

SARAH E. O'CONNOR*oconnor@ice.mpg.de*

49 (0)3641 57 1200

<http://www.sarahoconnor.org/><https://www.ice.mpg.de/ext/index.php?id=natural-product-biosynthesis>**Education**

2001 PhD, Organic Chemistry, Massachusetts Institute of Technology, Cambridge, MA

1995 BS, Chemistry, University of Chicago, Chicago, IL

Positions held

2019- Director, Department of Natural Product Biosynthesis, Max Planck Institute of Chemical Ecology, Jena, Germany

2011-2019 Project Leader, The John Innes Centre, Department of Biological Chemistry, Norwich, UK

2011-2019 The University of East Anglia, School of Chemistry, Norwich, UK (Honorary Professor (2015-2019), Professor (2012-2014), Lecturer (2011-2012))

2007-2011 Associate Professor of Chemistry, Massachusetts Institute of Technology, Cambridge, USA

2003-2007 Assistant Professor of Chemistry, Massachusetts Institute of Technology, Cambridge, USA

2000-2003 Post-doctoral Fellow in Biochemistry, Harvard Medical School, Boston, USA

Honours and Prizes

2019 Perkin Prize for Organic Chemistry

2017 Elected to EMBO membership

2013 Wain Medal

2011 Royal Society Wolfson Research Merit Award

2011 ACS Pfizer Award in Enzyme Chemistry

2007-2009 Sloan Research Fellowship

2007 Arthur Neisch Young Investigator Award of the North American Phytochemical Society

2007-2010 American Cancer Society Research Scholar

2005-2008 Beckman Young Investigator

2004-2007 Latham Family Career Development Professor

2003-2005 Smith Family Medical Foundation New Investigator

2000-2002 American Chemical Society Irving S. Sigal Postdoctoral Fellowship, Harvard Medical School

1998-1999 American Chemical Society Organic Division Graduate Fellowship, California Institute of Technology

1998 Distinguished Graduate Student Everhart Lecture Series, California Institute of Technology

Current Research Funding

H2020 (Jensen, PI; Courdavault, O'Connor, co-Is)	01/19-12/22
EU 814645	€6,648,301
Refactoring monoterpenoid indole alkaloid production in microbial cell factories	
ERC Advanced Grant (O'Connor, PI)	07/18-07/23
ERC 788301	€2,499,000
Harnessing the Molecules of Medicinal Plants	
NSF Genome Grant (Buell, PI; Dudavera, O'Connor, Soltis, Soltis, co-Is)	04/15-04/20
NSF 1444499	\$1,200,000
Evolution Of Specialized Metabolite Biosynthetic Pathways In The Lamiaceae	

Representative Plenary Lectures since 2015

- Novonordisk Conference on Synthetic Biology, Copenhagen, Denmark, 05/19
- International Society of Chemical Ecology, Atlanta, USA, 06/19
- Gottlieb Memorial Lecture, University of Illinois, Champaign-Urbana, USA, 09/19
- Mosbacher Kolloquium, Synthetic Biology, Mosbach, Germany, 03/18
- Keystone Symposia on Natural Products and Synthetic Biology, Olympia Valley, USA, 01/18
- Botanikertagung, German Botanical Society, Kiel University, Germany, 09/17
- Secondary Metabolite Conference 2017 (JBEI), Walnut Creek, USA, 07/17
- Tetrahedron Symposium in Organic Chemistry, Hungary, 07/17
- Synthetic Biology: Engineering, Evolution & Design Meeting, Vancouver, CA, 06/17
- Irseer Naturstofftage 2017, Irsee, Germany, 02/17
- Gordon Research Conference on Heterocyclic Compounds, Newport, USA, 06/16
- 15th Annual Life Sciences Institute Symposium, University of Michigan, Ann Arbor, USA, 05/16
- Gordon Conference on Marine Natural Products, Ventura, USA, 03/16
- Annual Symposium on Biological Complexity, Salk Institute, La Jolla, USA, 01/16
- Elliott Lecture, Rothamsted Research, Harpendon, UK, 06/15
- ISACS 16, Challenges in Chemical Biology, Zurich, 06/15
- Terpnet, Vancouver, Canada, 6/15
- Directing Biosynthesis, Norwich, UK, 03/15

