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### EDUCATION

1977 B. S. with Honors in Chemistry, Magna Cum Laude, Duke University.  
1981 Ph. D. in Physical Chemistry, Duke University.

### PROFESSIONAL BACKGROUND

2012- Ray and Mary Ingwersen Chair in Chemistry  
2009-2012 Joseph B. Platt Chair in Effective Teaching, Harvey Mudd College  
1993- Professor of Chemistry, Harvey Mudd College.  
1991 Visiting Research Scientist, Chemical Biodynamics Division, Lawrence Berkeley Laboratory, Berkeley, California.  
1989-1993 Associate Professor of Chemistry, Harvey Mudd College.  
1984-1989 Assistant Professor of Chemistry, Harvey Mudd College.  
1981-1984 NIH Postdoctoral Fellow, Laboratory of Chemical Biodynamics, U. California-Berkeley.

### COLLEGE SERVICE

2014- Faculty Representative to the Board of Trustees' Physical Plant and Campus Planning Committee  
2014-2019 Chair, Department of Chemistry, Harvey Mudd College  
2010-2013 Chair of the Faculty, Harvey Mudd College  
2010-2013 *Ex officio* Member, Harvey Mudd College Board of Trustees  
2010-2013 Faculty Representative to the Board of Trustees' Educational Planning Committee  
2011-2012 Co-chair, Search Committee for the Vice President of Academic Affairs and Dean of the Faculty  
2010-2011 Member, Search Committee for the Vice President of Advancement  
2009-2010 Chair, Faculty Budget Committee  
2009-2010 Faculty Representative to the Board of Trustees' Budget Committee  
2009 Keynote Speaker for Harvey Mudd College's Presentation Days: A Celebration of Student Research and Creative Activity  
2008-2010 Member, WASC Steering Committee for Harvey Mudd College's Reaccreditation Review  
2006-2008 Chair, Assessment Committee  
1999-2004 Chair, Curriculum Committee  
1996-1997 Member, Presidential Search Committee  
1995-1996 College Grievance Officer  
1992-1995 Chair, Research Committee  
1992-1993 Member, Search Committee for the Vice President of Student Affairs and Dean of Students  
1990-1996 Member, Claremont Colleges Faculty House Board of Governors  
1988-1989 Chair, Scholarly Standing Committee  
1987-1994 Director, Harvey Mudd College Department of Chemistry Summer Undergraduate Research Program

## **PROFESSIONAL SERVICE**

- 2013-18 Member, American Chemical Society, Committee on Professional Training
- 2012 Member, National Science Foundation Division of Chemistry Director Search Committee
- 2011-12 Member, Search Committee for the Executive Director of the Council on Undergraduate Research
- 2010-2014 Co-principal Investigator, NSF-CCLI-Phase 3 Project with the Council on Undergraduate Research: "Transformational Learning through Undergraduate Research: Comprehensive Support for Faculty, Institutions, State Systems and Consortia"
- 2009-2010 Member, National Science Foundation Division of Chemistry Committee of Visitors
- 2009-2010 Chair, Nominations Committee of the Council on Undergraduate Research
- 2008-2009 Chair, Council on Undergraduate Research Transformative Research Summit Steering Committee
- 2007-2008 President, Council on Undergraduate Research
- 2006-2012 Principal Investigator, NSF-ADVANCE-PAID Project: "Collaborative Research for Horizontal Mentoring Alliances"
- 2006-2010 Co-principal Investigator, NSF-CCLI-Phase 2 Project "A Workshop Initiative by the Council on Undergraduate Research to Establish, Enhance and Institutionalize Undergraduate Research"
- 2005-2009 Member, Executive Board, Council on Undergraduate Research
- 2005-2006 Secretary, Council on Undergraduate Research
- 2004-2006 Co-Chair, Council on Undergraduate Research 2006 National Conference
- 2004-2006 Member, Beckman Scholars Program Advisory Panel
- 2004-2005 Chair, Outreach Committee of the Council on Undergraduate Research
- 2003- Feature Editor, Journal of Chemical Education
- 2002-2003 Member, Steering Committee, NSF-sponsored Summit on Undergraduate Research Research
- 2001-2003 Chair of the Chemistry Division of the Council on Undergraduate Research
- 2001-2003 Member, Executive Board, Council on Undergraduate Research
- 2001- Member, Advisory Committee, NSF Center for Workshops in the Chemical Sciences
- 2000-2001 Member, Beckman Scholars Program Advisory Panel
- 1993-2008 Chemistry Division Councilor for the Council on Undergraduate Research

## **COMMUNITY SERVICE**

- 2006-2007 Member of the City of Claremont Committee on Aging
- 2004-2009 Member of the Joslyn Senior Center Successful Aging Committee
- 2004- Harvey Mudd College Liaison to Claremont Avenues for Lifelong Learning Program for senior auditors at the Claremont Colleges

## **HONORS AND AWARDS**

Council on Undergraduate Research Fellows Award, 2012; Council on Undergraduate Research Volunteer of the Year, 2010; Joseph B. Platt Chair in Effective Teaching, 2009-2012; Council on Undergraduate Research Volunteer of the Year, 2004; Henry T. Mudd Prize for Outstanding Service to Harvey Mudd College, 2003; Henry Dreyfus Teacher-Scholar Award, 1994; National Institutes of Health National Research Service Award, 1981-1984; James B. Duke Fellowship, 1980-81; Duke University Graduate Research Award, 1979-1980; American Chemical Society Centennial Scholarship, 1978; North Carolina Award for Graduate Study in Chemistry, 1977-78; National Science Foundation Graduate Fellowship Honorable Mention, 1977; Member of Sigma Xi, 1977; Member of Phi Beta Kappa, 1977; Member of Phi Lambda Upsilon, 1977; National Merit Scholarship, 1973-77; Dean's List, 1973-77.

