NATHAN I. HAMMER

CONTACT INFORMATION

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EDUCATION

Ph. D.	Physical Chemistry	2003	University of Tennessee	"Dipole-Bound Anions"
	Advisor: Prof. Robert N. Compton (rcompton@utk.edu)			
B. S.	Chemistry (Honors)	1998	University of Tennessee	Summa Cum Laude

APPOINTMENTS

2013 - present	Associate Professor of Chemistry, The University of Mississippi
2007 - 2013	Assistant Professor of Chemistry, The University of Mississippi
2005 - 2007	Intelligence Community Postdoctoral Research Fellow, Departments of Chemistry and Polymer Science & Engineering, University of Massachusetts, Amherst Advisors: Prof. Mike D. Barnes (mdbarnes@chem.umass.edu) and Prof. Todd S. Emrick (tsemrick@mail.pse.umass.edu)
2003 - 2005	Postdoctoral Research Associate, Department of Chemistry, Yale University Advisor: Prof. Mark A. Johnson (mark.johnson@yale.edu)
1998 - 2003	Teaching and Research Assistant, Department of Chemistry, University of Tennessee
1998	Research Assistant, Departments of Chemistry, University of Tennessee and Radiology and Radiological Sciences, Vanderbilt University

RESEARCH INTERESTS

Electronic, infrared, and Raman spectroscopy of single molecules, nanoparticles, and small clusters of molecules and ions to study the effects of noncovalent interactions on their evolving electronic and structural properties. Chemical education in the physical sciences to integrate theory with experiment.

TEACHING EXPERIENCE

Chemistry 105, General Chemistry I (Honors)
Chemistry 106, General Chemistry II
Chemistry 251, Introduction to Undergraduate Individual Research (Honors)
Chemistry 331/535, Physical Chemistry I
Chemistry 332/538, Physical Chemistry II
Chemistry 337, Physical Chemistry Laboratory
Chemistry 351, Undergraduate Individual Research (Honors)
Chemistry 463, Senior Undergraduate Research
Chemistry 532, Advanced Physical Chemistry: Thermodynamics
Chemistry 536, Advanced Physical Chemistry: Reaction Dynamics
Chemistry 662/762, Theory of Molecular Structure, Spectroscopy
Chemistry 697/797, Thesis/Dissertation Research

SELECTED SERVICE

University of Mississippi Faculty Research Development Fellow (2017–)
Ole Miss Physical Chemistry Summer Research Program and NSF REU Director (2009 –)
Ole Miss Local Section of the American Chemical Society Chair-Elect (2010, 2014, 2017) and Chair (2011, 2015)
UM Bachelor of Science in Chemistry (ACS Certified) Program Director (2014 –)
UM Department of Chemistry and Biochemistry Director of Undergraduate Research (2015 –)
UM Department of Chemistry and Biochemistry Awards Committee Chair (2011 –)
UM Undergraduate External Fellowship Committee (2011 –)
UM STEM Faculty Recruitment, Retention, and Development Working Group (2012)
UM STEM Student Recruitment, Retention, and Career Placement Working Group (2012)
UM Department of Chemistry and Biochemistry Seminar Coordinator (2009 – 2013)
Member of Departmental Graduate Recruitment, General Chemistry, Undergraduate Recruitment, and Department Chair, Analytical, Organic, Inorganic, & Instructional Assistant Professor Search Committees
Founding Member of Ole Miss Climate Change Study Group (2008)
Founding Member of Mississippi Biophysical Consortium (2007)
University of Tennessee Graduate Student Vice President (2000 – 2001) and President (2001 – 2002)

SELECTED AWARDS AND FELLOWSHIPS

Professionalism and Integrity Program Research Exemplar (U.S. Office of Research Integrity, 2017)
Ole Miss local section of the American Chemical Society Service Award (2012)
National Science Foundation Faculty Early Career Development (CAREER) Award (2010)
Alpha Omicron Pi Favorite Professor (2009)
University of Mississippi Faculty Research Fellow (2008)
Intelligence Community (IC) Postdoctoral Research Fellow (2005 – 2007)
Yates Graduate Dissertation Fellow (2002 – 2003), Hilton A. Smith Graduate Fellow (2001 – 2002)
John E. Bloor Award in Physical Chemistry (2001), Eugene John Barber Fellowship in Chemistry (2000)
First Year Graduate Student Achievement Award (1999), Research Merit Award (2002)
University of Tennessee Citation for Extraordinary Campus Leadership and Service (2002)
Tennessee, Ned McWherter, A.D. Melaven-Rhenium, and Calvin A. Buehler Scholar (1994 – 1998)
University of Tennessee Chemistry Department Recognized Graduating Senior (1998)
University of Tennessee Analytical Chemistry Division ACS Undergraduate Award (1996)

