Herbert C. Brown

Lectures in
Organic
Chemistry

2022

Department of Chemistry
Purdue University
West Lafayette, Indiana
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker</th>
<th>Institution</th>
<th>Title</th>
<th>Chair</th>
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<tbody>
<tr>
<td>8:55–9:00</td>
<td>Opening Remarks</td>
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<tr>
<td>9:00–10:00</td>
<td>Dawei Ma, Shanghai Institute of Organic Chemistry</td>
<td>“Exploring New Methodologies to Enhance Synthetic Efficiency”</td>
<td>Mingji Dai</td>
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<td>10:00–10:15</td>
<td>Discussion</td>
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<td>10:15–11:00</td>
<td>Coffee Break / Poster Session</td>
<td>STEW 202/206</td>
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<tr>
<td>11:00–12:00</td>
<td>Richmond Sarpong, University of California, Berkeley</td>
<td>“Break-it-to-Make-it Strategies for Chemical Synthesis Inspired by Complex Natural Products”</td>
<td>Bram Axelrod</td>
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<td>12:00–12:15</td>
<td>Discussion</td>
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<td>12:15–1:30</td>
<td>LUNCH (STEW 302/306)</td>
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<tr>
<td>1:30–2:30</td>
<td>Amir Hoveyda, Boston College</td>
<td>“A New Landscape for Catalytic Multicomponent Reactions”</td>
<td>Ryan Altman</td>
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<td>2:30–2:45</td>
<td>Discussion</td>
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<td>2:45–3:00</td>
<td>Baiyang Jiang, Purdue University (H.C. Brown Graduate Student Research Award Winner)</td>
<td>“Towards the Total Syntheses of Hamigerans with a [6–7–5] Tricyclic Skeleton”</td>
<td>Mingji Dai</td>
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<td>3:00–3:15</td>
<td>Shruti Biyani, Purdue University (H.C. Brown Graduate Student Research Award Winner)</td>
<td>“High Throughput Experimentation and Telescoped Flow Chemistry Applied to Target-Oriented Synthesis”</td>
<td>David Thompson</td>
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<td>3:15–4:00</td>
<td>Coffee Break / Poster Session</td>
<td>STEW 202/206</td>
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<td>4:00–5:00</td>
<td>Huw Davies, Emory University</td>
<td>“Catalyst-Controlled Site-Selective and Enantioselective C-H Functionalization”</td>
<td>Chris Uyeda</td>
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<td>5:00–5:15</td>
<td>Discussion</td>
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<tr>
<td>5:15–6:30</td>
<td>Reception and Announcement of Poster Award Winners</td>
<td>STEW 302/306</td>
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DAWEI MA
State Key Laboratory of Bioorganic & Natural Products Chemistry
Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences
Shanghai, China

Title of Lecture: “Exploring New Methodologies to Enhance Synthetic Efficiency”

Phone: 86-021-54925130
Email: madw@sioc.ac.cn

Education:
1989 Ph.D., Chemistry, Shanghai Institute of Organic Chemistry
1984 B.S., Chemistry, Shandong University

Research and Professional Experience
2000-present Director, State Key Laboratory of Bioorganic Chemistry, Shanghai Institute of Organic Chemistry
1995-present Research Professor, Shanghai Institute of Organic Chemistry
1994-1995 Research Associate Professor, Shanghai Institute of Organic Chemistry
1990-1994 Postdoctoral Fellow, University of Pittsburgh & Mayo Clinic

Honors and Awards
2019 Outstanding Science and Technology Achievement Prize of Chinese Academy of Sciences
2019 Member, Chinese Academy of Sciences
2018 Arthur C. Cope Scholars Award, American Chemical Society
2018 Future Science Prize-Physical Sciences
2016 Nien-Chu C. Yang Memorial Lectureship Award
2014 Cathy Award
2007 National Natural Science Award, Second Class
2006 Eli Lilly Scientific Excellence Award
2001 Top Ten Outstanding Youth of Shanghai City
2000 National Natural Science Award, Second Class
1999 JAPS Visiting Scholar Award
1998 Outstanding Young Scholar, Qiushi Science and Technology

