

David W. C. MacMillan

Born: March 16, 1968, Glasgow, Scotland
Department of Chemistry, Princeton University, Frick Laboratory
Tel. (626) 354-7502; email: dmacmill@princeton.edu

Education

1991-1996 Ph.D., Organic Chemistry, University of California, Irvine, California
1987-1991 B.Sc., Chemistry, University of Glasgow, Scotland

Professional

July 2011 **James S. McDonnell Distinguished University Professor of Chemistry**
July 2010 **Department Chair, Chemistry, Princeton University**
Sept 2006-11 **A. Barton Hepburn Professor of Chemistry,**
Sept 2006 **Director Merck Center for Catalysis at Princeton University**
Sept 2004 **Earle C. Anthony Professor of Chemistry,**
Feb 2003 **Full Professor of Chemistry,**
June 2000 **Associate Professor of Chemistry,**
The California Institute of Technology, California
July 1998 **Assistant Professor of Chemistry,**
University of California, Berkeley, California

Research Experience

1996-1998 **Postdoctoral Research Fellow with Professor David A. Evans,**
Harvard University, Cambridge, MA
1991-1996 **Graduate Research Assistant with Professor Larry E. Overman,**
University of California, Irvine, California

Selected Awards and Honors

2015 Ernst Schering Prize for Outstanding Basic Research in the Field of Chemistry
2014 NJ ACS Award for Creativity in Molecular Design and Synthesis
2014 Harrison Howe ACS Award in Chemistry
2012 Elected to the Fellowship of the Royal Society (FRS)
2012 Elected to the American Academy of Arts and Sciences
2011 ACS Prize for Creative Work in Organic Synthesis (Sponsored by Aldrich)
2011 Mitsui Award in Catalysis (Mitsui Chemicals, Japan)
2011 Fellow American Association for the Advancement of Science
2011 UC Irvine Distinguished Alumni Award
2007 Mukaiyama Prize (Japanese Society of Organic Chemists)
2007 ISHC Award in Heterocyclic Chemistry
2007 Arthur C Cope Scholar ACS Award
2006 Thieme-IUPAC Prize in Synthetic Organic Chemistry

2005 Elias J. Corey American Chemical Society Award
2005 Tetrahedron Worldwide Young Investigator Award (Inaugural award)
2005 Corday-Morgan Medal, Royal Society of Chemistry, UK
2001 Woodward Scholar Lectureship, Harvard University

Editorial Board

2009-present Editor-in-Chief, Chemical Science (Royal Society of Chemistry).

Editorial Advisory Board

2001-present Tetrahedron and Tetrahedron Letters.
2004-present Journal of the Chemical Society, Chemical Communications
2005-present Chemistry, an Asian Journal (VCH-Wiley)
2006-present Advanced Synthesis and Catalysis

Scientific Advisory Board

2011-present Firmenich Inc, Geneva, Switzerland
2001-present Lexicon Pharmaceuticals, NJ.
2001-2006 Materia, Inc, CA.

Scientific Consultant

2009-present Constellation Pharmaceuticals, MA.
2003-present Gilead Pharmaceuticals, CA.
2002-present Amgen Pharmaceuticals, Worldwide.
2002-present Lexicon pharmaceuticals
2001-present Merck Research Laboratories, Worldwide.
2001-2007 Bayer Pharmaceuticals, CT.
2000-present Johnson & Johnson, CA, NJ
2000-present Abbott Research Laboratories, IL

Companies Founded

2009-present Chiromics LLC, Princeton, NJ

Independent Publications



(1) "Development of a New Lewis Acid Catalyzed Claisen Rearrangement" Yoon, T.; Dong, V. M.; MacMillan, D.W.C. *J. Am. Chem. Soc.* **1999**, *121*, 9726-9727.



(2) "New Strategies for Organic Catalysis: The First Highly Enantioselective Organocatalytic Diels–Alder Reaction" Ahrendt, K.A.; Borths, C.J.; MacMillan, D.W.C. *J. Am. Chem. Soc.* **2000**, *122*, 4243-4244.



(3) "New Strategies for Organic Catalysis: The First Enantioselective Organocatalytic 1,3–Dipolar Cycloaddition" Jen, W. S.; Wiener, J. J. M.; MacMillan, D.W.C. *J. Am. Chem. Soc.* **2000**, *122*, 9874-9875.



(4) "Design of a New Cascade Reaction For the Construction of Complex Acyclic Architecture: The Tandem Acyl–Claisen Rearrangement" Dong, V.M.; MacMillan, D.W.C. *J. Am. Chem. Soc.* **2001**, *123*, 2448-2449.



(5) "Enantioselective Claisen Rearrangements: Development of a First Generation Asymmetric Acyl–Claisen Reaction" Yoon, T.P.; MacMillan, D.W.C. *J. Am. Chem. Soc.* **2001**, *123*, 2911-2912.



