

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
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NAME EDWARD A. DENNIS	POSITION TITLE DISTINGUISHED PROFESSOR OF CHEMISTRY, BIOCHEMISTRY, AND PHARMACOLOGY		
eRA COMMONS USER NAME edwarddennis			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Yale University, New Haven, CT	B.A.	1963	Chemistry
Harvard University, Cambridge, MA	M.A.	1965	Chemistry
	Ph.D.	1968	Chemistry
Harvard Medical School, Boston, MA	Postdoctoral	1967-1969	Biochemistry

A. Positions and Honors.

Professional Positions:

1963 – 1967 NIH Predoctoral Fellow, Department of Chemistry, Harvard University
1966 – 1967 Teaching Fellow, Department of Chemistry, Harvard University
1967 – 1969 NIH Postdoctoral Fellow, Department of Biological Chemistry, Harvard Medical School
1970 – 1975 Assistant Professor, Department of Chemistry, University of California, San Diego
1975 – 1981 Associate Professor, Department of Chemistry, University of California, San Diego
1981 – **present** Professor, Department of Chemistry & Biochemistry, University of California, San Diego
1983 – 1984 Visiting Professor, Department of Biological Chemistry, Harvard Medical School
1984 Visiting Scientist, Department of Biochemistry, Brandeis University
1984 – 1987 Vice Chairman, Department of Chemistry, University of California, San Diego
1987 – 1988 Chair, Academic Senate, University of California, San Diego
1992 – 1997 Vice Chair, Medical Biochemistry, Dept. of Chemistry & Biochemistry, Univ. California, San Diego
1992 – 1999 Head, Division of Biochemistry, Dept. of Chemistry & Biochemistry, Univ. of California, San Diego
1999 – **present** Adjunct Professor, Department of Immunology, The Scripps Research Institute
1999 – 2002 Chair, Department of Chemistry & Biochemistry, University of California, San Diego
2002 – **present** Vice Chair, Health Science, Dept. of Chemistry & Biochemistry, Univ. of California, San Diego
2003 – **present** Professor, Department of Pharmacology, Univ. of California, San Diego
2004 – **present** Distinguished Professor of Chemistry, Biochemistry, and Pharmacology

Honors and Other Professional Activities:

1970 Merck Faculty Development Award
1973 Member, American Society of Biological Chemists
1981 – 1983 NSF Advisory Panel for Physiological, Cellular and Molecular Biology (Biophysics & Biochemistry)
1983 – 1984 Guggenheim Fellow
1984 Fellow, American Association for the Advancement of Sciences
1984 – 1985 NSF Advisory Panel for Molecular Biosciences (Biophysics)
1988 – 1993 Editorial Board, Journal of Biological Chemistry
1988 – **present** Editorial Board, Journal of Cellular Biochemistry
1988 Chair, Keystone Symposium on Cell Activation and Signal Initiation
1989 Chair, Gordon Research Conference on Lipid Metabolism
1990 – 1999 Expert Analyst, CHEM TRACTS
1992 Chair, FASEB Summer Conference on Phospholipases
1992 – 1995 Editorial Board, "Colloids and Surfaces B: Biointerfaces"
1993 – 2001 Board of Directors, Association of Medical and Graduate Departments of Biochemistry
1994 Chair, Keystone Symposium on Lipid Second Messengers

- 1994 – **present** Scientific Advisory Board, The Keystone Symposia
- 1994, 1995, 1996 Honorable Mention, Kaiser Permanente Award for Excellence in Teaching
- 1996 Program Chair, American Society Biochemistry & Molecular Biology (ASBMB) National Meeting
- 1996 – **present** Board of Directors, The Keystone Symposia (Chair and President 1996-2004, Emeritus 2007)
- 1997 Member (Ad-Hoc) NIH Physiological Chemistry Study Section
- 1998 – 2003 Associate Editor, Prostaglandins and Other Lipid Mediators
- 1998 – 2001 Editorial Board, Biochimica et Biophysica Acta-Lipids and Lipid Metabolism
- 1998 – 1999 Chair, Publications Committee (Journal of Biological Chemistry), ASBMB
- 1999 – 2002 Chair, Standing Meetings Committee, American Society Biochemistry and Molecular Biology
- 1999 – 2000 President, Association of Medical and Graduate Departments of Biochemistry
- 2000 – **present** Board of Directors, Lipid Research Inc. (*Journal of Lipid Research*)
- 2000 Avanti Award in Lipid Enzymology from the American Society of Biochemistry & Molecular Biology
- 2000 – 2006 Selection and Scheduling Committee and Council, Gordon Research Conferences
- 2002 Chair, Juan March Symposium on Lipid Signaling, Madrid
- 2003 – **present** Editor-in-Chief, *Journal of Lipid Research*
- 2003 – **present** Director, LIPID MAPS (NIH Glue Grant Consortium)
- 2007 European Federation for the Science and Technology of Lipids "European Lipid Science Award"