## **RESEARCH INTERESTS**

- Applications of absorbance and fluorescence spectroscopy to supramolecular assemblies (e.g., micelles, reverse micelles, vesicles) and macromolecular host-guest systems (e.g., cyclodextrins, cucurbiturils, dendrimers).
- Spectroscopic delineation of binary and ternary phase diagrams
- Strategies to enhance the academic advancement of women in science and engineering

## **PROFESSIONAL MEMBERSHIPS**

American Chemical Society (Colloid and Surface Science, Physical Chemistry, and Chemical Education Divisions); Association of American Colleges and Universities Associate; Council on Undergraduate Research; Phi Beta Kappa; Society of the Sigma Xi.

## **COURSES TAUGHT**

- General Chemistry (now Chemistry in the Modern World) and Laboratory
- Physical Chemistry and Laboratory
  - Thermodynamics, Phase Equilibria, and Kinetics
  - Group Theory, Quantum Chemistry, and Spectroscopy
- Biophysical Chemistry
- Advanced Chemical Kinetics
- Advanced Thermodynamics
- Exploring the U.S. Scientific Enterprise
- Interdisciplinary Laboratory – First-year laboratory in chemistry, physics, and biology

## PUBLICATIONS

### BOOKS

A Guide to Lasers in Chemistry, G. R. Van Hecke and K. K. Karukstis, Jones and Bartlett Publishers, Boston, 1998.

Chemistry Connections: The Chemical Basis of Everyday Phenomena, K. K. Karukstis and G. R. Van Hecke, Harcourt/Academic Press, San Diego, 2000; 2nd edition, Academic Press/Elsevier Science, 2003.

Developing and Sustaining a Research-Supportive Curriculum: A Compendium of Successful Practices, K. K. Karukstis and Timothy E. Elgren, eds., Council on Undergraduate Research, Washington, D. C., 2007.

Transformative Research at Predominantly Undergraduate Institutions, K. K. Karukstis and N. Hensel, eds., Council on Undergraduate Research, Washington, D. C., 2010.

Mentoring Strategies to Facilitate the Advancement of Women Faculty, K. K. Karukstis, B. L. Gourley, M. Rossi, L. L. Wright, eds., ACS Symposium Series, American Chemical Society, Washington, D.C., 2010.

Enhancing and Expanding Undergraduate Research: A Systems Approach, M. Malachowski, J. M. Osborn, K. K. Karukstis, E. L. Ambos, eds., New Directions in Higher Education, Jossey-Bass, San Francisco, 2015.

### PEER-REVIEWED JOURNAL ARTICLES AND BOOK CHAPTERS Undergraduate co-authors denoted by \*

1. P. Smith and K. K. Karukstis, "EPR Study of Radicals Derived from n-Propyl Formate," *Journal of Magnetic Resonance* 39, 137-140 (1980).
2. P. Smith, K. K. Karukstis, and S. M. Denning, "INDO-MO Study of Long-Range EPR Couplings in Aliphatic Formate Radicals," *Journal of Magnetic Resonance* 40, 91-103 (1980).
3. P. Smith and K. K. Karukstis, "INDO-MO Study of  $\gamma$ -CH Formyl-Proton Couplings in Aliphatic  $\alpha$ -Formyloxy Radicals," *Journal of Magnetic Resonance* 42, 208-221 (1981).
4. P. Smith and K. K. Karukstis, "INDO-MO Study of  $\delta$ -CH Formyl-Proton Couplings in Aliphatic  $\beta$ -Formyloxy Radicals," *Journal of Magnetic Resonance* 43, 122-136 (1981).
5. P. Smith and K. K. Karukstis, "EPR Study of Long-Range Acetyl-Proton Couplings in Aliphatic Acetoxy Radicals," *Journal of Magnetic Resonance* 46, 200-212 (1982).
6. P. Smith and K. K. Karukstis, "EPR Study of Radicals Derived from Olefinic Alcohols," *Journal of Magnetic Resonance* 46, 469-474 (1982).