(6) "New Strategies in Organic Catalysis: The First Enantioselective Organocatalytic Friedel–Crafts Alkylation" Paras, N.A.; MacMillan, D.W.C. *J. Am. Chem. Soc.* **2001**, *123*, 4370-4371.



(7) "Enantioselective Organocatalytic Indole Alkylations. Design of a New and Highly Effective Chiral Amine for Iminium Catalysis" Austin, J.A.; MacMillan, D.W.C. *J. Am. Chem. Soc.* **2002**, *124*, 1172-1173.



(8) "The First General Enantioselective Catalytic Diels–Alder Reaction with Simple α,β -Unsaturated Ketones." Northrup, A.B.; MacMillan, D.W.C. *J. Am. Chem. Soc.* **2002**, *124*, 2458-2459.



(9) "The Enantioselective Organocatalytic 1,4-Addition of Electron Rich Benzenes to α,β -Unsaturated Aldehydes." Paras, N.A.; MacMillan, D.W.C. *J. Am. Chem. Soc.* **2002**, *124*, 7894-7895.



(10) "The First Direct and Enantioselective Cross-Aldol Reaction of Aldehydes" Northrup, A.B.; MacMillan, D.W.C. *J. Am. Chem. Soc.* **2002**, *124*, 6798-6799.



(11) "Development of a New Lewis Acid-Catalyzed [3,3]-Sigmatropic Rearrangement: The Allenolate-Claisen Rearrangement" Lambert T.H.; MacMillan, D.W.C. *J. Am. Chem. Soc.* **2002**, *124*, 13646-13647.



(12) "The First Enantioselective Organocatalytic Mukaiyama-Michael Reaction. A Direct Method for the Synthesis of Enantioenriched γ -Butenolide Architecture" Brown, S.P.; Goodwin, N.C.; MacMillan, D.W.C. *J. Am. Chem. Soc.* **2003**, *125*, 1192-1193.



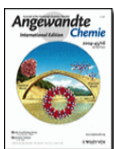
(13) "The First Suzuki Cross-Couplings of Aryltrimethylammonium Salts" Blakey, S.B.; MacMillan, D.W.C. *J. Am. Chem. Soc.* **2003**, *125*, 6046-6047.



(14) "The Direct and Enantioselective Organocatalytic α -Oxidation of Aldehydes" Brown, S.P.; Sinz, C. J.; Brochu, M.; MacMillan, D.W.C. *J. Am. Chem. Soc.* **2003**, *125*, 10808-10809.



(15) "Enantioselective Organocatalytic Construction of Pyrroloindolines via a Cascade Addition-Cyclization Strategy: Application to the Synthesis of (-)-Flustramine B." Austin, J. F.; Kim, S-G; Sinz, C. S.; Xiao, W-J, MacMillan, D. W. C. *Proc. Natl. Acad. Sci.* **2004**, *101*, 5482-5486.



(16) "Enantioselective Organocatalytic Direct Aldol Reactions of α -Oxyaldehydes: Step One in a Two Step Synthesis of Carbohydrates." Northrup, A. B.; Mangion, I. K.; Hettche, F.; MacMillan, D. W. C. *Angew. Chem.* **2004**, *43*, 2152-2153.



(17) "Direct and Enantioselective Organocatalytic α -Chlorination of Aldehydes." Brochu, M. P.; Brown, S. P.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2004**, *126*, 4108-4109.



(18) "Direct and enantioselective organocatalytic aldehyde-aldehyde aldol couplings. The broad utility of α -thioacetal aldehydes." Storer, R. I.; MacMillan, D. W. C. *Tetrahedron Symposium-in-Print to honor Professor Seebach's Tetrahedron Prize*, **2004**, *60*, 7705-7709.



(19) "Two-Step Synthesis of Carbohydrates by Selective Aldol Reactions." Northrup, A. B.; MacMillan, D. W. C. *Science*. **2004**, *305*, 1752-1755.



(20) "The Importance of Iminium Geometry Control in Enamine Catalysis. Identification of a New Catalyst Architecture for Aldehyde-Aldehyde Couplings." Northrup, A. B.; Mangion, I. K.; MacMillan, D. W. C. *Angew. Chem.* **2004**, *43*, 6722-6744.



(21) "Enantioselective Organocatalytic Hydride Reduction (EOHR)." Ouellet, S. G.; Tuttle, J. B.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2005**, *127*, 32-33.



(22) "Enantioselective Organocatalytic Cyclopropanations. The Identification of a New Class of Iminium Catalyst Based Upon Directed Electrostatic Activation." Kunz, R. K.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2005**, *127*, 3240-3241.



(23) "Total Synthesis of Littoralisone and Brasolide." Mangion, I. K.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2005**, *127*, 3696-3697.



(24) "Enantioselective Organocatalytic α -Fluorination of Aldehydes." Beeson, T. D.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2005**, *127*, 8826-8828.



(25) "Enantioselective Organocatalytic Intramolecular Diels–Alder Reactions. The Asymmetric Synthesis of Solanapyrone D." Wilson, R. M.; Jen, W. S.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2005**, *127*, 11616.



