

CURRICULUM VITAE

9/1/17

NAME: William Dowhan, Ph.D.
PRESENT TITLE: Professor of Biochemistry and Molecular Biology and Microbiology and Molecular Genetics
WORK ADDRESS: Office: The University of Texas-Houston
Medical School
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EMAIL: William.Dowhan@uth.tmc.edu
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Home: 9706 Burdine, Houston, Texas 77096
BIRTH DATE: December 15, 1942
CITIZENSHIP: USA
UNDERGRADUATE EDUCATION:
1960-1964 A.B., Department of Chemistry Princeton University, Princeton, New Jersey. Senior Thesis Advisor: Professor Walter Kauzmann
GRADUATE EDUCATION:
1964-1969 Ph.D., Department of Biochemistry University of California Berkeley, California Faculty Thesis Advisor: Professor Esmond E. Snell
POSTGRADUATE TRAINING:
1969-1972 Postdoctoral Fellow Harvard Medical School Department of Biological Chemistry Boston, Massachusetts Advisor: Professor Eugene P. Kennedy
ACADEMIC APPOINTMENTS:
1972-1977 Assistant Professor, Department of Biochemistry and Molecular Biology, The University of Texas Medical School at Houston
1972-present Member of the Faculty, Graduate School of Biomedical Sciences, The University of Texas Health Science Center at Houston
1977-1982 Associate Professor with tenure, Department of Biochemistry and Molecular Biology, The University of Texas Medical School at Houston
1982-present Professor with tenure, Department of Biochemistry and Molecular Biology, The University of Texas Medical School at Houston
1983-1984 Visiting Professor, Department of Biochemistry Biozentrum, University of Basel, Basel, Switzerland
1992 Visiting Professor, Department of Biological Sciences Stanford
2010-2011 Stanford, CA
ADMINISTRATIVE APPOINTMENTS:
1978-1981 Assistant Dean for Student Affairs, Graduate School of Biomedical Sciences, The University of Texas Health Science Center at Houston
1985-1997 Executive Committee of the Department of Biochemistry Molecular Biology, Member
1989-1998 Director of the Program in Biochemistry and Molecular and Biology, Graduate School of Biomedical Sciences, The University of Texas Health Science Center at Houston

1988-1989	Vice-President, Faculty of the Graduate School of Biomedical Sciences, University of Texas Health Science Center at Houston
1989-1990	President, Faculty of the Graduate School of Biomedical Sciences, University of Texas Health Science Center at Houston
1989	Acting-Chair, Department of Biochemistry and Molecular Biology, University of Texas Medical School at Houston
1989-1992	Vice-Chair, Department of Biochemistry and Molecular Biology, The University of Texas Medical School at Houston
1992-1997	Term Chair, Department of Biochemistry and Molecular Biology, The University of Texas Medical School at Houston

PROFESSIONAL ORGANIZATIONS:

1977-present	American Society for Biochemistry and Molecular Biology, Member
2011-present	Biophysical Society (US), Member
1993-present	Association of Medical and Graduate Departments of Biochemistry

HONORS AND AWARDS:

1964	Graduated <i>cum laude</i> in Chemistry, Princeton University
1969	Postdoctoral Research Fellowship from the National Institutes of Health, declined in favor of American Cancer Society award
1969-1972	Postdoctoral Research Fellowship from the American Cancer Society
1983-1984	Fellow of the John Simon Guggenheim Foundation
1998-1999	Distinguished Professorship, Department of Biochemistry and Molecular Biology
2000-present	John S. Dunn, Sr. Chair of Biochemistry and Molecular Biology
2000-present	Fellow of the American Academy of Microbiology
2005	Am. Soc. Biochem. Mol. Biol. Avanti Award in Lipids
2005-2015	MERIT Award for NIH grant R37 GM 20487-32
2005	President's Scholar, University of Texas Health Sciences Center, Houston
2010	van Deenen Lecturer at the 51st International Conference on the Bioscience of Lipids (ICBL) in Spain
2012	J. Biol. Chem. "Classic": Mukhopadhyay, R. "Exploring the World of Phospholipids and Their Interactions with Proteins: The Work of William Dowhan" <i>J. Biol. Chem.</i> 287: 9509-11 (2012).

EDITORIAL POSITIONS AND MEETING ORGANIZER:

1989-1994	Member of the Editorial Board of the Journal of Biological Chemistry
1997-2002	Chair of Gordon Research Conference: Molecular and Cellular Biology of Lipids, Meriden, NH
1999	Advisory Committee, Gordon Research Conference: Molecular and Cellular Biology of Lipids
1999-present	Advisory Committee, Gordon Research Conference: Molecular and Cellular Biology of Lipids
2001	Co-Chair, Satellite meeting of the American Society for Biochemistry and Molecular Biology, Membrane Lipid Function
2001-2009	Member Steering Committee of the International Conference on the Biosciences of Lipids
2001	Reviewer for Michael Smith Foundation for Health Research
2002-2004	Session Organizer and Member International Organizing Committee of the International Conference on the Biosciences of Lipids Meeting in Greece for 2004

