

# DAVID H. THOMPSON

## Professor of Chemistry

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### EDUCATION

<b>B.S.</b> , Chemistry	<b>University of Missouri, Columbia</b> <i>Research Advisor: John P. McCormick</i>	1978
<b>B.A.</b> , Biology	<b>University of Missouri, Columbia</b>	1978
<b>Ph.D.</b> , Organic Chemistry	<b>Colorado State University</b> <i>Thesis Advisor: Louis S. Hegedus</i> <i>Dissertation: Mechanistic Study of <math>\pi</math>-Methallyl Nickel Bromide Cross Coupling Reactions with Organic Halides</i>	1984

### POSITIONS HELD

Postdoctoral Research Associate, Oregon Graduate Institute <i>Research Advisor: James K. Hurst</i>	1984-1987
Assistant Professor, Oregon Graduate Institute	1987-1994
Visiting Professor, University of British Columbia-Biochemistry	1992
Associate Professor, Purdue University	1994-2001
Professor, Purdue University	2001-present
Visiting Professor, University of Florida-Pharmaceutics	2003
Visiting Professor, Osaka University-Department of Applied Chemistry	2003
Visiting Professor, Japan Advanced Institute of Science & Technology	2005

### DISTINCTIONS

Colorado Fellowship	1983-1984
Fall MRS Gold Paper Award	1999
Special Issue Editor, <i>Advanced Drug Delivery Reviews</i>	2001
Head, Organic Division, Purdue University	2003-2007
Top Ten Outstanding Teachers in the College of Science, Purdue U.	2004-2005
Chair, <i>Chemistry of Supramolecules &amp; Assemblies</i> Gordon Conference	2005
JSPS Fellow, Japan Society for the Promotion of Science	2006
Purdue University Faculty Scholar	2006-2011

### GOVERNMENT SERVICE & ADVISORY BOARDS

Editorial Advisory Board, <i>Langmuir</i>	2000-2005
Editorial Advisory Board, <i>Bioconjugate Chemistry</i>	2004-present
Editorial Advisory Board, <i>Nanomedicine: An Interdisciplinary Review</i>	2005-present
NIH Panelist, P50 <i>Cancer Imaging</i> Program	1999
NSF Reviewer, <i>IGERT</i> Program & ad hoc reviewer	1996-2000
NIH ad hoc reviewer, <i>Bioorganic &amp; Natural Products Chemistry</i>	2001
NIH ad hoc reviewer, <i>Bioengineering &amp; Physiology</i>	2001-2005
NIH ad hoc reviewer, <i>Nanoscience &amp; Nanotechnology in Biology &amp; Medicine</i>	2004-2006
NIH Advisory Board, <i>Nanomedicine Development Center</i> Initiative	2004-2006
NIH Study Section Panelist, <i>Gene &amp; Drug Delivery</i>	2006-present

**RESEARCH INTERESTS**

Development of transiently-stable carrier systems for intracellular drug & gene delivery; supported membrane protein sensors; synthesis of hydrogels; 2D protein crystallization.

**PROFESSIONAL & SCHOLARLY ASSOCIATIONS**

American Association for the Advancement of Science; American Chemical Society (Organic and Colloid & Surface Science Divisions); American Society for Gene Therapy; Controlled Release Society; Materials Research Society