(26) "Enantioselective Organo-Cascade Catalysis." Huang, Y.; Walji, A.; Larsen, C. R.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2005**, *127*, 15051.



(27) "Enantioselective Organocatalytic Reductive Amination." Storer, R. I.; Carrera, D. E.; Ni, Y.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2006**, *128*, 84.



(28) "Enantioselective Organocatalytic Amine Conjugate Addition." Chen, Y. K.; Yoshida, M.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2006**, *128*, 9328.



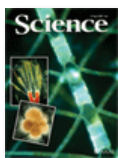
(29) "Modern Strategies in Organic Catalysis. The Advent and Development of Iminium Activation." Lelais, G.; MacMillan, D. W. C. *Aldrichimica Acta.* **2006**, *39*, 79.



(30) "Enantioselective organocatalytic epoxidation using hypervalent iodine reagents." Lee, S.; MacMillan, D. W. C. *Tetrahedron Symposium-in-Print to honor the Tetrahedron Young Investigator Prize to DWCM*, **2006**, *62*, 11413.



(31) "Organocatalytic Transfer Hydrogenation of Cyclic Enones." Tuttle, J. B.; Ouellet, S. G.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2006**, *128*, 12662.



(32) "Enantioselective Organocatalysis using SOMO Activation." Beeson, T. D.; Mastracchio, A.; Hong, J-B.; Ashton, K.; MacMillan, D. W. C. *Science*. **2007**, 316, 582.



(33) "Enantioselective Organocatalytic Singly Occupied Molecular Orbital Activation: The Enantioselective α -Enolation of Aldehydes." Jang, H-Y; Hong, J-B.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2007**, 129, 7004.



(34) "Strategies to Bypass the Taxol Problem. Enantioselective Cascade Catalysis, a New Approach for the Efficient Construction of Molecular Complexity." Walji, A.; MacMillan, D. W. C. *Synlett Special issue to honor the Thieme-IUPAC Prize to DWCM*, **2007**, 1477



(35) "Organocatalytic Vinyl and Friedel-Crafts Alkylations with Trifluoroborate Salts." Lee, S.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2007**, 129, 15438.



(36) "Enantioselective Organocatalytic Transfer Hydrogenation using Hantzsch Esters." Ouellet, S. G.; Walji, A.; MacMillan, D. W. C. *Acc. Chem. Res.* **2007**, 40, 1327.



(37) "Enantioselective Organo-SOMO Catalysis: The α -Vinylolation of Aldehydes." Kim, H.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2008**, 130, 398.



(38) "Total Synthesis and Structural Revision of Callipeltoside C." Carpenter, J.; Northrup, A. B.; Chung, D.; Wiener, J. J. M.; MacMillan, D. W. C. *Angew. Chem.* **2008**, *47*, 3568.



(39) "The advent and Development of Organocatalysis." MacMillan, D. W. C. *Nature*. **2008**, *455*, 304.



(40) "Merging Photoredox Catalysis with Organocatalysis: The Direct Asymmetric Alkylation of Aldehydes." Nicewicz, D. A.; MacMillan, D. W. C. *Science*. **2008**, *322*, 77.



(41) "Enantioselective Organo-SOMO Catalysis: The Carbo-Oxidation of Styrenes." Graham, T. H.; Jones, C. M.; Jui, N. T. MacMillan, D. W. C. *J. Am. Chem. Soc.* **2008**, *130*, 16494.



(42) "A process for the rapid removal of dialkylamino-substituents from aromatic rings. Application to the expedient synthesis of (*R*)-tolterodine." Paras, N.; Simmons, B.; MacMillan, D. W. C. *Tetrahedron Symposium-in-Print to honor Professor Du Bois' Tetrahedron Young Investigator Award*, **2009**, *65*, 3232.



(43) "Cycle-Specific Organocascade Catalysis: Application to Olefin Hydroamination, Hydro-Oxidation and Amino-Oxidation. The First Use of Organocascade Catalysis in Complex Natural Product Synthesis." Simmons, B.; Walji, A.; MacMillan, D. W. C. *Angew. Chem.* **2009**, *48*, 4349.



(44) "Enantioselective Linchpin Catalysis by SOMO Catalysis: an Approach to the Asymmetric α -Chlorination of Aldehydes and Terminal Epoxide Formation." Amatore, M.; Beeson, T. D.; Brown, S. P.; MacMillan, D. W. C. *Angew. Chem.* **2009**, *48*, 5121.



(45) "Enantioselective α -Trifluoromethylation of Aldehydes via Photoredox Organocatalysis." Nagib, D. A.; Scott, M. E.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2009**, *131*, 10875.



(46) "Development of a General, Enantioselective Mukaiyama-Michael Reaction with α,β -Unsaturated Aldehydes." Borths, C. J.; Carrera, D. E.; MacMillan, D. W. C. *Tetrahedron Symposium-in-Print to honor the Tetrahedron Prize to Larry Overman*, **2009**, *65*, 6746.