EXTERNAL FUNDING

"RII Track-2 FEC: Feeding and Powering the World - Capturing Sunlight to Split Water and Generate Fertilizer and Fuels" *Principal Investigator*, NSF EPSCoR (**OIA-1539035**) $6,000,000, '15 – '19
"MRI: Acquisition of a Raman Spectrometer for Research and Training at the University of Mississippi" *Principal Investigator,* NSF (**CHE-1532079**) $201,666, '15 – '18
"REU Site: Ole Miss Physical Chemistry Summer Research Program" *Principal Investigator*, NSF (**CHE-1460568**) $270,000, '15 – '18
"CAREER: Spectroscopically Tracking the Evolution of Noncovalent Interactions from the Single Molecule Level to the Condensed Phases" *Principal Investigator*, NSF Faculty Early Career Development (CAREER) Program (**CHE-0955550**) $650,000, '10 – '17
"REU Site: Ole Miss Physical Chemistry Summer Research Program" *Principal Investigator*, NSF (**CHE-1256713**) $300,000, '12 – '16
"Dynamics of Strand-Crossover Formation In Cadherin" *Co-PI* (with *Principal Investigator* Prof. Susan Pedigo, UM), NSF (**MCB-0950494**) $560,832, '10 – '13
"Modeling and Simulation of Complex Systems" *Senior Personnel*, NSF (**EPS-0903787**) $329,172, '09 - '14
"Exploring the Chemistry of Food: Engaging the Ole Miss Local Section and Oxford, MS Community" *Principal Investigator* (with Susan Pedigo), **American Chemical Society** $2,500, '15 – '16
"Ole Miss ACS Chemistry Book Club" *Co-PI* (with Susan Pedigo), **American Chemical Society** $3,000, '13 – '14
"Engaging Younger Chemists to Create a Sustainable Local Section" *Principal Investigator*, **American Chemical Society** $2,500, '11 – '12
"A Leadership Retreat for Undergraduate and Graduate Students" *Co-PI* (in partnership with Prof. Kate Stumpo, University of Tennessee-Martin), **American Chemical Society** $3,000, '11 – '12

AWARDS OF DIRECTED STUDENTS

Barry M. Goldwater Scholarship: Dana Reinemann (2012), Anna Hailey (2010)
NSF Graduate Research Fellowship: Dana Reinemann (Vanderbilt, 2015), Anna Hailey (Princeton, 2012)
UM Chemistry Outstanding Physical Chemistry Graduate Student: Shane Autry (2017)
UM Chemistry Graduate Research Award: John Kelly (2016)
UM Chemistry Undergraduate Research Award: Sarah Sutton (2017), Katelyn Allen (2017), Peyton Reves (2015), Kristina Cuellar (2012), Dana Reinemann (2011), Matt McDowell (2010)
UM Analytical Chemistry Award: Allyson Henke (2017), Andrew Kamiscke (2017), April Steen (2014)
UM Biochemistry Award: Sarah Sutton (2016)
UM Physical Chemistry Award: Allyson Henke (2017), Anna Craig (2015), Annie McClellan (2012), Dana Reinemann (2011)
UM Inorganic Chemistry Award: Dana Reinemann (2013)
UM Taylor Medalist: Anna Craig (2014), Joseph Golden (2012), Ramsey Frey (2012), Anna Hailey (2010), Austin Howard (2009)
UM Outstanding Engineering Student: Dana Reinemann (Chemical Engineering Junior 2011, Senior 2012), Anna Hailey (College of Engineering Senior 2011 and Chemical Engineering Senior 2011)
Mississippi EPSCoR State Meeting Student Poster Awards: Dana Reinemann (1st place 2012), Annie McClellan (3rd place 2012), Anna Hailey (1st place 2010)
UM Most Outstanding Senior Honors Thesis: Austin Howard (2009)

PUBLICATIONS

Peer-Reviewed Original Research Articles (h-index: 28, i10-index: 42, citations: 3201, updated 8/30/17)

