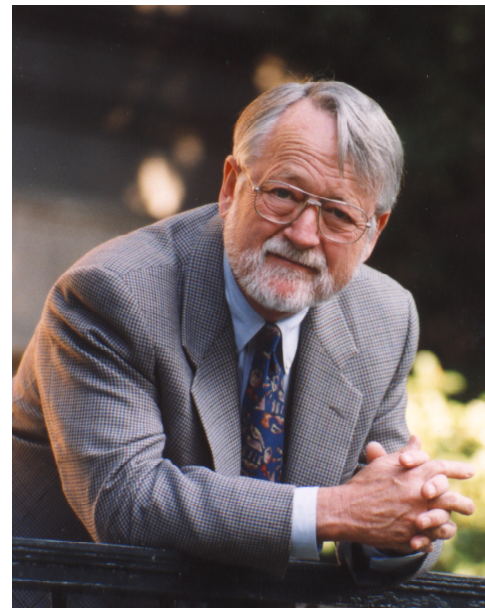


CLAYTON H. HEATHCOCK

Curriculum vitae



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education

San Antonio Public Schools, graduated from Brackenridge High School, 1954
Abilene Christian College; Abilene, TX; B.S., 1958
University of Colorado; Boulder, CO; Ph.D., 1963
Columbia University; New York City; Postdoctoral Fellow, 1963-64

Professional history

Champion Paper & Fibre Company, Pasadena, TX; Supervisor, Chemical Tests, 1958-60
University of California; Berkeley, CA
Assistant Professor, 1964-70; Associate Professor, 1970-75; Professor, 1975-present
Vice-Chairman, 1972-77; Chairman, 1986-89; Dean, College of Chemistry, 1999-2005,
Interim Dean, 2008; Gilbert Newton Lewis Professor, 2003-05; Chief Scientist,
QB3 Berkeley, California Institute for Quantitative Biosciences, 2005-present;
Miller Research Professor, 1982-83, 1991-92
Merck, Sharp & Dohme, Rahway, NJ; Consultant, 1968-78
Abbott Laboratories, Abbott Park, IL; Scientific Advisory Committee, 1986-1997
Medicinal Chemistry A Study Section (NIH); Member, 1979-81; Chairman, 1981-83
Organic Chemistry Division of the American Chemical Society
Executive Committee, 1976-79, 1984-86; Chairman, 1985; *Ex officio* 1986-present
Organic Syntheses Editorial Board, 1980-88; Editor-in-Chief, 1986; Board of Directors, 1992-present
Chairman, 1986 Gordon Conference on Stereochemistry
Editor-in-Chief, *Journal of Organic Chemistry*, 1989-1999
Chair, Chemistry Division, American Association for the Advancement of Science, 2000
Plexxikon, Scientific Advisory Board, 2002-present

honors

National Science Foundation Predoctoral and Postdoctoral Fellow, 1961-64
Alfred P. Sloan Foundation Fellow, 1967-69
Humboldt United States Senior Scientist Award, 1978
Miller Research Professor, UC Berkeley, 1982-83, 1991-92
Ernest Guenther Award, American Chemical Society, 1986
Award for Creative Work in Synthetic Organic Chemistry, American Chemical Society, 1990
A. C. Cope Scholar Award, American Chemical Society, 1990
Prelog Medal, ETH, 1991
Fellow of the American Academy of Arts and Sciences, 1991
Pfizer Award in Synthetic Organic Chemistry, 1993
Fellow of the National Academy of Sciences, 1995

Centenary Medal, Royal Society of Chemistry, 1996
H. C. Brown Award, American Chemical Society, 2002
Paul Gassman Award for Distinguished Service, American Chemical Society, 2004
Fellow of the American Chemical Society (Inaugural Class), 2009

lectureships

Georgia Institute of Technology, DuPont Visiting Professor, 1975
University of Idaho, ITT Rayonier Lecturer, 1976
Rutgers University, Martin Friedman Lecturer, 1977
Emory University, Timmie Lecturer, 1978
University of New Hampshire, Iddles Lecture, 1982
University of Colorado, Liebig Lecture, 1982
University of Montreal, Merck Lecture, 1982
Texas Christian University, Dow Lecturer, 1983
University of Notre Dame, 1985 Reilly Lecturer
Yale University, Bergmann Lecturer, 1987
Greater Manchester Lectureship, University of Salford, 1987
Hope College, 1988 Parke-Davis Lecturer
Swiss Federal Institute of Technology, 1991 Prelog Lecturer
Massachusetts Institute of Technology, 1992 George Büchi Lecturer
University of Virginia; 1992 Robert Lutz Lecturer
Nottingham University 1992 SmithKline Beecham Lecturer
University of Rochester, Victor Chambers Lecturer, 1993
University of Illinois, 1994 C. S. Marvell Lectureship
University of Nebraska, Phi Lamda Upsilon, *Rho* Chapter Lectureship Award, 1995
University of Michigan, Warner-Lambert Lectureship, 1995
Royal Society of Chemistry Centenary Lecture, Edinburgh, Scotland, 1996
University of Sherbrooke, Bio-Mega/Boehringer Ingelheim Lecture, 1997
R. W. Johnson Research Institute, 1997 PRI Chemistry Lecture, 1997
Texas A&M, Frontiers in Science Lectures, 1997
University of Sydney & University of New South Wales, 1998 Howard Lectures
Kansas University, 50th Frank Burnett Dains Memorial Lecture, 1998
Texas Tech University, 1st Henry Shine Lecture, 1999
Ohio State University, Mack Memorial Award Lecture, 2000
University of Puerto Rico, Pfizer Lecture, 2000
University of California, Davis, R. B. Miller Memorial Lecturer, 2001
University of Texas, Mahler Lecture, 2002
Nagoya University, Hirata Memorial Symposium, 2002
A. I. Meyers Memorial Symposium, 2008
Presiding Officer, 100th Anniversary Symposium of the Organic Chemistry Division of the ACS, 2008

research interests

Total synthesis of natural products, biomimetic synthesis, development of new synthetic methods, acyclic stereocontrol

publications

285. C. E. Wagner, Q. Wang, A. Melamed, C. R. Fairchild, R. Wild, C. H. Heathcock, "Synthesis and Biological Evaluation of Analogs of Althohydrin C (Spongistatin 2)," *Tetrahedron*, **2008**, *64*, 124-136.
284. H. S. Christie and C. H. Heathcock, "Total Synthesis of (±)-Halichlorine, (±)-Pinnaic Acid and (±)-Tauropinnaic Acid," *Proc. Natl. Acad. Sci. USA*, **2004**, *101*, 12,079-12,084.
283. M. Brito-Arias, R. Pereda-Miranda and C. H. Heathcock, "Synthesis of Tricolorin F," *J. Org. Chem.* **2004**, *69*, 4567-4570.
282. C. H. Heathcock, M. McLaughlin, J. Medina, J. L. Hubbs, G. A. Wallace, R. Scott, M. M. Claffey, C. J. Hayes and G. L. Ott; "Multigram Synthesis of the C29-C51 Subunit and Completion of the Total Synthesis of Althohyrtin C (Spongistatin 2)," *J. Am. Chem. Soc.* **2003**, *125*, 12,844-12,849.
281. J. L. Hubbs and C. H. Heathcock; "A Second-Generation Synthesis of the C1-C28 Portion of the Althohyrtins (Spongistatins)," *J. Am. Chem. Soc.* **2003**, 12,836-12,843.