2006-2011 Executive Editor, Molecular and Cell Biology of Lipids section of
Biochimie et Biophysica Acta
2007-2009 Member ASBMB Meetings Committee
2011-2012 Advisory Board for 2012 ICBL meeting in Banff, Canada

SERVICE ON NATIONAL GRANT REVIEW PANELS, STUDY SECTIONS, COMMITTEES:

1980 Ad Hoc Member, Physiological Chemistry Study Section, NIH
1981-1985 Member, Physiological Chemistry Study Section, NIH
1980-1983 External Examiner in Biochemistry, King Saud University Medical
School, Riyadh, Saudi Arabia
1987 Ad Hoc Member, Microbial Physiology Study Section, NIH
1988 Ad Hoc Member, Physiological Chemistry Study Section, NIH
1997 Educational Committee, Association of Medical and Graduate
Departments of Biochemistry
2000 & 2005 Program Committee of the meeting of the American Society for
Biochemistry and Molecular Biology
2000-2004 Member, Physiological Chemistry Study Section, NIH
2004-2006 Member, Biochemistry & Biophysics of Membranes Study Section,
NIH
2008 Ad Hoc Member, Postdoctoral Fellowship Study Section, NIH
2010 Ad Hoc Member, Biochemistry & Biophysics of Membranes Study
Section, NIH

SERVICE ON THE UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT HOUSTON
COMMITTEES:

Health Science Center Biohazards Committee
Health Science Center Scientific Council (35 years)
Health Science Center Review of the Graduate School
Health Science Center Conflict of Interest Committee (6 years as Chair)

SERVICE ON THE UNIVERSITY OF TEXAS MEDICAL SCHOOL AT HOUSTON COMMITTEES:

Radiation Protection Committee (2 years)
Curriculum Committee (2 years)
General Research Support Committee (6 years)
Student Evaluation and Promotions Committee (2 years, 1 as chairman)
Faculty Senate (9 years)
Secretary of the Faculty Senate (1 year)
Committee on Committees (6 years, 1 as chairman)
Faculty Promotions, Appointments & Tenure Committee (9 years)
Search Committee for Chair of Pharmacology
Search Committee for Chair of Neurobiology and Anatomy
Administrative Council of Medical School (five years)
Planning and Budget Committee
Graduate Education Council (3 years)
Medical School Graduate Student Education Committee (3 years)
Medical School Research Committee (3 years)
Medical School 6 Year Faculty Review Committee (2 years)

SERVICE ON THE UNIVERSITY OF TEXAS GRADUATE SCHOOL OF BIOMEDICAL
SCIENCES COMMITTEES (See Addendum for more details):

Curriculum Committee (2 years)
Academic Standards Committee (5 years, 1 as chairman)

Executive Committee (3 years, 1 as chairman)
Graduate Student Advisor for Biochemistry and Molecular Biology (1 year)
Committee on Area Studies in Biochemistry and Molecular Biology (1 year)
Membership Committee (6 years)
Program Directors Committee (2 years)
Reappointed with Highest Commendation (2000)
Reappointed with Commendation (2005)

SPONSORSHIP FOR CANDIDATES FOR PH.D. DEGREE:

Timothy Larson, Ph.D. awarded 1978; Professor, Virginia Polytechnical Institute
Anuradha Dutt awarded M.S. in 1976; awarded Ph.D., 1983; Research Scientist at M.D. Anderson Cancer Institute, retired.
Kathryn Louie, Ph.D. awarded 1983; Research Scientist at University of Arizona
Qiaoxin Li, Ph.D. awarded 1989; Senior Research Officer at University of Melbourne, Australia
Cindee Funk, Ph.D. awarded 1990; patent council in biotech industry
Jackie Aitken, Ph.D. awarded 1990; Research Scientist, Biological Sciences, University of Auckland, Auckland, New Zealand
Weiming Xia, Ph.D. awarded 1995; Principal Research Investigator, Department of Veterans Affairs, Veterans Hospital, Bedford, MA
Haifa Shen, Ph.D. awarded 1997; Assistant Professor, Methodist Hospital Research Institute, Houston, TX
Shao-Chun Chang, M.D., Ph.D. awarded 1998; Senior Medical Advisor at E. L. Lilly and Co., Indianapolis, IN
Wei Zhang, Ph. D. awarded 2004; Research Scientist at Glaxo-Smith-Kline, China
Mei Zhang, Ph. D. awarded 2005; Assistant Professor, University of Pittsburgh, Pittsburgh, PA
Xuefeng Su, Ph. D. awarded 2005, Research Scientist, Harvard Medical School, Boston
Jun Xie, Current Ph. D. awarded 2006, Research Scientist, VIB Center for Biology of Disease, Leuven, Belgium

SPONSORSHIP OF POSTDOCTORAL FELLOWS:

