, 2008)
  81. Novartis, Vienna, Austria (January, 2008)
  82. Novartis, Horsham, United Kingdom (January, 2008)
  83. GlaxoSmithKline, Harlow, United Kingdom (January, 2008)
  84. AstraZeneca R&D Charnwood, Loughborough, UK (January, 2008)
  85. Instituto de Química Orgánica General, Madrid, Spain (January, 2008)
  86. 13<sup>th</sup> Biennial Eli Lilly Grantee Symposium, Indianapolis, IN (March, 2008)
  87. University of Southern California, Los Angeles, CA (March, 2008)
  88. Searle Scholars Annual Meeting, Chicago, IL (April, 2008)
  89. Memorial Sloan-Kettering Cancer Center, New York, NY (May, 2008)
  90. Bristol-Myers Squibb Symposium, New Brunswick, NJ (May, 2008)
  91. Merck, Boston, MA (May, 2008)
  92. Pfizer, Sandwich, Kent, United Kingdom (July, 2008)
  93. Merck, West Point, PA (August, 2008)
  94. Amgen, San Francisco, CA (August, 2008)
  95. Exelixis, San Diego, CA (September, 2008)
  96. IRBM, Merck, Rome, Italy (September, 2008)
  97. AstraZeneca, Boston, MA (October, 2008)
  98. Takeda, San Diego, CA (November, 2008)
  99. New York University, New York, NY (January, 2009)
  100. Genomics Institute of the Novartis Research Foundation, La Jolla, CA (March, 2009)
  101. Université Pierre et Marie Curie, Paris, France (March, 2009)
  102. Lecture Series, Swiss Federal Institute of Technology, Lausanne, Switzerland (April, 2009)
  103. Lecture Series, Swiss Federal Institute of Technology, Basel, Switzerland (April, 2009)
  104. Lecture Series, Swiss Federal Institute of Technology, Geneva, Switzerland (April, 2009)
  105. Vitae Pharmaceuticals, Fort Washington, PA (July, 2009)
  106. Beckman Young Investigators Symposium, Irvine, CA (August, 2009)
  107. Boehringer-Ingelheim Pharmaceuticals, Ridgefield, CT (October, 2009)
  108. Northwestern University, Evanston, IL (February, 2010)
  109. University of Minnesota, Minneapolis, MN (March, 2010)

110. Boehringer-Ingelheim, Laval, Quebec, Canada (March, 2010)
111. GlaxoSmithKline, Upper Merion, PA (March, 2010)
112. Heterocyclic Compounds Gordon Research Conference, Newport, RI (June, 2010)
113. Celgene Research, San Diego, CA (July, 2010)
114. Stereochemistry Gordon Research Conference, Newport, RI (August, 2010)
115. Bristol-Myers Squibb, Wallingford, CT (September, 2010)
116. Syngenta, Jealott's Hill, Berkshire, United Kingdom (September, 2010)
117. UCB Pharma, Slough, United Kingdom (September, 2010)
118. Firmenich, Geneva, Switzerland (September, 2010)
119. The University of Delaware, Newark, DE (October, 2010)
120. The University of Texas at Austin, Austin, TX (November, 2010)
121. L.S. Skaggs Biomedical Symposium, La Jolla, CA (November, 2010)
122. AstraZeneca, Mölndal, Sweden (January, 2011)
123. Pfizer, Cambridge, MA (May, 2011)
124. Abbott Laboratories, Abbott Park, IL (June, 2011)
125. Vertex Pharmaceuticals, San Diego, CA (June, 2011)
126. PA Biotech Center, Doylestown, PA (June, 2011)
127. Eisai, Boston, MA (August, 2011)
128. GlaxoSmithKline Scholar Symposium, Raleigh, NC (September, 2011)
129. The Scripps Research Institute, Scripps Florida, Jupiter, FL (September, 2011)
130. SIOC, Shanghai, China (October, 2011)
131. SIMM, Shanghai, China (October, 2011)
132. WUXI, Shanghai, China (October, 2011)
133. Novartis, Shanghai, China (October, 2011)
134. Albany Molecular Research Inc. Albany, NY (November, 2011)
135. Dow AgroSciences, Indianapolis, IN (March, 2012)
136. Merck Research Laboratories, Boston, MA (March, 2012)
137. Pfizer, San Diego, CA (May, 2012)
138. Millennium Pharmaceuticals, Boston, MA (June, 2012)
139. Broad Institute of MIT and Harvard, Cambridge, MA (July, 2012)
140. Merck Serono, Darmstadt, Germany (August, 2012)
141. Sanofi-Aventis, Frankfurt, Germany (August, 2012)
142. AsymChem Fall Symposium, Tianjin, China (October, 2012)