(47) "Enantioselective Aldehyde α -Nitroalkylation via Oxidative Organocatalysis." Wilson, J. E.; Casarez, A. D.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2009**, *131*, 11332.



(48) "Enantioselective α -Arylation of Aldehydes via Organo-SOMO Catalysis. An Ortho-Selective Arylation Reaction Based on an Open-Shell Pathway." Conrad, J. C.; Kong, J.; Laforteza, B. N.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2009**, *131*, 11640.



(49) "Nine-Step Enantioselective Total Synthesis of (+)-Minfiensine." Jones, S. B.; Simmons, B.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2009**, *131*, 13606.



(50) "The Productive Merger of Iodonium Salts and Organocatalysis: A Non-photolytic Approach to the Enantioselective α -Trifluoromethylation of Aldehydes." Allan, A. E.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2010**, *132*, 4986.



(51) "Nature of Intermediates in Organo-SOMO Catalysis of α -Arylation of Aldehydes." Um, J. M.; Gutierrez, O.; Schoenebeck, F.; Houk, K. N.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2010**, *132*, 6001.



(52) "Enantioselective Polyene Cyclization via Organo-SOMO Catalysis." Rendler, S.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2010**, *132*, 5027.



(53) "The organocatalytic three-step total synthesis of (+)-frondosin B." Reiter, M.; Torsell, S.; MacMillan, D. W. C. *Chem. Sci.* **2010**, *1*, 37.



(54) "Enantioselective Organo-SOMO Cascade Cycloadditions: A Rapid Approach to Molecular Complexity from Simple Aldehydes and Olefins." Jui, N. T.; Lee, E. C. Y.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2010**, *132*, 10015.



(55) "Concerning the Mechanism of the FeCl₃-Catalyzed α -Oxyamination of Aldehydes. Evidence for a Non-SOMO Activation Pathway." Van Humbeck, J. F.; Simonovich, S. P.; Knowles, R. R.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2010**, *132*, 10012.



(56) "Mechanistic Complexity in Organo-SOMO Activation." Devery III, J. J.; Conrad, J. C.; MacMillan, D. W. C.; Flowers, R. A. *Angew. Chem.* **2010**, *49*, 6106.



(57) "Enantioselective α -Benzylation of Aldehydes via Photoredox Organocatalysis." Shih, H. W.; Vander Wal, R.; Grange, R. L.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2010**, *132*, 13600.



(58) "Direct and Enantioselective α -Allylation of Ketones via Singly Occupied Molecular Orbital (SOMO) Catalysis." Mastracchio, A.; Warkentin, A. A.; Walji, A. M.; MacMillan, D. W. C. *Proc. Natl. Acad. Sci.* **2010**, *107*, 20648.



(59) "The Preparation of (2*R*, 5*S*)-2-*t*-Butyl-3,5-dimethylimidazolidin-4-one." Graham, T. H.; Horning, B. D.; MacMillan, D. W. C. *Proc. Org. Synth.* **2011**, *88*, 42.



(60) "The Total Synthesis of Diazonamide A." Knowles, R. R.; Carpenter, J.; Blakey, S. B.; Kayano, A.; Mangion, I. K.; Sinz, C. J.; MacMillan, D. W. C. *Chem. Sci.* **2011**, *2*, 308.



(61) "Enantioselective Organocatalytic α -Fluorination of Cyclic Ketones." Kwiatkowski, P.; Beeson, T. D.; Conrad, J. C.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2011**, *133*, 1738.



(62) "The Enantioselective α -Arylation of Aldehydes Via the Productive Merger of Iodonium Salts and Organocatalysis." Allen, A.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2011**, *133*, 4260.



(63) "The intramolecular asymmetric allylation of aldehydes via Organo-SOMO catalysis: A novel approach to ring construction." Pham, P. V.; Ashton, K.; MacMillan, D. W. C. *Chem. Sci.* **2011**, *2*, 1470.



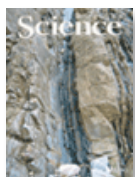
(64) "Photoredox Catalysis: A Mild and Operationally Simple Approach to the Synthesis of α -Trifluoromethyl Carbonyl Compounds." Pham, P. V.; Nagib, D. A.; MacMillan, D. W. C. *Angew. Chem.* **2011**, *50*, 6119.



(65) "The Collective Synthesis of Natural Products via Organocascade Catalysis." Jones, S. B.; Simmons, B.; Mastracchio, A.; MacMillan, D. W. C. *Nature.* **2011**, *475*, 183.



(66) "Enantioselective α -Arylation of Carbonyls via Cu(I)-Bisoxazoline Catalysis." Harvey, J. S.; Simonovich, S. P.; Jamison, C. R.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2011**, *133*, 13782.



(67) "The Discovery of an Amino C-H Arylation Reaction Using the Strategy of Accelerated Serendipity." McNally, A.; MacMillan, D. W. C. *Science*. **2011**, 334,1114.