1973-1975	Dr. Takashi Hirabayashi, Director of International Operations, Suntory, Ltd., Japan (deceased)
1977-1979	Dr. Akinori Ohta, Professor of Agricultural Chemistry, University of Tokyo, Japan
1977-1978	Dr. George Carman, Board of Governors Professor, Rutgers University
1978-1985	Dr. A.S. Gopalakrishnan, retired
1978-1980	Dr. Anna Radomska-Pandya, currently Professor of Medicine, University of Arkansas
1979-1983	Dr. Y.-C. Chen, division director at Abbott Laboratory, Chicago
1985-1987	Dr. Paul van Heusden, Professor, University of Leiden, Netherlands
1987-1988	Dr. Ludwika Zimniak, Professor of Medicine, University of Arkansas
1990-1995	Dr. Constance Clancey, pharmacist
1994-1995	Dr. Silvia Dryden, Research Scientist, Wayne State University, Detroit, MI
1991-1997	Dr. Eugenia Mileykovskaya, Associate Professor, Department of Biochemistry and Molecular Biology, Univ. Texas-Houston, Medical School

1991-1997	Dr. Mikhail Bogdanov, currently Associate Professor, Department of Biochemistry and Molecular Biology, Univ. Texas-Houston, Medical School
1997-2000	Dr. Minseok Rho, Research Associate, University of Korea
1998-2000	Dr. Atsushi Yamashita, Professor, Faculty of Pharmaceutical Sciences, Teikyo University, Sagamiko, Kanagawa, Japan
1999-2001	Dr. Darin Ostrander, Project Manager III, Research Associate, Johns Hopkins University
2000-2002	Dr. Xiaoyuan Wang, Professor Biotechnology and Food Science, Jiangnan University, Wuxi, China
2003-2005	Heidi Campbell, Assistant Professor of Physical Sciences, College of Southern Idaho
2004-2007	Dr. Lucia Piccotti, Project Scientist at Kimberly-Clark, Houston, TX
2006-2008	Dr. Sirinivas Mullanpudi, private research consultant
2008-2013	Dr. Heidi Vitrac, Assistant Professor, Department of Biochemistry and Molecular Biology, Univ. Texas-Houston, Medical School
2009-2012	Dr. Soledad Bázan, Postdoctoral Fellow, Department of Chemical Biology, Cordoba National University, Argentina

GSBS LAB ROTATIONS AND STUDENT COMMITTEES (See Addendum for more details)
No students or committees for past 5 years

TEACHING RESPONSIBILITIES (See Addendum for more details for GSBS):

1972-2015	Biochemistry and Molecular Biology, The University of Texas Medical School
1973-1975	Biomedical Chemistry, The University of Texas Graduate School of Biomedical Sciences
1973-1975	Enzymology, The University of Texas Graduate School of Biomedical Sciences
1974-1980	Membrane Biochemistry, The University of Texas Graduate School of Biomedical Sciences
1985-2009	Topics in Biochemistry and Molecular Biology, The University of Texas Graduate School of Biomedical Sciences
1992-2009	Current Methods in Biochemistry, The University of Texas Graduate School of Biomedical Sciences
1997	Bacterial Genetics and Molecular Biology, The University of Texas Graduate School of Biomedical Sciences
1998-2007	Intermediate Biochemistry, The University of Texas Graduate School of Biomedical Sciences

MENTORING

2014-2020	Mentor for Truc T. Tran under K08 award
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CURRENT GRANT SUPPORT:

2017-2021	National Institutes of Health General Medical Research (R01 GM121493) "Protein Determinants and Properties of the Lipid Bilayer that Govern Membrane Protein Dynamic Organization" Current direct annual funding: \$315,000. PI: William Dowhan
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- 2016-2020 National Institutes of Health General Medical Research (R01 GM115969) "The Role of Cardiolipin in the Assembly and Function of the Mitochondrial Respirasome" Current direct annual funding: \$247,000. PI: William Dowhan
- 2016-2017 National Institutes of Health General Medical Research (R01 GM115969-S1) "The Role of Cardiolipin in the Assembly and Function of the Mitochondrial Respirasome" Current direct annual funding: \$30,000. PI: William Dowhan

PENDING GRANT SUPPORT:

None

PAST GRANT SUPPORT:

- 2011-2016 National Institutes of Health Allergy and Infectious Disease Research Award (R01 AI093749) "Molecular Mechanisms Of Daptomycin Resistance In Enterococci." Direct annual funding: \$250,000 (Co-Investigator at 5%). PI: Cesar Arias
- 2005-2016 National Institutes of Health General Medical Research Merit Award (R37 GM20478) "Structure and Function of Membrane Proteins" Direct annual funding: \$429,000 (replaced R01 GM20478, '73-'05) PI: William Dowhan
- 2015-2016 National Institutes of Health General Medical Research Merit Award (R37 GM20478S1) "Structure and Function of Membrane Proteins" Direct annual funding: \$121,000 supplement. PI William Dowhan
- 2012-2014 National Institutes of Health General Medical Research Merit Award (R37 GM20478-S1) "Structure and Function of Membrane Proteins" Direct annual funding: \$68,000
- 2003-2013 National Institutes of Health General Medical Research Award (R01 GM56389) "Role of Phospholipids in Mitochondrial Function." Direct annual funding: \$353,000
- 2009-2011 National Institutes of Health General Medical Research Award (R01 GM56389-10S1 ARRA) "Role of Phospholipids in Mitochondrial Function." Direct annual funding: \$166,700
- 2004-2007 National Institutes of Health General Medical Research Award (F32 GM711282) "Determinants of Membrane Protein Topology." William Dowhan (sponsor) and Heidi Campbell (trainee). Direct annual funding: \$39,000
- 2005-2007 National Institutes of Health General Medical Science Award (R21 GM074839) "Eukaryotic Membrane Protein Folding in *E. coli*" John Spudich (PI), William Dowhan (Co-PI). Direct annual funding: \$105,000
- 1973-2005 National Institutes of Health General Medical Research Award (R01 GM20478) "Structure and Function of Membrane Proteins" Direct annual funding: \$250,000 (Replaced by R37 GM20478)