**PUBLICATIONS**

1. L. S. Hegedus & **D. H. Thompson**, "Reactions of Organic Halides with ( $\pi$ -Allyl)nickel Halide Complexes: A Mechanistic Study" *Journal of the American Chemical Society* **1985** *107*, 5663-5669.
2. J. K. Hurst & **D. H. Thompson**, "Mechanisms of Oxidation-Reduction Across Vesicle Bilayer Membranes: An Overview" *Journal of Membrane Science* **1986** *28*, 3-29.
3. J. K. Hurst, **D. H. Thompson** & J. S. Connolly, "Oxidative Quenching of Photoexcited ZnTPPS<sup>4-</sup> Ion by Dihexadecylphosphate Vesicle-Bound Viologens" *Journal of the American Chemical Society* **1987** *109*, 507-515.
4. J. K. Hurst & **D. H. Thompson**, "One-Electron Reduction of Dihexadecylphosphate-Bound Viologens by Pentacyanocobaltate Ions" *Inorganic Chemistry* **1987** *26*, 39-43.
5. **D. H. Thompson**, W. C. Barrette & J. K. Hurst, "One-Electron Reduction of Dihexadecylphosphate Vesicle-Bound Viologens by Dithionite Ions" *Journal of the American Chemical Society* **1987** *109*, 2003-2009.
6. M. J. Colaneri, L. Kevan, **D. H. Thompson** & J. K. Hurst, "Variation of Alkylmethylviologen Radical Cation-Water Interactions in Micelles and Vesicles from ESEM Spectroscopy: Effect of Alkyl Chain Length" *Journal of Physical Chemistry* **1987** *91*, 4072-4077.
7. T. Lu, T. M. Cotton, J. K. Hurst & **D. H. Thompson**, "A Raman and Surface-Enhanced Raman Study of Asymmetrically-Substituted Viologens" *Journal of Physical Chemistry* **1988** *92*, 6978-6985.
8. T. Lu, T. M. Cotton, J. K. Hurst & **D. H. Thompson**, "A Voltammetric Study of Asymmetric Viologen in an Organic Solvent, Aqueous Solution and Vesicle Systems" *Journal of Electroanalytical Chemistry* **1988** *246*, 337-347.
9. **D. H. Thompson** & J. K. Hurst, "Intermolecular Transmembrane Redox--Electron Tunneling or Molecular Diffusion?" in *Molecular Electronic Devices III*, F. L. Carter, R. Siatkowski, and H. Wohltjen, Eds., Elsevier, Amsterdam, **1988**, pp. 413-425.
10. B. C. Patterson, **D. H. Thompson** & J. K. Hurst, "Methyl Viologen-Mediated Oxidation-Reduction Across Dihexadecylphosphate Vesicles Involves Transmembrane Diffusion" *Journal of the American Chemical Society* **1988** *110*, 3656-3657.
11. B. C. Patterson, **D. H. Thompson** & J. K. Hurst, "Pathways of Transmembrane Redox Reactions for Dihexadecylphosphate Vesicle-Bound Viologens" in *Molecular Electronics--Science and Technology*, Aviram, A., Ed., Engineering Foundation Publications, New York, **1989**, pp. 385-392.
12. P. L. Camacho, E. Geiger, G. Vigh, R. Webster & **D. H. Thompson**, "Separation of the Enantiomeric Intermediates of Some Platelet-Activating Factor Analogues on a Naphthylalanine-Type Pirkle Column" *Journal of Chromatography* **1990** *506*, 611-616.
13. R. Humphry-Baker, **D. H. Thompson**, Y. Lei, M. Hope & J. K. Hurst, "Structural Investigations of Dihexadecylphosphate Small Unilamellar Vesicles" *Langmuir* **1991** *7*, 2592-2601.