---------- *Directed Undergraduate Students Italicized* ----------

82. J. Denny, G. Lang, A. McClellan, T. Woodby, J. Trate, E. Valente, N. I. Hammer, C. Webster, and T. K. Hollis, " Air-stable Palladium N-Heterocyclic Carbene and Abnormal Carbene based CCC-NHC Pincer Complexes and Raman Vibrational Studies," *Organometallics*, under review.
81. H. Cheema, A. Peddapuram, R. E. Adams, L. McNamara, L. Hunt, N. Le, D. L. Watkins, N. I. Hammer, R. H. Schmehl, and J. H. Delcamp, "Molecular Engineering of NIR Absorbing Thienopyrazine Double Donor Double Acceptor Organic Dyes for DSCs," *The Journal of Organic Chemistry*, under review.
80. L. E. McNamara, T. A. Rill, A. J. Huckaba, V. Ganeshraj, J. Gayton, *R. A. Nelson*, E. A. Sharpe, A. Dass, N. I. Hammer and J. H. Delcamp, "Indolizine-Squaraines: NIR Fluorescent Materials with Molecular Engineered Stokes Shifts," *Chemistry - A European Journal* (2017). DOI: 10.1002/chem.201702209
79. K. M. Dreux, L. E. McNamara, J. T. Kelly, A. M. Wright, N. I. Hammer, and G. S. Tschumper, "Probing dative and dihydrogen bonding in ammonia borane with electronic structure computations and Raman under nitrogen spectroscopy," *Journal of Physical Chemistry A*, 121, 5884 (2017). (Featured on inside cover) DOI: 10.1021/acs.jpca.7b03509
78. J. D. Cope, J. A. Denny, R. W. Lamb, L. E. McNamara, N. I. Hammer, C. E. Webster, and T. K. Hollis, "Synthesis, Characterization, Photophysics and a Ligand Rearrangement of CCC-NHC Pincer Nickel Complexes: Colors, Polymorphs Emission and Raman Spectra," *Journal of Organometallic Chemistry,* 845, 258 (2017). DOI: 10.1016/j.jorganchem.2017.05.046
77. Y. Zhang, S. A. Autry, L. E. McNamara, S. T. Nguyen, N. Le, P. Brogdon, D. L. Watkins, N. I. Hammer, and J. H. Delcamp, "Near-Infrared Fluorescent Thienothiadiazole Dyes with Large Stokes Shifts and High Photostability," *Journal of Organic Chemistry*, 82, 5597-5606 (2017). DOI: 10.1021/acs.joc.7b00422
76. T. L. Ellington, *P. L. Reves*, B. L. Simms, J. L. Wilson, D. L. Watkins, G. S. Tschumper, and N. I. Hammer, "Quantifying the effects of halogen bonding by haloaromatic donors on the acceptor pyrimidine," *ChemPhysChem*, 18, 1267-1273 (2017). DOI: 10.1002/cphc.201700114 (Featured on inside cover)
75. *S. C. Sutton*, W. E. Cleland, Jr., N. I. Hammer, "Introducing Students to a Synthetic and Spectroscopic Study of the Free Radical Chlorine Dioxide," *The Journal of Chemical Education*, 94, 515-520 (2017). DOI: 10.1021/acs.jchemed.6b00599
74. K. M. Williams, M. Gruner, J. Gensheimer, A. Wright, M. Blair, S. A. Autry, and N. I. Hammer, "Partial displacement of a triamine ligand from a platinum(II) complex after reaction with N-acetylmethionine," *Inorganica Chimica Acta*, 458, 163-170 (2017). DOI: 10.1016/j.ica.2017.01.010
73. N. N. Sreeramulu, L. McNamara, N. I. Hammer, and H. Rathnayake, "A versatile synthesis to novel binary reactive groups functionalized silsesquioxane microparticles," *Science Advances Today*, 3, 25266 (2017).
72. J. Wang, J. Waters, P. Kung, S. Kim, J. T. Kelly, L. E. McNamara, N. I. Hammer, A. Gupta, S. Pan, "A Facile Electrochemical Reduction Method for Improving Photocatalytic Performance of α-Fe_2O_3 Photoanode for Solar Water Splitting," *ACS Applied Materials & Interfaces*, 9, 381-390 (2017). DOI: 10.1021/acsami.6b11057
71. J. T. Kelly, *A. K. McClellan*, *L. V. Joe*, A. M. Wright, *L. T. Lloyd*, G. S. Tschumper, and N. I. Hammer, "Competition between Hydrophilic and Argyrophilic Interactions in Surface Enhanced Raman Spectroscopy (SERS)," *ChemPhysChem*, **17**, 2782-2786 (2016). DOI: 10.1002/cphc.201600678 (Featured on the inside cover)
70. A. J. Huckaba, A. Yella, L. E. McNamara, A. E. Steen, J. S. Murphy, C. A. Carpenter, G. D. Puneky, N. I. Hammer, M. K. Nazeeruddin, M. Grätzel, and J. H. Delcamp, "Molecular Design Principles of Near-Infrared Absorbing and Emitting Indolizine Dyes," *Chemistry - A European Journal*, **22**, 15536-15542 (2016). DOI: 10.1002/chem.201603165 (2016).
69. S. Ananthakrishnan, J. Strain, A. Mitul, L. E. McNamara, A. Iefanova, N. I. Hammer, Q. Qiao, and H. Rathnayake, "P3HT-block-Poly(anthracene-9,10-diyl) Donor-Donor Polymer Dyad for Organic Photovoltaics," *Journal of Polymer Science, Part A: Polymer Chemistry*, **54**, 3032-3045 (2016). DOI: 10.1002/pola.28189
68. P. Brogdon, L. E. McNamara, A. Peddapuram, N. I. Hammer, and J. H. Delcamp, "Toward Tightly Bound Carboxylic Acid-Based Organic Dyes for DSCs: Relative TiO2 Binding Strengths of Benzoic Acid, Cyanoacrylic Acid, and Conjugated Double Carboxylic Acid Anchoring Dyes," *Synthetic Metals*, 222, 66-75 (2016). DOI: 10.1016/j.synthmet.2016.03.031