Research Interests
Total synthesis and SAR studies of complex natural products; development of new synthetic methodologies and their applications in the synthesis of biologically and pharmaceutically important molecules; and discovery of selective modulators targeted to metabotropic glutamate receptors (mGluRs), protein kinase C (PKC), chemokine receptors, matrix metalloprteinase, protease and apoptosis pathway.
Title of Lecture: “Break-it-to-Make-it Strategies for Chemical Synthesis Inspired by Complex Natural Products”

Phone: 510-643-6312
Email: rsarpong@berkeley.edu

Education:
2001 Ph.D., Organic Chemistry, Princeton University
1995 B.A., Chemistry, Macalester College

Research and Professional Experience
2018-present Executive Associate Dean, College of Chemistry, University of California, Berkeley
2014-present Full Professor, Department of Chemistry, University of California, Berkeley
2015-2018 Vice-Chair for Synthetic Chemistry, Department of Chemistry, University of California, Berkeley
2010-2014 Associate Professor, Department of Chemistry, University of California, Berkeley
2004-2010 Assistant Professor, Department of Chemistry, University of California, Berkeley
2001-2004 Postdoctoral Fellow, California Institute of Technology

Honors and Awards
Alexander von Humboldt Research Award (2022); ACS Award for Creative Work in Synthetic Organic Chemistry (2022); ACS-DOC Edward Leete Award (2021); Elected Fellow of the American Chemical Society (2019); ISHC Alan R. Katritzky Award (2019); Mukaiyama Award of the Synthetic Society of Organic Chemistry Japan (2019); John Simon Guggenheim Fellow (2017); Noyce Prize for Excellence in Undergraduate Teaching (2016); Schülch Visiting Professor (Technion, Israel) (2015–2016); Royal Society of Chemistry Synthetic Organic Chemistry Award (2015); ACS Arthur C. Cope Scholar (2015); Fuson Lecturer, University of Illinois Urbana Champaign (2014); Japan Society for the Promotion of Science Fellowship (2013); Paul Dowd Lecturer, University of Pittsburgh (2013); Honorary Lifetime Membership of the Israel Chemical Society (2012); Society of Synthetic Organic Chemistry Japan Lectureship Award (2011); Ginsberg Lecturer (Technion, Israel) (2011); Roche Excellence in Organic Chemistry Award (2010); UC Berkeley Department of Chemistry Teaching Award (2009); Camille Dreyfus Teacher-Scholar Award (2009); Alfred P. Sloan Foundation Fellow (2009); American Cancer Society Research Scholar (2009-2012); Eli Lilly Grantee Award (2009-2010); National Academies of Science Kavli Fellow (2008); University of California Hellman Faculty Award (2008-2009); AstraZeneca Excellence in Chemistry Award (2008); Dupont Young Professor Award (2008-2010); Johnson and Johnson Focused Giving Award (2008-2010); GlaxoSmithKline Scholar Award (2008); Amgen Young Investigator Award (2007); National Science Foundation CAREER Award (2007-2011); Abbott Young Investigator Award (2007-2008); Eli Lilly Young Investigator Grantee (2004).

Research Interests
At Berkeley, Richmond’s laboratory focuses on the synthesis of bioactive complex organic molecules, with a particular focus on secondary metabolites that come from marine or terrestrial flora and fauna. These natural products continue to serve as the inspiration for new medicines. It is Richmond’s hope that through the work in his laboratory, he and his coworkers will uncover methods and strategies for synthesis that may contribute to more efficient ways to prepare bioactive compounds that may inspire new medicines.
Title of Lecture: “A New Landscape for Catalytic Multicomponent Reactions”

