**CURRICULUM VITAE**

Randy William Larsen, PhD
Department of Chemistry
University of South Florida
4202 East Fowler Ave.
Tampa, FL 33620

*Experience*

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| *08/15-Present* | Associate Dean for Research<br>Office of Research and Scholarship<br>College of Arts & Sciences<br>University of South Florida |
| *08/08 to 08/15*: | Professor & Chair<br>Department of Chemistry<br>University of South Florida |
| 07/05 – 07/08 | Professor<br>Department of Chemistry<br>University of South Florida |
| 01/02-07/05 | Associate Professor<br>Department of Chemistry<br>University of South Florida |
| 7/99-1/02 | Associate Professor<br>Department of Chemistry<br>University of Hawaii at Manoa<br>Honolulu, HI |
| 8/98-5/01 | Temporary Faculty (Concurrent with UH-Manoa Appointment)<br>Brigham Young University-Hawaii<br>Laie, HI |
| 1/92-6/99 | Assistant Professor<br>Department of Chemistry<br>University of Hawaii at Manoa<br>Honolulu, HI |
| 3/90-1/92 | Postdoctoral Research Fellow<br>California Institute of Technology<br>Pasadena, CA. |

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| ***Education***: | Spring 1990: | Ph.D., University of New Mexico<br>(Physical Chemistry) |
| | 1985-1990: | Graduate Student<br>Department of Chemistry<br>University of New Mexico |
| | Fall 1985: | B.S., University of New Mexico (Chemistry) |

***Professional Membership***: American Chemical Society
Biophysical Society

***Other Service Activities***: Secretary, Hawaii Section of the American Chemical Society, 1994/1995
Chair Elect, Hawaii Section of the American Chemical Society, 1997
Chair, Hawaii Section of the American Chemical Society, 1998

***Other Professional Activities:*** American Cancer Society Institutional Research Grant Committee, 1996-1999.
American Heart Association, National Peer Review Study Group member, Basic Cell, 2000-2004, 2012, 2013.
American Heart Association, Southeast Affiliate Peer Review Study Group Member, 2008-2010.
American Heart Association Hawai'i Section Research Council Member, 1998-2000.
NIH SSP Study Section, November, 2001.
NIH, MFSA Temporary Study Section Memebr, 2008.
NIH, MSFE Temporary Study Section Memebr, 2009.
Co-Chair, Protein Folding and Stability Symposium, 2009 Meeting of the Biophysical Society.
NSF- Grant Reviewer

***Funding Summary***

**Current:**

- College of Arts & Sciences Research Support, PI, "Metal Organic Materials Development", $165,000, 8/1/15-7/31/18.

**Pending:**

- National Science Foundation-MCB, PI (one CoPI), "Elucidating the Mechanism of Radical Mediated NO Production from Hydroxyurea, via a Multidisciplinary Computational-Experimental Approach", $540,238, 06/01/17-05/31/20.
- National Science Foundation-CAT, PI, "Development of Solid State Metal Organic CO2 Photoreduction Catalysts", $485,674, 6/1/17-5/30/20.
- National Institues of Health R03, PI, "Development of Photodynamic Therapy Metal Organic Materials", $149,500, 9/1/17-8/31/19 (to be matched with Florida High Tech Corridor Funding).

**Past Funding:**

- DOD Defense Threat Reduction Agency, PI (three CoPIs) "Functionalized Photocataolytic Materials for Threat Detection and Decontamination", $2,000,000, 06/01/08-5/31/12.
- Draper Laboratory-URAD, PI (two CoPIs), "Development of Novel Porphyrin Based Chemical/Biological Threat Agent Sensors", $181,816, 7/1/09-6/30/10.
- Florida High Tech Corridor (Draper Match), PI (two CoPIs), "Development of Novel Porphyrin Based Chemical/Biological Threat Agent Sensors", $91,600, 7/1/09-6/30/10.
- American Chemical Society-Petroleum Research Fund Type AC, PI, "Thermodynamic Profiles of Protein Folding", $120,000, 8/31/05-8/31/07.
- National Science Foundation-MCB, PI, "Energy Coupling in Cytochrome c Oxidase", $337,920, 10/1/03-9/30/07.
- American Heart Association Grant in Aid, PI, "Thermodynamic Profile of Dioxygen Reduction by Cytochrome c Oxidase", $120,000, 7/1/02-6/30/04.
- National Science Foundation-MCB, PI, "Energy Coupling in Quinol Oxidase", $353,604, 8/1/99-3/31/02.
- National Science Foundation-Research Experience for Undergraduates, CoPI, **"**Research Experiences for Undergraduates in Chemistry at the University of Hawaii", $135,000, 3/1/96-8/31/99.
- American Heart Association-Beginning Grant in Aid, PI, "Conformational Dynamics in Cytochrome c Oxidase", $77,942, 7/1/97-6/31/99.
- American Chemical Society-Petroleum Research Fund-Type G, PI, "Conformational Dynamics of Intermolecular Electron Transfer in Proteins", $20,000, 9/1/92-12/31/96.
- American Cancer Society-Seed Grant, PI, "Photodynamics of Cationic Porphyrins Associated with Nucleotides and Nucleosides", $15,000, 12/15/95-12/15/96.