14. J. M. Kim & **D. H. Thompson**, "Tetraether Bolaform Amphiphiles as Models of Archaeobacterial Membrane Lipids: Synthesis, Differential Scanning Calorimetry, and Monolayer Studies" *Langmuir* **1992** *8*, 637-644.
15. A. Heuer, D. Fink, V. Laraia, J. Arias, P. Calvert, K. Kendall, G. Messing, J. Blackwell, P. Rieke, **D. H. Thompson**, A. Wheeler, A. Veis & A. Caplan, "Innovative Materials Processing Strategies: A Biomimetic Approach" *Science* **1992** *255*, 1098-1105.
16. V. C. Anderson & **D. H. Thompson**, "Photoinduced Morphology Changes in Plasmalogen Liposomes Using Visible Light" in Macromolecular Assemblies, P. Stroeve & A. C. Balazs, Eds., *ACS Symposium Series* **1992** *493*, 154-170.
17. V. C. Anderson & **D. H. Thompson**, "Triggered Release of Hydrophilic Agents from Plasmalogen Liposomes Using Visible Light or Acid" *Biochimica et Biophysica Acta* **1992** *1109*, 33-42.
18. **D. H. Thompson** & J.-M. Kim, "Photoinduced Charge Transfer Studies in Bolaamphiphile-Gramicidin-Porphyrin Membranes" *MRS Symposium Proceedings, Macromolecular Host-Guest Complexes: Optical & Optoelectronic Properties and Applications* **1992** *277*, 93-98.
19. **D. H. Thompson**, K. Wong, R. Humphry-Baker, J. Wheeler, J. M. Kim & S. B. Rananavare, "Tetraether Bolaform Amphiphiles as Models of Archaeobacterial Membrane Lipids: Raman Spectroscopy, <sup>31</sup>P-NMR, X-Ray Scattering and Electron Microscopy" *Journal of the American Chemical Society* **1992** *114*, 9035-9042.
20. **D. H. Thompson**, J.-M. Kim & C. DiMeglio, "Photoinduced Charge Transfer Properties of Bolaamphiphile Membrane-Gramicidin Diad and Triad Composites" *SPIE Proceedings, Organic and Biological Optoelectronics* **1993** *1853*, 142-147.
21. P. L. Camacho-Torralba, G. Vigh & **D. H. Thompson**, "High Performance Chiral Displacement Chromatographic Separations in the Normal Phase Mode. Part 1. Retention and Adsorption Studies of Potential Displacers Developed for the Pirkle-Type Naphthylalanine Silica Stationary Phase" *Journal of Chromatography* **1993** *641*, 31-38.
22. P. L. Camacho-Torralba, M. D. Beeson, G. Vigh & **D. H. Thompson**, "High Performance Chiral Displacement Chromatographic Separations in the Normal Phase Mode. Part 2. Separation of the Enantiomers of 1,2-O-Dihexadecyl-*rac*-glycerol-3-O-(3,5-dinitrophenyl)carbamate Using the Pirkle-Type Naphthylalanine Silica Stationary Phase" *Journal of Chromatography* **1993** *646*, 259-266.
23. **D. H. Thompson**, C. B. Svendsen, C. DiMeglio & V. C. Anderson, "Synthesis of Chiral Diether and Tetraether Phospholipids. Regiospecific Ring Opening of Epoxides Derived from Asymmetric Epoxidation" *Journal of Organic Chemistry* **1994** *59*, 2945-2955.
24. Y. Rui & **D. H. Thompson**, "Stereocontrolled Synthesis of Plasmalogen-Type Lipids from Glycerol Ester Precursors" *Journal of Organic Chemistry* **1994** *59*, 5758-5762.
25. **D. H. Thompson**, O. V. Gerasimov, J. J. Wheeler & V. C. Anderson, "Triggerable Plasmalogen Liposomes: Improvement of System Efficiency" *Biochimica et Biophysica Acta* **1996** *1279*, 25-34.
26. Y. Rui & **D. H. Thompson**, "Efficient Stereoselective Synthesis of Plasmenylcholines" *Chemistry-A European Journal* **1996** *2*, 1505-1508.
27. **D. H. Thompson**, Y. Rui & O. V. Gerasimov, "Triggered Release from Liposomes Mediated by Physically- and Chemically-Induced Phase Transitions" *Surfactant Science Series: Vesicles*, M. Rosoff, Ed.; Marcel Dekker: New York, NY, **1996**, pp. 679-746.
28. O. Gerasimov, A. Schwan & **D. H. Thompson**, "Acid-Catalyzed Plasmenylcholine Hydrolysis and its Effect on Bilayer Permeability: A Quantitative Study" *Biochimica et Biophysica Acta* **1997** *1324*, 200-214.

