Curriculum Vitae
Phil S. Baran

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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 from Lake Sumter Community College, Florida

Awards

- 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)

- Nobel Laureate Signature Award in Chemistry, ACS, 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
- NYU College of Art and Sciences Scholarship, 1995 – 1997
- Herman and Margaret Sokol Chemistry Fellowship, NYU, 1995 – 1997

Publications

1. Shi, J.; Manolikakes, G.; Yeh, C-H.; Guerrero, C.A.; Shenvi, R.A.; Shigehisa, H.; Baran, P.S. Scalable Synthesis of Cortistatin A and Related Structures, *J. Am. Chem. Soc*., **2011**, *ASAP*.

2. Fujiwara, Y.; Domingo, V.; Seiple, I.B.; Gianatassio, R.; Del Bel, M.; Baran, P.S. Practical C-H Functionalization of Quinones with Boronic Acids, *J. Am. Chem. Soc*., **2011**, *133*, 3292 – 3295.

3. Newhouse, T.R.; Baran, P.S. If C-H Bonds Could Talk – Selective C-H Bond Oxidation, *Angew. Chem. Int. Ed.*, **2011**, *50*, 3362 – 3374.

4. Foo, K.; Newhouse, T.R.; Mori, I.; Takayama, H.; Baran, P.S. Total Synthesis-Guided Structure Elucidation of (+)-Psychotetramine, *Angew. Chem. Int. Ed.*, **2011**, *50*, 2716 – 2719.

5. Cherney, E.C.; Baran, P.S. Terpenoid Alkaloids: Their Biosynthetic Twist of Fate and Total Synthesis, *Isr. J. Chem.*, **2011**, *51*, 391 – 405.

6. Gutekunst, W.R.; Baran, P.S. C-H Functionalization Logic in Total Synthesis, *Chem. Soc. Rev.*, **2011**, *40*, 1976 – 1991.

7. Jessing, M.; Baran, P.S. Oxidative Coupling of Indoles with 3-Oxindoles, *Heterocycles* **2011**, *82*, 1739 – 1745. (Special Issue Dedicated to Professor Dr. Albert Eschenmoser on the Occasion of his 85th birthday.)

8. Lin, D.W.; Su. S.; Masuda, T.; Biskup, M.B.; Nelson, J.D.; Baran, P.S. Synthesis-Guided Structural Revision of the Sarcodonin, Sarcoviolin, and Hydnellin Natural Product Family, *J. Org. Chem.*, **2011**, *76*, 1013 – 1030.

9. Schallenberger, M.A.; Newhouse, T.; Baran, P.S.; Romesberg, F.E. The Psychotrimine Natural Products have Antibacterial Activity against Gram-positive Bacteria and Act via Membrane Disruption, *J. of Antibiotics*, **2010**, *63*, 685 – 687.

10. Seiple, I.B.; Su, S.; Rodriguez, R.A.; Giantassio, R.; Fujiwara, Y.; Sobel, A.L.; Baran, P.S. Direct C-H Arylation of Electron-Deficient Heterocycles with Arylboronic Acids, *J. Am. Chem. Soc.* **2010**, *132*, 13194 – 13196.

11. Sella, R.; Weinstain, R.; Erez, R.; Burns, N.Z.; Baran, P.S.; Shabat, D. Sulfhydryl-based Dendritic Chain Reaction, *Chem Comm.* **2010**, *46*, 6575 – 6577.

12. Ishihara, Y.; Baran, P.S., Two-Phase Terpene Total Synthesis: Historical Perspective and Application to the Taxol Problem, *Synlett* **2010**, *12*, 1733 – 1745. (Invited on occasion of the 2010 Thieme-IUPAC award.)

13. Gaich, T.; Baran, P.S. Aiming for the Ideal Synthesis, *J. Org. Chem.* **2010**, *75*, 4657 – 4673. (Invited on occasion of the 2010 Pure Chemistry award.)

14. Newhouse, T.; Lewis, C.A.; Eastman, K.J.; Baran, P.S. Scalable Total Syntheses of *N*-Linked Tryptamine Dimers by Direct Indole – Aniline Coupling: Psychotrimine and Kapakahines B and F, *J. Am. Chem. Soc.* **2010**, *132*, 7119 – 7137.