1997-2002	National Institutes of Health General Medical Research Award (GM54273) "Phospholipids: Synthesis & Signal Transduction" Direct annual funding: \$153,000
2000-2001	National Institutes of Health, Heart and Lung Research Award (1F32HL10304-01) "Molecular Basis for Cardiolipin Function in Mitochondria" Postdoctoral Award to Darin Ostrander, Ph.D. Last annual funding: \$32,416
2000-2001	U. S. Civilian Research and Development Foundation Co-PI with Dr. Marina Nesmeyanova (Pushchino, Russia) "Molecular Basis of Phospholipid Involvement in Membrane Protein Translocation and Insertion." Direct funding \$43,000 for 18 months
1997-1999	U. S. Civilian Research and Development Foundation Co-PI with Dr. Marina Nesmeyanova (Pushchino, Russia) "Mechanism of protein translocation across the bacterial membrane." Last direct annual funding: \$26,000
1985-1993	National Institutes of Health General Medical Research Award (GM35143) "Synthesis of Membrane Phospholipids" Last direct annual funding: \$172,690
1983-1988	National Institutes of Health General Medical Research Award (GM25047) "Membrane Protein Synthesis and Assembly" Last direct annual funding: \$91,000
1983-1986	Robert A. Welch Foundation Grant (AU-955) "Structure of Phosphatidylserine Decarboxylase." Last direct annual funding: \$20,000
1975-1981	Robert A. Welch Foundation Grant (AU-599) "Purification of Membrane-Bound Enzymes of Phospholipid Metabolism by Affinity Chromatography and their Characterization" Last direct annual funding: \$20,000

REFEREED ORIGINAL ARTICLES IN JOURNALS

1. **Dowhan, W.** and Snell, E.E.: D-Serine dehydratase from *E. coli*. II. Analytical studies and subunit structure. *J. Biol. Chem.* 245:4618-4628, 1970.
2. **Dowhan, W.** and Snell, E.E.: D-Serine dehydratase from *E. coli*. III. Resolution of pyridoxal 5'-phosphate and coenzyme specificity. *J. Biol. Chem.* 245:4629-4635, 1970.
3. Raetz, C.R.H., Hirschberg, C.B., **Dowhan, W.**, Wickner, W. and Kennedy, E.P.: A membrane bound pyrophosphatase catalyzing the hydrolysis of CDP-diglyceride. *J. Biol. Chem.* 247:2245-2247, 1972.
4. **Dowhan, W.**, Wickner, W.T., Kennedy, E.P.: Purification and properties of phosphatidylserine decarboxylase from *E. coli*. *J. Biol. Chem.* 249:3079-3084, 1974.
5. Raetz, C.R.H., **Dowhan, W.**, and Kennedy, E.P.: Partial purification and characterization of CDP-diglyceride hydrolase from membranes of *Escherichia coli*. *J. Bacteriol.* 125:855-863, 1976.
6. Larson, T.J., Hirabayashi, T., and **Dowhan, W.**: Phosphatidylglycerol biosynthesis in *Bacillus licheniformis*: Resolution of membrane bound enzymes by affinity chromatography on cytidine 5'-diphospho-*sn*-1,-2-diacylglycerol Sepharose. *Biochemistry* 15:974-979, 1976.
7. Hirabayashi, T., Larson, T.J. and **Dowhan, W.**: Membrane associated phosphatidylglycerophosphate synthetase from *E. coli*: Purification by substrate affinity chromatography on cytidine 5'-diphospho-1,-2-diacyl-*sn*-glycerol. *Biochemistry* 15:5205-5211, 1976.