Phone: 617-552-3618
Email: amir.hoveyda@bc.edu

Education:
1986 Ph.D., Yale University
1981 B.A., Columbia University

Research and Professional Experience
2019-present Director, Institute de Science et d’Ingénierie Supramoléculaires, University of Strasbourg, Strasbourg, France
2014-present Distinguished Visiting Professor, Technion-Israel Institute of Technology, Haifa, Israel
2006-2017 Chairperson of Chemistry Department, Boston College
1998-present Patricia and Joseph T. ’49 Vanderslice Millennium Professor, Boston College
1994-1998 Professor, Boston College
1990-1994 Assistant Professor, Boston College
1987-1988 Pfizer Central Research, Cancer Group
1986-87 & 1988-90 American Cancer Society Postdoctoral Fellow, Harvard University

Honors and Awards
Gutenberg Chair, 2020; American Chemical Society H. C. Brown Award for Creative Research in Synthetic Methods, 2020; Japan Society for Promotion of Science (JSPS) Invitation Fellowship, 2016; Eni Prize, 2014; American Chemical Society Award for Creative Work in Organic Synthesis, 2014; Yamada-Koga Prize, 2010; Harvard University Tishler Prize, 2007; National Institutes of Health MERIT Award, 2005; Royal Society Wolfson Research Merit Award, 2004; National Science Foundation Creativity Award, 2004; Boston College Distinguished Teaching Award, 2002; ExxonMobil Excellence in Catalysis Award, 2002; Novartis Research Award in Synthetic Organic Chemistry, 2001; Boston College Distinguished Senior Faculty Research Award, 2000; American Chemical Society Cope Scholar Award, 1998; Johnson & Johnson Focused Giving Award, 1995; Camille Dreyfus Teacher-Scholar Award, 1994; Alfred P. Sloan Research Fellowship, 1994; Pfizer Research Award in Synthetic Organic Chemistry, 1993; American Cancer Society Junior Faculty Research Award, 1993; Eli Lilly Grantee Award, 1992; National Science Foundation National Young Investigator Award, 1992; Boston College Distinguished Junior Faculty Award, 1992; American Cancer Society Postdoctoral Fellowship, 1986; National Institutes of Health National Research Service Award, 1985; Yale University R. B. Flint Graduate Fellowship Award, 1984.

Research Interests
Hoveyda's research interests are centered on catalysis. This includes development of catalysts for key transformations, such as olefin metathesis, conjugate additions, allylic substitutions and additions of various allylic moieties to aldehydes, ketones, aldimines and ketimines. Equally central are detailed investigations to unravel the nuances of how the new catalysts function, and their application to concise and stereoselective total synthesis of complex molecules. More recent areas of research include development of catalytic multicomponent processes for precise framework editing of bioactive molecules, and design of new catalytic and biorthogonal click reactions. Hoveyda has published nearly 270 research and 40 review articles. He is co-founder of XiMo, AG (now a subsidiary of Verbio).
Huw M. L. Davies
Emory University
Department of Chemistry
Atlanta, Georgia

Title of Lecture: “Catalyst-Controlled Site-Selective and Enantioselective C-H Functionalization”

Phone: 404-727-6839
Email: hmdavie@emory.edu

Education:
1980 Ph.D., Organic Chemistry, University of East Anglia
1977 B.Sc., Chemistry, University College Cardiff

Research and Professional Experience
2008-present Asa Griggs Candler Professor of Chemistry, Emory University
2007-2009 Founder and Chief Executive Officer, Dirhodium Technologies, Inc.
2000-2008 Larkin Professor of Organic Chemistry, University at Buffalo, the State University of New York
2003-2008 UB Distinguished Professor, University at Buffalo, the State University of New York
1995-2003 Professor of Chemistry, University at Buffalo, the State University of New York
1995-2008 Adjunct Professor, Department of Physiology and Pharmacology, Wake Forest University School of Medicine
1990-1995 Faculty Associate, Department of Physiology and Pharmacology, Wake Forest University School of Medicine
1993-1995 Professor of Chemistry, Wake Forest University
1988-1993 Associate Professor of Chemistry, Wake Forest University
1983-1988 Assistant Professor of Chemistry, Wake Forest University
1980-1983 Postdoctoral Research Associate, Princeton University