B. Selected peer-reviewed publications (in chronological order).

255. Killermann-Lucas,K. and Dennis,E.A., Distinguishing Phospholipase A₂ Types in Biological Samples By Employing Group-specific Assays in the Presence of Inhibitors, *Prostaglandins and other Lipid Mediators.*, 77, 235-248 (2005).
256. Schaloske,R.H., Provins,J.W., Kessen,U.A., and Dennis,E.A., Molecular Characterization of the Lipopolysaccharide/Platelet Activating Factor and Zymosan Induced Pathways Leading to Prostaglandin Production in P388D1 Macrophages, *Biochim.Biophys.Acta - Molecular and Cell Biology of Lipids*, 1687, 64-75 (2005).
257. Svensson,C.I., Lucas,K.K., Hua,X.-Y., Powell,H.C., Dennis,E.A., and Yaksh,T.L., Spinal Phospholipase A₂ In Inflammatory Hyperalgesia: Role of the Small, Secreted sPLA₂s, *Neuroscience*, 133, 543-553 (2005).
258. Constantinou-Kokotou,V., Peristeraki,A., Kokotos,G., Six,D.A., and Dennis,E.A., Synthesis and Activity of 2-Oxoamides Containing Long Chain β-Amino Acids, *J.of Peptide Science*, 11, 431-435 (2005).
259. Killermann Lucas,K., Svensson,C.I., Yaksh,T.L., and Dennis,E.A., Spinal Phospholipase A₂ in Inflammatory Hyperalgesia: Role of Group IVA cPLA₂, *British Journal of Pharmacology*, 144, 940-952 (2005).
260. Shirai,Y., Balsinde,J., and Dennis,E.A., Localization and Functional Interrelationships of Cytosolic Group IV, Secretory Group V, and Ca²⁺-Independent Group VI Phospholipase A₂s in Macrophages Using GFP/RFP Constructs, *Biochim.Biophys.Acta - Molecular and Cell Biology of Lipids*, 1735, 119-129 (2005).
261. Fahy,E., Subramaniam,S., Brown,H.A., Glass,C.K., Merrill,A.H., Murphy,R.C., Raetz,C.R.H., Russell,D.W., Seyama,Y., Shaw,W., Shimizu,T., Spener,F., Van Meer,G., VanNieuwenhze,M., White,S., Witztum,J.L., and Dennis,E.A., A Comprehensive Classification System for Lipids, *Journal of Lipid Research*, 46, 839-861 (2005). Reprinted in *Eur. J. Lipid Sci. & Technol.* 107, 337-364 (2005).
262. Dennis,E.A., Brown,H.A., Deems,R., Glass,C.K., Merrill,A.H., Murphy,R.C., Raetz,C.R.H., Shaw,W., Subramaniam,S., Russell,D.W., VanNieuwenhze,M., White,S.H., Witztum,J.L., and Wooley,J., The LIPID MAPS Approach to Lipidomics, *in Functional Lipidomics*, (L. Feng and G. Prestwich, Eds), CRC Press/Taylor & Francis Group, 1-15 (2005).