***Publications (120 total- 113 journal articles and 7 book chapters)***

114. "Photo-Physical studies of Ruthenium(II) tris(1,10-phenanthroline) Confined within a Polyhedral Zinc(II)-Trimesic Acid Metal Organic Framework", R. W. Larsen and L. Wojtas, *Inorg. Chim. Acta* (2017), submitted.

113. "Photophysical studies of $[Ru(2,2'\text{-bipyridine})_3]^{2+}$ Encapsulated within the Uio-66 Zirconium Based Metal Organic Framework", R.W. Larsen and L. Wojtas, *J. Solid State Chem.,* (2017), 247, 77-82.

112. "Time Resolved Calorimetry of Photo-Induced Folding in Horse Heart Cytochrome c", T. A. Word and R. W. Larsen, *Arch. Biochem. Biophys.* (2017), 615, 10-14.

111. "Photoacoustic calorimetry study of CO photo-dissociation from chloramine-T modified horse heart cytochrome-*c*", T. A. Word and R.W. Larsen, *Arch. Biochem. Biophys.,* (2016), 612, 17-21.

110. "Photoacoustic calorimetry study of the cis to trans photoisomerization of the [Ru(II)(2,2'-bipyridine)2(H2O)2]2+ complex in aqueous solution" T. A. Word, A. Karolak, C. R. Cioce, A. van der Vaart, R. W. Larsen *Comm. Inrog. Chem.,* (2016), 36, 343-354.

109. "Molecular mechanism of protein kinase recognition and sorting by the Hsp90 kinome-specific cochaperone Cdc37", D. Keramisanou, A. Aboalroub, Z. Zhang, W. Liub, D. Marshall, A. Diviney, R. W. Larsen, R. Landgraf, and I. Gelis, *Mol. Cell*, (2016) 62, 260-271.

108. "Hybrid-state emission in a polythienylenevinylene derivative with an electron deficient moiety", E. Lafalce, C. Whittington, R. W. Larsen, J. Pan, L. Sanow, C. Zhang, and X. Jiang, *J. Chem. Phys.,* (2015), 142, 164702.

107. "A New Photoactive Ru(II)tris(2,2'-bipyridine) Templated Zn(II) Benzene-1,4-dicarboxylate Metal Organic Framework: Structure and Photophysical Properties", C. L. Whittington, L. Wojtas, W. Gau, S. Ma and R. W. Larsen, *Dalt. Trans.* (2015), 44, 5331-5337.

106. "Fixed Distance Photoinduced Electron Transfer between Fe and Zn Porphyrins Encapsulated within the Zn HKUST-1 Metal Organic Framework", R. W. Larsen and L. Wojtas, *Dalt. Trans. Comm.* (2015), 44, 2959-2963.

105. "Sulfono-γ-AApeptides as a new class of unnatural helical foldamer", H. Wu, Q. Qiao, Y. Hu, P. Teng, W. Gao, X. Zuo, L. Wojtas, R. W. Larsen, S. Ma, and J. Cai, *Chem. Eur. J.* (2015), 21, 2501-2507.

104. "Photoacoustic calorimtery studies of ligand photo-release from the Ru(II)bis(2,2' bipyridine)(6,6' dimethyl 2,2' bipyridine) complex", T. Word, A. Karolak, M. T. Kemp, C. L. Whittington, A. van der Vaart, and R. W. Larsen, *Chem. Phys. Lett.* (2014), 619, 214-218.

