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## Prelog Lecture 1999

Eidgenössische Technische Hochschule Zürich  
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**Abstract:** On Monday, November 15, 1999, the rector Prof. Dr. K. Osterwalder presented the Prelog Medal 1999 to **Prof. David Evans**, Harvard University (12 Oxford Street, Cambridge, Massachusetts 02138, USA). The title of the lecture that followed was 'Studies in Asymmetric Synthesis'.

**Key Words:** Asymmetric synthesis · Evans, David · Prelog Medal



D. Evans

**David Evans** was born in Washington DC in 1941. He obtained an AB degree in chemistry in 1963 from Oberlin College, Oberlin, Ohio. His doctoral studies were conducted under the supervision of Professor Robert Ireland at California Institute of Technology where he received his Ph.D. in 1967. In that same year he was appointed as an assistant professor at the University of California, Los Angeles (UCLA) where in a short period of time he rose quickly through the ranks to become associate (1972) and subsequently full professor in 1974. He then accepted a professorial position at California Institute of Technology (1974–83). In 1984 he moved to the Department of Chemistry at Harvard University where he was subsequently named the Abbott and James Lawrence Professor of Chemistry and in 1999 the Arthur and Ruth W. Sloan Research Professor. From 1995 through 1998 Professor Evans served as Chair of the Department of Chemistry and Chemical Biology.

Throughout his career, Professor Evans' scholarly work has been characterized by its fundamental contributions to science and its wide versatility and practicality. His research efforts have focussed on the design and study of stereoselective processes and their applications to complex natural products synthesis. Over the last two decades, reaction methods aimed at relative and absolute stereocontrol in carbon–carbon bond formation have been a central theme of his work, such as asymmetric (enantio- and diastereoselective) Diels–Alder, Michael, aldol, and alkylation reactions. Any reading of the scientific literature amply reveals the important impact Evans' pioneering work has had

conceptually and practically in chemistry. He has made fundamental discoveries in reaction chemistry that have influenced inorganic, organometallic, physical-organic, and organic chemistry. Evans was the first to achieve the *de novo* synthesis of complex natural products through the exclusive use of chiral auxiliaries for asymmetric stereocontrol; this constituted a substantive and significant departure from the more traditional approach at the time which relied on the use of the chiral pool. The Evans auxiliaries and catalysts for asymmetric bond construction have become some of the most reliable and efficient systems for enantioselective synthesis worldwide in academic and industrial laboratories. The impact of his work is highlighted by the fact that his citation average of 50/paper ranks 13th in the global chemical community. Thus, the design and successful realization of any modern asymmetric synthesis necessarily includes methods, strategies, and fundamental principles that have been developed by Professor Evans.

In parallel with the discovery and development of novel reaction methodology, Evans has established himself as one of the master practitioners of the art and science of natural products total synthesis. The over forty natural products syntheses successfully completed by Evans constitute classics in organic synthesis and are characterized by meticulous attention to efficiency, innovation, and elegance. Each of the syntheses illustrates not only novel strategies and processes for molecular construction but is also marked by the highest degree of creativity and scholarship. His contributions to the field of natural products synthesis span the range



Foto: R. Häfiker

K. Osterwalder (left) and D. Evans

from alkaloids to polyketides, including the syntheses of Macbecin, Tylonolide, Bafilomycin, Oleandolide, Deoxyerythronolide, Calcimycin, X-206, Ionomycin, Premonensin, Cytovaricin, Lonomycin, Ferensimycin, Thienamycin, OF-4949, Calyculin, Altohyrtin, Zaragozaic acid, Tetrahydrocannabinol, Colchicine, Cyclocline, Morphine, Histrinicotixin, and the Vancomycin class of antibiotics.

Professor Evans' significant impact on science is exhibited by a commitment to the education, training, and mentoring of future teacher/scientists. He has served as a mentor to numerous young academicians and scientists. Over the last decade, more than thirty-five individuals have been placed in universities worldwide; it is thus not uncommon to find an Evans student or post-doctoral associate at the major research academic and industrial institutions worldwide.

Professor Evans has been the recipient of numerous awards such as Camille and Henry Dreyfus Teacher-Scholar Award (1971), A. P. Sloan Fellowship (1972), the American Chemical Society Award for Creative Work in Synthetic Organic Chemistry (1982), Arthur C. Scope Scholar Award (1988), the ACS Remsen Award (1996), the Yamada Prize (1998), and the Tetrahedron Prize (1998). Recently he has been selected as the recipient of the Arthur

C. Cope Award by the American Chemical Society (2000). He was elected to the National Academy of Sciences in 1984, the American Academy of Arts and Sciences in 1988, and named fellow of the American Association for the Advancement of Science in 1992. He was a consultant with Eli Lilly through 1989; he is currently a consultant with Merck Sharp and Dohme, DuPont-Merck, and Oxford Asymmetry. He has been on the advisory boards of *Journal of the American Chemical Society*, *Journal of Organic Chemistry*, *Tetrahedron*, *Tetrahedron Letters*, and *Chemical Reviews*.

#### Former Prelog Lecturers

- 1986 Kurt Mislow
- 1987 Meier Lahav and Leslie Leiserowitz
- 1988 K. Barry Sharpless
- 1989 Jeremy R. Knowles
- 1990 Henri B. Kagan
- 1991 Clayton H. Heathcock
- 1992 J. Michael McBride
- 1993 Hisashi Yamamoto
- 1994 Jean-Pierre Sauvage
- 1995 Yoshito Kishi
- 1996 David M.J. Lilley
- 1997 Günter Helmchen
- 1998 Lia Addadi