7. P. Smith and K. K. Karukstis, "EPR Study of Long-Range Proton Couplings in Aliphatic Acetoxy and Alkoxy carbonyl Radicals," *Journal of Magnetic Resonance* 47, 8-18 (1982).
8. K. K. Karukstis and P. Smith, "INDO-MO Study of  $\delta$ -CH Formyl-Proton Couplings in Radicals from Vinyl Formate," *Journal of Magnetic Resonance* 48, 265-271 (1982).
9. K. K. Karukstis and K. Sauer, "Potentiometric Titration of Photosystem II Fluorescence Decay Kinetics in Spinach Chloroplasts," *Biochimica et Biophysica Acta* 722, 364-371 (1983).
10. K. K. Karukstis and K. Sauer, "Picosecond Fluorescence Kinetic Studies of Electron Acceptor Q Redox Heterogeneity," *Biochimica et Biophysica Acta* 725, 246-253 (1983).
11. P. Haworth, K. K. Karukstis, and K. Sauer, "Picosecond Fluorescence Kinetics in Spinach Chloroplasts at Room Temperature: Effects of Phosphorylation," *Biochimica et Biophysica Acta* 725, 261-271 (1983).
12. K. K. Karukstis and K. Sauer, "Photosynthetic Membrane Development Studies Using Picosecond Fluorescence Kinetics," *Biochimica et Biophysica Acta* 725, 384-393 (1983).
13. K. K. Karukstis and K. Sauer, "Fluorescence Kinetics of Chlorophyll in Photosynthetic Membranes (a review)," *Journal of Cell Biochemistry*. 23, 131-158 (1983).
14. K. Sauer, M. Boska, J. L. Casey, and K. K. Karukstis, "Photosystem 2 and Water Oxidation in Higher Plants," *Advances in Photosynthesis Research*, Vol. I (Sybesma, C., ed.), pp. 121-126, Nijhoff/Junke Publisher, The Hague, The Netherlands, 1984.
15. K. K. Karukstis and K. Sauer, "Fluorescence Decay Kinetics of Chlorophyll in Photosynthetic Membranes," in *Biosynthesis of the Photosynthetic Apparatus: Molecular Biology, Development, and Regulation*, UCLA Symposia on Molecular and Cellular Biology - New Series (Hallick, R., Staehelin, A., and Thornber P.), pp. 59-86, Alan R. Liss, New York, 1984.
16. K. K. Karukstis and K. Sauer, "Energy Transfer and Distribution in the Red Alga *Porphyra Perforata* Studied Using Picosecond Fluorescence Spectroscopy," *Biochimica et Biophysica Acta* 766, 141-147 (1984).
17. K. K. Karukstis and K. Sauer, "Organization of the Photosynthetic Apparatus of the Chlorina-f2 Mutant of Barley Using Chlorophyll Fluorescence Decay Kinetics" *Biochimica et Biophysica Acta* 766, 148-155 (1984).
18. B. R. Green, K. K. Karukstis, and K. Sauer, "Fluorescence Decay Kinetics of Photosystem I- and Photosystem II-Deficient Mutants of Corn," *Biochimica et Biophysica Acta* 767, 574-581 (1984).
19. B. S. Packard, K. K. Karukstis, and M. P. Klein, "Intracellular Dye Heterogeneity Determined by Fluorescence Lifetimes," *Biochimica et Biophysica Acta* 769, 201-208 (1984).

20. K. K. Karukstis and P. Smith, "INDO-MO Study of  $\delta$ -CH Acetyl-Proton Couplings in Aliphatic  $\alpha$ -Acetoxy Radicals," *Journal of Magnetic Resonance* 52, 288-293 (1984).
21. K. K. Karukstis and P. Smith, "Temperature Dependence of  $\delta$ -CH Proton Couplings in Radicals from Aliphatic Carboxylic Acid Esters," *Journal of Magnetic Resonance* 56, 288-293 (1984).
22. K. K. Karukstis and K. Sauer, "The Effects of Cation-Induced and pH-Induced Membrane Stacking on Chlorophyll Fluorescence Decay Kinetics," *Biochimica et Biophysica Acta* 806, 374-389 (1985).
23. P. Smith, P. J. Pomery, C. E. Mader, and K. K. Karukstis, "INDO-MO Study of  $\epsilon$ -CH Proton EPR Hyperfine Couplings in Radicals Derived from Allyl Ethyl Ethers," *Journal of Magnetic Resonance* 62, 182-194 (1985).
24. K. K. Karukstis and S. M. Gruber\*, "Effect of Trivalent Lanthanide Cations on Chlorophyll Fluorescence and Thylakoid Membrane Stacking", *Biochimica et Biophysica Acta* 851, 322-326 (1986).
25. K. K. Karukstis, S. C. Boegeman\*, S. M. Gruber\*, C. R. Monell\*, J. A. Fruetel\*, and M. H. Terris\*, "Multivariate Analysis of Photosystem II Fluorescence Quenching by Quinones", in *Progress in Photosynthesis Research* (J. Biggins, ed.), Vol. I, pp. 119-122, Martinus Nijhoff Publishers, Dordrecht, The Netherlands, 1987.
26. K. K. Karukstis, S. C. Boegeman\*, J. A. Fruetel\*, S. M. Gruber\*, and M. H. Terris\*, "Multivariate Analysis of Photosystem II Fluorescence Quenching by Substituted Benzoquinones and Naphthoquinones", *Biochimica et Biophysica Acta* 891, 256-264, 1987.
27. K. K. Karukstis, S. M. Gruber\*, J. A. Fruetel\*, and S. C. Boegeman\*, "Quenching of Chlorophyll Fluorescence by Substituted Anthraquinones," *Biochimica et Biophysica Acta* 932, 84-90, 1988.
28. K. K. Karukstis and C. R. Monell\*, "Reversal of Quinone-Induced Chlorophyll Fluorescence Quenching," *Biochimica et Biophysica Acta* 973, 124-130, 1989.
29. K. K. Karukstis, M. A. Berliner\*, C. J. Jewell\*, and K. T. Kuwata\*, "Competition of Anthraquinones for the QB Binding Domain," in *Current Research in Photosynthesis* (M. Baltscheffsky, ed.), Vol. I, pp. 579-582, Martinus Nijhoff Publishers, Dordrecht, The Netherlands, 1990.
30. K. K. Karukstis, "Chlorophyll Fluorescence as a Physiological Probe of the Photosynthetic Apparatus," in *Chlorophylls* (H. Scheer, ed.), pp. 769-795, CRC Press, Boca Raton, 1990.
31. K. K. Karukstis, M. A. Berliner\*, C. J. Jewell\*, and K. T. Kuwata\*, "Chlorophyll Fluorescence Measurements to Assess the Competition of Substituted Anthraquinones for the QB Binding Site," *Biochimica et Biophysica Acta* 1020, 163-168, 1990.