(68) "Trifluoromethylation of arenes and heteroarenes via photoredox catalysis." Nagib, D. A.; MacMillan, D. W. C. *Nature*. **2011**, 480, 224.



(69) "Synergistic Catalysis: A Powerful Strategy for New Reaction Development." Allen, A. E.; MacMillan, D. W. C. *Chem. Sci.* **2012**, 3, 633.



(70) "A General Approach to the Enantioselective α -Oxidation of Aldehydes Via Synergistic Catalysis." Simonovich, S. P.; Van Humbeck, J. F.; MacMillan, D. W. C. *Chem. Sci.* **2012**, 3, 58.



(71) "Enantioselective α -Vinylolation of Aldehydes via the Synergistic Combination of Copper and Amine Catalysis." Skucas, E.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2012**, 134, 9090.



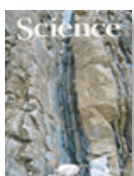
(72) "Enantioselective Copper-Catalyzed Construction of Aryl Pyrroloindolines via an Arylation–Cyclization Cascade." Zhu, S.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2012**, 134, 10815.



(73) "Enantioselective Organo-SOMO Cycloadditions: A Catalytic Approach to Complex Pyrrolidines from Olefins and Aldehydes." Jui, N. T.; Garber J. A. O.; Finelli F. G.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2012**, *134*, 11400.



(74) "Visible Light Photoredox Catalysis with Transition Metal Complexes: Applications in Organic Synthesis." Prier, C. K.; Rankic D. A. O.; MacMillan, D. W. C. *Chem. Rev.* **2013**, *113*, 5322.



(75) "Photoredox Activation for the Direct β -Arylation of Ketones and Aldehydes." Pirnot, M. T.; Rankic, D. A.; Martin, D. B. C.; MacMillan, D. W. C. *Science*. **2013**, *339*, 1593.



(76) "Nine-Step Enantioselective Total Synthesis of (-)-Vincorine." Horning, B. D.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2013**, *135*, 6442.



(77) "Development of a Generic Activation Mode: Nucleophilic α -Substitution of Ketones via Oxy-Allyl Cations." Vander Wal, M. N.; Dilger, A. K.; MacMillan, D. W. C. *Chem. Sci.* **2013**, *4*, 3075.



(78) "Enantioselective Intramolecular Aldehyde α -Alkylation with Simple Olefins: Direct Access to Homo-Ene Products." Comito, R. J.; Finelli, F. G.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2013**, *135*, 9358.



(79) "Enantioselective Direct α -Amination of Aldehydes via a Photoredox Mechanism: A Strategy for Asymmetric Amine Fragment Coupling." Cecere, G.; König, C. M.; Alleva J. L.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2013**, *135*, 11521.



(80) "Enantioselective α -Alkenylation of Aldehydes with Boronic Acids via the Synergistic Combination of Copper(II) and Amine Catalysis." Stevens, J. M.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2013**, *135*, 11756.



(81) "Enantioselective Total Synthesis of (-)-Minovincine in Chemical Steps: An Approach to Ketone Activation in Cascade Catalysis." Laforteza, B. N.; Pickworth, M.; MacMillan, D. W. C. *Angew. Chem.* **2013**, *52*, 11269.



(82) "Simple Catalytic Mechanism for the Direct Coupling of α -Carbonyls with Functionalized Amines: A One-Step Synthesis of Plavix." Evans, R. W.; Zbieg, J. R.; Zhu, S.; Li, W.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2013**, *135*, 16074.



(83) "Direct β -Functionalization of Cyclic Ketones with Aryl Ketones via the Merger of Photoredox and Organocatalysis." Petronijević, F. R.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2013**, *135*, 18323.



(84) "A general Strategy for the Organocatalytic Activation of C-H Bonds via Photoredox Catalysis: Direct Arylation of Benzylic Ethers." Qvortrup, K.; Rankic, D. A.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2014**, *136*, 626.



(85) "Decarboxylative Arylation of α -Amino Acids via Photoredox Catalysis: A One-Step Conversion of Biomass to Drug Pharmacophore." Zuo, Z.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2014**, *136*, 5257.



(86) "A General and Enantioselective Approach to Pentoses: A Rapid Synthesis of PSI-6130, the Nucleoside Core of Sofosbuvir." Peifer, M.; Berger, R.; Shurtleff, V. W.; Conrad, J. C.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2014**, *136*, 5900.



(87) "Direct β -Alkylation of Aldehydes via Photoredox Organocatalysis." Terrett, J. A.; Clift, M. D.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2014**, *136*, 6858.



(88) "Merging photoredox with nickel catalysis: Coupling of α -carboxyl sp^3 -carbons with aryl halides." Zuo, Z.; Ahneman, D.; Chu, L.; Terrett, J.; Doyle, A. G.; MacMillan, D. W. C. *Science* **2014**, in press.