8. Larson, T.J. and **Dowhan, W.**: Ribosomal associated phosphatidylserine synthase from *E. coli*: Purification by substrate specific elution from phosphocellulose using cytidine 5'-diphospho-1,-2-diacyl-sn-glycerol. *Biochemistry* 15:5212-5218, 1976.
9. Raetz, C.R.H., Larson, T.J. and **Dowhan, W.**: Gene cloning for the isolation of enzymes of membrane lipid synthesis: Phosphatidylserine synthase overproduction in *Escherichia coli*. *Proc. Natl. Acad. Sci. USA* 74:1412-1416, 1977.
10. Dutt, A. and **Dowhan, W.**: Intracellular distribution of enzymes of phospholipid metabolism in several gram-negative bacteria. *J. Bacteriol.* 132:159-165, 1977.
11. Carman, G.M. and **Dowhan, W.**: A spectrophotometric method for the assay of CDP-diglyceride dependent enzymes of phospholipid metabolism. *J. Lipid Res.* 19:519-522, 1978.
12. Carman, G.M. and **Dowhan, W.**: Phosphatidylserine synthase from *E. coli*: The role of Triton X-100 in catalysis. *J. Biol. Chem.* 254:8391-8397, 1979.
13. Louie, K. and **Dowhan, W.**: Investigations on the association of phosphatidylserine synthase with the ribosomal component from *Escherichia coli*. *J. Biol. Chem.* 255:1124-1127, 1980.
14. Ohta, A., Waggoner, K., Louie, K. and **Dowhan, W.**: Cloning of the gene involved in membrane lipid synthesis: Effects of amplification of phosphatidylserine synthase in *E. coli*. *J. Biol. Chem.* 256:2219-2225, 1981.
15. Ohta, A., Waggoner, K., Radomska-Pyrek, A. and **Dowhan, W.**: Cloning of genes involved in membrane lipid synthesis: Effects of amplification of phosphatidylglycero-P synthase in *E. coli*. *J. Bacteriol.* 147:552-562, 1981.
16. Dutt, A. and **Dowhan, W.**: Intracellular distribution of phospholipid biosynthetic enzymes in gram-positive bacteria: Characterization of a membrane-associated phosphatidylserine synthase. *J. Bacteriol.* 147:535-542, 1981.
17. Sharma, S., Ohta, A., **Dowhan, W.** and Moses, R.E.: Cloning of the *uvrC* gene of *E. coli*: The expression of a DNA repair gene. *Proc. Natl. Acad. Sci., USA* 78:6033-6037, 1981.
18. Sharma, S., **Dowhan, W.** and Moses, R.E.: Molecular structure of the *uvrC* gene of *E. coli*: Identification of the DNA sequence required for transcription of the *uvrC* gene. *Nuc. Acid. Res.* 10:5209-5221, 1982.
19. Tucker, S.D., Gopalakrishnan, A.S., Bollinger, R., **Dowhan, W.** and Murgola, E.J.: Molecular mapping of *glyW*, a duplicate gene for tRNA₃ of *E. coli*. *J. Bacteriol.* 152:773-779, 1982.
20. Dutt, A. and Dowhan, A.: Purification and properties of a membrane bound phosphatidylserine synthase from *Bacillus licheniformis*. *Biochemistry* 24:1073-1079, 1985.
21. **Dowhan, W.**, Bibus, C.R. and Schatz, G.: The cytoplasmically made subunit IV is necessary for assembly of cytochrome *c* oxidase in yeast. *EMBO Journal* 4:179-184, 1985.
22. Gopalakrishnan, A.S., Chen, Y.-C., Temkin, M. and **Dowhan, W.**: Structure and expression of the gene locus encoding the phosphatidylglycerophosphate synthase of *Escherichia coli*. *J. Biol. Chem.* 261:1329-1338, 1986.
23. Louie, K., Chen, Y.-C. and **Dowhan, W.**: Substrate-induced membrane association of phosphatidylserine synthase from *Escherichia coli*. *J. Bacteriol.* 165:805-812, 1986.
24. Raetz, C.R.H., Carman, G.M., **Dowhan, W.**, Jiang, R.-T., Waszkuc, W., Loffredo, W. and Tsai, M.-D.: Phospholipids chiral at phosphorus. Steric course of the reactions catalyzed by phosphatidylserine synthase from *Escherichia coli* and yeast. *Biochemistry* 26:4022-4027, 1987.
25. Heacock, P.N. and **Dowhan, W.**: Construction of a lethal mutation in the synthesis of the major acidic phospholipids of *Escherichia coli*. *J. Biol. Chem.* 262:13044-13049, 1987.