Honors and Awards
2019 ACS Herbert C. Brown Award for Creative Research in Synthetic Methods
2018 Paul N. Rynalder Award
2017 Alexander von Humboldt Foundation Research Award
2015 Fellow of the National Academy of Inventors
2013 eEROS Reagent of the Year Award
2012 Fellow of the American Association for the Advancement of Science
2009 Fellow of the American Chemical Society
2007 Fellow of the Royal Society of Chemistry
2005 American Chemical Society Cope Scholar Award

Research Interests
Professor Davies’ research emphasizes the development of new enantioselective synthetic methods and their applications in total synthesis and drug discovery. A major current theme of his program is catalytic asymmetric C–H functionalization by means of rhodium-carbene induced C–H insertion. He is currently the Director of the NSF Center for Chemical Innovation for Selective C-H Functionalization, which brings together 22 faculty members from 15 universities.
Herbert C. Brown was born in London on May 22, 1912, but was brought to the U.S. at age two and grew up in Chicago. He enrolled in Crane Junior College in 1933, where he met Sarah Baylen (b. January 10, 1916), his wife of more than 68 years. When Crane closed for lack of funds in June 1933, they continued their training in the home laboratory of one of their teachers, Nicholas D. Cheronis. When new colleges were opened in 1934, they attended Wright Junior College, where Sarah autographed his yearbook with the inscription, "To a future Nobel Laureate." They then entered the University of Chicago in 1935 as juniors. H. C. Brown completed two years of work in one year and graduated in 1936. A graduation gift from Sarah, Alfred Stock's Baker Lectures on "Hydrides of Boron and Silicon," was in part responsible for his choosing H.I. Schlesinger as his graduate research advisor at Chicago. His Ph.D. thesis (1938) dealt with the reduction of carbonyl compounds with diborane. Sarah and Herb were married "secretly" in 1937. They had a son, Charles in 1944, who became a chemist, B.S. Purdue (1964), Ph.D., University of California, Berkeley (1967). After a year of postdoctoral work with M. S. Kharasch, H. C. Brown became Assistant to Schlesinger (with rank of instructor) and codiscovered sodium borohydride. He became Assistant Professor at Wayne (now Wayne State) University in 1943, where he explored steric strains. He was promoted to Associate Professor in 1946. In 1947 he moved to Purdue University as Professor. He was promoted to R. B. Wetherill Professor in 1959 and R. B. Wetherill Research Professor in 1960. He received 14 Honorary Doctorates including one from the University of Chicago in 1968. Since his "retirement" in 1978, he had been R. B. Wetherill Professor Emeritus until he passed away on December 19, 2004. Sarah Brown passed away on May 29, 2005. He published seven books and 1,266 scientific publications. He won the majority of major awards in his field, including the Nobel Prize for Chemistry in 1979, the ACS Award for Creative Research in Organic Chemistry (1960), the National Medal of Science (1969), the Roger Adams Award (1971), the Priestley Medal (1981), the Perkin Medal (1982), the American Institute of Chemists Gold Medal Award (1985), the National Academy of Sciences Award in Chemical Sciences (1987), the Emperor's Decoration (Japan): Order of the Rising Sun, Gold and Silver Star (1989), Honorary Scholar of the University of Wales, Swansea (1994). In 1998 he was the inaugural winner of the ACS Herbert C. Brown Medal and Award for Creative Research in Synthetic Methods. He was named "One of the Top 75 Contributors to the Chemical Enterprise in the Past 75 Years," C&E News (1998).
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<tr>
<th>Year</th>
<th>Lecturer 1</th>
<th>Lecturer 2</th>
<th>Lecturer 3</th>