External Panels and Committees

Member, Newton Foundation Fellowship Committee (2015-2021)
 Advisory Board, Terpnet (2015-present)
 Member, Industrial Biotechnology and Bioenergy Strategy Advisory Panel (BBSRC) (2016-2019)
 Associate Editor ACS Synthetic Biology (2017- 2019)
 Advisory Board, Alkion (2013-2018)
 External Advisory Board, Helmholtz Foundation, Karlsruhe Institute of Technology (2015-2018)
 Member, BBSRC Panel D (2013-2016)
 ad hoc Member, BBSRC Panel B (2016)
 Chair of the Plant Metabolic Gordon Research Conference (2015)
 Review Panel for Helmholtz Foundation (2014)
 Editorial Board Metabolic Engineering (2016- present)
 Editorial Advisory Board Phytochemistry (2015-present)
 Editorial Advisory Board RSC ChemBioChem (2015-present)
 Editorial Advisory Board ACS Chemical Advances (2015-present)
 Editorial Advisory Board Natural Products Reports (2011-present)
 Editorial Advisory Board ACS Chemical Biology (2012-present)
 Editorial Advisory Board ACS Synthetic Biology (2012-present)
 Member of the Scientific Advisory Board of Alkion (2011-present)
 Organizing Committee for European Conference on Natural Products (2013)
 Organizing Committee for Banff (2012)

Courses Taught**Friedrich Schiller University**

Chemical and Molecular Interaction Ecology MEES028/E23 (15 enrollment)

Taught Winter20-21

This module provides a survey for key concepts in chemical ecology for master's level students.

University of East Anglia

BIO-6019Y Plant Biotechnology (10 enrollment)

Taught Spring16, Spring17

This module identifies the major challenges for sustainable crop production, highlight the role of plant biotechnology and current plant breeding strategies. Taught two lectures each year on medicinal plants.

CHE-2FY8 Medicinal Chemistry (100 enrollment)

Taught Spring12, Fall12, Fall13-Spring14 (module organizer F13-S14)

This course introduces medicinal chemistry using chemical principles established during the first year. Topics discussed include the mode of action and synthesis of β -lactams; sulphonamides, amino acids and proteins and their significance in medicinal chemistry; biosynthesis and properties of alkaloids such as manzamine; the mode of action of enzymes and chemotherapy discussed in the context of bacterial and viral infections.

CHE-3H16 Medicinal Chemistry (40 enrollment)

Taught Spring13

This course introduces medicinal chemistry using chemical principles established during the first year. Topics discussed include the mode of action and synthesis of β -lactams; sulphonamides, amino acids and proteins and their significance in medicinal chemistry; biosynthesis and properties of alkaloids such as manzamine; the mode of action of enzymes and chemotherapy discussed in the context of bacterial and viral infections.

MIT

5.12 Organic Chemistry I (110-160 enrollment in Fall; 280-300 enrollment in Spring)

Taught Spring05, Fall05, Spring07, Fall07, Fall08, Fall09

This is an introductory organic chemistry course for undergraduates at MIT. Acidity, Alkanes, Stereochemistry, Alkyl Halides, Nucleophilic Substitution and Elimination, Chemistry of Alkenes and Alkynes, Electrophilic Aromatic Substitution, Alcohols, Aldehydes and Ketones, Carboxylic Acids and Derivatives, and Enol/Enolate Chemistry are covered during this course.

5.451 Chemistry of Biomolecules (20-30 enrollment)

Taught Fall03, Fall04, Fall05, Fall07

This graduate class is designed to teach entering organic and biological chemistry graduate students modern chemical biology, bioengineering and reaction/enzyme mechanism within the context of natural product biosynthesis.

5.54/7.540/20.554 Frontiers in Chemical Biology (20 enrollment)

Taught Fall08, Fall09

Developed with Professor B. Imperiali in Fall of 2008. The syllabus is designed to provide an introduction to current research at the interface of chemistry, biology, and bioengineering.

Chemistry Tutorial (5-10 enrollment)

Taught Fall03, Fall04

This intense, 3-week graduate class is designed to teach incoming organic graduate students how to work through organic mechanism problems.