32. K. K. Karukstis, M. A. Berliner\*, and K. T. Kuwata\*, "Analysis of  $\pi$  Charge Distribution in Substituted Anthraquinones to Assess Affinity for the QB Binding Site," *Biochimica et Biophysica Acta* 1020, 169-175, 1990.
33. K. K. Karukstis, "QB Analogs as Inhibitors of Photosystem II Electron Transport in Plant Chloroplasts", *Trends in Photochemistry and Photobiology*, 1, 289-292, 1991.
34. K. K. Karukstis, R. M. Moision\*, S. K. Johansen\*, K. E. Birkeland\*, and S. M. Cohen\*, "Alternative Measures of Photosystem II Electron Transfer Inhibition Anthraquinone-Treated Chloroplasts", *Photochemistry and Photobiology*, 55, 125-132, 1992.
35. K. K. Karukstis, K. E. Birkeland\*, B. P. Babusis\*, K. A. Kasal\*, and C. J. Jewell\*, "Chlorophyll Fluorescence Characterization of Photosystem II Electron Transport Inhibitors, *Journal of Luminescence*, 51, 119-128, 1992.
36. K. K. Karukstis, "Chlorophyll Fluorescence Analyses of Photosystem II Reaction Center Heterogeneity", *Journal of Photochemistry and Photobiology, B: Biology*, 15, 63-74 (1992).
37. K. K. Karukstis, C. M. Emetarom\*, D. P. Nash\*, D. Takamoto\*, M. Y. Kao\*, and K. J. Kaphengst\*, "Structural and Kinetic Aspects of Lanthanide Binding to Chloroplast Thylakoid Membranes", *Research in Photosynthesis* (N. Murata, ed.), Vol. II, pp. 93-96, Kluwer Academic Publishers, Dordrecht, The Netherlands, 1993.
38. G. R. Van Hecke and K. K. Karukstis, "Curriculum Using the Unique Capabilities of Lasers", *Journal of Chemical Education*, 70, 323 (1993).
39. K. K. Karukstis, D. A. Krekel\*, D. A. Weinberger\*, R. A. Bittker\*, N. R. Naito\*, and S. H. Bloch\*, "Resolution of the Excited States of the Fluorescence Probe TNS using a Trilinear Analysis Technique", *Journal of Physical Chemistry*, 99, 449-453 (1995).
40. K. K. Karukstis, M. Y. Kao\*, D. A. Savin\*, R. A. Bittker\*, K. J. Kaphengst\*, C. M. Emetarom\*, N. R. Naito\*, and D. Y. Takamoto\*, "Spectral Studies of Lanthanide Interactions with Membrane Surfaces", *Journal of Physical Chemistry*, 99, 4339-4346 (1995).
41. K. K. Karukstis, M. Y. Kao\*, D. A. Savin\*, R. A. Bittker\*, K. J. Kaphengst\*, N. R. Naito\*, "Spectral Characterizations of Lanthanide Interactions with Thylakoid Membrane Surfaces", *Photosynthesis: from Light to Biosphere* (P. Mathis, ed.), Vol. III, pp. 245-248, Kluwer Academic Publishers, Dordrecht, The Netherlands, 1995.
42. K. K. Karukstis, S. W. Suljak\*, P. J. Waller\*, J. A. Whiles\*, E. H. Z. Thompson\*, "Fluorescence Analysis of Single and Mixed Micelle Systems of SDS and DTAB", *Journal of Physical Chemistry*, 100 11125-11132 (1996).
43. K. K. Karukstis, A. A. Frazier\*, D. S. Martula\*, J. A. Whiles\*, "Characterization of the Microenvironments in AOT Reverse Micelles using Multidimensional Spectral Analysis", *Journal of Physical Chemistry*, 100 11133-11138 (1996).