29. E. Barklis, J. McDermott, S. Wilkens, E. Schabtach, M. Schmid, S. Fuller, S. Karanjia, Z. Love, R. Jones, X. Zhao, Y. Rui & **D. H. Thompson**, "Structural Analysis of Membrane-Bound Retrovirus Capsid Proteins" *EMBO Journal* **1997** *16*, 1199-1213.
30. I. Szleifer, O. V. Gerasimov & **D. H. Thompson**, "Spontaneous Liposome Formation Induced by Grafted Poly(ethylene oxide) Layers: Theoretical Prediction and Experimental Verification" *Proceedings of the National Academy of Sciences* **1998** *95*, 1032-1037.
31. N. Wymer, O. V. Gerasimov & **D. H. Thompson**, "Cascade Liposomal Triggering: Light-Induced  $\text{Ca}^{2+}$  Release from Plasmemylcholine Liposomes Triggers  $\text{PLA}_2$ -Catalyzed Hydrolysis and Contents Leakage from DPPC Liposomes" *Bioconjugate Chemistry* **1998** *9*, 305-308.
32. E. Barklis, J. McDermott, S. Wilkens, S. Fuller, & **D. H. Thompson**, "Organization of HIV-1 Capsid Proteins on a Lipid Monolayer" *Journal of Biological Chemistry* **1998** *273*, 7177-7180.
33. S. Svenson & **D. H. Thompson**, "Facile and Efficient Synthesis of Bolaamphiphilic Tetraether Phosphocholines" *Journal of Organic Chemistry* **1998** *63*, 7180-7182.
34. Y. Rui, S. Wang, P. S. Low & **D. H. Thompson**, "Diplasmemylcholine-Folate Liposomes: An Efficient Vehicle for Intracellular Drug Delivery" *Journal of the American Chemical Society* **1998** *120*, 11213-11218.
35. O. V. Gerasimov, N. Wymer, D. Miller, Y. Rui, & **D. H. Thompson**, "Intracellular Delivery of Liposomal Contents Using pH- and Light-Activated Plasmemyl-Type Liposomes" S.M. Dinh, J.D. DeNuzzio, A.R. Comfort, Eds., *ACS Symposium Series* **1999** *728*, 164-178.
36. J. A. Boomer & **D. H. Thompson**, "Synthesis of Acid-Labile Diplasmemyl Lipids for Drug and Gene Delivery Applications" *Chemistry and Physics of Lipids* **1999** *99*, 145-153.
37. A. Patwardhan & **D. H. Thompson**, "Efficient Synthesis of 40- and 48-Membered Tetraether Macrocyclic Bisphosphocholines" *Organic Letters* **1999** *1*, 241-244.
38. O. Gerasimov, J. Boomer, M. Qualls & **D. H. Thompson**, "Cytosolic Drug Delivery Using pH- and Light-Sensitive Liposomes" *Advanced Drug Delivery Reviews* **1999** *38*, 317-338.
39. C. DiMeglio, S. B. Ranavavare, S. Svenson & **D. H. Thompson**, "Phosphocholine Analogs of Bolaamphiphiles: Phase Structure and Mesomorphism" *Langmuir* **2000** *16*, 128-133.
40. A. Patwardhan & **D. H. Thompson**, "Novel Flexible and Rigid Tetraether Acyclic and Macrocyclic Bisphosphocholines: Synthesis and Monolayer Properties" *Langmuir* **2000**, *16*, 10340-10350.
41. J. Shin, M. M. Qualls, J. A. Boomer, J. Robarge & **D. H. Thompson**, "An Efficient New Route to Plasmemyl-Type Lipids: Synthesis and Cytotoxicity of a Plasmemylcholine Analog of the Antitumor Ether Lipid ET-18- $\text{OCH}_3$ " *Journal of the American Chemical Society* **2001** *123*, 508-509.
42. M. M. Qualls & **D. H. Thompson**, "Synergistic Phototoxicity of Chloroaluminum Phthalocyanine Tetrasulfonate Delivered via Acid-Labile Diplasmemylcholine-Folate Liposomes" *International Journal of Cancer* **2001** *93*, 384-392.
43. J.-M. Kim & **D. H. Thompson**, "Acid- & Oxidatively-Labile Vinyl Ether Lipids: Synthesis & Drug Delivery Applications" *Surfactant Science Series: Reactions & Synthesis in Surfactant Systems*, J. Texter, Ed.; Marcel Dekker: New York, NY, 2001, pp. 145-154.
44. J. H. Collier, B.-H. Hu, J. W. Ruberti, Z.-Y. Zhang, P. Shum, **D. H. Thompson** & P. B. Messersmith, "Thermally and Photochemically Triggered Self-Assembly of Peptide Hydrogels" *Journal of the American Chemical Society* **2001** *123*, 9463-9464.
45. J.-M. Kim, J. Shin, P. Shum & **D. H. Thompson**, "Acid- and Oxidatively-Labile Vinyl Ether Surfactants: Synthesis and Drug Delivery Applications" *Journal of Dispersion Science and Technology* **2001** *22*, 399-407.