103. "Ruthenium(II)tris(2,2'-bipyridine) templated zinc(II)1,3,5-tris(4-carboxyphenyl)benzene metal organic frameworks: Structural characterization and photophysical properties", C. L. Whittington, L. Wojtas and R. W. Larsen, *Inorg. Chem.* (2014),53, 160-166.

102. "Spectroscopic Investigation of the Noncovalent Association of the Nerve Agent Simulant Diisopropyl Methylphosphonate (DIMP) with Zinc(II)porphyrins", W. A. Maza, C. M. Vetromile, C. Kim, X. Xu, X. P. Zhang and R. W. Larsen, *J. Phys. Chem. A.* (2013), 117, 11308-11315.

101. "Photo-Induced Inter-Cavity Electron Transfer between Ru(II)tris(2,2' bipyridine) and Co(II)tris(2,2' bipyridine) Co-Encapsulated within a Zn(II)-Trimesic Acid Metal Organic Framework", R.W. Larsen and L. Wojtas, *J. Mat. Chem. A*, (2013), 1, 14133-14139.

100. “Electronic Spectra of Porphyrins in the Solid State: Newly Observed Transitions, Collective and Structural Effects, and Protein Mimicing Environments”, R.L. Musselman, R.W. Larsen, and B.M. Hoffman, *Coord. Chem. Rev.* (2013), 257, 369-380.

99. “Applications of Photoacustic Calorimetry in Chemistry and Biology”, R. W. Larsen, W. A. Maza, T. A. Word and C. M. Vetromile, *Invited Review, Trends in Photochemistry and Photobiology (*2012), 14, 47-68.

98. “Fluorescent Properties and Resonance Energy Transfer of 3,4-Bis(2,4-difluorophenyl)-maleimide”, K P. Nacheva, W. Maza, D. Z. Mayer, F. Fronczek, R. W. Larsen, R. Manetsch, *Org. Biom. Chem.* (2012), 10(48), 7840-7846.

97. “How can Proteins Enter the Interior of a MOF: Investigation of Cytochrome *c* Translocation into a MOF Consisting of Mesoporous Cages with Microporous Windows” Y. Chen, V. Lykourinou, C. Vetromile, T. Hoang, L-J. Ming, R. W. Larsen, and S. Ma, *J. Am. Chem. Soc.* (2012), 134, 13188-13191.

96. “Photo-Physical Studies of Ru(II)tris(2,2’-bipyridine) Confined within a Zn(II)-Trimesic Acid Metal Organic Framework”, R. W. Larsen and L. Wojtasz, *J. Phys. Chem. A* (2012), 116. 7830-7835.

95. “Understanding Ion Sensing in Zn(II) Porphyrins: Spectroscopic and Computational Studies of Nitrite/Nitrate Binding", C. Whittington, W. A. Maza, H. Woodcock, and R. W. Larsen, *Inorg. Chem* (2012), 51, 4756-4762.

94. "The Interplay of Turn Formation and Hydrophobic Interactions on the Early Kinetic Events in Protein Folding", J. J-T. Huang, R. W. Larsen and S. I. Chan, *Chem. Comm.* (2012), 48, 487-497.

93. "Ground and Excited State Properties of Zn(II) tetrakis(4-tetramethyl pyridyl) Porphyrin Specifically Encapsulated within an Zn HKUST Metal Organic Framework", R. W. Larsen, J. Miksovska, R. L. Musselman and L. Wojtas, *J. Phys. Chem. A* (2011), 115, 11519-11524.

92. "Solution Stability of Cu(II) Metal Organic Polyhedra", C. M. Vetromile, A. Lazano, S. Feola, and R. W. Larsen, *Inorg. Chim. Acta*, (2011), 378, 36-41.

91. "Mimicking Heme Enzymes in the Solid State: Metal-Organic Materials with Selectively Encapsulated Heme ", R. W. Larsen, L. Wojtas, J. Perman, R. K. Musselman, M. J. Zaworotko, and C. M. Vetromile, *J. Am. Chem. Soc.* (2011), 133, 10356-10359.

90. “Solid State X-Ray Structural Characterization and Solution Spectroscopy of a Dodecyloxy Copper Nanoball”, J. J. Perry, V. Kravstov, M. J. Zaworotko, and R. W. Larsen, *Cryst. Grwth. Design* (2011), 11, 3183-3189.