26. No, Z., Sanders II, C.R., **Dowhan, W.** and Tsai, M.-D.: Steric course of the reaction catalyzed by phosphatidylserine decarboxylase from *E. coli*. *Bioorg. Chem.* 16:184-188, 1988.
27. de Vrije, T., de Swart, R.L., **Dowhan, W.**, Tommassen, J. and de Kruijff, B.: Phosphatidylglycerol is involved in protein translocation across *Escherichia coli* inner membranes. *Nature* 334:173-175, 1988.
28. Li, Q.-X. and **Dowhan, W.**: Structural characterization of *E. coli* phosphatidylserine decarboxylase. *J. Biol. Chem.* 263:11516-11522, 1988.
29. Heacock, P.N. and **Dowhan, W.**: Alterations of the phospholipid composition of *Escherichia coli* through genetic manipulation. *J. Biol. Chem.* 264: 14972-14977, 1989.
30. Lill, R., **Dowhan, W.**, and Wickner, W.: The ATPase of SecA is regulated by acidic phospholipids, SecY, and the leader and mature domains of precursor proteins. *Cell* 60: 271-280, 1990.
31. Li, Q.-X. and **Dowhan, W.**: Studies on the mechanism of formation of the pyruvate prosthetic group of phosphatidylserine decarboxylase from *Escherichia coli*. *J. Biol. Chem.* 265: 4111-4115, 1990.
32. Aitken, J.F., van Heusden, G.P.H., Temkin, M. and **Dowhan, W.**: The gene encoding the phosphatidylinositol transfer protein is essential for cell growth. *J. Biol. Chem.* 265: 4711-4717, 1990.
33. Bankaitis, V.A., Aitken, J.R., Cleves, A.E., and **Dowhan, W.**: An essential role for a phospholipid transfer protein in yeast Golgi function. *Nature* 347: 561-562, 1990.
34. Cleves, A.E., McGee, T. P., Whitters, E. A., Champion, K., Aitken, J.R., **Dowhan, W.**, Goebel, M., and Bankaitis, V.A.: Mutations in the CDP-choline pathway for phospholipid biosynthesis render yeast cells independent of the requirement for an essential phospholipid transfer protein. *Cell* 64: 789-800, 1991.
35. DeChavigny, A., Heacock, P.N., and **Dowhan, W.**: Sequence and inactivation of the *pss* gene of *Escherichia coli*: phosphatidylethanolamine may not be essential for the viability cell viability. *J. Biol. Chem.* 266: 5323-5332, 1991.
36. Kent, C., Carman, G.M., Spence, M.W., and **Dowhan, W.**: Regulation of eukaryotic phospholipid metabolism. *FASEB J.* 5: 2258-2266, 1991.
37. Gupta, S. D., **Dowhan, W.**, and Wu, H. C.: Phosphatidylethanolamine is not essential for the N-acylation of apolipoprotein in *Escherichia coli*. *J. Biol. Chem.* 266: 9983-9986, 1991.
38. Kusters, R., **Dowhan, W.**, and de Kruijff, B.: Negatively charged phospholipids restore prePhoE translocation across phosphatidyl-glycerol depleted *Escherichia coli* membranes. *J. Biol. Chem.* 266: 8659-8662, 1991.
39. **Dowhan, W.**: "Phospholipid transfer proteins." *Current Opinions in Cell Biology* 3: 621-625, 1991.
40. Funk, C. R., Zimniak, L., and **Dowhan, W.**: The *pgpA* and *pgpB* genes of *Escherichia coli* are not essential: Evidence for a third phosphatidyl-glycerophosphate phosphatase. *J. Bacteriol.* 174: 205-213, 1992.
41. Rietveld, A. R., Killian, A., **Dowhan, W.**, and de Kruijff, B.: Polymorphic regulation of phospholipid composition in *E. coli*: *J. Biol. Chem.* 268: 12427-12433, 1993.
42. van der Goot, F. G., Didat, N., Pattus, F., **Dowhan, W.**, and Letellier, L.: Role of acidic lipids in translocation and channel activity of colicins A and N in *E. coli* cells. *Europ. J. Biochem.* 213: 217-221, 1993.
43. Mileykovskaya, E. and **Dowhan, W.**: Alterations in the electron transfer chain of *E. coli* lacking phosphatidylethanolamine: *J. Biol. Chem.* 268: 24824-24831, 1993.
44. Clancey, C., J., Chang, S.-C., and **Dowhan, W.**: Cloning of the gene (*PSD1*) encoding phosphatidylserine decarboxylase from *Saccharomyces cerevisiae* by complementation of an *Escherichia. coli* mutant: *J. Biol. Chem.* 268: 24580-24590, 1993.