46. P. Shum, J.-M. Kim & **D. H. Thompson**, "Phototriggering of Liposomal Drug Delivery Systems" *Advanced Drug Delivery Reviews* **2001** 53, 273-284.
47. Z.-Y. Zhang, P. Shum, M. Yates, P. B. Messersmith & **D. H. Thompson**, "Formation of Fibrinogen-Based Hydrogels Using Phototriggerable Dipalmitoylcholine Liposomes" *Bioconjugate Chemistry* **2002** 13, 640-646.
48. J. A. Boomer, **D. H. Thompson** & S. Sullivan, "Formation of Plasmid-Based Transfection Complexes with an Acid-Labile Cationic Dipalmitoyl Lipid: *In Vitro* and *In Vivo* Gene Transfer" *Pharmaceutical Research* **2002** 19, 1289-1298.
49. J. Shin, O. Gerasimov & **D. H. Thompson**, "Facile Synthesis of Plasmalogens via Barbier-type Reactions of Vinyl Dioxolanes with Alkyl Halides in LiDBB Solution" *Journal of Organic Chemistry* **2002** 67, 6503-6508.
50. M. Rovira-Bru, **D. H. Thompson** & I. Szleifer, "Size and Structure of Spontaneously Forming Liposomes in Lipid:PEG-Lipid Mixtures" *Biophysical Journal* **2002** 82, 2419-2439.
51. J.-C. Kim, K. Park & **D. H. Thompson**, "Synthesis of Tris(amino acid)-Substituted  $\alpha$ -Cyclodextrins Derivatives", *Macromolecular Chemistry Symposium* **2002** 15, 303-312.
52. N. Bergstrand, M. C. Arfvidsson, J.-M. Kim, **D. H. Thompson** & K. Edwards, "Interactions Between pH-Sensitive Liposomes and Model Membranes", *Biophysical Chemistry* **2003** 104, 361-379.
53. J. A. Boomer, H. D. Inerowicz, Z.-Y. Zhang, N. Bergstrand, K. Edwards, J.-M. Kim & **D. H. Thompson**, "Acid-Triggered Release from Sterically-Stabilized Fusogenic Vesicles: A Novel DePEGylation Strategy", *Langmuir* **2003** 19, 6408-6415.
54. J. Shin, P. Shum & **D. H. Thompson**, "Acid-Triggered Release via DePEGylation of DOPE Liposomes Containing Acid-Labile Vinyl Ether PEG-Lipids", *Journal of Controlled Release* **2003** 91, 187-200.
55. J. Shin & **D. H. Thompson**, "Direct Synthesis of Plasmalogens from Allyl Substituted Glycerols", *Journal of Organic Chemistry* **2003** 68, 6760-6766.
56. J. Shin & **D. H. Thompson**, "Intracellular Delivery of DNA and Proteins Using Vinyl Ether-Based Drug Delivery Vehicles" *ACS Symposium Series* **2003** 879, 50-60.
57. **D. H. Thompson**, H. D. Inerowicz, J. Groves & T. Sarna "Characterization of Plasmalogen Photooxidation Products", *Photochemistry and Photobiology* **2003** 78, 323-330.
58. H. Seong, W.-M. Choi, J.-C. Kim, **D. H. Thompson** & K. Park, "Preparation of Liposomes With Glucose Binding Sites: Liposomes Containing Di-branched Amino Acid Derivatives", *Biomaterials* **2003** 24, 4487-4493.
59. M. D. Kennedy, K. N. Jallad, **D. H. Thompson**, P. S. Low & D. Ben-Amotz, "Optical Imaging of Folate-Receptor Positive Tissues and Tumors Targeted with a Folate-Fluorescein Conjugate", *Journal of Biomedical Optics* **2003** 8, 636-641.
60. J.-M. Kim, A. Patwardhan, A. Bott & **D. H. Thompson**, "Preparation and Electrochemical Behavior of Gramicidin Bipolar Lipid Monolayer Membranes Supported on Gold Electrodes", *Biochimica et Biophysica Acta* **2003** 1617, 10-21.
61. **D. H. Thompson**, J. Shin, J. A. Boomer & J.-M. Kim, "Preparation of Plasmenylcholine Lipids and Plasmenyl-Type Liposome Dispersions", *Methods in Enzymology* **2004** 387, 153-168.
62. M. Zhou, S. Haldar, J. Franses, J.-M. Kim & **D. H. Thompson**, "Synthesis and Self-Assembly Properties of Acylated Cyclodextrins and Nitrilotriacetic Acid (NTA)-Modified Inclusion Ligands for Interfacial Protein Crystallization", *Supramolecular Chemistry* **2005** 17, 101-111.
63. C. Wang, S. Leffler, **D. H. Thompson** & C. A. Hrycyna, "A General Assay for S-adenosyl Methionine-dependent Enzymes Using a Thiol-activated Fluorescent Molecular Beacon", *Biochemical and Biophysical Research Communications* **2005** 331, 351-356.

