



Curriculum Vitae Professor Dr Erick M. Carreira



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Name: Erick M. Carreira

Date of birth: 30 May 1963

Research Priorities: Organic and medicinal chemistry, chemical biology, catalysis

Erick Carreira is an American chemist. His work encompasses various areas of organic chemistry, including natural products chemistry, biology and synthesis, medicinal chemistry, chemical biology, as well as synthetic methodology and asymmetric catalysis. These areas collectively and individually contribute to the drug discovery and development process.

Academic and Professional Career

- since 1998 Professor of Chemistry, Department of Chemistry and Applied Biosciences (D-CHAB), Eidgenössische Technische Hochschule (ETH) Zürich, Zürich, Switzerland
- 1997 - 1998 Professor of Chemistry, California Institute of Technology – Caltech, Pasadena, USA
- 1996 - 1997 Associate Professor of Chemistry, Caltech, Pasadena, USA
- 1992 - 1996 Assistant Professor, Chemistry, Caltech, Pasadena, USA
- 1991 - 1992 Postdoctoral Fellow, Caltech, Pasadena, USA
- 1984 - 1990 PhD in Chemistry, Harvard University, Cambridge, USA
- 1984 BSc in Chemistry, University of Illinois, Urbana, USA

Functions in Scientific Societies and Committees

- 2022 - 2023 Chairperson, Conference of Department Chairs, ETH Zürich, Zürich, Switzerland
- 2021 - 2023 Chairperson, D-CHAB, ETH Zürich, Zürich, Switzerland
- since 2021 Editor-in-Chief, Journal of the American Chemical Society, USA

- 2020 - 2018 Editor-in-Chief, Organic Letters, American Chemical Society (ACS), USA
- 2014 Chairperson, Laboratorium for Organic Chemistry, ETH Zürich, Zürich, Switzerland
- since 2011 Member, Competence Center for Systems Physiology and Metabolic Diseases (CC-SPMD), ETH Zürich, Zürich, Switzerland

Project Coordination, Membership in Collaborative Research Projects

- 2018 Advanced Grant “Development of Stereoselective Olefin Functionalization Methods”, European Research Council (ERC)
- 2012 Advanced Grant “Understanding Halogenated Lipids: Synthesis, Mode of Action, Structural Studies, and Applications”, ERC

Honours and Awarded Memberships

- 2023 Akira Suzuki Award
- since 2022 Member, German National Academy of Sciences Leopoldina, Germany
- since 2021 Honorary Member, Chinese Chemical Society, China
- since 2020 Member, National Academy of Sciences, USA
- 2021 Noyori Prize, Eun Lee Lectureship Award, Seoul National University, South Korea
- 2019 Carl Shipp Marvel Lecturer, University of Illinois at Urbana-Champaign, Urbana and Champaign, USA
- 2018 Winner, Lieben Lectureship, Austrian Chemical Society (GÖCH), Austria
- since 2017 Member, American Academy of Arts and Sciences, USA
- 2016 Karl Ziegler Award Lecture, Max-Planck-Institut für Kohlenforschung, Mülheim an der Ruhr, Germany
- 2015 Max Tishler Prize Lecture, Harvard University, Cambridge, USA
- 2014 Gassman Lectureship in Chemistry, University of Minnesota, Minneapolis-St. Paul, USA
- 2015 Seymour Rothchild Lecture Award, University of Rochester, Rochester, USA
- 2013 SpiroChem, Winning Venture, 15th IMD Startup Competition
- 2014 Yamada Koga Prize, Chemical Society of Japan, Japan
- 2013 Award for Creative Work in Synthetic Organic Chemistry, American Chemical Society, USA
- 2012 Spark Award, ETH Zürich, Zürich, Switzerland

2011	A. Cruishank Lecture, Gordon Research Conference
since 2010	Honorary Member, Israeli Chemical Society, Israel
2010	Julius Stieglitz Memorial Lecture, University of Chicago, Chicago, USA
2008	Chair, Tetrahedron, Ghent, Belgium
2002	Thieme Award, International Union of Pure and Applied Chemistry (IUPAC)
1999	Nobel Laureate Signature Award for Graduate Education in Chemistry Recipients, ACS, USA
1997	Arthur C. Cope Scholar Award, ACS, USA
1996	Presidential Early Career Award for Scientists and Engineers – PECASE, U.S. Government, USA
1996	Excellence in Chemistry Award, AstraZeneca PLC, Cambridge, UK
1996	Award in Pure Chemistry, ACS, USA
1996	National Fresenius Award, ACS, USA

Research Priorities

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Erick Carreira's research focuses on a number of core disciplines within the more general area of modern organic chemistry. The first of these is the asymmetric synthesis of biologically active, stereochemically and structurally complex natural products. Targets are selected that meet a variety of key criteria: (1) important and interesting biological activity of relevance to molecular biology and to human medicine in the long term; (2) natural products of human origin; and (3) difficult structural challenges that guide and inspire the discovery and study of new reactions and synthetic strategies. A complex, multi-step synthesis endeavour provides a goal-oriented setting within which to engage in reaction innovation and design. Synthesis provides new avenues for thinking about the creation of complex structures relevant to human medicine. These same molecules are used to shed light on fundamental biological processes.

The information that is gained in the process informs a second focus of Carreira's work: the synthesis of biological probes and medicines. Specifically, Erick Carreira and his team are working to develop proteolysis targeting chimeras (PROTACs) and ligand-directed covalent probes for the study of cannabinoid receptors in live cells, including research projects in photopharmacology.

An additional focus of Carreira's work is the identification and synthesis of novel scaffolds and building blocks for medicinal-chemical studies and pharmaceutical drug development. In another current project, which draws from the areas of organometallic chemistry, coordination chemistry, and molecular recognition, Carreira's team aims to develop catalytic and stoichiometric reagents for the discovery, design, and study of novel molecular structures, with an emphasis on reactions that display high levels of sensitivity.