(89) "Photoredox-Mediated α -Vinylolation of α -Amino Acids and *N*-Aryl Amines." Noble, A.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2014**, *136*, in press.



(90) "Carboxylic Acids as a Traceless Activation Group for Conjugate Additions: A Three-Step Synthesis of (\pm)-Lyrica." Chu, L.; Ohta, C.; Zuo, Z.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **2014**, *136*, in press.

Book Chapters

- (1) Lelais, G.; MacMillan, D. W. C. History and Perspective of Chiral Organic Catalysts. In *New Frontiers in Asymmetric Catalysis*; Mikami, K., Lautens, M., Eds.; Wiley: Hoboken, New Jersey, 2007; pp 313–358.
- (2) Lelais, G.; MacMillan, D. W. C. Iminium Catalysis. In *Enantioselective Organocatalysis: Reactions and Experimental Procedures*; Dalko, P. I., Ed.; Wiley-VCH: Weinheim, 2007; pp 95–120.
- (3) Watson, A. J. B.; MacMillan, D. W. C. Enantioselective Organocatalysis Involving Iminium, Enamine, SOMO, and Photoredox Activation, In *Catalytic Asymmetric Synthesis*, 3rd ed; Ojima, I., Ed.; Wiley, Hoboken, New Jersey: 2010, Chapter 2A, pp 39-57.

Selected Invited Lectures

October 1999	The Scripps Research Institute, CA
January 2000	California Institute of Technology, CA; UC Irvine, CA
July 2000	Cambridge University, UK
October 2000	Yale University, CT; Merck Pharmaceuticals, UK;
December 2000	DuPont Symposium in Organic Synthesis, UC San Diego
Feb 2001	UC Los Angeles
April 2001	Michigan Distinguished Lecturer Tour; University of Chicago
May 2001	Plenary Speaker Royal Society of Chemistry Grasmere Conference, UK
June 2001	Symposium in Honor of Professor David Evans, Harvard University
July 2001	Invited Speaker ICHC, Yokohama, Japan
August 2001	ACS Nakanishi Prize Symposium for Professor Jack Roberts
Sept 2001	Massachusetts Institute of Technology; GlaxoSmithKline Chemistry Scholar Symposium.
October 2001	Harvard University, Woodward Scholar Lectureship.
Nov 2001	Astra Zeneca New Investigator Award Symposium
February 2002	Mesilla Chemistry Workshop, "Asymmetric Catalysis," NM
March 2002	Keynote Speaker: NCCC III Symposium, Amsterdam, Holland. Cram Memorial Symposium, UCLA.
April 2002	ACS Award Symposium for Professor Clayton Heathcock Plenary Speaker: SCI Symposium on Enantioselective Organocatalysis, London. Merck Lecturer UK, Manchester, Leeds
May 2002	International Symposium on Recent Developments in Organometallic and Organic Synthesis, University of Montreal
June 2002	Plenary Speaker: Roche Symposium, Boulder, CO Plenary Speaker: Merck Worldwide Symposium, Montreal
October 2002	Plenary Speaker: CMDS Symposium, KAIST, Daejeon Korea Plenary Speaker: ACS Princeton Symposium, NJ Philadelphia Chemists Society meeting to honor Franklin Davis, PA
Dec 2002	Plenary Speaker: ISSIN, Osaka University, Tokyo, Japan