64. H. B. Hodges, M. Zhou, J. L. Anderson, **D. H. Thompson** & C. A. Hrycyna, "Inhibition of Membrane-Spanning Metalloproteins by Hydrophobic Metal Chelators", *Bioconjugate Chemistry* **2005** *16*, 490-493.
65. G. Acharya, K. Park & **D. H. Thompson**, "Synthesis and Evaluation of  $\alpha$ -Cyclodextrin-Aldonamide Conjugates for D-Glucose Recognition", *Journal of Drug Delivery Science and Technology* **2006** *16*, 45-48.
66. V. Dixit, J. Van den Bossche, D. M. Sherman, **D. H. Thompson** & R. P. Andres, "Synthesis and Grafting of Thioctic Acid-PEG-Folate Conjugates onto Au Nanoparticles for Selective Targeting of Cancer Cells", *Bioconjugate Chemistry* **2006** *17*, 603-609.
67. T. Ooya, D. Inoue, H. S. Choi, Y. Kobayashi, S. Loethen, **D. H. Thompson**, Y. Ho Ko, K. Kim & N. Yui, "pH-Responsive Movement of Cucurbit[7]uril in a Dual Polypseudorotaxane: Contribution of Dimethyl  $\beta$ -Cyclodextrin", *Organic Letters* **2006** *8*, 3159-3162.
68. S. Loethen, T. Ooya, H. S. Choi, N. Yui & **D. H. Thompson**, "Synthesis, Characterization and pH-Triggered Dethreading of  $\alpha$ -Cyclodextrin Polyethylene Glycol Polyrotaxanes Bearing Cleavable Stoppers", *Biomacromolecules* **2006** *7*, 2501-2506.
69. C. Huguet, E. C. Hopmans, W. Febo-Ayala, **D. H. Thompson**, J. S. Sinninghe Damsté & S. Schouten, "An Improved Method to Determine the Absolute Abundance of Glycerol Dibiphytanyl Glycerol Tetraether Lipids", *Organic Geochemistry* **2006** *37*, 1036-1041.
70. R. Wampler, M. Zhou, **D. H. Thompson** & G. J. Simpson, "Mechanism of the Chiral SHG Activity of Bacteriorhodopsin Films", *Journal of the American Chemical Society* **2006** *128*, 10994-10995.
71. W. Febo-Ayala, S. Morera-Felix, C. A. Hrycyna & **D. H. Thompson**, "Functional Reconstitution of the Integral Membrane Enzyme, Isoprenylcysteine Carboxyl Methyltransferase, in Synthetic Bola-lipid Membrane Vesicles", *Biochemistry* **2006** *45*, 14683-14694.
72. W. Febo-Ayala, D. P. Holland, S. A. Bradley, **D. H. Thompson**, "Lateral Diffusion Coefficients of an Eicosanyl-Based Bisglycerophosphocholine Determined by PFG-NMR and FRAP", *Langmuir* **2007** *23*, 6276-6280.
73. E. Kang, J.-w. Park, S. McClellan, J.-M. Kim, D. P. Holland, G. U. Lee, E. Franses, K. Park, **D. H. Thompson**, "Specific Adsorption of Histidine-Tagged Proteins on Silica Surfaces Modified with  $\text{Ni}^{2+}$ :NTA-Derivatized Poly(ethylene glycol)", *Langmuir* **2007** *23*, 6281-6288.
74. J. Van den Bossche, J. Shin, **D. H. Thompson**, "Improved Plasmalogen Synthesis Using Organobarium Intermediates", *Journal of Organic Chemistry* **2007** *72*, 5005-5007.
75. S. Loethen, J.-M. Kim, **D. H. Thompson**, "Biomedical Applications of Cyclodextrin-Based Polyrotaxanes", *Journal of Macromolecular Science C-Polymer Reviews* **2007** *47*, 1-36.
76. **D. H. Thompson**, M. Zhou, J. Grey, H.-k. Kim, "Design, Synthesis and Performance of NTA-Modified Lipids as Templates for Histidine-Tagged Protein Crystallization", *Chemistry Letters* **2007** *36*, 956-975.
77. G. S. Longo, **D. H. Thompson**, I. Szleifer, "Stability and Phase Separation in Mixed Bola-Linear Lipid Layers" *Biophysical Journal* **2007** *93*, in press (October issue).

### **BOOK REVIEWS & OPINION ARTICLES**

1. "Comprehensive Organic Transformations: A Guide to Functional Group Preparations, 2<sup>nd</sup> Edition" (R. C. Larock, Wiley, 1999) *Pharmaceutical Research* **2001** *18*, 1386.
2. "Solid-Phase Organic Synthesis" (K. Burgess, Ed., Wiley, 2000) *Pharmaceutical Research* **2001** *18*, 1386-1387.
3. "Solid-Phase Synthesis and Combinatorial Technologies" (P. Seneci, Ed., Wiley, 2000) *Pharmaceutical Research* **2001** *18*, 1386-1387.

4. **D. H. Thompson**, *Nature-Materials* **2002**, *1*, 214-215; News & Views article based on "Active Transport of Ca<sup>2+</sup> by an Artificial Photosynthetic Membrane" *ibid*, pp. 398-401.

## **PATENTS**

1. U. S. Patent No. 5,277,913 (Issued 1/11/94): "Liposomal Delivery System With Photoactivatable Triggered Release." (Japanese Patent No. 502261/95)
2. U.S. Patent No. 6,979,460 (Issued 12/27/05): "Vinyl Ether Lipids with Cleavable Hydrophilic Headgroups"
3. PCT US02/31772: "Device and Bioanalytical Method Utilizing Asymmetric Biofunctionalized Membrane"

## **CONFERENCES ORGANIZED**

American Chemical Society Symposium: "Intelligent Materials & Novel Concepts for Controlled Release Technology: Liposome Technology", 4/13-18/97, San Francisco, CA.

Materials Research Society Symposium: "Materials Science of Phospholipid Assemblies", 11/29-12/3/99, Boston, MA.

Gordon Research Conference, *Chemistry of Supramolecules and Assemblies*, 6/12-6/17/05, Colby College, Waterville, ME; [www.grc.uri.edu/programs/2005/supramol.htm](http://www.grc.uri.edu/programs/2005/supramol.htm).