143. Shanghai Institute of Materia Medica, Chinese Academy of Sciences, Shanghai, China (October, 2012)
144. Jiaotong University, Shanghai, China (October, 2012)
145. 5<sup>th</sup> International Forum on Homogeneous Catalysis, SIOC, Shanghai, China (October, 2012)
146. 1<sup>st</sup> International Symposium of C-H Activation, Peking University, Beijing, China (October, 2012)
147. University of Chicago, Department Colloquium, Chicago, IL (December, 2012)
148. Dart NeuroScience, San Diego, CA (April, 2013)
149. 23<sup>rd</sup> Annual Meeting on Structural Biology, San Jose del Cabo, Mexico (May, 2013)
150. Merck, Rahway, NJ (July, 2013)
151. AstraZeneca, Alderley Park, UK (July, 2013)
152. GlaxoSmithKline, Stevenage, UK (July, 2013)
153. Eisai, United Kingdom (July, 2013)
154. Academia Sinica, Taiwan, China (September, 2013)
155. Asymchem Inc., Tianjin, China (September, 2013)
156. Boehringer-Ingelheim, Ridgefield, CT (October, 2013)
157. LEO Ingenol Science Day, LEO Pharma A/S, Ballerup, Denmark (February, 2014)
158. Celgene, San Diego, CA (March, 2014)
159. Marine Natural Products Gordon Research Conference, Ventura, CA (March, 2014)
160. "Advances in C-H Functionalization" Symposium, American Chemical Society National Meeting, Dallas, TX (March, 2014)
161. "MEDI Awards" Symposium, American Chemical Society National Meeting, Dallas, TX (March, 2014)
162. "Award Symposium to Honor Amir Hoveyda," American Chemical Society National Meeting, Dallas, TX (March, 2014)
163. Jewish Federation of San Diego FED Talks, San Diego, CA (March, 2014)
164. Bristol-Myers Squibb Symposium, Princeton, NJ (May, 2014)
165. Johnson & Johnson, San Diego, CA (June, 2014)
166. AstraZeneca, Waltham, MA (October, 2014)
167. Hewitt Foundation Symposium, San Diego, CA (January, 2015)
168. GlaxoSmithKline, King of Prussia, PA (March, 2015)
169. Temple University, Philadelphia, PA (May, 2015)
170. Teva Global Research and Development, West Chester, PA (May, 2015)
171. Gordon Research Conference, New London, NH (June, 2015)



172. San Diego Bio-Pharma Conference, San Diego, CA (June, 2015)
173. AstraZeneca, Waltham, MA (August, 2015)
174. Teva Pharmaceutical Scholars Symposium, Boston, MA (August, 2015)
175. Kevli Symposium, Boston, MA (August, 2015)
176. American Chemical Society, Boston, MA (August, 2015)
177. International Society of Heterocyclic Chemistry, Santa Barbara, CA (August, 2015)
178. Bristol-Myers Squibb Symposium, Princeton, NJ (September, 2015)
179. Northern Section of the ACS Process Symposium, Boston Harbor, MA (October, 2015)
180. Asymchem Inc., Tianjin, China (October, 2015)
181. SIOC, Shanghai, China (October, 2015)
182. WuHan University, WuHan, China (October, 2015)
183. Harvard University, Cambridge, MA (November, 2015)
184. Pacificchem Symposium on Strategies and Tactics in Complex Molecule Synthesis, Honolulu, HI (December, 2015)
185. C-H Functionalization Symposium, Pacificchem, Honolulu, HI (December, 2015)
186. Symposium on Innovative Strategies for the Synthesis of Nitrogen Heterocycles, Honolulu, HI (December, 2015)
187. Genentech, South San Francisco, CA (February, 2016)
188. Emory University, Novartis Lecture, Atlanta, GA (April, 2016)
189. Gilead Sciences, Inc., San Francisco, CA (August, 2016)
190. Inception Sciences, San Diego, CA (August, 2016)
191. Asymchem, Inc., Tianjin, China (October, 2016)
192. University of Basel, Basel, Switzerland (November, 2016)
193. Binghamton University, Binghamton, NY (December, 2016)
194. Duke University, Durham, NC (April, 2017)
195. Eli Lilly, Madrid, Spain (July, 2017)
196. 254<sup>th</sup> ACS National Meeting, Graduate Symposium (August, 2017)
197. Alkermes, Waltham, MA (August, 2017)
198. Blueprint Medicines, Cambridge, MA (August, 2017)
199. Celgene, Inc., Summit, NJ (August, 2017)