280. B. Kedrowski and C. H. Heathcock, "Thiazoline Ring Formation From 2-Methylcysteines And 2 Halomethyl-alanines," *Heterocycles* **2002**, 58, 601-634.
279. D. Skyler and C. H. Heathcock, "The Pyridoacridine Family Tree - A Useful Scheme for Designing Synthesis and Predicting Undiscovered Natural Products," *J. Nat. Prod.* **2002**, 65, 1573-1581.
278. J. D. Fell and C. H. Heathcock, "Oxidative Fragmentation of Pregna-14,16-dien-20-ones to 14-Hydroxyandrost-15-en-17-ones," *J. Org. Chem.* **2001**, 67, 4742-4746.
277. C. M. Blazey and C. H. Heathcock, "Regiochemistry in 1,3-Dipolar Cycloadditions of the Azomethine Ylide Formed from Diethyl Aminomalonate and Paraformaldehyde," *J. Org. Chem.* **2002**, 67, 298-300.
276. D. Skyler and C. H. Heathcock, "A Simple Biomimetic Synthesis of Styelsamine B," *Org. Lett.* **2001**, 3, 4323-4324.
275. M. M. Hinman and C. H. Heathcock, "A Synthetic Approach to the *Stemona* Alkaloids," *J. Org. Chem.*, **2001**, 66, 7751-7756.
274. G. A. Wallace and C. H. Heathcock, "Further Studies of the *Daphniphyllum* Alkaloid Polycyclization Cascade," *J. Org. Chem.* **2001**, 66, 450-454.
273. G. A. Wallace, R. W. Scott and C. H. Heathcock, "Synthesis of the C29-C44 Portion of Spongistatin 1 (Altohyrtin A)," *J. Org. Chem.* **2000**, 65, 4145-4152.
272. K. Yamamoto and C. H. Heathcock, " α,β -Epoxy Vinyl Triflates in Pd-Catalyzed Reactions," *Org. Lett.* **2000**, 2, 1709-1712.
271. M. A. Toczko and C. H. Heathcock, "Total Synthesis of (\pm)-Aspidospermidine," *J. Org. Chem.* **2000**, 65, 2642-2645.
270. B. Raimundo and C.H. Heathcock, "Synthesis of a Model for C7-C13 of Lankamycin," *Org. Lett.* **2000**, 2, 27.
269. G. R. Ott and C. H. Heathcock, "A Method for Constructing the C44-C55 Side Chain of Altohyrtin C," *Org. Lett.* **1999**, 1, 1475.
268. J. L. Hubbs and C. H. Heathcock, "Total Synthesis of (\pm)-Isoschizogamine," *Org. Lett.* **1999**, 1, 1315.
267. M. M. Claffey, C. J. Hayes and C. H. Heathcock, "Synthesis of the C1-C28 Portion of Spongistatin 1 (Altohyrtin A)," *J. Org. Chem.* **1999**, 64, 8267.
266. J. F. Liu and C. H. Heathcock, "Total Synthesis of (\pm)-Cylindricines A and B," *J. Org. Chem.* **1999**, 64, 8263.
265. S. Chi and C. H. Heathcock, "Total Synthesis of Preussomerins G and I," *Org. Lett.* **1999**, 1, 3.
264. A. K. Mapp and C. H. Heathcock, "Total Synthesis of Myxalamide A," *J. Org. Chem.* **1999**, 64, 23.
263. K. M. Aubart and C. H. Heathcock, "A Biomimetic Approach to the Discorhabdin Alkaloids: Total Syntheses of Discorhabdins C and E and Dethiadiscorhabdin D," *J. Org. Chem.* **1999**, 64, 16.
262. D.J. Denhart, D. A. Griffith and C. H. Heathcock, "Synthesis of the Tricyclic Core of Sarain A. Use of Formaldehyde in an Intramolecular Grigg Azomethine Ylid Cyclization," *J. Org. Chem.* **1998**, 63, 9616.
261. R. W. Scott, J. Epperson and C. H. Heathcock, "Total Synthesis of Petrosin, Petrosin A and Petrosin B," *J. Org. Chem.* **1998**, 63, 5001.
260. C. H. Heathcock, R. C. D. Brown and T. Norman, "Total Synthesis of Petrosin C and D," *J. Org. Chem.* **1998**, 63, 5013.
259. P.W. Crawford, J. Gross, K. Lawson, C. C. Cheng, Q. Dong, F. Liu, Y. L. Luo, B. G. Szczepankiewicz and C. H. Heathcock, "Electrochemical Properties of Some Biologically Active Quinone Derivatives. Furanquinones, Pyridoquinones and Diplamine, A Cytotoxic Pyridoacridine Alkaloid," *J. Electrochemical Soc.* **1997**, 144, 3710.

258. D. P. Larson and C. H. Heathcock, "The Total Synthesis of Tricolorin A," *J. Org. Chem.* **1997**, *62*, 8406.
257. B. G. Szczepankiewicz and C. H. Heathcock, "A Novel Method for Suppression of the Abnormal Fischer Indole Synthesis," *Tetrahedron* **1997**, *53*, 8853.
256. C. J. Hayes and C. H. Heathcock, "A Method for Constructing the C18-C28 Dispiroacetal Moiety of Altohyrtin A," *J. Org. Chem.* **1997**, *62*, 2678.
255. R. Parsons and C. H. Heathcock, "Total Synthesis of (-)-Tantazole B," *Synlett.* **1996**, *12*, 1168.
254. K. A. Marshall, A. K. Mapp and C. H. Heathcock, "Synthesis of a 2,7-Dioxatricyclo[4.2.1.0^{3,8}]nonane; A Model Study for Possible Application in a Synthesis of Dictyoxetane," *J. Org. Chem.* **1996**, *61*, 9135.
253. S. Caron, D. Stoermer, A. K. Mapp and C. H. Heathcock, "Total Synthesis of Zaragozaic Acid A (Squalestatin S1). Synthesis of a Relay Compound," *J. Org. Chem.* **1996**, *61*, 9126.
252. D. Stoermer, S. Caron and C. H. Heathcock, "Total Synthesis of Zaragozaic Acid A (Squalestatin S1). Degradation to a Relay Compound and Reassembly of the Natural Product," *J. Org. Chem.* **1996**, *61*, 9115.
251. C. H. Heathcock, "Nature Knows Best; An Amazing Reaction Cascade is Uncovered by Design and Discovery," *Proc. Natl. Acad. Sci. USA*, **1996**, *93*, 14323.
250. M. C. Claffey and C. H. Heathcock, "A Method for Constructing the C2-C12 Dispiroacetal Moiety of Altohyrtin A," *J. Org. Chem.* **1996**, *61*, 7646.
249. R. W. Scott and C. H. Heathcock, "An Efficient Synthesis of 3,4,6-tri-*O*-benzyl-2-*C*-methyl-D-glucal," *Carbohydrate Research*, **1996**, *291*, 205-208.
248. M. A. Brimble, C. H. Heathcock and G. N. Nobin, "Synthesis and Ene Reactions of Di(-)-menthyl Diazene-dicarboxylate," *Tetrahedron: Asymmetry*, **1996**, *7*, 2007.
247. D. P. Larson and C. H. Heathcock, "Synthesis of the Macrolactone Disaccharide Subunit of Tricolorin A," *J. Org. Chem.* **1996**, *61*, 5208.
246. C. H. Heathcock, "As We Head Into the 21st Century, is There Still Value in Total Synthesis of Natural Products as a Research Endeavor?," in *Chemical Synthesis: Gnosis to Prognosis*, eds. C. Chatgililoglu and V. Snieckus, Kluwer: Dordrecht, 1996.
245. S. Caron, A. I. McDonald and C. H. Heathcock, "An Improved Synthesis of 1,6-Anhydro-2,3-di-*O*-benzyl- β -D-glucopyranos-4-*ulose*," *J. Carbohydrate Res.* **1996**, *281*, 179.
244. T. S. McDermott, A. Mortlock and C. H. Heathcock, "Total Syntheses of (-)-Papuanamine and (-) Haliclonadamine," *J. Org. Chem.* **1996**, *61*, 700.
243. B. C. Raimundo and C. H. Heathcock, "Further Studies on the *Anti*-Aldol Reaction of Chiral Imides," *Synlett.* **1995**, 1213.
242. C. H. Heathcock, M. Clasby, D. A. Griffith, B. R. Henke and M. J. Sharp, "Progress Toward the Synthesis of Sarain A," *Synlett.* **1995**, 467.
241. S. Caron, A. I. McDonald and C. H. Heathcock, "Synthesis of 1-Substituted and 1,4-Disubstituted 2,3-di-*O*-benzyl-1,6-anhydrogalactofuranoses," *J. Org. Chem.* **1995**, *61*, 2780.
240. D. A. Griffith and C. H. Heathcock, "Progress Toward the Synthesis of Sarain A: An Unanticipated Rearrangement," *Tetrahedron Letters.* **1995**, *36*, 2381.
239. C.H. Heathcock, J. C. Kath and R. B. Ruggeri, "*Daphniphyllum* Alkaloids 16. Total Synthesis of (+)-Codaphniphylline," *J. Org. Chem.* **1995**, *60*, 1120.
238. C. H. Heathcock and D. Joe, "*Daphniphyllum* Alkaloids 17. A Possibly Biomimetic Transformation of the Secodaphnane to the Daphnane Skeleton," *J. Org. Chem.* **1995**, *60*, 1131.