44. K. K. Karukstis, N. D. D'Angelo\*, and C. T. Loftus\*, "Using the Optical Probe Methyl Orange to Determine the Role of Surfactant and Alcohol Chain Length in the Association of 1-Alkanols with Alkyltrimethylammonium Bromide Micelles", *Journal of Physical Chemistry*, 101 1968-1973 (1997).
45. K. K. Karukstis, "Enhancing Undergraduate Research in Chemistry: An Example of the Use of CUR Databases", *Council on Undergraduate Research Quarterly* 18 189-198 (1997).
46. G. R. Van Hecke, K. K. Karukstis, and J. M. Underhill\*, "Using Lasers to Demonstrate the Concept of Polarizability: Variations in the Refractive Indices of the o-Halobenzenes", *The Chemical Educator*, December 1997.
47. K. K. Karukstis, D. A. Savin\*, C. T. Loftus\*, and N. D. D'Angelo\*, "Spectroscopic Studies of the Interaction of Methyl Orange with Cationic Alkyltrimethylammonium Bromide Surfactants", *Journal of Colloid and Interface Science* 203 157-163, 1998.
48. K. K. Karukstis, E. H. Z. Thompson\*, J. A. Whiles\*, and R. J. Rosenfeld\*, "Deciphering the Fluorescence Signature of Daunomycin and Doxorubicin", *Biophysical Chemistry* 73 249-264, 1998.
49. K. K. Karukstis and A. V. Gullledge\*, "Analysis of the Solvatochromic Behavior of the Disubstituted Triphenylmethane Dye Brilliant Green", *Analytical Chemistry* 70 4212-4217 (1998).
50. K. K. Karukstis, A. A. Frazier\*, C. T. Loftus\*, and A. S. Tuan\*, "Fluorescence Investigation of Multiple Partitioning Sites in Aqueous and Reverse Micelles", *Journal of Physical Chemistry* 102 8163-8169 (1998).
51. K. K. Karukstis, S. K. Avrantinis\*, S. L. Boegeman\*, J. M. Conner\*, B. N. Hackman\*, J. M. Lindsay\*, A. L. Mandel\*, and E. J. Miller \*, "Spectroscopic Determination of Ternary Phase Diagrams", *Journal of Chemical Education* 77 701-703 (2000).
52. K. K. Karukstis, "Encapsulation of Fluorophores in Multiple Microenvironments in Surfactant-Based Supramolecular Assemblies" (invited review) in *Handbook of Surfaces and Interfaces of Materials, Volume 3: Nanostructured Materials, Micelles, and Colloids*, Chapter 12 (H. S. Nalwa, editor) Academic Press, San Diego, 2001.
53. K. K. Karukstis, S. C. Thonstad\*, and M. E. Hall\*, "Modulation of Guest Partitioning Within Dendrimer-Surfactant Supramolecular Assemblies", *Journal of Dispersion Science and Technology* 23 737-746 (2002).
54. G. R. Van Hecke, K. K. Karukstis, R. C. Haskell, C. S. McFadden, and F. S. Wettack, "An Integration of Chemistry, Biology, and Physics: The Interdisciplinary Laboratory", *Journal of Chemical Education* 79 837-844 (2002).
55. K. K. Karukstis, G. R. Van Hecke, K. A. Roth\*, M. A. Burden\*, "A Structure-Activity Investigation of Photosynthetic Electron Transport: An Interdisciplinary Experiment for the First-Year Laboratory", *Journal of Chemical Education* 79 985-988 (2002).



56. G. M. Lanza, D. R. Abendschein, X. Yu, P. M. Winter, K. K. Karukstis, M. J. Scott, R. W. Fuhrhop, D. E. Scherrer, S.A. Wickline, "Molecular Imaging and Targeted Drug Delivery with a Novel, Ligand-Directed Paramagnetic Nanoparticle Technology", *Academic Radiology* 9 S330-S331 (2002).
57. G. M. Lanza, X. Yu, P. M. Winter, D. Abendschein, D. R. Abendschein, K. K. Karukstis, M. J. Scott, L. K. Chinen, R. W. Fuhrhop, D. E. Scherrer, and S. A. Wickline, "Targeted Antiproliferative Drug Delivery to Vascular Smooth Muscle Cells with a Magnetic Resonance Imaging Nanoparticle Contrast Agent: Implications for Rational Therapy of Restenosis", *Circulation* 106 2842-2847 (2002).
58. K. K. Karukstis, L. A. Perelman\*, and W. K. Wong\*, "Spectroscopic Characterization of Azo Dye Aggregation on Dendrimer Surfaces", *Langmuir* 18 10363-10371, (2002).
59. K. K. Karukstis, "Examining Technology's Impact on Society", *Journal of College Science Teaching* 33 36-40 (2003).
60. K. K. Karukstis, C. A. Zieleniuk\*, M. J. Fox\*, "Fluorescence Characterization of DDAB-AOT Catanionic Vesicles", *Langmuir* 19 10054-10060 (2003).
61. K. K. Karukstis, G. R. Van Hecke, "Chemistry of Everyday Life", *World and I*, November 2003, 146-153.
62. K. K. Karukstis, S. A. McCormack\*, T. M. McQueen\*, K. F. Goto\*, "Fluorescence Delineation of the Surfactant Microstructures in the CTAB-SOS-H<sub>2</sub>O Catanionic System", *Langmuir* 20 64-72 (2004).
63. M. D. Schuh and K. K. Karukstis, "Getting Started in Research with Undergraduates", *Journal of Chemical Education* 81 322 (2004).
64. K. K. Karukstis and T. J. Wenzel, "Enhancing Research in the Chemical Sciences at Predominantly Undergraduate Institutions: Recommendations of a Recent Undergraduate Research Summit", *Journal of Chemical Education* 81 468-4699 (2004).
65. K. K. Karukstis, "Reinvigorating the Undergraduate Experience with a Research-Supportive Curriculum", *Journal of Chemical Education* 81 938-939 (2004).
66. G. R. Van Hecke, K. K. Karukstis, F. S. Wettack, C. S. McFadden, and R. C. Haskell, "The Interdisciplinary Laboratory: An Integration of Chemistry, Biology, and Physics", in *Reinvigorating the Undergraduate Experience: Successful Models Supported by NSF's RAIRE/AIRE Program*, (L. E. Kauffman, J. E. Stocks, eds.), Council on Undergraduate Research, Washington, D.C., 2004, <[http://www.cur.org/publications/aire\\_raire/toc.asp](http://www.cur.org/publications/aire_raire/toc.asp)>.
67. K. K. Karukstis, "Creating Time for Research: Recommendations from Faculty at Predominantly Undergraduate Institutions", *Journal of Chemical Education* 81 1550-1551 (2004).