89. "Time Resolved Thermodynamics Associated with Ligand Photorelease in Heme Peroxidases and Globins: Open Access Channels versus Gated Ligand Access", C. M. Vetromile, J. Miksovska and R.W. Larsen, *Biochim. Biophys. Acta* (2011), Invited Review, 1814, 1065-1076.

88. “Sub-Nanosecond Photolysis Studies of $Fe^{2+}$Protoporphyrin IX Solubilized in Neat Dimethyl Sulphoxide”, R. W. Larsen, *Inorg. Chim. Acta* (2011), 370, 45-49.

87. “Excited State Properties of 9-Amino Acridine Adsorbed onto Zr-Phosphate Galleries”, C. Vetramile, J. Permon, M. Cheney, M. J. Zaworotko, and R.W. Larsen, *Spectrochim. Acta A Mol. Biomol. Spectr.* (2011), 78, 648-652.

86. “Photothermal Studies of the Room Temperature Photoinduced Spin State Change in Fe(III)(Salten)(Mepepy) Complex”, A. Mokdad and R. W. Larsen, *Inorg. Chimica. Acta* (2010), 363, 3338-3344.

85. “Temperature and Concentration Control over Interpenetration in a Polymorphic

Metal-Organic Material", J. Zhang, L. Wojtas, R. W. Larsen, M. Eddaoudi and M. J. Zaworotko, *J. Am. Chem. Soc.* (2009), 131, 17040-17041.

84. "Co-crystal controlled solid-state synthesis of a thermally stable nicotinate analogue that sustains an isostructural series of porous metal-organic materials", J. A. Perman, K. Dubois, F. Nouar, S. Zoccali, L. Wojtas, M. Eddaoudi, R. W. Larsen and M. J. Zaworotko, *Cryst. Growth. Des.* (2009), 9, 5021-5023.

83. "Kinetic and Thermodynamic Characterization of Dihydrotestosterone-Induced Conformational Perturbations in Androgen Receptor Ligand Binding Domain" R. Jasuja, J. Ulloor, C. M. Yengo, K. Choong, D. Jacobs, R. Swerdloff, J. Miksovska, R. W. Larsen, and S. Bhasin, *Mol. Endo* (2009), 23, 1231-1241.

82. "Photothermal Studies of CO Photodissociation from Horse radish and Soybean Peroxidases", A. Mokdad, J. Miksovska, R. W. Larsen, *Biochim. Biophys. Acta* (2009), 1794, 1558-1563.

81. "How Well Should the Active Site and the Specific Recognition Be Defined for Proficient Catalyses? —Effective and Cooperative Polyphenol/Catechol Oxidation and Oxidative DNA Cleavage by a Copper(II)-Binding and H-bonding Copolymer", V. Lykourinou, A. I. Hanafy, G. F. Z. da Silva, K. S. Bisht, R. W. Larsen, B. T. Livingston, A. Angerhofer,and L-J. Ming, *Eur. J. Inorg. Chem.* (2008), 16, 2584-2592.

80. "Zeolite- Metal-Organic Frameworks (ZMOFs) as Platforms For Applications: On Metalloporphyrin-Based Catalysis", M. H. Alkordi, Y. Liu, R. W. Larsen, J. F. Eubank and M. Eddaoudi, *J. Am. Chem. Soc.* (2008), 130, 12639-12641.

79. "How Fast do Metal Organic Polyhedra Form in Solution? Kinetics of $[Cu_2(5\text{-OH-bdc})_2\ L_2]_{12}$ Formation in Methanol", R. W. Larsen, *J. Am. Chem. Soc.* (2008), 130, 11246-11247.

78. "Photophysical Studies of the *Trans* to *Cis* Isomerization of the Push-Pull Molecule: 1-(pyridin-4-yl)-2-(N-methylpyrrol-2-yl)-Ethene (mepepy)", A. Mokdad, J. Belof, S. W. Yi, S. E. Shuler, M. L. McLaughlin, B. Space and R. W. Larsen, *J. Phys. Chem. A.* (2008), 112, 8310-8315.

77. "Evidence for Fast Conformational Change Upon Ligand Dissociation in the HemAT Class of Bacterial Oxygen Sensors", A. Mokdad, C. Suquet, J. D. Satterlee , and R. W. Larsen, *FEBS Lett.* (2007) 581, 4512-4516.