15. Chen, K.; Ishihara, Y.; Galán, M.M.; Baran, P.S. Total Synthsis of Eudesmane Terpenes: Cyclase Phase, *Tetrahedron* **2010**, *66*, 4738 – 4744. (Special Issue Dedicated to Tetrahedron Award Winner)

16. Seiple, I.B.; Su, S.; Young, I.S.; Lewis, C.A.; Yamaguchi, J.; Baran, P.S. Total Synthesis of Palau'amine, *Angew. Chem. Int. Ed.* **2010**, *49*, 1095 – 1098.

17. Schultz, A.W.; Lewis, C.A.; Luzung, M.R.; Baran, P.S.; Moore, B.S. Functional Characterization of the Cyclomarin/Cyclomarazine Prenyltransferase CymD Directs the Biosynthesis of Unnatural Cyclic Peptides, *J. Nat. Prod.* **2010**, *73*, 373 – 377.

18. Cipres, A.; O'Malley, D.P; Li, K.; Finlay, D.; Baran, P.S.; Vuori, K. Sceptrin, a Marine Natural Compound, Inhibits Cell Motility in a Variety of Cancer Cell Lines, *ACS Chem. Bio*. **2010**, *5*, 195 – 202.

19. Chen, K.; Eschenmoser, A.; Baran, P.S. Strain-Release in C-H Bond Activation?, *Angew. Chem. Int. Ed.* **2009**, *48*, 9705 – 9708.

20. Maimone, T.J.; Shi, J.; Ashida, S.; Baran, P.S. Total Synthesis of Vinigrol, *J. Am. Chem. Soc*. **2009**, *47*, 17066 – 17067.

21. Krawczuk, P.J.; Schoene, N.; Baran, P.S. A Synthesis of the Carbon Skeleton or Maoecrystal V, *Org. Lett*. **2009**, *11*, 4474 – 4476.

22. Newhouse, T.; Baran, P.S.; Hoffmann, R.W. The Economies of Synthesis, *Chem. Soc. Rev*. **2009**, *38*, 3010 – 3021.

23. Luzung, M.R.; Lewis, C.A.; Baran, P.S. Direct, Chemoselective N-*tert*-Prenylation of Indoles by C-H Functionalization, *Angew. Chem. Int. Ed*. **2009**, *48*, 7025 – 7029.

24. Burns, N.Z.; Krylova, I.; Hannoush, R.N.; Baran, P.S. Scalable Total Synthesis and Biological Evaluation of Haouamine A and its Atropoisomer, *J. Am. Chem. Soc*. **2009**, *131*, 9172 – 9173.

25. Burns, N.Z.; Jessing, M.; Baran, P.S. Total Synthesis of Haouamine A: The Indeno-tetrahydropyridine Core, *Tetrahedron* **2009**, *65*, 6600 – 6610. (Special issue dedicated to Tetrahedron award winner)

26. Chen, K.; Baran, P.S. Total Synthesis of Eudesmane Terpenes by Site-Selective C–H Oxidations, *Nature* **2009**, *459*, 824 – 828.

27. Newhouse, T.; Lewis, C.A.; Baran, P.S. Enantiospecific Total Syntheses of Kapakahines B and F, *J. Am. Chem. Soc*. **2009**, *131*, 6360 – 6361.

28. Shi, J.; Shigehisa, H.; Guerrero, C.A.; Shenvi, R.A.; Li, C.; Baran, P.S. Stereodivergent Synthesis of 17α- and 17β-Aryl Steroids: Application and Biological Evaluation of D-Ring Cortistatin Analogues, *Angew. Chem. Int. Ed.* **2009**, *48*, 4328 – 4331.

29. Burns, N.Z.; Baran, P.S.; Hoffmann, R.W. Redox Economy in Organic Synthesis, *Angew. Chem. Int. Ed.* **2009**, *48*, 2854 – 2867.

30. Young, I.S.; Baran, P.S. Protecting Group Free Synthesis as an Opportunity for Invention, *Nature Chem.* **2009**, *1*, 193 – 205.

31. Shenvi, R.A.; O'Malley, D.P.; Baran, P.S. Chemoselectivity: The Mother of Invention in Total Synthesis, *Acc. Chem. Res.* **2009**, *42*, 530 – 541.

