

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

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

NOTE: The Biographical Sketch may not exceed four pages. Follow the formats and instructions on the attached sample.

A. Positions and Honors. List in chronological order previous positions, concluding with your present position. List any honors. Include present membership on any Federal Government public advisory committee.

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)
 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). Do not include publications submitted or in preparation.

251. Boegeman, S.C., Deems, R.A., and Dennis, E.A., Phospholipid Binding and the Activation of Group IA Secreted Phospholipase A₂, *Biochemistry*, **43**, 3907-3916 (2004).
252. Kokotos, G., Six, D.A., Loukas, V., Smith, T., Constantinou-Kokotou, V., Hadjipavlou-Litina, D., Kotsovolou, S., Chiou, A., Beltzner, C.C., and Dennis, E.A., Inhibition of Group IVA Cytosolic Phospholipase A₂ by Novel 2-Oxoamides *in vitro*, in Cells, and *in vivo*., *J. Med. Chem.*, **47**, 3615-3628 (2004).
253. Killermann Lucas, K. and Dennis, E.A., The ABC's of Group IV Cytosolic Phospholipase A₂, *Biochim. Biophys. Acta - Molecular and Cell Biology of Lipids*, **1636**, 213-218 (2004).
254. Smith, T.R. and Dennis, E.A., Phospholipase A₂ Structure and Function, in *Encyclopedia of Biological Chemistry*, **3**, (W. Lennarz and M.D. Lane, Edit.) Elsevier, Oxford, 297-300 (2004).
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).

C. Research Support. List selected ongoing or completed (during the last three years) research projects (federal and non-federal support). Begin with the projects that are most relevant to the research proposed in this application. Briefly indicate the overall goals of the projects and your role (e.g. PI, Co-Investigator, Consultant) in the research project. Do not list award amounts or percent effort in projects.

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 GM64611-04 Edward A. Dennis (PI) 09/17/02-8/31/08

NIH/GM

"Regulation of Prostaglandin Production in Macrophages"

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.

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 and Tony Yaksh (PI) 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: Co-PI