68. K. K. Karukstis, "Community-Based Research": New Paradigm for Undergraduate Research in the Sciences", *Journal of Chemical Education* 82 15-16 (2005).
69. K. K. Karukstis and J. R. McDonough\*, "Characterization of the Aggregates of N-Alkyl-N-Methylpyrrolidinium Bromide Surfactants in Aqueous Solution", *Langmuir* 21 5716-5721 (2005).
70. K. K. Karukstis and R. S. Rowlett, "On-Site Reviews and Institutes to Assess and Strengthen Undergraduate Departments and Programs", *Journal of Chemical Education* 82 512-513 (2005).
71. K. K. Karukstis, K. D. Sienerth, and F. V. Farnsworth, "Professional Infrastructure for Supporting the Undergraduate Research Enterprise on Campus", *Journal of Chemical Education* 82 825-826 (2005).
72. K. K. Karukstis, "Communicating the Importance of Undergraduate Research to Legislators", *Journal of Chemical Education* 82 1279-1280 (2005).
73. G. R. Van Hecke, K. K. Karukstis, H. Li\*, H. C. Hendargo\*, A. J. Cosand\*, M. M. Fox\*, "Synthesis and Physical Properties of Liquid Crystals: An Interdisciplinary Experiment for the First Year Laboratory", *Journal of Chemical Education* 82 1349-1354 (2005).
74. K. K. Karukstis, "Showcasing Successful Practices that Enhance a Research-Supportive Undergraduate Curriculum", *Journal of Chemical Education* 82 1440-1442 (2005).
75. K. K. Karukstis, "Understanding the Federal Funding Landscape for Undergraduate Research", *Journal of Chemical Education* 83 1119-1120 (2006).
76. L. N. Gentile, N. S. Mills, and K. K. Karukstis, "Faculty Mentoring Faculty: Lending Support within the Undergraduate Research Community", *Journal of Chemical Education* 83, 1584 (2006).
77. K. K. Karukstis, "A Council on Undergraduate Research Workshop Initiative to Establish, Enhance, and Institutionalize Undergraduate Research", *Journal of Chemical Education* 83, 1744-1745 (2006).
78. K. K. Karukstis, "Alliances to Promote Undergraduate Research", *Journal of Chemical Education*, 84, 384-385 (2007).
79. K. K. Karukstis, "The Impact of Undergraduate Research on America's Global Competitiveness", *Journal of Chemical Education*, 84, 912-914 (2007).
80. K. K. Karukstis, "Facilitating Advanced Study in Science and Engineering: The CUR Registry of Undergraduate Researchers", *Journal of Chemical Education*, 84, 1744-1745 (2007).
81. K. K. Karukstis, "Starting a Successful Research Program at a Predominantly Undergraduate Institution", *Journal of Chemical Education*, 85, 343-344 (2008).

82. K. K. Karukstis, "The Scientist's Civic Responsibilities: Sharing Research and Scholarship on Capitol Hill", *Journal of Chemical Education*, 85, 1170-1171 (2008).
83. J. M. Osborn and K. K. Karukstis, "The Benefits of Undergraduate Research, Scholarship, and Creative Activity", in **Broadening Participation in Undergraduate Research: Fostering Excellence and Enhancing the Impact**. M. K. Boyd and J. L. Wesemann, eds., Council on Undergraduate Research, Washington, D. C., 2009, Chapter 4.
84. K. K. Karukstis, T. E. Elgren, S. E. Ronco, S. E. Feller, and R. S. Rowlett, "Barriers to Seeking External Research Funding: Perceptions and Facts", *Journal of Chemical Education*, 86, 788-790 (2009).
85. D. F. Brakke, M. L. Crowe, and K. K. Karukstis, "Perspective: Reasons Why Deans and Provosts (and Presidents) Should Value, Support, and Encourage Undergraduate Research", *Council on Undergraduate Research Quarterly* 30, 10-14 (2009).
86. K. K. Karukstis, "Transformative Research Initiative: The Role of Undergraduate Institutions", *Journal of Chemical Education*, 86, 1011-1012 (2009).
87. K. K. Karukstis, "Women in Science, Beyond the Research University: Overlooked and Undervalued," *The Chronicle of Higher Education* 55 41 p. 23 (2009).
88. K. K. Karukstis, "Expanding Opportunities for Undergraduate Research through Recent NSF Awards to CUR," *Journal of Chemical Education*, 87, 45-246 (2010).
89. K. K. Karukstis, J. P. Litz\*, M. B. Garber\*, L. M. Angell\*, G. K. Korir\*, "A Spectral Approach to Determine Location and Orientation of Azo Dyes within Surfactant Aggregates", *Spectrochimica Acta Part A*, 75, 1354-1361 (2010).
90. K. K. Karukstis, B. L. Gourley, L. L. Wright, M. Rossi, "Mentoring Strategies To Recruit and Advance Women in Science and Engineering," *Journal of Chemical Education*, 87, 355-356 (2010).
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102. K. K. Karukstis, G. R. Van Hecke, J. S. Lee\*, E. N. Van Burns\*, R. R. Low\*, J. S. Lee\*, M. D. May\*, B. E. Johnson\*, S. S. Shill\*, H. K. Tay\*, "A Fluorescence Approach to Monitoring Aggregation of Chromonic Dyes in the Isotropic Phase", in preparation.
103. K. K. Karukstis, G. R. Van Hecke, J. P. Hines\*, H. A. Audesirk\*, C. M. George\*, M. M. Kossarian\*, K. N. Heinselman\*, H. A. M. Hatch\*, J. C. Crompton\*, E. N. Van Burns\*, C. J. Zazueta\*, A. R. Lee\*, C. A. Snyder\*, C. H. Giammanco\*, H. M. Linder\*, K. N. Chellis\*, M. B. Daub\*, "Determining the Binary Phase Diagrams of Sugar-Based Surfactants in Water using Fluorescence Spectroscopy", in preparation.

