

49th Annual MilliporeSigma-UCSD Lectureship Series

Lipid Nanoparticles: From Model Membranes to COVID Vaccines and Gene Therapies

MilliporeSigma is proud to continue a 49-year tradition of partnering with the University of California, San Diego, Department of Chemistry and Biochemistry to sponsor and present the annual MilliporeSigma-UCSD Lectureship Series (formerly known as the Calbiochem®-UCSD Lectureship Series).

The series has hosted many eminent scientists, and we are pleased to continue the tradition of investing in the San Diego life sciences community.

Join us for two exciting lectures!

Fifty Years of Lipids and How That Led to the Lipid Nanoparticles Enabling the COVID-19 mRNA Vaccines

Wednesday, November 30, 2022 – 4:00 pm

Lipid Nanoparticles That Enable Gene Therapies: The Next Generation of Pharmaceuticals

Thursday, December 1, 2022 – 4:00 pm

*See back of flyer for detailed abstracts

Reception following the Wednesday lecture.

Refreshments at 3:30 pm, both days.

**Health Sciences Education Center Auditorium,
Lower Level, Skaggs Pharmacy Building
UCSD, San Diego, CA**



Dr. Pieter R. Cullis

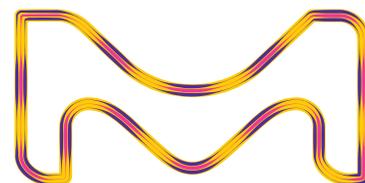
Professor,
Department of Biochemistry
and Molecular Biology,
University of British Columbia

Pieter R. Cullis, PhD, FRSC, FNAI (USA), OC, Director, Nanomedicines Research Group, Professor, Department of Biochemistry and Molecular Biology, University of British Columbia. Dr. Cullis and co-workers have been responsible for fundamental advances in the development of nanomedicines employing lipid nanoparticle (LNP) technology for cancer therapies, gene therapies and vaccines. This work has contributed to five drugs that have received clinical approval by the FDA, the European EMA and Health Canada. Dr. Cullis has also co-founded eleven biotechnology companies that now employ over 400 people, has published over 350 scientific articles (h index 128) and is an inventor on over 60 patents.

He has also co-founded and been Founding Scientific Director of two National Centre of Excellence networks, the Centre for Drug Research and Development (now AdMare) in 2004 and the NanoMedicines Innovation Network in 2019.

These not-for-profit networks are aimed at translating basic research in the life sciences into commercially viable products and have given rise to numerous start-up companies.

UC San Diego



| Date and Time | Lecture |
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| Date: Wednesday, November 30, 2022 Time: 4:00 pm Please join us for a reception following this lecture. | Fifty Years of Lipids and How That Led to the Lipid Nanoparticles Enabling the COVID-19 mRNA Vaccines Dr. Pieter Cullis Fifty years ago I began studying lipid polymorphism and lipid asymmetry, two basic features of lipids found in biological membranes. Decades later the insights and tools developed in the course of these studies proved useful for designing effective lipid nanoparticle systems for delivery of nucleic acid polymers in vivo for vaccine and other applications. My story points out the importance of curiosity based fundamental research. the highly non-linear path that scientific discovery often takes as well as the important role of serendipity, or good luck, in the process. |
| Date: Thursday, December 1, 2022 Time: 4:00 pm | Lipid Nanoparticles That Enable Gene Therapies: The Next Generation of Pharmaceuticals Dr. Pieter Cullis Gene therapies hold the promise of treatments for most diseases. The field has been held back by the lack of straightforward, effective and non-toxic ways of delivering nucleic acid polymers into cells in vivo. Lipid nanoparticle technology is removing this logjam, enabling a wide range of gene therapies that will change the practice of medicine. |

**University Of California, San Diego
Health Sciences Education Center Auditorium,
Lower Level, Skaggs Pharmacy Building**

**Host: Edward A. Dennis
Contact: Milda Simonaitis
Email: msimonaitis@ucsd.edu**

Previous renowned speakers in the MilliporeSigma-UCSD Lectureship Series include:

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| 2021 – Dr. Ruslan Medzhitov, Yale University | 2010 – Prof. Elizabeth Blackburn, University of California, San Francisco |
| 2020 – Dr. Frances Arnold, California Institute of Technology | 2009 – Prof. Thomas D. Pollard, Yale University |
| 2019 – Dr. Robert J. Lefkowitz, Duke University Medical Center | 2008 – Prof. David Baltimore, California Institute of Technology |
| 2018 – Dr. David R. Liu, Harvard University | 2007 – Dr. Roderick Mackinnon, The Rockefeller University |
| 2017 – Dr. Jennifer Doudna, University of California, Berkeley | 2006 – Prof. Joseph Schlessinger, Yale University School of Medicine |
| 2016 – Dr. Lewis C. Cantley, Weill Cornell Medical College | 2005 – Prof. Robert A. Weinberg, Whitehead Institute |
| 2015 – Dr. Brian K. Kobilka, Stanford University School of Medicine | 2004 – Prof. Phillip A. Sharp, The McGovern Institute |
| 2014 – Dr. Joan A. Steitz, Yale University | 2003 – Dr. John E. Walker, Medical Research Council |
| 2013 – Dr. Jean-Pierre Changeux, L'Institut Pasteur, Paris, France | 2002 – Prof. Robert Huber, Max Planck Institut für Biochemie |
| 2012 – Dr. Michael S. Brown, M.D., University of Texas Southwestern Medical Center | 2001 – Prof. Thomas R. Cech, University of Colorado at Boulder |
| 2011 – Dr. Ruedi Abersold, Ph.D., ETH Zurich, Switzerland | 1999 – Prof. Alfred G. Gilman, University of Texas Southwestern Medical Center |