263. Bowers-Gentry,R.C., Deems,R., Harkewicz,R., and Dennis,E.A., Eicosanoid Lipidomics, *in* Functional Lipidomics, (L. Feng and G. Prestwich, Eds),.CRC Press/Taylor & Francis Group, 79-94 (2005).
264. Winstead,M.V., Killermann-Lucas,K., and Dennis,E.A., Group IV Cytosolic Phospholipase A₂ Mediates Arachidonic Acid Release in H9c2 Rat Cardiomyocyte Cells in Response to Hydrogen Peroxide, *Prostaglandins and Other Lipid Mediators*, 78, 55-66 (2005).
265. Rapaka,R.S., Piomelli,D., Spiegel,S., Barzan,N., and Dennis,E.A., Targeted Lipidomics: Signaling Lipids and Drugs of Abuse, *Prostaglandins and Other Lipid Mediators*, 77, 223-234 (2005).
266. Boullier,A., Friedman,P., Harkewicz,R., Hartvigsen,K., Green,S.R., Almazan,F., Dennis,E.A., Steinberg,D., Witztum,J.L., and Quehenberger,O., Phosphorylcholine as a Pattern Recognition Ligand for CD36, *Lipid Research*, 46, 969-976 (2005).
267. Kessen, U. A., Schaloske, R. H., Stephens, D. L., Killermann-Lucas, K., and Dennis, E. A., PGE₂ Release is Independent of Upregulation of Group V Phospholipase A₂ During Long-term Stimulation of P388D₁ Cells with Lipopolysaccharide, *J.Lipid Res.*, 46, 2488-2496 (2005).
268. Yaksh,T.L., Kokotos,G., Svensson,C.I., Stephens,D.L., Kokotos,C., Fitzsimmons,B., Hadjipavlou-Litina,D., Hua,X.Y., and Dennis,E.A., Systemic and Intrathecal Effects of a Novel Series of Phospholipase A₂ Inhibitors on Hyperalgesia and Spinal PGE₂ Release, *J.Pharmacol.Exp.Ther.* 316, 466-475 (2005).
269. Raetz,C.R.H., Garrett,T.A., Reynolds,C.M., Shaw,W., Moore,J.D., Smith,D.C., Ribeiro,A.A., Murphy,R.C., Ulevitch,R.J., Fearn,C., Reichart,D., Glass,C.K., Benner,C., Subramaniam,S., Harkewicz,R., Bowers-Gentry,R.C., Buczynski,M.W., Cooper,J., Deems,R., and Dennis,E.A., Kdo2-Lipid A Escherichia coli, a Defined Endotoxin That Activates Macrophages Via TLR-4, *Journal of Lipid Research*, 47, 1097-1111 (2006).
270. Stephens,D.L., Barbayianni,E., Constantinou-Kokotou,V., Peristeraki,A., Cooper,J., Harkewicz,R., Deems,R.A., Dennis,E.A., and Kokotos,G., Differential Inhibition of Group IVA and Group VIA Phospholipases A₂ by 2-Oxoamides, *J.Med.Chem*, 49, 2821-2828 (2006).
271. Grkovich,A., Johnson,C.A., and Dennis,E.A., Lipopolysaccharide Induced Cyclooxygenase-2 Expression in Human U937 Macrophages is Phosphatidic Acid Phosphohydrolase-1 Dependent, *J.Biol.Chem.*, 281, 32,978-32,987 (2006).
272. Schaloske,R.H. and Dennis,E.A., The Phospholipase A₂ Superfamily And Its Group Numbering System, *Biochim.Biophys.Acta*, 1761, 1246-1259 (2006).
273. Sud,M., Fahy,E., Cotter,D., Brown,H.A., Dennis,E.A., Glass,C.K., Merrill,A.H., Murphy,R.C., Raetz,C.R.H., Russell,D.W., and Subramaniam,S., LMSD: LIPID MAPS Structure Database, *Nucleic Acids Research Online Journal*, 35, D527-D532 (2007).
274. Harkewicz,R., Fahy,E., Andreyev,A., and Dennis,E.A., Arachidonic Derived Dihomo-prostaglandin Production Observed in Endotoxin Stimulate Macrophage-like Cells, *J.Biol.Chem.* 282, 2899-2910 (2007).
275. Six, D. A., Barbayianni, E., Loukas, V., Constantinou-Kokotou, V., Hadjipavlou-Litina, D., Stephens, D. L., Wong, A. C., Magrioti, V., Moutevelis-Minakakis, P., Baker, S. F., Dennis, E. A., and Kokotos, G., Structure-Activity Relationship of 2-Oxoamide Inhibition of Group IVA Cytosolic Phospholipase A₂ and Group V Secreted Phospholipase A₂. *J.Med.Chem.*, 50, 4222-4235 (2007).
276. Buczynski MW, Stephens DL, Bowers-Gentry RC, Grkovich A, Deems RA, Dennis EA TLR-4 and Sustained Calcium Agonists Synergistically Produce Eicosanoids Independent of Protein Synthesis in RAW264.7 Cells. *J Biol Chem.*, 282, 22834-22847 (2007).
277. Deems,R.A., Buczynski,M.W., Bowers-Gentry,R.C., Harkewicz,R., and Dennis,E.A., Detection and Quantitation of Eicosanoids via High Performance Liquid Chromatography/Electrospray Ionization Mass Spectrometry, *in Methods in Enzymology*, 432, 59-82 (2007).
278. Schmelzer,K.D.E.A., Deems,R.A., Fahy,E., and Subramaniam,S., The Lipid Maps Initiative in Lipidomics, 432 , 169-181 (2007).
279. Minakakis-Moutevelis,P., Neokosmidi,A., Filippakou,M., Stephens,D.L., Dennis,E.A., and Kokotos,G., Synthesis of Lipophilic 2-oxoamides Based on γ -aminobutyric and δ -aminovaleric analogues and Their Activity Against Phospholipase A₂, *J.Peptide Sci.*, 13, 634-641 (2007).