237. A. V. Vorobjev, M. M. Shakirov, V. A. Raldugin and C. H. Heathcock "Conformational Analysis of the 10- and 13-Hydroxy Derivatives of Cembrene," *J. Org. Chem.* **1995**, *60*, 63.
236. M. J. Munchhof and C. H. Heathcock, "Total Synthesis of ACRL Toxin IIIb; A Protocol for Parlaying Aldols into Synthons Containing Three Stereocenters Having an [n, n+1, n+4] Relationship," *J. Org. Chem.* **1994**, *59*, 7566.
235. C. H. Heathcock and S. C. Smith, "Synthesis and Biological Activity of Unsymmetrical Bis-steroidal Pyrazines Related to the Cytotoxic Marine Natural Product Cephalostatin 1," *J. Org. Chem.* **1994**, *59*, 6828.
234. R. W. Scott, J. R. Epperson and C. H. Heathcock, "Total Synthesis of Petrosin," *J. Am. Chem. Soc.* **1994**, *116*, 8853.
233. R. L. Parsons, Jr. and C. H. Heathcock, "Total Synthesis of (-)-Thiangazole, a Naturally Occurring HIV-1 Inhibitor," *J. Org. Chem.* **1994**, *58*, 4733.
232. B. G. Szczepankiewicz and C. H. Heathcock, "Total Synthesis of Diplamine, A Strongly Cytotoxic Pyridoacridine Alkaloid from a Pacific Tunicate," *J. Org. Chem.* **1994**, *59*, 3512.
231. M. J. Sharp and C. H. Heathcock, "An Unusual Isomerization Under Lawesson Thiation Conditions," *Tetrahedron Lett.* **1994**, *35*, 3651.
230. R. L. Parsons, Jr. and C. H. Heathcock, "Revision of the Stereostructure of Mirabazole C," *Tetrahedron Lett.* **1994**, *35*, 1379.
229. R. L. Parsons, Jr. and C. H. Heathcock, "Total Synthesis of Mirabazole B," *Tetrahedron Lett.* **1994**, *35*, 1383.
228. A. Ganesan and C. H. Heathcock, "Synthesis of Unsymmetrical Pyrazines by Reaction of 1,4 Diazabutadienes with Enamines," *J. Org. Chem.* **1993**, *58*, 6155.
227. D. L. Clark and C. H. Heathcock, "Studies on the Alkylation of Chiral Enolates: Application toward the Total Synthesis of Discodermolide," *J. Org. Chem.* **1993**, *58*, 5878.
226. M. A. Brimble and C. H. Heathcock, "Allylic Amination by the Lewis-Acid-Mediated Ene Reaction of Diethyl Azodicarboxylate with Alkenes," *J. Org. Chem.* **1993**, *58*, 5261.
225. D. S. Stoermer and C. H. Heathcock, "Total Synthesis of (-)-Alloaristoteline, (-)-Serratoline and (+)-Aristoteline," *J. Org. Chem.* **1993**, *58*, 564.
224. N. C. Ihle and C. H. Heathcock, "Palladium-Catalyzed Intramolecular Alkyne-Carbon Monoxide Alkene Insertion Cascade for Synthesis of α -Methylenecyclopentenones," *J. Org. Chem.* **1993**, *58*, 560.
223. P. D. Theisen and C. H. Heathcock, "Prochiral Recognition in the Reaction of 3-Substituted Glutaric Anhydrides with Chiral Secondary Alcohols," *J. Org. Chem.* **1993**, *58*, 142.
222. A. Ganesan and C. H. Heathcock, "A Stereochemical Test of the Mechanism of Electrophilic Substitution in 3-Substituted Indoles," *Tetrahedron Lett.* **1993**, *34*, 439.
221. B. R. Henke, A. J. Kouklis and C. H. Heathcock, "The Intramolecular 1,3-Dipolar Cycloaddition of Stabilized Azomethine Ylides to Unactivated Dipolarophiles," *J. Org. Chem.* **1992**, *57*, 7056.
220. M. J. Munchhof and C. H. Heathcock, "The Stereochemistry of Enolate Formation in THF-Hexane Mixtures," *Tetrahedron Lett.* **1992**, *33*, 8005.
219. S. C. Smith and C. H. Heathcock, "A Convenient Procedure for the Synthesis of bis-Steroidal Pyrazines: Models for the Cephalostatins," *J. Org. Chem.* **1992**, *57*, 6379.
218. S. K. Thompson and C. H. Heathcock, "Total Synthesis of Some Marasmane and Lactarane Sesquiterpenes," *J. Org. Chem.* **1992**, *57*, 5979.
217. R. S. C. Lopes, C. Lopes and C. H. Heathcock, "Synthesis of Pancreatistatin Models," *Tetrahedron Lett.* **1992**, *33*, 6775.

216. M. A. Walker and C. H. Heathcock, "Total Synthesis of (-)-Mirabazole C," *J. Org. Chem.* **1992**, *57*, 5566.
215. C. H. Heathcock, "The Enchanting Alkaloids of Yuzuriha," *Angew. Chem.* **1992**, *104*, 675; *Angew. Chem. Int. Ed. Engl.* **1992**, *31*, 665.
214. S. M. Kerwin and C. H. Heathcock, "Remote Oxidation of Perhydrophenanthrenes by Template Directed Hydrogen Atom Abstraction," *J. Org. Chem.* **1992**, *57*, 4005.
213. C. H. Heathcock, R. B. Ruggeri and K. F. McClure, "Daphniphyllum Alkaloids. 15. Total Synthesis of (±)-Methyl Homodaphniphyllate and (±)-Daphnilactone A," *J. Org. Chem.* **1992**, *57*, 2585.
212. C. H. Heathcock, J. A. Stafford and D. L. Clark, "Daphniphyllum Alkaloids. 14. Total Synthesis of (±)-Bukittinggine," *J. Org. Chem.* **1992**, *57*, 2575.
211. C. H. Heathcock and J. A. Stafford, "Daphniphyllum Alkaloids. 13. Total Synthesis of (-)-Secodaphniphylline," *J. Org. Chem.* **1992**, *57*, 2566.
210. C. H. Heathcock, S. Piettre, R. B. Ruggeri, J. A. Ragan and J. C. Kath, "Daphniphyllum Alkaloids. 12. A Proposed Biosynthesis of the Pentacyclic Skeleton proto-Daphniphylline," *J. Org. Chem.* **1992**, *57*, 2554.
209. C. H. Heathcock, M. M. Hansen, R. B. Ruggeri and J. C. Kath, "Daphniphyllum Alkaloids. 11. Biomimetic Total Synthesis of Methyl Homosecodaphniphyllate. Development of the Tetracyclization Reaction," *J. Org. Chem.* **1992**, *57*, 2544.
208. C. H. Heathcock, S. K. Davidsen, Sander Mills and Mark A. Sanner "Daphniphyllum Alkaloids. 10. Classical Total Synthesis of Methyl Homodaphniphyllate," *J. Org. Chem.* **1992**, *57*, 2531.
207. C. H. Heathcock, "Modern Enolate Chemistry: Regio- and Stereoselective Formation of Enolates and the Consequence of Enolate Configuration on Subsequent Reactions," *Modern Synthetic Methods*, **1992**, *6*, 1.
206. M. A. Walker and C. H. Heathcock, "Extending the Scope of the Evans Asymmetric Aldol Reaction: Preparation of anti and 'non-Evans' syn Aldols," *J. Org. Chem.* **1991**, *56*, 5748.
205. C. H. Heathcock, "The Aldol Reaction: Acid and General Base Catalysis," In *Comprehensive Organic Synthesis*, B. M. Trost and I. Fleming, Eds. Pergamon Press: Oxford, 1991.
204. C. H. Heathcock, "The Aldol Reaction: Preformed Group I and Group II Enolates," In *Comprehensive Organic Synthesis*, B. M. Trost and I. Fleming, Eds. Pergamon Press: Oxford, 1991.
203. N. Van Draanen, S. Arseniyadis, M. T. Crimmins and C. H. Heathcock, "Protocols for the Preparation of each of the four Possible Stereoisomeric α -Alkyl- β -Hydroxy Carboxylic Acids from a Single Chiral Aldol Reagent," *J. Org. Chem.* **1991**, *56*, 2499.
202. C. H. Heathcock, "Understanding and Controlling Diastereofacial Selectivity in Carbon-Carbon Bond-Forming Reactions," *Aldrichimica Acta*, **1990**, *23*, 99.
201. I. Mori, K. Ishihara, L. A. Flippin, K. Nozaki, H. Yamamoto, P. A. Bartlett and C. H. Heathcock, "On the Mechanism of Lewis-Acid-Mediated Nucleophilic Substitution Reactions of Acetals," *J. Org. Chem.* **1990**, *55*, 6107.
200. I. Mori, P. A. Bartlett and C. H. Heathcock, "Stereoselective Additions of Nucleophilic Alkenes to Chiral Thionium Ions," *J. Org. Chem.* **1990**, *55*, 5966.
199. D. A. Oare and C. H. Heathcock, "Acyclic Stereocontrol in Michael Addition Reactions of Enamines and Enol Ethers," *Topics in Stereochemistry*, E. L. Eliel and S. H. Wilen, Eds. **1991**, *20*, 87.
198. J. A. Stafford and C. H. Heathcock, "Asymmetric Total Synthesis of (-)-Secodaphniphylline," *J. Org. Chem.* **1990**, *55*, 5433.
197. U.S. PATENT NO. 4,950,775 "Antihypercholesterolemic Compounds and Synthesis Thereof" Inventors: C. H. Heathcock, T. J. Rosen, issued August 21, 1990.