76. "Photophysical Studies of Cu-Hydroxy Nanoballs in Solution", R. W. Larsen, G. McManus, J. Perry and M. Zaworotko, *Inorg. Chem.* (2007) 46, 5904-5910.

75. "Time-Resolved Thermodynamics of Ligand Binding in Heme Proteins", J. Miksovska, and R. W. Larsen, *invited paper*: *Coord. Chem. Rev.* (2007) 251, 1101-1127.

74. "pH Dependence of the Thermodynamic Profiles for Mixed Valence Cytochrome c Oxidase from Bovine Heart", R. W. Larsen, *invited Paper: Photochem. Photobiol. Sci.*,(2006) 5, 603-610.

73. "Metal-Organic Framework Diversity via Heterocoordination of a Multifunctional Ligand: $SrAl_2$ and a Novel (3,4)-Connected Network", J. F. Eubank, R. D. Walsh, P. Poddar, H. Srikanth, R. W. Larsen and M. Eddaoudi, *Crystal Growth and Design* (2006) 6, 1453-1457.

72. "Molecular Building Blocks Approach to the Assembly of Zeolite-like Metal-Organic Frameworks (ZMOFS) with Extra-Large Cavities", Y. Liu, V. C. Krastov, R. W. Larsen and M. Eddaoudi, *Chem Comm.* (2006) 14, 1488-1451.

71. "Spectroscopic and Photothermal Study of Myoglobin Conformational Changes in the Presence of Sodium Dodecyl Sulfate*",* J. Mikšovská, J. Yom, B. Diamond, and R. W. Larsen, *Biomacromolecules* (2006) 7, 476-482.

70. “A Combined Photothermal and Molecular Dynamics Method for Determining Molecular Volume Changes”, C. Ridley, J. Miksovska, A. Stern, T. Green, R. DeVane, B. Space, and R. W. Larsen, *Chem. Phys. Lett.* (2006) 418, 137-141.

69. “Thermodynamics of Carbon Monoxide Dissociation from the Fully Reduced Cytochrome aa3 from Rb. Sphaeroides”, J. Miksovska, R. B. Gennis and R. W. Larsen, *Biochim. Biophys. Acta* (2006) 1757, 182-188.

68. “Effects of Turn Stability on the Kinetics of Refolding of a Hairpin in a □-sheet”, N. N.-W. Kuo, J J.-T. Huang, J. Miksovska, R. P.-Y. Chen, R. W. Larsen, S. I. Chan, *J. Am. Chem. Soc.* (2005) 127, 16945-16954.

67. “Volume and Enthalpy Changes Associated with Intramolecular Electron Transfer in *Eschirichia coli* Cytochrome $bo_3$”, J. Miksovska, R. B. Gennis, and R. W. Larsen, *FEBS Lett.* (2005) 579, 3014-3018.

66. “Characterization of Conformational Changes Coupled to Ligand Photodissociation from the Heme Binding Domain of FixL”, J. Miksovska, C. Suquet, J. D. Satterlee, and R. W. Larsen, *Biochemistry* (2005) 44, 10028-10036.

65. “Thermodynamic Profiles for CO Photodissociation from Heme Model Compounds:Effects of Proximal Ligands”, J. Miksovska, J. Norstrom, and R.W. Larsen, *J. Inorg. Chem.* (2005) 44, 1006-1014.

64. “Rapid Photochemical Triggering of Protein Unfolding in a Non-Denaturing Environment”, Rock, R. S., Hansen, K. C., Larsen, R. W., and Chan, S. I., *Chem. Phys.* (2004) 307, 201-208.

63. "Ligand Binding Subsequent to NO Photolysis of Partially Unfolded Cytochrome c”, J. Miksovska and R. W. Larsen, *J. Chin. Chem. Soc.* (2004) 50, 1127-1132. Special Issue Honoring Sunney I. Chan.

62. “Direct measurement of the triplet quantum yield of poly(3-dodecylthiophene) in solution”, Yi-Fang Huang, Hsin-Liang Chen, Joseph W. Ting, Chien-Shiun Liao, Randy W. Larsen, and Wunshain Fann, *J. Phys. Chem.* B (2004) 108, 9619-9622.