32. Hafensteiner, B.D.; Santamaria, M.E.; Petricci, E.; Baran, P.S. An Improved Synthesis of alpha, beta-Unsaturated Nitrones Relevant to the Stephacidins and Analogs Thereof,

Bioorg. Med. Chem. Lett. **2009**, *19*, 3808 – 3810. (Special issue dedicated to Tetrahedron young investigator)

33. Eastman, K.; Baran, P. S. A Simple Method for the Direct Arylation of Indoles, *Tetrahedron* **2009**, *65*, 3149 – 3154. (Special issue dedicated to Tetrahedron young investigator)

34. Weinstain, R.; Baran, P.S.; Shabat, D. Activity-Linked Labeling of Enzymes by Self-Immolative Polymers, *Bioconjugate Chem.* **2009**, *20*, 1783 – 1791.

35. Perry-Feigenbaum, R.; Baran, P.S.; Shabat, D. The pyridinone-methide Elimination, *Org. Biomol. Chem.* **2009**, *7*, 4825 – 4828.

36. Richter, J.M.; Ishihara, Y.; Masuda, T.; Whitefield, B.; Llamas, T.; Pohjakallio, A.; Baran, P.S. Enantiospecific Total Synthesis of the Hapalindoles, Fischerindoles, and Welwitindolinones via a Redox Economic Approach, *J. Am. Chem. Soc.* **2008**, *130*, 17938 – 17954.

37. Su, S.; Seiple. I.B.; Young, I.; Baran, P.S. Total Synthesis of (±)-Massadine and Massadine Chloride, *J. Am. Chem. Soc.* **2008**, *130*, 16490 – 16491.

38. DeMartino, M.P.; Chen, K.; Baran, P.S. Intermolecular Enolate Heterocoupling: Scope, Mechanism, and Application, *J. Am. Chem. Soc.* **2008**, *130*, 11546 – 11560.

39. Newhouse, T.; Baran, P.S. Total Synthesis of (±)-Psychotrimine, *J. Am. Chem. Soc.* **2008**, *130*, 10886 – 10887.

40. Chen, K.; Richter, J.M.; Baran, P.S. 1,3-Diol Synthesis via Controlled, Radical Mediated C–H Functionalization, *J. Am. Chem. Soc.* **2008**, *130*, 7247 – 7249.

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42. O'Malley, D.P.; Yamaguchi, J.; Young, I.S.; Seiple, I.B.; Baran, P.S. Total Synthesis of (±)-Axinellamines A and B, *Angew. Chem. Int. Ed.* **2008**, *47*, 3581 – 3583.

43. Yamaguchi, J.; Seiple, I.B.; Young, I.S.; O'Malley, D.P.; Maue, M.; Baran, P.S. Synthesis of 1,9-Dideoxy-pre-axinellamine, *Angew. Chem. Int. Ed.* **2008**, *47*, 3578 – 3580.

44. Maimone, T.J.; Voica, A.-F.; Baran, P.S. A Concise Approach to Vinigrol, *Angew. Chem. Int. Ed.* **2008**, *47*, 3054 – 3056.

45. Burns, N.Z; Baran, P.S. On the Origin of the Haouamine Alkaloids, *Angew. Chem. Int. Ed.* **2008**, *47*, 205 – 208.

46. Richter, J.M.; Whitefield, B.; Maimone, T.J.; Lin, D.W.; Castroviejo, P.; Baran, P.S. Scope and Mechanism of the Direct Indole Coupling Adjacent to Carbonyl Compounds:

Total Synthesis of Acremoauxin A and Oxazinin 3, *J. Am. Chem. Soc.* **2007**, *129*, 12857 – 12869.

47. Grube, A.; Immel, S.; Baran, P.S.; Köck, M. Massadine Chloride: a Biosynthetic Precursor of Massadine and Stylissadine, *Angew. Chem. Int. Ed.* **2007**, *46*, 6721 – 6724. [Corrigenda: *Angew. Chem. Int. Ed.* **2007**, *46*, 8107.]

48. Köck, M.; Grube, A.; Seiple, I.B.; Baran, P.S. The Pursuit of Palau'amine, *Angew. Chem. Int. Ed.* **2007**, *46*, 6586 – 6594.

49. Maimone, T.J.; Baran, P.S. Modern Synthetic Approaches to Terpenes, *Nature Chem. Bio.* **2007**, *3*, 396 – 407.

50. O'Malley, D.P.; Li, K.; Maue, M.; Zografos, A.L.; Baran, P.S. Total Synthesis of Dimeric Pyrrole-Imidazole Alkaloids: Sceptrin, Ageliferin, Nagelamide E, Oxysceptrin, Nakamuric Acid, and the Axinellamine Carbon Skeleton, *J. Am. Chem. Soc.* **2007**, *129*, 4762 – 4775.