<th>Lecturer 4</th>
<th>Lecturer 5</th>
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<tr>
<td>1984</td>
<td>G. Stork</td>
<td>S. Danishefsky</td>
<td>P. A. Grieco</td>
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<td>1985</td>
<td>J. I. Brauman</td>
<td>F. G. Bordwell</td>
<td>P. Kebarle</td>
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<td>1986</td>
<td>C. H. Heathcock</td>
<td>A. I. Meyers</td>
<td>S. Masamune</td>
<td>K. B. Sharpless</td>
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<td>1989</td>
<td>A. G. Brook</td>
<td>I. Fleming</td>
<td>J. Michl</td>
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<td>1991</td>
<td>P. B. Dervan</td>
<td>S. M. Hecht</td>
<td>P. A. Kollman</td>
<td>R. Noyori</td>
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<td>1993</td>
<td>F. N. Diederich</td>
<td>D. A. Dougherty</td>
<td>J. M. McBride</td>
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<td>1994</td>
<td>P. A. Bartlett</td>
<td>B. O. Fraser-Reid</td>
<td>A. B. Smith, III</td>
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<td>1997</td>
<td>D. L. Boger</td>
<td>L. E. Overman</td>
<td>P. A. Wender</td>
<td>H. Yamamoto</td>
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<td>1998</td>
<td>K. N. Houk</td>
<td>W. L. Jorgensen</td>
<td>P. von R. Schleyer</td>
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<td>1999</td>
<td>A. Fürstner</td>
<td>Y. Kishi</td>
<td>S. V. Ley</td>
<td>M. Shibasaki</td>
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<td>2002</td>
<td>M. S. Brookhart</td>
<td>R. H. Grubbs</td>
<td>P. Knochel</td>
<td>G. M. Whitesides</td>
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<td>2003</td>
<td>C. H. Heathcock</td>
<td>M. T. Reetz</td>
<td>V. Snieckus</td>
<td>P. Stang</td>
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<td>2004</td>
<td>P. Kochiensi</td>
<td>I. Paterson</td>
<td>K. Tamao</td>
<td>P. A. Wender</td>
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<td>2005</td>
<td>S. L. Buchwald</td>
<td>D. P. Curran</td>
<td>S. Hanessian</td>
<td>E. Vedejs</td>
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<td>2006</td>
<td>J.-E. Bäckvall</td>
<td>L. L. Kiessling</td>
<td>J. Mulzer</td>
<td>D. N. Reinholdt</td>
<td>G. Stork</td>
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<td>2007</td>
<td>B. L. Feringa</td>
<td>T. Hayashi</td>
<td>H. Schwarz</td>
<td>J. F. Stoddart</td>
<td>C. H. Wong</td>
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<td>2008</td>
<td>E. M. Carreira</td>
<td>A. B. Holmes</td>
<td>E. Nakamura</td>
<td>A. Pfältz</td>
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<td>2009</td>
<td>S. Blechert</td>
<td>G. C. Fu</td>
<td>E. N. Jacobsen</td>
<td>D. W. C. MacMillan</td>
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<td>2010</td>
<td>S. Denmark</td>
<td>J. Ellman</td>
<td>A. H. Hoveyda</td>
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<td>2011</td>
<td>M. Fujita</td>
<td>C. Khosla</td>
<td>B. M. Stoltz</td>
<td>C. T. Walsh</td>
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<td>2012</td>
<td>V. Aggarwal</td>
<td>J. Cossy</td>
<td>E. Negishi</td>
<td>A. Suzuki</td>
<td>P. Wipf</td>
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<td>2013</td>
<td>J. Clardy</td>
<td>J. Ellman</td>
<td>T. Fukuyama</td>
<td>B. Imperiali</td>
<td>H. Waldmann</td>
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<td>2014</td>
<td>J. Hartwig</td>
<td>S. Martin</td>
<td>S. Stupp</td>
<td>T. Swager</td>
<td>D. Tirrell</td>
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Organizers for the 37th H. C. Brown Lectures
Chris Uyeda (Chair)
Jianguo Mei (Vice Chair)

Session Chairs
Ryan Altman
Bram Axelrod
Mingji Dai
Chris Uyeda

Symposium Secretary
Donna Bertram

38th H. C. Brown Lectures: Friday, April 14, 2023