196. C. H. Heathcock, S. Piettre and J. Kath, "Mechanistic Investigations of a Biomimetic Polycyclization Process that leads to the *Daphniphyllum* Alkaloids," *Pure & Applied Chem.* **1990**, *62*, 1911.
195. S. H. Montgomery, M. C. Pirrung and C. H. Heathcock, "De Novo Synthesis of Carbohydrates by Stereoselective Aldol Reaction: L-Cladinose," *Carbohyd. Res.* **1990**, *202*, 13.
194. S. Piettre and C. H. Heathcock, "Biomimetic Total Synthesis of Proto-Daphniphylline," *Science, Washington. D. C.* **1990**, *248*, 1532.
193. R. Ruggeri and C. H. Heathcock, "Biomimetic Total Synthesis of (\pm)-Methyl Homodaphniphyllate," *J. Org. Chem.* **1990**, *55*, 3714.
192. J. G. Stack, J. J. Doney, R. G. Bergman and C. H. Heathcock, "Rhenium 2-Oxoalkyl (Enolate) Complexes: Synthesis and Carbon-Carbon Bond Forming Reactions with Nitriles," *Organometallics*, **1990**, *9*, 453.
191. S. K. Thompson and C. H. Heathcock, "Effect of Cation, Temperature and Solvent on the Stereoselectivity of the Horner-Emmons Reaction of Trimethyl Phosphonoacetate with Aldehydes," *J. Org. Chem.* **1990**, *55*, 3386.
190. S. K. Thompson and C. H. Heathcock, "Total Synthesis of (\pm)-Isovelleral, a Mutagenic Sesquiterpene Dialdehyde from *Lactarius Vellereus*," *J. Org. Chem.* **1990**, *55*, 3004.
189. J. G. Stack, R. D. Simpson, F. J. Hollander, R. G. Bergman and C. H. Heathcock, "Carbon-Carbon Bond Forming Reactions of Rhenium Enolates with Terminal Alkenes. Evidence for an Alkyne C-H Oxidative Addition Mechanism and Observation of Highly Stereoselective Base-Catalyzed Proton Transfer Reactions in Rhenium Metallacycles," *J. Am. Chem. Soc.* **1990**, *112*, 2716.
188. C. H. Heathcock, M. H. Norman and D. A. Dickman, "Total Synthesis of (\pm)-Vallesamidine," *J. Org. Chem.* **1990**, *55*, 798.
187. I. Mori, K. Ishihara and C. H. Heathcock, "New Stereoselective Propanal/Propanoic Acid Synthons for Aldol Reactions," *J. Org. Chem.* **1990**, *55*, 1114.
186. E. R. Burkhardt, R. G. Bergman and C. H. Heathcock, "Synthesis and Reactions of Nickel and Palladium Carbon-Bound Enolate Complexes," *Organometallics* **1990**, *9*, 30.
185. H. Danda, M. M. Hansen and C. H. Heathcock, "Reversal of Stereochemistry in the Aldol Reactions of a Chiral Boron Enolate," *J. Org. Chem.* **1990**, *55*, 173.
184. D. A. Oare and C. H. Heathcock, "Stereochemistry of the Michael Addition of Ester and Ketone Enolates to α,β -Unsaturated Ketones," *J. Org. Chem.* **1990**, *55*, 157.
183. D. A. Oare, M. A. Henderson, M. A. Sanner and C. H. Heathcock, "The Stereochemistry of the Michael Addition of *N,N*-Disubstituted Amide and Thioamide Enolates to α,β -Unsaturated Ketones," *J. Org. Chem.* **1990**, *55*, 132.
182. C. H. Heathcock, D. A. Dickman and M. H. Norman, "An Approach to the Total Synthesis of (3H)-Indoline Alkaloids," in *Proceedings of the First Chulabhorn Science Congress 1987 International Congress of Natural Products*, Volume III, H. R. H. Chulabhorn Mahidol, Ed. Chulabhorn Foundation: Bangkok, 1989.
181. D. A. Oare and C. H. Heathcock, "Stereochemistry of the Michael Reaction," *Topics in Stereochemistry*, E. L. Eliel and S. H. Wilen, Eds. **1989**, *19*, 227.
180. K. Ishihara, H. Yamamoto and C. H. Heathcock, "Diastereoselective Aldol Synthesis using Acetal Templates," *Tetrahedron Lett.* **1989**, *30*, 1825.
179. C. H. Heathcock, T. A. Blumenkopf and K. M. Smith, "Total Synthesis of (\pm)-Fawcettimine," *J. Org. Chem.* **1989**, *54*, 1548.
178. R. B. Ruggeri, K. F. McClure and C. H. Heathcock, "Total Synthesis of (\pm)-Daphnilactone A: A Novel Fragmentation Reaction," *J. Am. Chem. Soc.* **1989**, *111*, 1530.

177. D. A. Dickman and C. H. Heathcock "Total Synthesis of (\pm)-Vallesamidine," *J. Am. Chem. Soc.* **1989**, *111*, 1528.
176. G. A. Slough, R. G. Bergman and C. H. Heathcock, "Synthesis of η^1 -Oxygen-Bound Rhodium Enolates. Applications to Catalytic Aldol Chemistry," *J. Am. Chem. Soc.* **1989**, *111*, 938.
175. R. B. Ruggeri and C. H. Heathcock, "A Proposal for the Biosynthesis of the *Daphniphyllum* Alkaloids," *Pure & Applied Chem.* **1989**, *61*, 289.
174. C. H. Heathcock, B. R. Davis and C. R. Hadley, "Synthesis and Biological Evaluation of a Monocyclic, Fully Functional Analog of Compactin," *J. Med. Chem.* **1989**, *32*, 197.
173. R. B. Ruggeri, M. M. Hansen and C. H. Heathcock, "Total Synthesis of Methyl (\pm)-Homosecodaphniphyllate: A Highly Efficient Tetracyclization Reaction," *J. Am. Chem. Soc.* **1988**, *110*, 8734.
172. M. A. Henderson and C. H. Heathcock, "Acyclic Stereoselection. 44. Diastereoselectivity in the Orthoester Claisen Rearrangement of Chiral Propargylic Alcohols. Use of β -Allenic Esters as Chiral Methylmalonaldehyde Synthons," *J. Org. Chem.* **1988**, *53*, 4736.
171. S. Hoagland, Y. Morita, D. L. Bai, H.-P. Märki, K. Kees, L. Brown and C. H. Heathcock, "Acyclic Stereoselection. 43. Stereoselective Synthesis of the C-8 to C-15 Moiety of Erythronolide A," *J. Org. Chem.* **1988**, *53*, 4730.
170. M. H. Norman and C. H. Heathcock, "An Improved Synthesis of N-Benzyl-5-ethyl-1,2,3,4-tetrahydropyridine," *J. Org. Chem.* **1988**, *53*, 3370.
169. P. D. Theisen and C. H. Heathcock, "Improved Procedure for Preparation of Optically-Active 3-Hydroxyglutarate Monoesters and 3-Hydroxy-5-oxoalkanoic Acids," *J. Org. Chem.* **1988**, *53*, 2374.
168. C. H. Heathcock, B. L. Finkelstein, E. T. Jarvi, P. A. Radel and C. R. Hadley, "1,4- and 1,5-Stereoselection by Sequential Aldol Addition to α,β -Unsaturated Aldehydes followed by Claisen Rearrangement. Application to the Total Synthesis of the Vitamin-E Side Chain and the Archaeobacterial C₄₀ Diol," *J. Org. Chem.* **1988**, *53*, 1922.
167. E. R. Burkhardt, J. J. Doney, G. A. Slough, J. M. Stack, C. H. Heathcock and R. G. Bergman, "Carbon-Carbon Bond Forming Reactions of Organotransition Metal Enolate Complexes," *Pure & Applied Chem.* **1988**, *60*, 1.
166. C. H. Heathcock, Ed. *Organic Syntheses, Vol. 68*, **1988**, John Wiley: New York.
165. R. B. Ruggeri and C. H. Heathcock, "Synthesis of Polycyclic Lactam and Lactone Ethers by Intramolecular Reformatsky Reactions. A Model for Construction of the Daphnilactone A Ring System," *J. Org. Chem.* **1987**, *52*, 5745.
164. I. Mori, P. A. Bartlett and C. H. Heathcock, "High Diastereofacial Selectivity in Nucleophilic Additions to Chiral Thionium Ions," *J. Am. Chem. Soc.* **1987**, *109*, 7199.
163. C. H. Heathcock, C. R. Hadley, T. Rosen, P. D. Theisen and S. J. Hecker, "Total Synthesis and Biological Evaluation of Structural Analogs of Compactin and Dihydromevinolin," *J. Med. Chem.* **1987**, *30*, 1858.
162. M. M. Hansen, P. A. Bartlett and C. H. Heathcock, "Preparation and Reactions of an Alkylzinc Enolate," *Organometallics* **1987**, *6*, 2069.
161. E. R. Burkhardt, J. J. Doney, J. G. Stack, C. H. Heathcock and R. G. Bergman, "Formation of Carbon-Carbon Bonds Using Organotransition Metal Enolate Complexes," *J. Mol. Catalysis* **1987**, *41*, 41.
160. E. P. Lodge and C. H. Heathcock, "Steric Effects, as Well as σ^* -Orbital Energies, are Important in Diastereoface Differentiation in Additions to Chiral Aldehydes," *J. Am. Chem. Soc.* **1987**, *109*, 3353.
159. E. P. Lodge and C. H. Heathcock, "On The Origin of Diastereofacial Selectivity in Additions to Chiral Aldehydes and Ketones: Trajectory Analysis," *J. Am. Chem. Soc.* **1987**, *109*, 2819.
158. S. M. Kerwin, A. G. Paul and C. H. Heathcock, "Quassinoid Synthesis. 2. Preparation of a Tetracyclic Intermediate Having the Bruceantin Tetrahydrofuran Ring," *J. Org. Chem.* **1987**, *52*, 1686.