61. “Time Resolved Photoacoustic Study of Ruthenium(II)bis(2,2’-bipyridine)(4,4’-dicarboxy-2,2’-bipyridine) Complex”, J. Miksovska and R. W. Larsen, *J. Inorg. Chem.* (2004) 43, 4051-4055.

60. “Measuring the Refolding of □-Sheets with Different Turn Sequences on a Nanosecond Time Scale”, Chen, R. P-Y., Huang, J. J-T., Chen, H-L., Jan, H., Velusamy, M., Lee, C-T., Fann, W., Larsen, R. W., and Chan, S. I., *Proc. Natl. Acad. Sci. USA* (2004) 101/19, 7305-7310.

59. “Photothermal Studies of the Photodegradation of (□-Peroxo)(□-Hydroxo)bis[bis(bipyridyl)Co(III)] and (□-Peroxo)(□-Hydroxo)bis[bis(phenanthroline)Co(III)] Complexes in Water”, J. Miksovska and R. W. Larsen, *Inorg. Chimica Acta* (2003) 355C, 116-120.

58. “A MD Method for Calculating Molecular Volume Changes Efficacious for Biomolecular Simaulation”, DeVane, R., Ridley, C., Larsen, R., and Space, B., *Biophys. J.* (2003) 85, 2801-2807.

57. “Photothermal Studies of the pH Induced Unfolding of Apo-Myoglobin”, J. Miksovska and R. W. Larsen, *J. Prot. Chem.* (2003) 22, 387-394.

56. “Volume and Enthalpy Profiles for CO Rebinding to Horse Heart Myoglobin”, J. Miksovska, J. Day and R. W. Larsen, *J. Biol. Inorg. Chem.* (2003) 8, 621-625.

55. "Photo-Induced Electron Transfer within Electrostatically Stablized Coproporphyrin:Horse-Heart Cytochrome *c* Complexes", J. Croney, M. K. Helms, D. M. Jameson, and R. W. Larsen, *Biophys. J.* (2003) 84, 4135-4143.

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52. “Aerotactic Response in Bacteria to Photoreleased Oxygen”, H. S. Yu, J. H. Saw, R. W. Larsen, K. Watts, M. S. Johnson, M. Zimmer, G. Ordal, B. L. Taylor, and M. Alam, *FEMS Lett.* (2002) 217, 237-242.

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50. " Temperature Dependence of Photoinudced Electron Transfer within Self-Associated Porphyrin:Guanine Monophosphate Complexes" R. Jasuja, T. L. Hazlett, M. K. Helms, S.-H. Lee, D. M. Jameson, and R. W. Larsen, *Chem. Phys. Lett.* (2001) 350, 515-521.

49. " Globin-Coupled Sensor Proteins: Domain Organization and Identification of Heme-Binding Proximal Histidine of Myoglobin-Like Aerotaxis Transducers in *Archae* and *Bacteria*", S. Hou, T. Freitas, R. W. Larsen, M. Piatibratov, V. Sivozhelezov, A. Yamamoto, E. A. Meleshkevitch, H. S. Yu, M. Zimmer, G. W. Ordal, and M. Alam, *Proc. Natl. Acad. Sci. USA* (2001) 98, 1741-1747.

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45. "Photochemistry of Fe(II)protoporphyrin IX in Tetramethylene Sulphoxide", R. W. Larsen and E. W. Findsen, *Inorg. Chim. Acta* (2000) 319, 1-7.

44. "Myoglobin-Like, Heme-containing Aerotaxis Transducers in *Archaea* and *Bacteria*", S. Hou, R. W. Larsen, D. Boudko, W. Riley, E. Karatan, M. Zimmer, G. W. Ordal, and M. Alam, *Nature* (2000) 403, 540-544.

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42. "Activation Profiles for Intramolecular Electron Transfer in Bovine Heart Cytochrome c Oxidase", R. W. Larsen, *FEBS Lett* (1999) 462, 75-78.

41. "Isolation, Characterization and Kinetic Properties of Polymorphic Hemoglobin from the Blue-Trevally (*Caranx melampygus)*", Larsen, R. W., *J. Biochem. Mol. Biol. Biophys*. (1999) 3, 203-210.

40. “Volume Changes Associated with CO-Photolysis from Fully Reduced Bovine Heart Cytochrome $aa_3$”, R. W. Larsen and T. Langley, *J. Am. Chem. Soc.* (1999) 121, 4495-4499.