280. Harkewicz,R., Hartvigsen,K., Almazan,F., Dennis,E.A., Witztum,J.L., and Miller,Y.I., Cholesteryl Ester Hydroperoxides are Biologically Active Components of Minimally Oxidized LDL, *J.Biol.Chem.* <http://www.jbc.org/cgi/doi/10.1074/jbc.M709006200> (2008).
281. Hsu,Y.-H., Burke,JE., Stephens,D.L., Deems,R., Li,S., Asmus, K.M., Woods Jr.,V.L., and Dennis,E.A., Calcium Binding Rigidifies the C2 Domain of GIVA Phospholipase A₂ as Revealed by Hydrogen/Deuterium Exchange Mass Spectrometry , *J.Biol.Chem.* <http://www.jbc.org/cgi/doi/10.1074/jbc.M708143200> (2008).

C. Research Support

Ongoing

5 R01 GM20501-31 Edward A. Dennis (PI) 12/01/03-11/30/08

NIH/GM

"Action of Lipolytic Enzymes"

The overall goal of this project is to carry out mechanistic and structural studies on lipolytic enzymes and to understand how these enzymes interact with large aggregated lipid structures. The current grant period focuses on developing deuterium exchange mass spectrometry to map the surfaces of GIA AND GIVA PLA₂s. Changes in deuterium exchange profiles that occur when the enzymes interact with the aggregated lipid substrates will be used to determine the nature of these interactions.

Role: PI

5 R01 GM64611-05 Edward A. Dennis (PI) 09/17/02-01/31/12

NIH/GM

"Regulation of Lipid Mediators in Spinal Microglia and Astrocytes"

This project focuses on the underlying mechanisms that control the activities of various phospholipase A₂s in vivo and how these processes in turn control the production of prostaglandins by macrophages, microglia, astrocytes and spinal fluid.

Role: PI

5 U54 GM069338-4 Edward A. Dennis (PI) 08/21/03-07/31/08

NIH/GM

"LIPID MAPS"

Development of networks and maps of lipid metabolites in the macrophage in response to stimuli using LC/MS systems biology approaches on RAW264.7 cells and primary elicited peritoneal macrophages. This involves 11 Co-Investigators at eight institutions and supports instrumentation infrastructure development aimed at mapping the mouse macrophage lipidome.

Role: Director, PI of Core A, Core G, and Bridge E.

Completed Research Support

Bio02-10303 Edward A. Dennis (PI) and Tony Yaksh 05/27/03-8/26/05

UC Discovery/Analgesix

"Development of a Potent Drug for Pain and Inflammation"

Development of novel inhibitors for pain and inflammation.

Role: PI