157. E. R. Burkhardt, J. J. Doney, R. G. Bergman and C. H. Heathcock, "Tungsten and Molybdenum 2 oxallyl (η^1 -(C)-Enolate) Complexes: Functional Group Transformations, Photochemical Aldol Reactions and Alkyne/CO Migratory Insertion Reactions," *J. Am. Chem. Soc.* **1987**, *109*, 2022.
156. M. H. Norman and C. H. Heathcock, "Novel Transformations Leading to 3-Benzylindolizidin-2 ones," *J. Org. Chem.* **1987**, *52*, 226.
155. C. H. Heathcock and T. W. von Geldern, "Total Synthesis of Norsecurinine," *Heterocycles* **1987**, *25*, 75.
154. D. A. Oare and C. H. Heathcock, "Influence of Enolate Geometry on the Stereochemistry of Michael Additions to Ketone Enolates to α,β -Unsaturated Ketones," *Tetrahedron Lett.* **1986**, *27*, 6169.
153. C. H. Heathcock and P. A. Radel, "Total Synthesis of a Slightly Unnatural Product: Confirmation of the Stereostructure of the Archaeobacterial C₄₀ Diol by Synthesis of a Stereoisomer," *J. Org. Chem.* **1986**, *51*, 4323.
152. C. H. Heathcock, S. K. Davidsen, S. Mills and M. A. Sanner, "Total Synthesis of Methyl Homodaphniphyllate," *J. Am. Chem. Soc.* **1986**, *108*, 5650.
151. C. H. Heathcock, K. M. Smith and T. A. Blumenkopf, "Total Synthesis of (\pm)-Fawcettimine (Burnell's Base A)," *J. Am. Chem. Soc.* **1986**, *108*, 5022.
150. C. H. Heathcock, S. K. Davidsen, K. T. Hug and L. A. Flippin, "Acyclic Stereoselection. 36. Simple Diastereoselection in the Lewis Acid Mediated Reactions of Enolsilanes with Aldehydes," *J. Org. Chem.* **1986**, *51*, 3027.
149. S. J. Hecker and C. H. Heathcock, "Total Synthesis of (+)-Dihydromevinolin," *J. Am. Chem. Soc.* **1986**, *108*, 4586.
148. C. H. Heathcock and S. Arseniyadis, "Acyclic Stereoselection. 35. Effect of Cation on Diastereofacial Selectivity in Aldol Reactions of a Chiral α -Silyloxy Ketone," *Tetrahedron Lett.* **1985**, *26*, 6009.
147. C. H. Heathcock and D. E. Uehling, "Stereoselection in the Michael Addition Reaction. 4. Diastereofacial Preferences in Lewis Acid Mediated Additions of Enolsilanes to Chiral Enones," *J. Org. Chem.* **1986**, *51*, 279.
146. A. Streitwieser, Jr. and C. H. Heathcock, *Introduction to Organic Chemistry, 3rd Edition*, MacMillan Publishing Co. Inc. **1985**.
145. S. K. Davidsen and C. H. Heathcock, "A Convenient Method for the Preparation of Bicyclo[3.3.0]oct-1-en-3-one," *Synthesis* **1986**, 842.
144. C. H. Heathcock, J. J. Doney and R. G. Bergman, "The Synthesis and Carbon-Carbon Bond-Forming Reactions of Tungsten, Molybdenum and Rhenium Enolates," *Pure & Applied Chemistry* **1985**, *57*, 1789.
143. T. J. Rosen and C. H. Heathcock, "The Synthesis of Mevinic Acids," *Tetrahedron* **1986**, *42*, 4909.
142. S. J. Hecker and C. H. Heathcock, "An Approach to the Synthesis of Mevinolin Based on Intramolecular Diels-Alder Cycloaddition," *J. Org. Chem.* **1985**, *50*, 5159.
141. C. H. Heathcock, B. L. Finkelstein, T. Aoki and C. D. Poulter, "Stereostructure of the Archaeobacterial C₄₀ Diol," *Science, Washington, D.C.* **1985**, *229*, 862.
140. K. Takai and C. H. Heathcock, "Acyclic Stereoselection. 32. Synthesis and Characterization of the Diastereomeric (4S)-Pentane-1,2,3,4-Tetraols," *J. Org. Chem.* **1985**, *50*, 3247.
139. C. H. Heathcock and D. A. Oare, "Stereoselection in the Michael Addition Reaction. 3. The relationship between Ester Enolate Geometry and Adduct Stereochemistry in the Kinetic Michael Reaction of Lithium Enolates with Enones," *J. Org. Chem.* **1985**, *50*, 3022.
138. C. H. Heathcock, M. A. Henderson, D. A. Oare and M. A. Sanner, "Stereoselection in the Michael Addition Reaction. 2. Stereochemistry of the Kinetic Michael Reaction of Amide Enolates with Enones," *J. Org. Chem.* **1985**, *50*, 3019.
137. P. J. Connolly and C. H. Heathcock, "An Approach to the Total Synthesis of Dendrobine," *J. Org. Chem.* **1985**, *50*, 4135.

136. Jeffrey J. Doney, R. G. Bergman and C. H. Heathcock, "Synthesis, Structure and C-C Bond Forming Reactions of Carbon-Bound Molybdenum, Tungsten and Rhenium Enolates. Detection of an η^3 -Oxaallyl Intermediate," *J. Am. Chem. Soc.* **1985**, *107*, 3724.
135. C. H. Heathcock, M. H. Norman and D. E. Uehling, "Stereoselection in the Michael Addition Reaction. 1. The Mukaiyama-Michael Reaction," *J. Am. Chem. Soc.* **1985**, *107*, 2797.
134. C. H. Heathcock and S. H. Montgomery, "Acyclic Stereoselection. 28. Use of Stereoselective Aldol Methodology in the Total Synthesis of Cladinose," *Tetrahedron Lett.* **1985**, *26*, 1001.
133. T. Rosen and C. H. Heathcock, "Synthetic and Biological Studies of Compactin and Related Compounds. 4. Total Synthesis of (+)-Compactin," *J. Am. Chem. Soc.* **1985**, *107*, 3731.
132. S.-I. Kiyooka, H. Sasaoka, R. Fujiyama and C. H. Heathcock, "Diastereofacial Selectivity in the Lewis Acid Mediated Reactions of Allylsilane with Chiral β -Alkoxy Acetals," *Tetrahedron Lett.* **1984**, *25*, 5331.
131. C. H. Heathcock, S. D. Young, J. P. Hagen, R. Pilli and U. Badertscher, "Acyclic Stereoselection. 25. Stereoselective Synthesis of the C-1 to C-7 Moiety of Erythronolide A," *J. Org. Chem.* **1985**, *50*, 2095.
130. C. H. Heathcock, J. P. Hagen, S. D. Young, R. Pilli, D.-L. Bai, H.-P. Märki, K. Kees and U. Badertscher, "Simple Diastereoselection in the Formation of α,β -Dihydroxy Aldehydes: An Aldol Approach to the Synthesis of Erythronolide A," *Scripta Chimica* **1985**, *25*, 39.
129. T. Rosen, M. J. Taschner, J. A. Thomas and C. H. Heathcock, "Synthetic and Biological Studies of Compactin and Related Compounds. 3. Synthesis of the Hexalin Portion of Compactin," *J. Org. Chem.* **1985**, *50*, 1190.
128. C. H. Heathcock, T. W. von Geldern, C. B. Lebrilla and W. F. Maier, "Nucleophilic Substitution with Inversion of Configuration at the Nucleophile," *J. Org. Chem.* **1985**, *50*, 968.
127. C. H. Heathcock, K. T. Hug and L. A. Flippin, "Acyclic Stereoselection. 27. Simple Diastereoselection in the Lewis Acid Mediated Reactions of Enolsilanes with Benzaldehyde," *Tetrahedron Lett.* **1984**, *25*, 5793.
126. T. A. Blumenkopf and C. H. Heathcock, "Synthesis of *Lycopodium* Alkaloids," in *Alkaloids: Chemical and Biological Perspectives, Volume 3*, S. W. Pelletier, ed. John Wiley & Sons, **1985**, 185.
125. C. H. Heathcock, M. C. Pirrung, S. D. Young, J. P. Hagen, E. T. Jarvi, U. Badertscher, H.-P. Märki and S. Montgomery, "Acyclic Stereoselection. 23. Lactaldehyde Enolate Equivalents," *J. Am. Chem. Soc.* **1984**, *106*, 8161.
124. T. Rosen, M. J. Taschner and C. H. Heathcock, "Synthetic and Biological Studies of Compactin and Related Compounds. 2. Synthesis of the Lactone Moiety of Compactin," *J. Org. Chem.* **1984**, *49*, 3994.
123. T. Rosen, M. Watanabe and C. H. Heathcock, "A Convenient Assay for the Optical Purity of Monomethyl 3-Hydroxypentanedioate," *J. Org. Chem.* **1984**, *49*, 3657.
122. C. H. Heathcock, S.-I. Kiyooka and T. A. Blumenkopf, "Acyclic Stereoselection. 22. Diastereofacial Selectivity in the Lewis Acid Mediated Reactions of Allylsilanes with Chiral Aldehydes and Enones," *J. Org. Chem.* **1984**, *49*, 4214.
121. C. H. Heathcock, C. Mahaim, M. F. Schlecht and T. Utawanit, "A Synthetic Approach to the Quassinoids," *J. Org. Chem.* **1984**, *49*, 3264.
120. C. H. Heathcock, E. T. Jarvi and T. Rosen, "Acyclic Stereoselection. 21. Synthesis of an Ionophore Synthon having Four Asymmetric Carbons by Sequential Aldol Addition, Claisen Rearrangement and Hydroboration," *Tetrahedron Lett.* **1984**, *25*, 243.
119. R. A. Bunce, M. F. Schlecht, W. G. Dauben and C. H. Heathcock, "Organic Reactions at High Pressure. Conjugate Additions of *O*-Silylated Ketene Acetals to Activated Enones," *Tetrahedron Lett.* **1983**, *25*, 4943.
118. C. H. Heathcock, "The Aldol Addition Reaction," in *Asymmetric Synthesis, Volume 3*, J. D. Morrison, ed. Academic Press, Inc. New York, **1984**, 111.