Jan 2003 Columbia University
 Feb 2003 Plenary Speaker: Advances in Catalysis Symposium, Puerto Rico
 March 2003 ACS Perspectives Symposium on Catalysis, Boston, MA
 April 2003 Invited Speaker, Burgenstock, Switzerland
 April 2003 Plenary Speaker: National Organic Symposium, Bloomington, ID. Plenary Speaker: International Symposium on Catalysis, Holland.
 May 2003 Derome Lectureship, Oxford University, UK
 July 2003 Plenary Speaker: International Symposium on Synthesis in Organic Chemistry, Cambridge University, UK; Plenary Speaker: International Conference on Heterocycles, Ft Collins, CO
 October 2003 Invited Speaker: 9th International Kyoto Conference on New Aspects of Organic Chemistry, Kyoto, Japan.
 March 2004 Chemistry as a Life Science Symposium, Princeton, NJ.
 March 2004 Paul Dowd Lectureship, University of Pittsburgh, PA.
 April 2004 BMS Lectureship, University of California, Berkeley, CA.
 April 2004 Inspire Lectureship, University of North Carolina, Chapel Hill, NC.
 May 2004 Baker Lecture, Cornell University, NY.
 May 2004 Lundbeck Lectureship, Technical University, Copenhagen, Denmark.
 June 2004 Merck Lectureship, Imperial College, London, UK.
 June 2004 UMDES Plenary Lecture, Zaragoza, Spain.
 June 2004 Plenary Lecture, BOS 2004, Riga, Latvia.
 July 2004 AOCC Plenary Lecture, Cairns, Perth, Sydney, Australia.
 July 2004 Plenary Lecture, Belgian Organic Symposium, Louvain-la-Neuve, Belgium.
 July 2004 New Frontiers in Organic Synthesis, Edinburgh, Scotland.
 Sep 2004 Plenary Lecture, French Chemical Society, Paris, France.
 Sep 2004 Syngenta Lectureship, Basel Chemical Society, Basel, Switzerland.
 Sep 2004 Plenary Lecture, IASOC XI, Ischia, Italy.
 October 2004 Fuson Lectureship, University of Illinois, Urbana-Champaign.
 Dec 2004 Ertzman Lecturer, Royal Institute of Technology, Stockholm, Sweden
 Jan 2005 Plenary Lecture, Frontiers in Organic Chemistry, Yale University, US
 Mar 2005 Award Lecture for EJ Corey Prize, San Diego, US
 May 2005 The Merck Lectures, Cambridge University, UK
 June 2005 Award Address for Tetrahedron Young Investigator Prize, Bordeaux, France
 July 2005 BASF Symposium in Catalysis, Heidelberg, Germany
 Sep 2005 Key address, Gregynogg Symposium, UK
 Oct 2005 Plenary Lecture, SBF symposium, Aachen, Germany
 Oct 2005 Plenary Lecture, Yamada-Koga Prize symposium, Tokyo, Japan
 Dec 2005 Plenary Lecture, Dublin Chemistry Symposium, Dublin, Ireland
 Jan-Dec 2005 Novartis International Lecturer, Boston, US; Basel, Switzerland, London, UK; Tokyo, Japan, Vienna, Austria.
 Dec 2005 Organocatalysis Symposium, Honolulu, Hawaii.
 Feb 2006 Plenary lecture, Kaist Chemistry Symposium, Jeju Island, Korea.
 Feb 2006 Merck lecturer, Harvard University, Cambridge, MA.

March 2006 Award lecture, Ta-shue Chou Symposium, Academia Sinica, Taipei, Taiwan.

April 2006 Corday-Morgan Award Lecture, Royal Society of Chemistry, UK.

May 2006 Plenary Lecture, Pfizer Symposium, Ann-Arbor, MI.

July 2006 Plenary Lecture, IUPAC Symposium, Kyoto, Japan.

Dec 2006 Plenary Lecture, New Zealand International Chemistry Conference, Rotorua, New Zealand.

Jan 2007 Novartis Lectureship, University of Pennsylvania, PA.

Feb 2007 Merck Lectureship, Stanford, CA.

Mar 2007 Cornforth Lectureship, University of Sydney, Australia.

April 2007 Bristol Synthesis Meeting, Bristol, UK

April 2007 Hellenic Symposium on Organic Synthesis, Athens, Greece

April 2007 Kende Lectureship, University of Rochester, NY

May 2007 Kyoto Conference on Organocatalysis, Japan

July 2007 ISHC Heterocyclic Award lecture, Sydney, Australia

Aug 2007 Cope Scholar Award Lecture, Boston, MA

Aug 2007 Young Guns Conference on Organic Synthesis, San Francisco, CA

Aug 2007 Brazilian Meeting on Organic Synthesis, Brazil

Sep 2007 Mukaiyama Award Symposium, Awaji Island, Japan

Oct 2007 Banff Symposium on Organic Synthesis, Canada

Jan 2008 Plenary Lecture Copenhagen Symposium on Catalysis, Denmark

Feb 2008 Plenary Lecture Swiss Chemical Society, Basel, Switzerland

Mar 2008 Merck Catalysis Symposium, Shanghai, China

Mar 2008 Plenary Lecture, Japanese Soc of Pharma Sciences, Yokohama, Japan

Mar 2008 Plenary Lecture, Presentation of ACS Award to M. Shibasaki, ACS Meeting, Philadelphia, PA

April 2008 Organic Synthesis Lectureship, UC Irvine, CA

May 2008 Plenary Lecture, UK Symposium on Catalytic Methods, Leeds, UK

July 2008 Plenary Lecture, Ischia Organic Chemistry Conference, Ischia, Italy

Aug 2008 Plenary Lecture, Division of Organic Chemistry Centennial Celebration ACS Meeting, Philadelphia, PA

Sept 2008 Plenary Lecture, German Organic Chemistry, Weimar, Germany

Oct 2008 Plenary Lecture, Ischia Workshop, Ischia, Italy

May 2009 Plenary Lecture, Grasmere, UK; Pfizer Green Chemistry Symposium, UK.

May 2009 Carruthers Lectureship, Birmingham, UK.

June 2009 Van 't Hoff lecture of the Dutch Royal Academy, Amsterdam, Holland.

Aug 2009 Plenary Lecture, Presentation of Tetrahedron Prize to L. Overman, ACS Meeting, Washington, D.C.