39. “Spectroscopic Characterization of the Soluble Transducers HtrX and HtrXI from *Halobacter salinarium*”, R. W. Larsen, J. Yang, S. Hou, M. K. Helms, D. M. Jameson, and M. Alam, *J. Prot. Chem.* (1999) 18, 269-275.

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37. "Ground and Excited State Characterization of the Self-Assembled Tetrakis(4-Sulphonatophenyl)Porphine-24-Pyrimidnium Crown-6 Complex in Aqueous Solution", R. W. Larsen, M. K. Ehlms, Russel W. Everett, and D. M. Jameson, *Photochem. Photobiol*. (1999) 69, 429-434.

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155. **"**Ru(II)Tris(2,2'-bipyridine) templated metal organic frameworks- structure and photophysics" R.W. Larsen**,** L. Wojtas, C. McKeithan, 252nd American Chemical Society National Meeting & Exposition, Philidelphia PA, August 2016.

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153. "Ru(II)tris(2,2'-bipyridine) templated metal organic frameworks- structure and photophysics" R.W. Larsen, 61st Southeast Regional Meeting of the American Chemical Society, Columbia South Carolina, October, 2016.

151. "MOFs by Accident: Synthesis and photophysical characterization novel Ru(II)tris(2,2'-bipyridine) templated MOFs", R. W. Larsen, Tulane University, April 2015.

150. "Probing the stability and ligand binding of heme proteins 'mineralized' within the ZIF-8 metal organic framework" D. Grassie, C. McKeithan, R.W. Larsen, 71st Southwest Regional Meeting/61st Southeast Regional Meeting of the American Chemical Society, Memphis, Tennessee November, 2015.

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144. "Utilizing Metal Organic Framework Materials to Tune Transition Metal Photophycis/Photoreactivity: Where We are and Where Should We Go from Here?" R.W. Larsen, L. Wojtas and C.L. Whittington, 90th Florida Annual Meeting and Exposition (FAME), May, 2014.

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142. "Electronic Transitions of Copper Acetate and Derivatives" M.T. Kemp, C.M. Vetromille, C.L. Whittington and R.W. Larsen, ibid.

141. "Thermodynamics of Nitric Oxide Photorelease from Sodium Nitroprusside" P. J. Huhta, C.L. Whittington, R. W. Larsen, ibid.

140. "Ru(II)Bis(2,2' Bipyridine)L Complexes As Photorelease Agents For Bioactive Molecules: Photothermal Studies of Lgand Release" R. W. Larsen, A. Karolak, T.A. Word, M.T. Kemp, C.L. Whittington, H.L. Woodcock, A. van der Vaart, 58th Annual Meeting of the Biophysical Society, San Francisco, CA, February, 2014.

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67. “Characterization of the Ligand Rebinding to the Heme Domain of FixL and EcDOS Proteins”, J. Miksovska, J.D. Satterlee, and R. W. Larsen, ibid.

66. “Photothermal Studies of CO-Photolysis from Methionine Sulfoxide Modified Cytochrome c”, R. W. Larsen, Forty Eight Annual Meeting of the Biophysical Society, Baltimore, MD, Feb, 2004.

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64. “Characterization fo the Heme Domains of FixL and EcDos Proteins”, J. Miksovska, J. D. Satterlee, and R. W. Larsen, ibid.

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60. “A Novel Porphyrin-Polymer System for Biomimetic Oxidation”, A. King, L.-J. Ming, and R. W. Larsen, ibid.

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57. “Time Resolved Photoacoustic Study of the Ruthenium(II)bis(2,2’-bipyridyl)(4,4’-dicarboxy-2,2’-bipyridine) Complex”, J. Miksovska and R. W. Larsen, ibid.

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45. “Fluorescence Studies of Self-Assembled Complexes in Aqueous Solution: Models for Protein:Protein and Protein:Small Molecule Interactions”, R. W. Larsen, M. K. Helms, and D. M. Jameson, 4$^{th}$ International Weber Symposium on Innovative Fluorescence Methodologies in Biochemistry and Medicine, Maui, HI, June, 1999.

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20. "Protein:Porphyrin Interactions and Electron Transfer Activity of Anionic Porphyrin: Myoglobin Complexes", R. W. Larsen and D. H. Omdal, ibid.