117. C. H. Heathcock, "Stereoselective Aldol Condensations," in *Comprehensive Carbanion Chemistry, Volume II*, E. Buncl and T. Durst, eds. Elsevier, **1984**.
116. S.-I. Kiyooka and C. H. Heathcock, "Acyclic Stereoselection. 20. High Diastereofacial Selectivity in the Stannic Chloride Mediated Reactions of Allylsilanes with Chiral α - and β -Alkoxy Aldehydes," *Tetrahedron Lett.* **1983**, *24*, 4765.
115. C. H. Heathcock and J. Lampe, "Acyclic Stereoselection. 17. Simple Diastereoselection in the Addition of Medium- and Long-Chain *n*-Alkyl Ketone Lithium Enolates to Aldehydes," *J. Org. Chem.* **1983**, *48*, 4330.
114. C. H. Heathcock and S. H. Montgomery, "Acyclic Stereoselection. 19. Total Synthesis of (\pm)-Ristosamine and (\pm)-Megalosamine," *Tetrahedron Lett.* **1983**, *24*, 4637.
113. C. H. Heathcock and B. L. Finkelstein, "1,4-Stereoselection by Sequential Aldol Addition-Claisen Rearrangement. Stereostructure of the C-30 Diol from Messel Shale Kerogen," *J. Chem. Soc. Chem. Commun.* **1983**, 919.
112. C. H. Heathcock, R. A. Jennings and T. W. von Geldern, "Studies Directed toward the Total Synthesis of *Securinega* Alkaloids," *J. Org. Chem.* **1983**, *48*, 3428.
111. C. H. Heathcock and L. A. Flippin, "Acyclic Stereoselection. 16. High Diastereofacial Selectivity in Lewis Acid Mediated Additions of Enolsilanes to Chiral Aldehydes," *J. Am. Chem. Soc.* **1983**, *105*, 1667.
110. T. A. Blumenkopf and C. H. Heathcock, "Stereochemistry of the Sakurai Reaction. Additions to Cyclohexenones and Cycloheptenones," *J. Am. Chem. Soc.* **1983**, *105*, 2354 .
109. C. H. Heathcock, S. L. Graham, M. C. Pirrung, F. Plavac and C. T. White, "Total Synthesis of Sesquiterpenes, 1970-79," in *The Total Synthesis of Natural Products, Volume V*, ed. J. ApSimon, John Wiley & Sons, **1983**, 1.
108. C. H. Heathcock, "The Aldol Condensation as a Tool for Stereoselective Organic Synthesis," in *Current Trends in Organic Synthesis*, H. Nozaki, ed. Pergamon Press, Oxford and New York, **1983**, 27.
107. C. H. Heathcock, M. J. Taschner, T. Rosen, J. A. Thomas, C. R. Hadley and G. Popjak, "Synthesis and Biological Activity of the Hexalin Moiety of Compactin (ML-236B)," *Tetrahedron Lett.* **1982**, *23*, 4747.
106. C. H. Heathcock, C. M. Tice and T. C. Germroth, "Synthesis of Sesquiterpene Antitumor Lactones. 10. Total Synthesis of (\pm)-Parthenin," *J. Am. Chem. Soc.* **1982**, *104*, 6081.
105. C. H. Heathcock and E. T. Jarvi, "Acyclic Stereoselection. 15. Sequential Aldol-Claisen as a Method for 1,5-Stereoselection. Total Synthesis of the Vitamin-E Side Chain," *Tetrahedron Lett.* **1982**, *23*, 2825.
104. C. H. Heathcock, "Acyclic Stereoselection via the Aldol Condensation," *ACS Symposium Series, No. 185, Asymmetric Reactions and Processes in Chemistry*, E. L. Eliel and S. Otsuka, eds. American Chemical Society, **1982**.
103. C. H. Heathcock, E. G. DelMar and S. L. Graham, "Synthesis of Sesquiterpene Antitumor Lactones. 9. The Hydronaphthalene Route to Pseudoguaianolides. Total Synthesis of (\pm)-Confertin," *J. Am. Chem. Soc.* **1982**, *104*, 1907.
102. C. H. Heathcock, E. F. Kleinman and E. S. Binkley, "Total Synthesis of Lycopodium Alkaloids: (\pm)-Lycopodine, (\pm)-Lycodine and (\pm)-Lycodoline," *J. Am. Chem. Soc.* **1982**, *104*, 1054.
101. C. H. Heathcock, "Acyclic Stereocontrol Through the Aldol Condensation," *Science, Washington, D. C.* **1981**, *214*, 395.
100. C. H. Heathcock, J. P. Hagen, E. T. Jarvi, M. C. Pirrung and S. D. Young, "Acyclic Stereoselection. 14. O-Alkylactic Acid Esters: Reagents for the Stereoselective Construction of *Erythro*- and *Threo*-Methyl- α,β -dihydroxy Carbonyl Compounds," *J. Am. Chem. Soc.* **1981**, *103*, 4972.
99. C. H. Heathcock, M. C. Pirrung, S. H. Montgomery and J. Lampe, "Acyclic Stereoselection. 13. Aryl Esters: Reagents for *threo*-Aldolization," *Tetrahedron* **1981**, *37*, 4087.
98. A. Streitwieser, Jr. and C. H. Heathcock, *Introduction to Organic Chemistry, 2nd Edition*, MacMillan Publishing Co. Inc. **1981**.

97. C. H. Heathcock, M. C. Pirrung, J. Lampe, C. T. Buse and S. D. Young, "Acyclic Stereoselection. 12. Double Stereodifferentiation with Mutual Kinetic Resolution. A Superior Class of Reagents for Control of Cram's Rule Stereoselection in Synthesis of *erythro*- α -Alkyl- β -hydroxy Carboxylic Acids from Chiral Aldehydes," *J. Org. Chem.* **1981**, *46*, 2290.
96. C. H. Heathcock, C. T. White, J. J. Morrison and D. VanDerveer, "Acyclic Stereoselection. 11. Double Stereodifferentiation as a Method for Achieving Superior Cram's Rule Selectivity in Aldol Condensations with Chiral Aldehydes," *J. Org. Chem.* **1981**, *46*, 1296.
95. D. Schinzer and C. H. Heathcock, "Fluoride-Catalyzed Conversion of Acylsilanes to Aldehydes and Ketones," *Tetrahedron Lett.* **1981**, *22*, 1881.
94. C. T. White and C. H. Heathcock, "Acyclic Stereoselection. 10. A General Synthesis of *erythro*- α -Alkyl- β -hydroxy Ketones," *J. Org. Chem.* **1981**, *46*, 191.
93. C. H. Heathcock and E. F. Kleinman, "Total Synthesis of (\pm)-Lycodoline," *J. Am. Chem. Soc.* **1981**, *103*, 222.
92. C. M. Tice and C. H. Heathcock, "Synthesis of Sesquiterpene Antitumor Lactones. 8. An Approach to the Synthesis of Pseudoguaianolides Based on Oxy-Cope Rearrangement," *J. Org. Chem.* **1981**, *46*, 9.
91. S. L. Graham and C. H. Heathcock, "Stereoselectivity in the Alkylation of Sulfonium Salts," *Tetrahedron Lett.* **1980**, 3865.
90. J. A. Thomas and C. H. Heathcock, "A Reagent for Cyclohexene Annelation," *Tetrahedron Lett.* **1980**, 3235.
89. R. W. Dugger and C. H. Heathcock, "An Efficient Preparation of *trans,trans*- β -Ionylideneacetaldehyde," *Synth. Commun.* **1980**, *10*, 509.
88. C. H. Heathcock, S. D. Young, J. P. Hagen, M. C. Pirrung, C. T. White and D. VanDerveer, "Acyclic Stereoselection. 9. Stereochemistry of the Addition of Lithium Enolates to α -Alkoxy Aldehydes," *J. Org. Chem.* **1980**, *45*, 3846.
87. M. C. Pirrung and C. H. Heathcock, "Acyclic Stereoselection. 8. A New Class of Reagents for the Highly Stereoselective Preparation of *threo*-2-Alkyl-3-hydroxycarboxylic Acids by the Aldol Condensation," *J. Org. Chem.* **1980**, *45*, 1727.
86. S. L. Graham and C. H. Heathcock, "The Origin of the Differential Acidity of Diastereotopic Protons in Sulfonium Salts," *J. Am. Chem. Soc.* **1980**, *102*, 3713.
85. R. W. Dugger and C. H. Heathcock, "A General Synthesis of 5,6-Dihydro- α -pyrones," *J. Org. Chem.* **1980**, *45*, 1181.
84. C. H. Heathcock, C. T. Buse, W. A. Kleschick, M. C. Pirrung, J. E. Sohn and J. Lampe, "Acyclic Stereoselection. 7. Stereoselective Synthesis of 2-Alkyl-3-hydroxy Carbonyl Compounds by the Aldol Condensation," *J. Org. Chem.* **1980**, *45*, 1066.
83. D. Davalian and C. H. Heathcock, "Methyl 13,14-Dihydro-13,14-epoxyretinoate," *J. Org. Chem.* **1979**, *44*, 4988.
82. C. H. Heathcock, T. C. Germroth and S. L. Graham, "Stereochemistry of Cuprate Addition to 4-, 5- and 6-Alkylcycloheptenones," *J. Org. Chem.* **1979**, *44*, 4481.
81. D. Davalian and C. H. Heathcock, "Synthesis of 7,8-Epoxy-7,8-dihydroretinoids," *J. Org. Chem.* **1979**, *44*, 4458.
80. C. H. Heathcock, M. C. Pirrung, C. T. Buse, J. P. Hagen, S. D. Young and J. E. Sohn, "Acyclic Stereoselection. 6. A Reagent for Achieving High 1,2-Diastereoselection in the Aldol Conversion of Chiral Aldehydes to 3-Hydroxy-2-methylcarboxylic Acids," *J. Am. Chem. Soc.* **1979**, *101*, 7077.
79. C. H. Heathcock and C. T. White, "Acyclic Stereoselection. 5. Use of Double Stereodifferentiation to Enhance 1,2-Diastereoselection in Aldol Condensations of Chiral Aldehydes," *J. Am. Chem. Soc.* **1979**, *101*, 7076.
78. C. H. Heathcock, M. C. Pirrung and J. E. Sohn, "Acyclic Stereoselection. 4. Assignment of Stereostructure to β -Hydroxycarbonyl Compounds by ^{13}C NMR," *J. Org. Chem.* **1979**, *44*, 4294.