## Grant Awards from the National Science Foundation

Award Number	NSF Organization/ Program	Award Title	Award Dates	Award Amount	Additional Investigators
8712409	CHE Cross-Directorate Programs	Research Experiences for Undergraduates in Chemistry at Harvey Mudd	06/01/87 11/30/90	\$105,000.	
9100288	CHE Undergraduate Programs in Chemistry	Research Experiences for Undergraduates in Chemistry at Harvey Mudd College	03/15/91 08/31/94	\$95,800.	
9155909	DUE Introductory Curriculum Projects	A Fresh Approach to the General Chemistry Curriculum Using the Unique Capabilities of Lasers	07/01/92 12/31/95	94,180.	With G. R. Van Hecke
9451365	DUE Undergraduate Instrumentation and Laboratory Improvement	Enhancing the Biophysical Component of the Physical Chemistry Laboratory	08/15/94 07/31/96	\$14,972.00	
9512467	CHE Academic Research Facilities	Acquisition of a Multi-Purpose Facility for Computational Chemistry	08/15/95 01/31/97	\$100,000	With R. Cave, P. Myhre, G. R. Van Hecke, S. Baker
9751709	DUE Undergraduate Instrumentation and Laboratory Improvement	Introduction of Circular Dichroism and Stopped-Flow Spectroscopy in Chemistry Laboratories	06/01/97 05/31/99	\$36,442.00	With G. R. Van Hecke and A. McCurdy
0338568	DUE CCLI-Educational Materials Development	Promoting the Interrelationship of Chemistry and Society with a Case Study Approach	01/01/04 12/31/07	\$74,982.00	
0619150	SBE ADVANCE-PAID	ADVANCE Partnerships for Adaptation, Implementation, and Dissemination Award: Collaborative Research for Horizontal Mentoring Alliances	10/01/06 09/30/09	\$361,168.00	Collaboration totals \$499,864.
0618548	DUE CCLI - Phase 2 (Expansion)	Collaborative Project: A Workshop Initiative by the Council on Undergraduate Research to Establish, Enhance and Institutionalize Undergraduate Research	01/01/07 12/31/08	\$37,252.00	Collaboration totals \$499.066.
0809440	MPS-Chemistry RUI	Innovative Determination of Phase Diagrams of Green Surfactants in Water and Ionic Liquids	07/15/08 06/30/13	\$270,000.00	With G. R. Van Hecke
0920275	DUE CCLI-Phase 3 Comprehensive Award	Collaborative Research: Transformational Learning through Undergraduate Research: Comprehensive Support for Faculty, Institutions, State Systems and Consortia	01/01/2010 12/31/2014	\$999.500.	

	Widening Implementation and Demonstration of Evidence-based Reforms (WIDER)	Supplement to Collaborative Research: Transformational Learning through Undergraduate Research: Comprehensive Support for Faculty, Institutions, State Systems and Consortia	09/15/2012-12/31/2014	\$172,720	With J. Osborn, M. Malachowski, E. Ambrose
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### Grants awarded by the National Institutes of Health

Award Number	NIH Institute/ Program	Award Title	Award Dates	Award Amount
1R15GM038447-01	National Institutes of Health - Academic Research Enhancement Award National Institute of General Medical Sciences	Quinone Inhibition of Chloroplast Excitation Transfer	09/01/1987 - 08/31/1989	\$70,300.
1R15GM046090-01	National Institutes of Health - Academic Research Enhancement Award National Institute of General Medical Sciences	Lanthanide Binding to Chloroplast Thylakoid Membranes	05/01/1991 - 10/31/1994	\$104,417.
1R15GM055911-01	National Institutes of Health - Academic Research Enhancement Award National Institute of General Medical Sciences	Cation-Pi Interactions of Anthracycline Drugs	05/01/1997 - 06/30/2000	\$107,032.
2R15GM055911-02	National Institutes of Health - Academic Research Enhancement Award National Institute of General Medical Sciences	Host-Guest Interactions in Catanionic Vesicles	07/01/2000 - 06/30/2005	\$134,810.

### Grants awarded by the American Chemical Society - Petroleum Research Fund

ACS-PRF Program	Award Title	Award Dates	Award Amount
Type B	Characterization of Coumarin Binding to Photosynthetic Membranes	09/01/1991-08/31/1993	\$20,000.
Type B	Characterization of Cation-Membrane Interactions using Trilinear Analysis of Probe Fluorescence	09/01/1993-08/31/1995	\$25,000.
Type B	Spectroscopic Characterization of Microdomains within Dendrimer-Surfactant Supramolecular Assemblies	06/01/1999 - 08/30/2003	\$30,000.
Type B	Fluorescence Characterization of Ternary Phase Diagrams of Aqueous Catanionic Systems	06/01/2003 - 08/31/2007	\$50,000.

### Grants awarded by Research Corporation

Award Title	Award Dates	Award Amount
Lanthanide Ions as Structural Probes in Photosynthetic Systems	04/01/1986 - 03/31/1988	\$15,300.
Complex formation of ionic surfactants and organic dyes: An induced fit	01/01/1997-12/31/1998	\$31,600.