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12. "Resonance Raman Spectroscopy of Photoinduced Electron Transfer Reactions in a Ruthenium Bis-Bipyridine Dicarboxybipyridine Cytochrome c (Lys 72) Derivative" J. D. Hobbs, D. J. Nunez, R. W. Larsen, L. P. Pan, F. Millet, and M. R. Ondrias, ibid.

11. "The Effects of pHMB-Modification and Heat Treatment on the $Cu_A$ Reduction Potential of Cytochrome c Oxidase", Z. Li, R. W. Larsen, L. P. Pan, and S. I. Chan, ibid.

10. "The Nature of $Cu_X$ in Cytochrome c Oxidase", L. P. Pan, Z. Li, R. W. Larsen, and S. I. Chan, ibid.

9. "Structure and Reactivity of Heme a Reconstituted Myoglobin and Heme a Reconstituted Horseradish Peroxidase", R. W. Larsen, D. J. Nunez, J. MacLeod, M. R. Ondrias, and S. I. Chan, Thirty Fourth Annual Biophysical Society National Meeting, San Fransisco, California, February 1991.

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7. "Resonance Raman Studies of the Interaction of Mesoheme and Copper with Histidine-Rich Glycoprotein", B. B. Muhoberac, R. W. Larsen, D. J. Nunez, W. T. Morgan, and M. R. Ondrias, Thirty Third Annual Biophysical Society Meeting, Baltimore, Maryland, February 1990.

6. "Resonance Raman Characterization of the Dioxygen Intermediates in Cytochrome c Oxidase", R. W. Larsen, W. Lei, R. A. Copeland, S. I. Chan, and M. R. Ondrias, ibid

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***Summary of Teaching Accomplishments at the University of Hawaii***

| Course | Avg Enrollment | Avg. Evaluation |
|---|---|---|
| Chemistry 171 (Introductory Chemistry) | 35 | 4.16 |
| Chemistry 171A/181A (Honors Introductory Chemistry) | 45 | 4.25 |
| Chemistry 333/333L (Instrumental Analysis/Lab) | 21 | 4.11 |
| Chemistry 352L (Physical Chemistry Laboratory) | 10 | N/A |
| Chemistry 601 (Graduate, Chemical Bonding) | 7 | 4.45 |
| Chemistry 602 (Graduate, Survey of Spectroscopy) | 7 | 4.20 |
| Chemistry 751 (Graduate, Special Topics: Spectroscopy of Biological Molecules) | 5 | 4.67 |

- Evaluation scores are on a scale of 1 to 5 with 5 being the highest rating.

*Dept. of Chemistry Nominee for the 1996/1997, 1997/1998, 1998/1999, 1999/2000 University of Hawaii Excellence in Teaching Award.*

**Courses Taught at BYU-Hawaii (Visiting Instructor, temporary position for ACS accreditation)**

| Course | Avg. Enrollment |
|---|---|
| Chemistry 361/361L Physical Chemistry I/Physical Chemistry I Laboartory | 10 |
| Chemistry 362/362L Physical Chemistry II/Physical Chemistry II Laboratory | 10 |
| Chemistry 421 Intermediate Inorganic Chemistry I | 8 |
| Chemistry 422 Intermediate Inorganic Chemistry II | 8 |

***Summary of Teaching Accomplishments at the University of South Florida***

| Course | Avg Enrollment | Avg Evaluation |
|---|---|---|
| Chemistry 3610/L (Intermediate Inorganic Chemistry) | 120 | 3.8 |
| Chemistry 3400/4410 (Physical Chemistry I) | 35 | 4.2 |
| Chemistry 3401/4411 (Physical Chemistry II) | 5 | 4.25 |
| Chemistry 3402L (Physical Chemsitry Lab) | 6 | 3.75 |
| Chemistry 4413 | 25 | 4.2 |

| | | |
|---|---|---|
| (Biophysical Chemistry) | | |
| Chemistry 4131 | 10 | 4.2 |
| (Methods of Chemical Analysis) | | |
| Chemistry 6398 | 12 | 4.7 |
| (Graduate, Spectroscopy) | | |
| Chemistry 6398 | 7 | 4.1 |
| (Graduate, Photochemistry and Photobiology) | | |
| Chemistry 6938 | 10 | 4.5 |
| (Graduate, Advanced Bioinorganic Chemistry) | | |

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