



Curriculum Vitae Professor Dr Kyriacos Costa Nicolaou

Name: Kyriacos Costa Nicolaou

Date of birth: 21 August 1964

Research Priorities: Chemical synthesis, chemical biology, synthetic biology, synthesis of organic and natural products with pharmacological substances

Kyriacos Costa Nicolaou is an American chemist who focuses on total synthesis of active substances and on methodology development. He rose to international prominence by synthesising many complex, naturally occurring molecules. He received particular attention for the synthesis of the highly complex molecule Taxol, which acts against various types of cancer.

Academic and Professional Career

- since 2013 Harry C. and Olga K. Wiess Professor of Chemistry, BioScience Research Collaborative, Rice University, Houston, USA
- 2012 - 2014 Visiting Professor, Chongqing University, Chongqing, China
- 2003 - 2009 Founder, Chemical Synthesis Laboratory, Agency for Science, Technology and Research (A*STAR), Singapore, Singapore
- 2003 - 2009 Director, Chemical Synthesis Laboratory, Agency for Science, Technology and Research (A*STAR), Singapore, Singapore
- since 1996 Aline W. and L. S. Skaggs Professor for Chemical Biology, Department of Chemistry, Scripps Research Institute, La Jolla, USA
- since 1989 Darlene Shiley Professor for Chemistry, Department of Chemistry, Scripps Research Institute, La Jolla, USA
- 1989 Founder and Chairperson, Department of Chemistry, Scripps Research Institute, La Jolla, USA
- 1989 Professor of Chemistry, University of California, San Diego, La Jolla, USA

1976 - 1989 Professor of Chemistry, University of Pennsylvania, Philadelphia, USA
1973 - 1976 Postdoctoral Fellow, Harvard University, Cambridge, USA
1972 - 1973 Postdoctoral Fellow, Columbia University, New York City, USA
1972 PhD in Chemistry, University College London, London, UK
1996 Bachelor's Degree in Chemistry, Bedford College, London, UK

Functions in Scientific Societies and Committees

1989 - 2012 Chairperson, Department of Chemistry, Scripps Research Institute, La Jolla, USA

Honours and Awarded Memberships

2021 Robert Koch Gold Medal, Robert Koch Foundation, Berlin, Germany
2016 Wolf Prize in Chemistry, Wolf Foundation, Herzlia Pituach, Israel
since 2013 Foreign Member, Royal Society, UK
since 2011 Member, American Philosophical Society, USA
since 2011 Honorary Member, Singapore National Institute of Chemistry, Singapore
2011 Benjamin Franklin Medal, Franklin Institute, Philadelphia, USA
since 2009 Honorary Member, Israel Chemical Society, Israel
since 2009 Member, German National Academy of Sciences Leopoldina, Germany
2008 August Wilhelm von Hofmann Commemorative Coin, German Chemical Society, Germany
since 2007 Honorary Member, Indian Academy of Sciences, India
2005 Arthur C. Cope Award, American Chemical Society (ACS), USA
2002 Tetrahedron Prize, Elsevier, Amsterdam, The Netherlands
2001 Ernst Schering Prize, Schering Foundation, Berlin, Germany
since 2001 Member, Academy of Athens, Athens, Greece
2000 Paul Karrer Gold Medal, Paul Karrer Lecture Foundation, University of Zurich, Zurich, Switzerland
1999 Member, American Association for the Advancement of Science (AAAS), USA
1996 Honorary Member, Pharmaceutical Society of Japan, Japan
1996 Member, National Academy of Sciences, USA

- 1996 Inhoffen Medal, Helmholtz Centre for Infection Research (HZI) Braunschweig, Braunschweig, Germany
- 1996 Chemical Pioneer Award, American Institute of Chemists, Philadelphia, USA
- 1996 Ernest Guenther Award in Chemistry of Natural Products, ACS, USA
- 1996 William H. Nichols Medal, ACS, USA
- 1996 Linus Pauling Medal, Puget Sound, Oregon, and Portland Sections, ACS, USA
- 1993 Award for Creative Work in Synthetic Organic Chemistry, ACS, USA
- since 1993 Member, American Academy of Arts and Sciences, USA
- 1987 - 1988 US Senior Scientist Award, Alexander von Humboldt Foundation, Bonn, Germany
- 1988 Award, Japan Society for the Promotion of Science, Japan
- since 1987 Member, New York Academy of Sciences, New York University, New York City, USA
- 1884 Guggenheim Scholarship, John Simon Guggenheim Memorial Foundation, New York City, USA
- 1979 - 1983 Sloan Research Fellowship, Alfred P. Sloan Foundation, New York City, USA
- Member, ACS, USA
- Member, Chemical Society London, London, UK
- Member, German Chemical Society, Germany
- Member, Japanese Chemical Society, Japan

Research Priorities

Kyriacos Costa Nicolaou is an American chemist who focuses on total synthesis of active substances and on methodology development. He rose to international prominence by synthesising many complex, naturally occurring molecules. He received particular attention for the synthesis of the highly complex molecule Taxol, which acts against various types of cancer.

Many natural substances are important sources for medications such as anti-tumour medications and antibiotics. Therefore, much research and development is currently focused on creating these substances in the laboratory. At the same time, the complex molecular structures pose a major challenge to the researchers. Using innovative synthesis technologies, Kyriacos Costa Nicolaou succeeded in creating almost 200 naturally-occurring molecules and thousands of analogues in the laboratory. The achievement is all the more impressive as this includes almost all important classes of bioactive molecules, irrespective of whether they are classified according to structure or activity. His work constitutes a paradigm shift in organic synthesis and has paved the way for the transition from foundational to translational research. The methods he helped to develop not only allow for

the structures of natural products to be confirmed, but also for the total synthesis of natural substances. This allowed Kyriacos Costa Nicolaou to be the first to synthesise Taxol, a clinically implemented anti-tumour agent.

Kyriacos Costa Nicolaou is the publisher of many academic journals and has authored over 800 publications as well as books including the world-famous “Classics in Total Synthesis” (Volumes I through III).