## Additional External Grants

Agency or Foundation	Award Title	Award Dates	Award Amount	Additional Investigators
Jonsson Foundation	Pilot Project to Introduce Lasers into the Freshman Chemistry Curriculum	9/01/1991-08/31/1992	\$7,000.	Gerald R. Van Hecke
Camille and Henry Dreyfus Foundation - Henry Dreyfus Teacher-Scholar Award	Kinetic and Structural Studies of Photosynthetic Systems using Fluorescence and Absorbance Spectroscopy and Light Scattering	1994-1998	\$60,000.	
Camille and Henry Dreyfus Foundation - Special Grant Program in the Chemical Sciences	Enhancing the Biophysical Component of Physical Chemistry			
Mellon Faculty Career Enhancement Inter-Institutional Initiative	Advancing the Careers of Senior Women Chemistry Faculty through a Horizontal Peer Network	01/01/2004-08/31/2006	\$20,000.	Bridget L. Gourley (De Pauw University), Laura L. Wright (Furman University), Sunhee Choi (Middlebury College), Miriam Rossi (Vassar College).
Mellon Faculty Career Enhancement	New Venture Proposal	04/24/2006-06/30/2008	\$14,700	

## College-Sponsored Research and Curricular Grants

Award Title	Award Dates	Award Amount	Additional Investigators
Lanthanide Ions as Structural Probes in Photosynthetic Membranes	5/01/1985-04/30/1986	\$1500.	
Multivariate Analysis of Quinone Fluorescence Quenching	05/01/1986-04/30/1987	\$3625.	
Quinone Interactions in Photosynthetic Membranes	05/01/1987-04/30/1988	\$2100.	
Coumarins and Pyrones as Inhibitors of Photosynthesis	05/01/1988-04/30/1989	\$2950.	
The Use of Web-Based Materials to Enhance Instruction and Learning in General Chemistry	05/01/2000-04/30/2001	\$15,900.	
Increasing the Interactivity of the Classroom Experience in General Chemistry	09/01/2002-5/15/2003	\$20,000.	G. R. Van Hecke

### Undergraduate Senior Thesis Research Students

<b>Student</b>	<b>Graduation Class</b>	<b>Graduate School</b>	<b>Degree Year*</b>
Mark Terris	1985	UC San Francisco	M.D. 1989
Chris Boegeman	1986	Cornell	PhD 1996
Julia Fruetel	1986	UC San Francisco	PhD 1992
Suzanne Gruber	1987	Princeton	MS 1989
Craig Monell	1987	John Hopkins	PhD 1992
Erik Hendrickson	1988	Harvard	PhD 1997
Lorna Prince	1988	Northwestern	Masters of Public Health
Robert Moison	1989	U. of Utah	PhD 2007
Susan Cohen Locke	1990	Duke	PhD 1996
Mark Minto	1990	UC Berkeley	PhD 2001
Kari Birkeland	1991	Northwestern	PhD 1995
Keith Kuwata	1991	Caltech	PhD 1998
Chitoh Emetarom	1991	UC-Irvine	M.S.
Benis Babusis	1992	UC-Irvine	M.D. 1996
Elisabeth Davis Wade	1992	UC Berkeley	PhD 1996
Dawn Takamoto	1992	UC Santa Barbara	PhD 1999
Rachel Bittker	1993	U of Michigan	M.D. 1997
Jennifer Stengel Nichols	1993	Cornell	Ph.D.
Marie Kao	1994	UC San Francisco	DDS 1998
Heather Lane Olson	1994	Duke	PhD
Naomi Naito	1994	Northwestern	PhD 1999
Micah Gearhart	1995	Scripps Research Institute	PhD 2001
Stefan Martula	1995	U. Texas	PhD 2000 Chemical Engineering
Robin Rosenfeld	1995	Scripps Research Institute	PhD 2002
Dan Savin	1995	Carnegie Melon	PhD 2002
Steve Suljak	1995	Penn State	PhD 2000
Petra Waller	1995	International Sales, ChromaDex	
Dana Weinberger	1995	Northwestern	PhD 2000
Christine Loftus	1996	U. Washington	Masters of Public Health, 2010 Ph.D. – in progress
Jennifer Whiles	1996	UC San Diego	PhD 2001
Christina Baxter	1997	UCLA	Masters of Library and Information Science 2002
Noel D'Angelo	1997	Stanford	PhD 2004
April Frazier	1997	U. Virginia	PhD 2003



<b>Student</b>	<b>Graduation Class</b>	<b>Graduate School</b>	<b>Degree Year*</b>
Elizabeth Thompson	1997	Scripps Research Institute	PhD 2002
Abigail Kritzer	1999	Cima Labs	
Wun Wong	2000	Texas A&M	Ph.D. 2006 Chemical Engineering
Stacey Thonstad	2001	Oregon State U	Pharm. D. 2009
Mike Ragudo	2002	deceased	
Joseph Friesen	2003	Cal State U East Bay	MS
Tyrel McQueen	2004	Princeton	Ph.D. 2009
Courtney Ronstadt	2004	Princeton	Ph.D. 2010
Whitney Duim	2005	Stanford	Ph.D. 2012
Eric Hall	2005	Stanford	Ph.D. 2012
Shelley A. McCormack	2005	UC San Francisco UC San Diego	Pharm D 2009 MD 2015
James R. McDonough	2007	Stanford	Ph.D. 2012
Kristen Chellis	2008	Enologist	Boedecker Cellars
Judy Hines	2009	University of Washington	Ph.D. in progress
Alison Lee	2009	UC Davis	MS Pharmacology 2013
Christine Min Kim	2010	U Minnesota Twin Cities	Pharm. D. 2015
Heidi Linder Heimerl	2011	Baylor University	Tech, Research II Pediatrics-Hematology
Samantha Fisher	2012	industry	Production Technician at MedImmune
J. Chance Crompton	2013	Caltech	Ph.D. in progress

\* Degree in Chemistry unless otherwise noted