## **INVITED PRESENTATIONS**

FASEB Archaeobacteria Research Meeting, Williamsburg, VA, 10/24/89, Lecture.

Oregon Materials Symposium, 5/9/92, Lecture.

GRC: *Chemistry of Supramolecules & Assemblies*, 7/5/93, Discussion Leader.

GRC: *Chemistry of Supramolecules & Assemblies*, 7/28/95, Lecture.

American Oil Chemist's Society, *Gene Therapy Symposium*, 4/30/96, Lecture.

NSF Workshop on Physical Organic Chemistry, Whidbey Island, WA, 6/96, Lecture.

9<sup>th</sup> Int'l Symp. on *Molecular Recognition and Inclusion*, Lyon, France, 9/7-12/96, Lecture.

*Artificial Self-Assembling Systems for Gene Delivery*, Coronado, CA, 11/16/96, Lecture.

ACS Symposium: *Intelligent Materials for Drug Delivery*, SF, CA, 4/13-18/97, Lecture.

1<sup>st</sup> Int'l Symp. on *Ordered Proteins at Interfaces*, U. Washington, 8/17-19/97, Lecture.

ACS Symposium: *Synthetic Design and Characterization of Surfaces & Interfaces*, Las Vegas, NV 9/7-11/97, Lecture.

Ohio State University, Department of Chemistry, 1/29/98

*Renaissance in Dermatology*, Montecatini, Italy, 3/25-28/98, Lecture.

6<sup>th</sup> Int'l *Liposome Research Days* Conference, Isle d'Hyeres, France, 5/28-31/98, Lecture.

1<sup>st</sup> Int'l *Supramolecular Chemistry Conference*, Zakopane, Poland, 9/27-10/2/98, Lecture.

University of Utrecht-Department of Pharmaceutics, Utrecht, Holland, 10/6/98, Lecture.

Eindhoven University-Department of Chemistry, Eindhoven, Holland, 10/7/98, Lecture.

1<sup>st</sup> Int'l *Academy of Cosmetic Dermatology*, St. Julian, Malta, 1/27-31/99, Lecture.

*Structure and Design of Synthetic Gene Carriers*, San Francisco, CA, 2/24-26/99, Lecture.

*Bürgenstock Conference on Stereochemistry*, Burgenstock Switzerl., 4/25-30/99, Poster.

GRC: *Chemistry of Supramolecules and Assemblies*, 8/1-6/99, Discussion Leader.

ACS Symposium: *Novel Surfactants—Synthesis, Properties, and Applications*, New Orleans, LA, 8/22-26/99, Lecture.

IUPUI Physics Colloquium, 9/16/99

National Institute of Standards & Technology, 10/19/99, Lecture.

ARO Workshop, *Templated Nanoscale Synthesis and Reactivity*, 10/20-21/99, Lecture.

University of Toronto-Dept. Medical Biophysics & Biochemistry, 12/9/99, PENCE Lecture.

GRC: *Drug Carriers in Medicine & Biology*, 2/20-25/00, Lecture.