Sept 2009 Plenary Lecture, Welch Foundation Symposium, TX

Dec 2010 Karabatsos lectureship, Michigan State University

Jan 2010 Plenary Lecture, Sheffield Stereochemistry Meeting, UK

June 2010 French-American Chemical Society Meeting, Obernai, France

June 2010 Plenary Lecture, Tetrahedron Symposium, Beijing, China

July 2010 Tetrahedron Chair, BOSS Symposium, Brussels, Belgium

July 2010 Plenary Lecturer, DFG Meeting on Organocatalysis, Mulheim, Germany
July 2010 Plenary Lecturer, ISSACS Meeting, San Francisco
Sept 2010 Plenary Lecture Iberia Americo Symposium, Spain
Oct 2010 Pfizer Lectureship, MIT, Cambridge, MA
April 2011 Kharasch Lectureship, University of Chicago, IL
Mar 2011 Mitsui Catalysis Award Lecture, Kyoto, Japan
Mar 2011 ACS Award Lecture for Creative Work in Chemical Synthesis,
ACS National Meeting, Anaheim, CA
May 2011 Hassel Lectureship, University of Oslo, Norway
July 2011 Plenary Lecture, Regensburg University, Germany
July 2011 Plenary Lecture, Cambridge-Oxford Synthesis Meeting, UK
Aug 2011 Plenary Lecture, ICHC symposium, Glasgow, Scotland
Sept 2011 Student invited seminar, Minnesota University, MN
Dec 2011 Plenary Lecture, Green Catalysis Symposium, Quebec, Canada
Jan 2012 Plenary Lecture, Werner Soc. Dublin, Ireland
Mar 2012 Plenary Lecture, HCF symposium, Gainesville, FL
Mar 2012 Plenary Lecture to Honor Steve Hanessian Natural Products Prize, ACS,
San Diego, CA
Mar 2012 Lilly Award Symposium, Senior Talk, Indianapolis, IN
April 2012 Sloan-Kettering, New York
April 2012 Donald G. Davis, Memorial Lectureship, University of New Orleans
May 2012 Plenary Lecture SFB 858 Symposium, Munster, Germany
May 2012 Symposium to honor Howard Alper, Ottawa University, Canada
June 2012 Keynote Lecture Heterocycles GRC, Salve Regina, RI
June 2012 Keynote Lecture National Graduate Student Symposium, Boulder, CO
Aug 2012 Electron Transfer GRC, Salve Regina, RI
Aug 2012 Plenary Lecture to Honor Manfred Reetz Tetrahedron Prize, ACS, PA
Sept 2012 Swissman Lectures, Kansas University, KS
Nov 2012 Bohlman Lectureship, TUB, Berlin, Germany
Dec 2012 Plenary Lecture, Organocatalysis Symposium, Honolulu, HI
Jan 2013 Bristol-Syngenta Lectureship, Bristol, UK
Feb 2013 Abbott Lectureship, UC Berkeley, Berkeley, CA
Feb 2013 Beckman Lectureship, Caltech, Pasadena, CA
March 2013 Plenary Lecture, Huddersfield Catalysis Symposium, UK
March 2013 RSC Catalysis Award, Symposium in Honor, Strathclyde University, UK
March 2013 Murray Lectureship, St Louis, Missouri
April 2013 ACS Symposium on Photoredox Catalysis, New Orleans
June 2013 Koppa Symposium in Organic Chemistry, Helsinki, Finland
July 2013 Plenary Lecture, ESOC 2013, Marseille, France
March 2014 Stork Lectureship, Columbia University, New York, NY
April 2014 UW Madison, Student Invited Lectureship, Madison, WI
April 2014 Marker Lectureship, Penn State, PA
July 2014 Plenary Lecture, ICIQ Anniversary Symposium, Tarragona, Spain
Aug 2014 Plenary Lecture, Chinese Chem Soc Meeting, Beijing, China

Aug 2014 Plenary Lecture, Isacs Meeting, Shanghai, China
Aug 2014 Eun Lee lectureship, Seoul National University, Korea
Sept 2014 Plenary Lecture, Russian Organic Symposium, Moscow, Russia
Oct 2014 Plenary Lecture, Pavia Chemistry Day, Pavia, Italy
Oct 2014 Plenary Lecture, Madrid Symposium of Organic Chemistry, Madrid, Spain
Nov 2014 Backer Lectureship, Groningen University, Netherlands
Dec 2015 Award Lecture, ACS aAWard for Molecular Design and Synthesis, NJ
Feb 2015 Plenary Lecture, Rio de Janerio, Brazil
March 2015 Invited Lecture, University of North Caroline, Chapel Hill, NC.
April 2015 Robinson Lectures, Oxford University, UK
May 2015 Harrison Howe Award Lecture, Rochester, NY
June 2014 Plenary Lecture, Gif-Sur-Yvette, France
June 2014 Plenary Lecture National Organic Symposium, Delaware
July 2015 Keynote Lecture, Nato Conference, Sapporo, Japan
July 2015 Plenary Lecture, Medicinal Chemistry GRC, Rhode Island
Aug 2015 Kavali Lecture, ACS National Meeting, Boston
Sept 2015 Schering Prize Lectures, Berlin, Germany