77. E. Kleinman and C. H. Heathcock, "Total Synthesis of (\pm)-Lycodine," *Tetrahedron Lett.* **1979**, 4125.
76. C. H. Heathcock, E. Kleinman and E. S. Binkley, "Total Synthesis of Lycopodine and Related Alkaloids," rpt. from *Stereoselective Synthesis of Natural Products: Proceedings of the Seventh Workshop Conference Hoechst, Schloss Reisenburg*, 24-27 September 1978, W. Bartmann and E. Winterfeldt, Eds. Excerpta Medica, Amsterdam-Oxford.
75. D. M. Roush, E. M. Price, L. K. Templeton, D. H. Templeton and C. H. Heathcock, "Synthesis, Stereostructure, Pyramidal Inversion and Alkylation of 1-Thionibicyclo[4.4.0]decane Salts," *J. Am. Chem. Soc.* **1979**, *101*, 2971.
74. F. Plavac and C. H. Heathcock, "Synthesis of Sesquiterpene Antitumor Lactones 7. Studies Directed toward the Total Synthesis of Pentalenolactone. Intramolecular Ene Reaction," *Tetrahedron Lett.* **1979**, 2115.
73. C. H. Heathcock, E. Kleinman and E. S. Binkley, "A Highly Efficient Total Synthesis of (\pm)-Lycopodine," *J. Am. Chem. Soc.* **1978**, *100*, 8036.
72. C. T. Buse and C. H. Heathcock, "Acyclic Stereoselection. 3. Synthesis of *threo*-3-Hydroxy-2 methylcarboxylic Acids," *Tetrahedron Lett.* **1978**, 1685.
71. W. A. Kleschick and C. H. Heathcock, "Synthesis and Chemistry of Ethyl 2-Diethylphosphonoacrylate," *J. Org. Chem.* **1978**, *43*, 1256.
70. C. T. Buse and C. H. Heathcock, "Acyclic Stereoselection. 2. Synthesis of 3-Hydroxy-2-methyl- and 3-Hydroxy-2,4-dimethylcarboxylic Acids," *J. Am. Chem. Soc.* **1977**, *99*, 2337.
69. D. M. Roush and C. H. Heathcock, "On the Stereostructure of Eastman's Sulfonium Salt. Pyramidal Inversion Barrier of an Unstabilized Sulfonium Ylide," *J. Am. Chem. Soc.* **1977**, *99*, 2337.
68. L. G. Kozar, R. D. Clark and C. H. Heathcock, "Synthesis of Bicyclo[2.2.2]octenes and Bicyclo[3.2.2]nonenes by π -Cyclization," *J. Org. Chem.* **1977**, *42*, 1386.
67. W. A. Kleschick, C. T. Buse and C. H. Heathcock, "Stereoselection in the Aldol Condensation," *J. Am. Chem. Soc.* **1977**, *99*, 247.
66. A. Streitwieser, Jr. and C. H. Heathcock, *Introduction to Organic Chemistry*, MacMillan Publishing Co. Inc. **1976**.
65. P. M. Wege, R. D. Clark and C. H. Heathcock, "Synthesis of Sesquiterpene Antitumor Lactones. 6. *cis*-8a-Vinyl-octahydro-3H-2-benzopyran-3,7-dione, a Precursor to Vernolepin," *J. Org. Chem.* **1976**, *41*, 3144.
64. J. E. Ellis, J. S. Dutcher and C. H. Heathcock, "Pentacyclic Triterpene Synthesis. 6. Synthesis of a Bicyclic Intermediate Corresponding to Rings D and E of b-Amyrin," *J. Org. Chem.* **1976**, *41*, 2670.
63. J. S. Dutcher, J. G. MacMillan and C. H. Heathcock, "Pentacyclic Triterpene Synthesis. 5. Synthesis of Optically Pure Ring AB Precursors," *J. Org. Chem.* **1976**, *41*, 2663.
62. C. G. Chavdarian, S. L. Woo, R. D. Clark and C. H. Heathcock, "Synthesis of Sesquiterpene Antitumor Lactones. V. A Model for Rings B and C of Vernolepin," *Tetrahedron Lett.* **1976**, 1769.
61. C. G. Chavdarian and C. H. Heathcock, "Synthesis of Sesquiterpene Antitumor Lactones. IV. A Stereoselective Synthesis of *trans*-2,3-Epoxy cyclohexanol," *Synth. Commun.* **1976**, *6*, 277.
60. R. D. Clark and C. H. Heathcock, "Synthesis of a Cytotoxic Vernolepin Prototype. Ozonization of Silyoxyalkenes," *J. Org. Chem.* **1976**, *41*, 1396.
59. R. D. Clark and C. H. Heathcock, "Preparation and Reactions of β -Chloro- α,β -unsaturated Ketones," *J. Org. Chem.* **1976**, *41*, 636.
58. C. G. Chavdarian and C. H. Heathcock, "Synthesis of δ -Lactones from Cyclohexenones. Preparation of a Vernolepin Analog," *J. Org. Chem.* **1975**, *40*, 2970.
57. R. D. Clark, L. G. Kozar and C. H. Heathcock, "Alkylation of Diethyl 2-Oxoalkanephosphonates," *Synthesis* **1975**, 635.

56. D. N. Brattesani and C. H. Heathcock, "A Synthetic Approach to the Dendrobine Skeleton," *J. Org. Chem.* **1975**, *40*, 2165.
55. E. S. Binkley and C. H. Heathcock, "The Mass Spectra of Some 2,3,5-Trialkylcyclohexanones," *J. Org. Chem.* **1975**, *40*, 2160.
54. E. S. Binkley and C. H. Heathcock, "Regiospecific Alkylation of Enolate Ions in Liquid Ammonia Tetrahydrofuran," *J. Org. Chem.* **1975**, *40*, 2156.
53. C. G. Chavdarian and C. H. Heathcock, "Preparation and Synthetic Applications of Lithium Di(α -methoxyvinyl)-cuprate," *J. Am. Chem. Soc.* **1975**, *97*, 3822.
52. R. D. Clark and C. H. Heathcock, "Synthesis of Spiro Lactones and Ketones via Conjugate Addition to Cyclopropyl Malonates and β -Keto Esters," *Tetrahedron Lett.* **1975**, 529.
51. R. D. Clark, L. G. Kozar and C. H. Heathcock, "Cyclopentenones from β,ϵ -Diketo Phosphonates. Synthesis of *cis*-Jasmone," *Synth. Commun.* **1975**, *5*, 1.
50. D. N. Brattesani and C. H. Heathcock, "Sulfonylation and Selenylation of Nitriles," *Tetrahedron Lett.* **1974**, 2279.
49. R. D. Clark and C. H. Heathcock, "Ozonization of Silyloxyalkenes," *Tetrahedron Lett.* **1974**, 2027.
48. R. D. Clark and C. H. Heathcock, "A New Synthesis of the Vernolepin A-Ring," *Tetrahedron Lett.* **1974**, 1713.
47. J. E. Ellis, J. S. Dutcher and C. H. Heathcock, "Pentacyclic Triterpene Synthesis. IV. A New Method for Accomplishing Robinson-Nazarov Annulations," *Synth. Commun.* **1974**, *4*, 71.
46. J. S. Dutcher and C. H. Heathcock, "Pentacyclic Triterpene Synthesis. III. Preparation of an Optically Active Synthone for Rings A and B," *Tetrahedron Lett.* **1974**, 933.
45. J. S. Dutcher, J. G. MacMillan and C. H. Heathcock, "Pentacyclic Triterpene Synthesis. II. Preparation of an AB Synthone," *Tetrahedron Lett.* **1974**, 929.
44. R. D. Clark and C. H. Heathcock, "A New Procedure for the Preparation of β -Chloro- α,β -unsaturated Ketones," *Synthesis* **1974**, 47.
43. C. H. Heathcock, "Total Synthesis of Sesquiterpenes," in *The Total Synthesis of Natural Products, Volume II*, edited by John ApSimon, John Wiley & Sons, **1973**, 197.
42. R. D. Clark, J. E. Ellis and C. H. Heathcock, "Methylation of Dimedone," *Synth. Commun.* **1973**, *3*, 347.
41. R. D. Clark and C. H. Heathcock, "The Reduction of β -Halo- α,β -unsaturated Ketones," *J. Org. Chem.* **1973**, *38*, 3658.
40. D. N. Brattesani and C. H. Heathcock, "A Convenient Procedure for the Alkylation of Acetylenes," *Synth. Commun.* **1973**, *3*, 245.
39. C. H. Heathcock, R. Ratcliffe and J. Van, "Synthesis of Hydroazulenes by Solvolytic Rearrangement of 9-Methyl-1-decalyl Tosylates," *J. Org. Chem.* **1972**, *37*, 1796.
38. B. E. Ratcliffe and C. H. Heathcock, "Synthesis and Characterization of 8-Methylspiro[4.5]dec-7-en-6-one and 6-Methylspiro[4.5]dec-6-en-8-one," *Synth. Commun.* **1972**, *2*, 157.
37. Y. Amano and C. H. Heathcock, "(\pm)-Occidentalol: Absolute Stereostructure and Total Synthesis," *Can. J. Chem.* **1972**, *50*, 340.
36. C. H. Heathcock and B. E. Ratcliffe, "Acid-Catalyzed Rearrangement of 6-Methyltricyclo[4.4.0.0^{2,7}]decan-3-one," *J. Org. Chem.* **1972**, *37*, 1298.
35. B. E. Ratcliffe and C. H. Heathcock, "Acid-Catalyzed Rearrangement of Tricyclo[4.4.0.0^{2,7}]decan-3-ols," *J. Org. Chem.* **1972**, *37*, 531.