45. Shi, W., Bogdanov, M., **Dowhan, W.**, and Zusman, D. R.: The *pss* and *pds* genes are required for motility and chemotaxis in *Escherichia coli*: J. Bacteriol. 175: 7711-7714, 1993.
46. Killian, J. A., Koorengevel, M. C., Bouwstra, J. A., Gooris, G., **Dowhan, W.**, de Kruijff, B.: Effect of divalent cations on lipid organization of cardiolipin isolated from *E. coli* strain AH930. Biochim. Biophys. Acta 1189: 225-232, 1994.
47. Reitveld, A. G., Chupin, V. V., Koorengevel, M. C., Wienk, L. J., **Dowhan, W.**, and de Kruijff, B.: Regulation of lipid polymorphism is essential for the viability of phosphatidylethanolamine deficient *Escherichia coli* cells. J. Biol. Chem. 269: 28670-28675, 1994.
48. Bogdanov, M. and **Dowhan, W.**: Phosphatidylethanolamine is required for *in vivo* function of the membrane associated lactose permease of *Escherichia coli*. J. Biol. Chem. 270: 732-739, 1995.
49. Xia, W. and **Dowhan, W.**: *In vivo* evidence for the involvement of anionic phospholipids in initiation of DNA replication in *Escherichia coli*. Proc. Nat'l. Acad. Sci., USA 92: 783-787, 1995.
50. Xia, W. and **Dowhan, W.**: Phosphatidylinositol cannot substitute for phosphatidylglycerol in supporting cell growth of *Escherichia coli*. J. Bacteriol. 177: 2926-2928, 1995.
51. Troop, B. E., Ragolia, L, Xia, W., **Dowhan, W.**, Milkman, R., Rudd, K. E., Ivanisevic, R., and Savic, J.: Identity of the *Escherichia coli* *cls* and *nov* genes. J. Bacteriol. 177: 5155-5157, 1995.
52. Shen, H., Heacock, P. N., Clancey, C. J., and **Dowhan, W.**: The *CDS1* gene encoding CDP-diacylglycerol synthase in *Saccharomyces cerevisiae* is essential for cell growth. J. Biol. Chem. 271: 789-795, 1996.
53. Dryden, S. C. and **Dowhan, W.**: Isolation and expression of the *Rhodobacter sphaeroides* gene (*pgsA*) encoding phosphatidylglycerophosphate synthase. J. Bacteriol. 178: 1030-1038, 1996.
54. Bogdanov, M., Sun, J., Kaback, H. R. and **Dowhan, W.**: A phospholipid acts as a chaperone in assembly of a membrane transport protein. J. Biol. Chem. 271: 11615-11618, 1996.
55. Shen, H. and **Dowhan, W.**: Reduction of CDP-diacylglycerol synthase activity results in the excretion of inositol by *Saccharomyces cerevisiae*. J. Biol. Chem. 271: 29043-29048, 1996.
56. Dillon, D. A., Wu, W.-I., Riedel, B., Wissing, J. B., **Dowhan, W.**, and Carman, G. M.: The *Escherichia coli* *pgpB* gene encodes for diacylglycerol pyrophosphate phosphatase. J. Biol. Chem. 271: 30548-30553, 1996.
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32. **Dowhan, W.** and Bogdanov, M.: "Lipid-assisted membrane protein folding and topogenesis." IN *The Structure of Biological Membranes* (ed. Philip Yeagle), 3rd Ed., CRC Press, New York, 2012, pp 177-201.
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36. **Dowhan, W.**, Nikaido, H., Stubbe, J., Kozarich, J. W., Wickner, W. T., Russell, D. W., Garrett, T. A., Brozek, K., and Modrich, P. Christian Raetz: Scientist and Friend Extraordinaire. *Annu Rev. Biochem* 82: 1-24 (2013) PMID 3198341.
37. Mileykovskaya, E. and **Dowhan, W.:** Cardiolipin-dependent formation of mitochondrial respiratory supercomplexes. *Chem. Phys. Lipids* 179: 42-48 (2014) PMID 3947694
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39. **Dowhan, W.:** Lipids and extracellular material. *Annu Rev. Biochem.* 83: 45-49 (2014). PMID 24606141
40. **Dowhan, W.**, Vitrac, H., and Bogdanov, M.: May the Force Be With You: Unfolding Lipid-Protein Interactions Single-Molecule Force Spectroscopy. *Structure*, 23:612-14 (2015) PMID 25862933
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42. Mileykovskaya, E. and **Dowhan, W.:** The Role of Cardiolipin in Mitochondrial Supercomplex Assembly. IN *Redox Proteins in Supercomplexes and Signalosomes* (Louro, R.O. and Diaz-Moreno, I., Eds.), Lumina Datamatics, Puducherry, India, 81-105 (2015)
43. **Dowhan W.**, Synthesis and Structure of Glycerolipids. IN: *Encyclopedia of Cell Biology*, Ralph A Bradshaw and Philip D Stahl (Editors-in-Chief), Vol 1, Waltham, MA, Academic Press, pp. 160-172 (2016)
44. **Dowhan, W.**, Bogdanov, M., Mileykovskaya, E. and Vitrac, H.: Functional Roles of Individual Membrane Phospholipids in *Escherichia coli* and *Saccharomyces cerevisiae*. In: Otto Geiger (Ed) *Biogenesis of Fatty Acids, Lipids and Membranes* (Otto Geiger) [doi:10.1007/978-3-319-43676-0_36-1](https://doi.org/10.1007/978-3-319-43676-0_36-1) (2017) pp. 1-22
45. **Dowhan, W.:** Understanding Phospholipid Function: Why are there so many Lipids? *J. Biol. Chem.* 292: 10755-66 (2017) PMID 5491763

OTHER PROFESSIONAL COMMUNICATIONS (RECENT INVITED LECTURESHIPS)

Emory University School of Medicine, Physiology Dept., January, 2005.

ASBMB Avanti Award in Lipids Plenary Lecture, San Diego, CA, April, 2005.

Gordon Research Conference on "Protein Transport Across Membranes", Colby-Sawyer, NH, June, 2005

Royal Netherlands Academy of Arts and Sciences Colloquium on "Lipids moving center stage", Plenary Speaker, Amsterdam, The Netherlands, October, 2005.

Institute of Membrane Biology, University of Amsterdam, The Netherlands, October, 2005.