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52. Baran, P.S.; Shenvi, R.A. Total Synthesis of (±)–Chartelline C, *J. Am. Chem. Soc.* **2006**, *128*, 14028 – 14029.

53. Baran, P.S.; DeMartino, M.P. Intermolecular Oxidative Enolate Heterocoupling, *Angew. Chem. Int. Ed.* **2006**, *45*, 7083 – 7086.

54. Baran, P.S.; Hafensteiner, B.D.; Ambhaikar, N.B.; Guerrero, C.A.; Gallagher, J. Enantioselective Total Synthesis of Avrainvillamide and the Stephacidins, *J. Am. Chem. Soc.* **2006**, *128*, 8678 – 8693.

55. Northrop, B.H.; O'Malley, D.P.; Zografos, A.L.; Baran, P.S.; Houk, K. N. Mechanism of the Vinylcyclobutane Rearrangement of Sceptrin to Ageliferin and Nagelamide E, *Angew. Chem. Int. Ed.* **2006**, *45*, 4126 – 4130.

56. Baran, P.S.; Burns, N.Z. Total Synthesis of (±)–Haouamine A, *J. Am. Chem. Soc.* **2006**, *128*, 3908 – 3909.

57. Baran, P.S.; Li, K.; O'Malley, D.P.; Mitsos, C.A. Short, Enantioselective Total Synthesis of Sceptrin and Ageliferin by Programmed Oxaquadricyclane Fragmentation, *Angew. Chem. Int. Ed.* **2006**, *45*, 249 – 252.

58. Baran, P.S.; Shenvi, R.A.; Nguyen, S.A. One-Step Synthesis of 4,5-Disubstituted Pyrimidines Using Commercially Available and Inexpensive Reagents. *Heterocycles* **2006**, *70*, 581 – 586. (Special issue dedicated to Professor Steve Weinreb)

59. Baran, P.S.; Ambhaikar, N.B.; Guerrero, C.A.; Hafensteiner, B.D.; Lin, D.W.; Richter, J.M. Oxidative C–C Bond Formation in Heterocyclic Chemistry, *ARKIVOC* **2006**, 310 –

325 (invited review).

60. Baran, P.S.; Richter, J.M. Enantioselective Total Syntheses of Welwitindolinone A and Fischerindoles I and G, *J. Am. Chem. Soc.* **2005**, *127*, 15394 – 15396.

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63. Baran, P.S.; Guerrero, C.A.; Ambhaikar, N.B.; Hafensteiner, B.D. Short, Enantioselective Total Synthesis of Stephacidin A, *Angew. Chem. Int. Ed.* **2005**, *44*, 606 – 609.

64. Baran, P.S.; Richter, J.M.; Lin, D.W. Direct Coupling of Pyrroles with Carbonyl Compounds: Short Enantioselective Synthesis of (*S*)-Ketorolac, *Angew. Chem. Int. Ed.* **2005**, *44*, 609 – 612.

65. Baran, P.S.; Richter, J.M. Direct Coupling of Indoles with Carbonyl Compounds: Short, Enantioselective, Gram-Scale Synthetic Entry into the Hapalindole and Fischerindole Alkaloid Families, *J. Am. Chem. Soc.* **2004***, 126*, 7450 – 7451.

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70. Baran, P.S.; Corey, E.J. A Short Synthetic Route to (+)-Austamide, (+)-Deoxyaustamide, and (+)-Deoxyisoaustamide from a Common Precursor by a Novel Palladium-Mediated Indole to Dihydroindoloazocine Cyclization, *J. Am. Chem. Soc.* **2002**, *124*, 7904 – 7905.

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Book Forewords

1. Li, J. J. *From Lipitor to Viagra: Stories Behind the Drugs We Use*, Oxford Press, **2006**

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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 – Present
5. Discussion Chair, GRC (Heterocycles), July 2006
6. Co-Chair, ACS Western Regional Meeting, 2007

Consulting

1. Bristol-Myers Squibb (exclusive, all sites), 2005 – present
2. DuPont, 2007 – Present
3. TetraPhase (Scientific Advisory Board), 2007 – 2009