34. C. H. Heathcock and R. A. Badger, "Photochemistry of 1,6-Cyclodecadienes. II. Synthesis and Photochemistry of 6-Methyl-1,6-cyclodecadien-3-one," *J. Org. Chem.* **1972**, *37*, 234.
33. C. H. Heathcock, R. A. Badger and R. A. Starkey, "Photochemistry of 1,6-Cyclodecadienes. I. 1-Methyl-(*E,E*)-1,6-cyclodecadiene," *J. Org. Chem.* **1972**, *37*, 231.
32. C. H. Heathcock, J. E. Ellis, J. E. McMurry and A. Coppolino, "Acid-Catalyzed Robinson Annulations," *Tetrahedron Lett.* **1971**, 4995.
31. C. H. Heathcock and J. E. Ellis, "Pentacyclic Triterpene Synthesis. Preparation of a Useful Intermediate," *Chem. Commun.* **1971**, 1474.
30. C. H. Heathcock and D. Gray, "On Mukharji's Cyclodecadieneone," *Tetrahedron* **1971**, *27*, 1239.
29. C. H. Heathcock and R. Ratcliffe, "A Stereoselective Total Synthesis of the Guaiazulenic Sesquiterpenoids α -Bulnesene and Bulnesol," *J. Am. Chem. Soc.* **1971**, *93*, 1746.
28. A. Hassner, R. P. Hoblitt, C. H. Heathcock, J. E. Kropp and M. Lorber, "Electronic vs. Steric Effects in the Addition of Iodine Isocyanate to Olefins," *J. Am. Chem. Soc.* **1970**, *92*, 1326.
27. C. H. Heathcock and S. R. Poulter, "Catalytic Hydrogenation of Cyclopropyl Alkenes. III. On the Mechanism of Homogeneous Hydrogenation in the Presence of Tris(triphenylphosphine)chlororhodium(I)," *Tetrahedron Lett.* **1969**, 2755.
26. C. H. Heathcock, "A New Synthesis of Alkyl Azides," *Angew. Chem. Internat. Edit. Engl.* **1969**, *8*, 134.
25. C. H. Heathcock, L. G. Gulick and T. Dehlinger, "Reaction of Furyllithium with Carboxylic Acids" *J. Heterocyclic Chem.* **1969**, *6*, 141.
24. C. H. Heathcock, J. E. Ellis and R. A. Badger, "Reaction of Alkylolithium Reagents with 2,2 Dialkyl-1,3-dioxolanes," *J. Heterocyclic Chem.* **1969**, *6*, 139.
23. C. H. Heathcock and R. A. Badger, "Synthesis and Photocyclization of a Cyclododecadienone," *Chem. Commun.* **1968**, 1510.
22. S. R. Poulter and C. H. Heathcock, "Catalytic Hydrogenation of Cyclopropyl Alkenes. II. Nature of the Intermediates in the Heterogeneous Hydrogenolysis Reaction," *Tetrahedron Lett.* **1968**, 5343.
21. S. R. Poulter and C. H. Heathcock, "Catalytic Hydrogenation of Cyclopropyl Alkenes. I. Effect of the Alkyl Substitution on the Heterogeneous Hydrogenolysis Reaction," *Tetrahedron Lett.* **1968**, 5339.
20. C. H. Heathcock and B. E. Ratcliffe, "An Unusual Cyclobutane Pyrolysis," *J. Org. Chem.* **1968**, *33*, 3650.
19. C. H. Heathcock and R. Ratcliffe, "Formation of Hydroazulenes by Solvolytic Rearrangement of 6 Methyldecalin-1-toluene-*p*-sulphonates," *Chem. Commun.* **1968**, 994.
18. C. H. Heathcock and S. R. Poulter, "The Effect of Cyclopropyl Substitution on the $p \rightarrow p^*$ Transition of Simple Olefins," *J. Am. Chem. Soc.* **1968**, *90*, 3766.
17. C. H. Heathcock and Y. Amano, "Sesquiterpenoids. V. The Synthesis and Formolysis of 4ab,8b- Dimethyl-8aa-hydroxydecahydronaphth-2b-oic Acid and 4b,8b-Dimethyl-8a hydroxydecahydronaphth-2a-oic Acid Lactone," *Tetrahedron* **1968**, *24*, 4917.
16. C. H. Heathcock and T. R. Kelly, "Sesquiterpenoids. IV. Acid-Catalyzed Methyl Migration in 9 Methyl Decalins," *Tetrahedron* **1968**, *24*, 3753.
15. C. H. Heathcock and T. R. Kelly, "Total Synthesis of Nor-ketoagarofuran," *Chem. Commun.* **1968**, 267.
14. C. H. Heathcock and T. R. Kelly, "Sesquiterpenoids. III. Total Synthesis of Eudesmane Sesquiterpenoids," *Tetrahedron* **1968**, *24*, 1801.

13. A. Hassner, M. E. Lorber and C. H. Heathcock, "Addition of Iodine Isocyanate to Olefins. Scope and Synthetic Utility," *J. Org. Chem.* **1967**, 32, 540.
12. C. H. Heathcock, R. A. Badger and J. W. Patterson, Jr. "Total Synthesis of (±)-Copaene and (±)-Ylangene. A General Method for Synthesis of Tricyclo[4.4.0.0^{2,7}]decanes," *J. Am. Chem. Soc.* **1967**, 89, 4133.
11. C. H. Heathcock, "The Total Synthesis of (±)-Copaene and (±)-8-Isocopaene," *J. Am. Chem. Soc.* **1966**, 88, 4110.
10. C. H. Heathcock, "The Synthesis of 1-Methyltricyclo[4.4.0.0^{2,7}]decanes," *Tetrahedron Lett.* **1966**, 2043.
9. M. J. Jorgenson and C. H. Heathcock, "Photochemistry of Cyclopropylacrylic Esters," *J. Am. Chem. Soc.* **1965**, 87, 5264.
8. A. Hassner and C. H. Heathcock, "Synthesis and Ring Opening of Fused Steroidal Aziridines," *J. Org. Chem.* **1965**, 30, 1748.
7. A. Hassner and C. H. Heathcock, "Synthesis of Fused Ethyleneimines from Cyclic Olefins," *Tetrahedron* **1964**, 20, 1037.
6. A. Hassner and C. H. Heathcock, "Stereospecific Additions to Olefins. The Iodonium Ion," *Tetrahedron Lett.* **1964**, 1125.
5. A. Hassner and C. H. Heathcock, "On the Mechanism of the Conversion of β -Iodo Carbamates to Aziridines," *J. Org. Chem.* **1964**, 29, 3640.
4. A. Hassner and C. H. Heathcock, "Reaction of Nitrosyl Chloride with Steroid 5-Enes. NMR as a Stereochemical Tool in Steroids," *J. Org. Chem.* **1964**, 29, 1350.
3. A. Hassner and C. H. Heathcock, "The Stereochemistry of Ethyleneimines Fused to Six-Membered Rings," *Tetrahedron Lett.* **1963**, 393.
2. A. Hassner and C. H. Heathcock, "Formation of 2-Oxazolidones from β -Iodourethanes. A Stereospecific Synthesis of cis- β -Amino Alcohols," *Angew. Chem. Internat. Edit. Engl.* **1963**, 2, 213.
1. C. H. Heathcock, "The Chemical Shift of Aromatic Alkoxy Groups," *Can. J. Chem.* **1962**, 40, 1865.