University of Basel, Biocenter, Basel, Switzerland, October, 2005
University of Michigan, Department of Biochemistry, Ann Arbor, MI, October, 2005
University of Pennsylvania, Department of Microbiology, Philadelphia, PA, October, 2005
University of Oregon Health Sciences Center, Department of Biochemistry, Portland, OR, March, 2006.
ASBMB meeting Symposium Organizer, Session Chair and Plenary Speaker, San Francisco, CA, April, 2006
University of Arizona, Department of Biochemistry, Tucson, AZ, April, 2006.
Gordon Research Conference, Bacterial Cell Surfaces, Plenary Speaker, Colby-Sawyer, NH, June, 2006
FEBS meeting on "New Concepts in Lipidology: From Lipidomics to Disease", Plenary Speaker, The Netherlands, October, 2006
International Symposium on "Membrane Proteins and Cellular Dynamics", Plenary Speaker, Osnabruk, Germany, November, 2006
University of Tennessee, Department of Biochemistry, Knoxville, TN, February, 2007
Keystone Symposium on Bioactive Lipids, Plenary Speaker, Taos, NM, February, 2007
John Innes Centre Symposium Series, Plenary Speaker, Norwich, UK, June, 2007
Gordon Research Conference on Molecular and Cellular Biology of Lipids, Plenary Speaker, Waterville, NH, July, 2007
Weill Medical College of Cornell University, Department of Physiology and Biophysics, New York, New York, November, 2007
University of Guelph, Department of Molecular and Cellular Biology, Guelph, Canada, December, 2007
University of Texas Medical School, Department of Medicine, Houston, TX, January, 2008
FASEB Summer Research Conference "Molecular Biophysics of Cellular Membranes", Vermont, July, 2008.
MD Anderson, Biochemistry and Molecular Biology, Houston. January, 2009
Biophysics Society National meeting, Chair of session and speaker, Boston, March, 2009.
Deuel Conference on Lipids, Borrego Springs, CA, March 2009.
University of Texas Health, Department of Biological Sciences, El Paso, TX, September 2009
University of Wisconsin, Department of Biochemistry, Madison, WI, November, 2009
PepCon conference, Beijing, China, March 2010
Jiangnan University, Biotechnology and Food Science, Wuxi, China, March 2010
LIPID MAPS Symposium, La Jolla, CA, May, 2010.
Keynote Speaker, Microbial Lipid Conference, Vienna, Austria, May 2010.
Graz University of Technology, Institute of Biochemistry, Graz, Austria, May 2010
University of Barcelona, Department of Physical Chemistry, Barcelona, Spain, September 2010
van Deenen Lecturer at the 51st International Conference on the Bioscience of Lipids (ICBL) in Spain, September 2010
Keynote Speaker, Argentinean Biophysics Society meeting, Salta, Argentina, October 2010
University of California, Department of Microbiology, Berkeley, CA, November, 2010
Keynote Speaker, 2010 NIH RoadMap Meeting, La Jolla, CA, November 2010
British Biochemical Society, Symposium on Advances in Membrane Biochemistry, Cambridge, England, January 2011
Gordon Research Conference on Molecular and Cellular Biology of Lipids, Plenary Speaker, Waterville, NH, July, 2011

University of California San Diego, Department of Pharmacology, La Jolla, CA, August 2011.

Weizmann Institute, Biochemistry Department, Rehovot, Israel October 2011

Ben Gurion University, Life Sciences Department, Be'er Sheva, Israel October 2011

Gordon Research Conference on Protein Transport Across Cell Membranes, Galveston, TX, March 2012

Session Chair and Speaker, Molecular Genetics of Bacteria and Phages Meeting, Cold Spring Harbor, NY, August, 2012

State University of New York, Department of Biochemistry, Stony Brook, NY, August, 2012.

University of Texas Medical Branch, Department of Biochemistry, Galveston, TX October, 2012

Keynote Speaker, Biophysics Society meeting on Lipid-protein Interactions in Membranes: Implications for Health and Disease, Hyderabad, India, November, 2012

Washington University, Department of Biochemistry and Molecular Biophysics, St. Louis, Mo, March 2013

FinMit International Summer School, 3 lecture series on Mitochondrial Lipids, Finland, June 1-8, 2013

ICBL pre-meeting on Cardiolipin and Mitochondrial Function, Bari, Italy, September 17, 2013

Biophysical Society Membrane Structure and Assembly Symposium, San Francisco, CA, February 15, 2014

Protein Society Symposium, San Diego, CA July 28, 2014

Lecturer in "Advances in Lipid-Protein Interactions: Understanding its Importance and Modulation in Cell Physiology", Cuernavaca, Mexico, August 18-22, 2014

Stockholm University, Department of Biochemistry and Biophysics, Stockholm, Sweden, October, 2014

University of Utrecht, Institute of Biomembranes, Utrecht, Netherlands, October, 2014

Stockholm University, Science of Life Laboratory, Stockholm, Sweden, December, 2014

University of Texas Southwestern Medical School, Department of Physiology, February, 2015

Gordon Research Conference Membrane Protein Folding, Waltham, MA, June 2015

Texas Tech Health Science Center, Lubbock, TX December, 2015

Frankfurt Collaborative Research Center, Frankfurt, Germany, April 2016

Universite Libre de Bruxelles, Brussels, Belgium, May, 2016 (cancelled due to security)

Lipid Maps Symposium, La Jolla, CA May 2016

Ronald Kaback Symposium, NIH, Bethesda, MD June, 2016

Wayne State University Lipid Symposium, Detroit, MI, May 2017