Liposome Research Days, Napa, CA, 4/12-15/00, Lecture.  
Central Regional ACS Meeting Symposium, Cincinnati, OH, 5/16-19/00, Lecture.  
NIH Workshop, *Nanoscience & Nanotechnology*, 6/25-26/00, Poster.  
XVIII IUPAC Symposium on Photochemistry, Dresden, Germany, 7/22-25/00, Poster.  
10<sup>th</sup> Int'l Conf. on Colloid and Interfacial Science, Bristol, England, 7/25-28/00, Lecture.  
NSF Workshop on Materials Chemistry, 10/12-15/00, Lecture.  
Washington State University-Department of Chemistry, 11/27/00, Lecture.  
North Carolina State University-Department of Chemistry, 1/29-30/01, Lecture.  
Particles 2001, Orlando, FL, 2/24-28/01, Lecture.  
Antioch College-Department of Chemistry, 3/16/01, Lecture.  
*Interface of Biology & Materials Science*, Purdue MATCON Symposium, 3/28/02, Lecture.  
ACS Symposium: *Drug Delivery Systems*, Orlando, FL, 4/7-9/02, Lecture.  
Particles 2002, Orlando, FL, 4/21-23/02, Keynote Lecture.  
Bowling Green State University-Department of Chemistry, 5/1/02, Lecture.  
ACS Symposium: *Polymeric Bioconjugates*, Boston, MA, 8/22/02, Lecture.  
Elmhurst College-Department of Chemistry, 9/18/02, Lecture.  
*2<sup>nd</sup> Conf. on Tumor Targeted Drug Delivery*, National Cancer Institute, 9/24/02, Lecture.  
Brown University-Department of Chemistry, 3/7/03, Lecture.  
University of Florida-Department of Pharmaceutics, 4/24/03, Lecture.  
University of Wisconsin-Department of Pharmacy, 5/6/03, Lecture.  
Colorado State University-Department of Chemistry, 5/10/03, Lecture.  
GRC: *Bioorganic Chemistry*, 6/19/03, Lecture.  
GRC: *Chemistry of Supramolecules & Assemblies* 7/7/03, Discussion Leader.  
ACS Symposium: *Polymeric Drug Delivery* Symposium, New York, NY, 9/7/03, Lecture.  
11<sup>th</sup> Int'l Conf. on Surface & Colloid Science, Iguassu Falls, Brazil, 9/15-19/03, Lecture.  
9<sup>th</sup> Int'l Kyoto Conference on New Aspects of Organic Chemistry, 11/12/03, Lecture.  
Osaka Prefecture University-Department of Applied Materials Science, 11/12/03, Lecture.  
Japan Advanced Institute of Science & Technology, School of Mat'ls Sci., 11/14/03, Lecture.  
Osaka Dental University, 11/17/03, Lecture.  
Osaka University-Department of Molecular Chemistry, 11/20-21/03, 3 Lectures.  
University of Victoria-Department of Chemistry, Victoria, BC, Canada, 1/5/04, Lecture.  
Rutgers University-Department of Chemistry, Departmental Colloquium.  
9<sup>th</sup> Liposome Research Days, Taipei, Taiwan, 5/12/04, Lecture.  
Purdue Nanomedicine Symposium, 7/26/04, Lecture.  
13<sup>th</sup> Int'l Symposium on Supramolecular Chemistry, Notre Dame, IN, 7/27/04, Lecture.  
ARO Workshop, Jackson Hole, WY, 10/7/04, Lecture.  
National Renewable Energy Laboratory, 1/24/05, Lecture.  
University of Colorado-Department of Chemistry, 1/25/05, Lecture.  
Max Planck Institute-Biophysics Institute, Frankfurt, Germany, 1/30/05, Lecture.  
University of Twente-Department of Chemistry, Enschede, Netherlands, 2/2/05, Lecture.  
ACS Symposium: *Surfactant Self-Assembly*, San Diego, CA, 3/13-3/17/05, 3 Lectures.  
MRS Symposia: *Nano-Bio Interface; Smart Surfaces; Dynamic Self-Assembly*, San Francisco, CA, 3/29-30/05, 3 Lectures.  
Scanning 2005, Monterrey, CA, 4/7/05, Lecture.  
University of North Carolina, Chapel Hill-Department of Chemistry, 4/28/05, Lecture.  
GRC: *Chemistry of Supramolecules & Assemblies*, 6/17/05, Discussion Leader.  
Particles 2005, San Francisco, CA, 8/15/05, Keynote Lecture.  
NanoTechnology 2005, JAIST-Komatsu, Japan, 9/15-9/19/05, Lecture.  
Illinois State University, Department of Chemistry, 1/27/06, Lecture.

Frontiers in Nanotechnology, Northwestern University, 2/23/06, Lecture.  
University of Arizona, Department of Chemistry, 2/27/06, Lecture.  
Particles 2006, 5/14/06, Keynote Lecture.  
Purdue University Cancer Center Retreat, 9/7/06, Lecture.  
Osaka University, Department of Applied Chemistry, 11/20/06, Lecture.  
Hokkaido University, Department of Pharmaceutical Sciences, 11/22/06, Lecture.  
Nara Advanced Institute of Science & Technology, School of Chem. Sci., 11/27/06, Lecture.  
Osaka University, Department of Polymer Science, 11/28/06, Lecture.  
Japan Advanced Institute of Science & Technology, School of Mat'ls Sci., 11/29/06, Lecture.  
RIKEN, 12/4/06, Lecture.  
University of Tokyo-Hongo, 12/6/06.  
Tokyo Institute of Technology, 12/7/06.  
33<sup>rd</sup> Symposium on Main Group Chemistry, Fukuoka University, 12/9/06, Lecture.  
Kyushu University, Dept. of Chemistry & Biochemistry, 12/11/06, Lecture.  
Tokyo Medical & Dental University, Inst. of Biomaterials & Bioengr., 12/12/06, Lecture.  
Kyoto University, Graduate School of Engineering, 12/13/06, Lecture.  
Kyoto University, Graduate School of Human & Environmental Studies, 12/15/06, Lecture.  
National Meeting, American Oil Chemist's Society, Quebec City, Quebec, 5/14/07, Lecture.  
Steacie Institute for Molecular Science, NRC, Ottawa, Canada, 5/17/07, Lecture.