67. J. Lu, K. Cuellar, N. I. Hammer, S. Jo, A. Gryczke, K. Kolter, N. Langley, M. A. Repka,"Preparation and Solid-state Characterization of Felodipine-Soluplus® Amorphous Solid Dispersions," *Drug Development and Industrial Pharmacy*, **42**, 485-496 (2016). DOI: 10.3109/03639045.2015.1104347
66. L. E. McNamara, N. Liyanage, A. Peddapuram, J. S. Murphy, J. H. Delcamp, and N. I. Hammer, "Donor-Acceptor-Donor Thienopyrazines via Pd-Catalyzed C-H Activation as NIR Fluorescent Materials," *Journal of Organic Chemistry*, **81**, 32-42 (2016). DOI: 10.1021/acs.joc.5b01958
65. J. T. Kelly, Y. Wang, X. Zhang, S. Lyapustina, M. M. Nilles, S. Xu, J. D. Graham, and K. H. Bowen, "The Onset of Electron-Induced Proton-Transfer in Hydrated Azabenzene Cluster Anions," *PCCP*, **18**, 704-712 (2016). (Featured on the cover) DOI: 10.1039/C5CP02746B
64. A. F. DeBlase, C. Wolke, G. H. Weddle, K. Archer, K. Jordan, J. T. Kelly, G. S. Tschumper, N. I. Hammer, and M. A. Johnson, "Water network-mediated, electron-induced proton transfer in anionic $[C_5H_5N\cdot(H_2O)_n]^-$ clusters," *The Journal of Chemical Physics*, **143**, 144305 (2015). DOI: 10.1063/1.4931928
63. J. Wilson, J. S. D. Williams, C. Petkovsek, *P. Reves*, J. Jurss, N. I. Hammer, G. Tschumper, and D. L. Watkins, "Synergistic Effects of Halogen Bond and pi-pi Interactions in Thiophene-based Building Blocks," *RSC Advances*, **5**, 82544-82548 (2015). DOI: 10.1039/c5Ra16680b
62. G. E. Tyson, K. Tokmic, C. S. Oian, D. Rabinovich, H. U. Valle, T. K. Hollis, J. T. Kelly, K. A. Cuellar, L. E. McNamara, N. I. Hammer, C. E. Webster, A. G. Oliver, "Synthesis, characterization, photophysical properties, and catalytic activity of an SCS bis(N-heterocyclic thione) (SCS-NHT) Pd pincer complex," *Dalton Transactions*, **44**, 14475-14482 (2015). DOI: 10.1039/C4DT03324H
61. J. Bae, L. E. McNamara, M. A. Nael, F. Mahdi, R. J. Doerksen, G. L. Bidwell III, N. I. Hammer and S. Jo, "Nitroreductase-triggered activation of a novel caged fluorescent probe obtained from methylene blue," *Chemical Communications*, **51**, 12787-12790 (2015). DOI: 10.1039/C5CC03824C
60. N. Vunnam, N. I. Hammer, and S. Pedigo, "Basic Residue at Position 14 is Not Required for Fast Assembly and Disassembly Kinetics in Neural Cadherin," *Biochemistry*, **54**, 836-843 (2015). DOI: 10.1021/bi5010415
59. F. Begum, J. Fergusona, K. McKenna, L. E. McNamara, N. I. Hammer, and H. Rathnayake, "Preparation of n-Type Semiconducting Polymer Nanoarrays by Covalent Synthesis Followed by Crystallization," *New Journal of Chemistry*, **39**, 2004-2010 (2015). DOI: 10.1039/C4NJ00968A
58. A. J. Huckaba, F. Giordano, L. E. McNamara, K. Dreux, N. I. Hammer, G. S. Tschumper, S. M. Zakeeruddin, M. Grätzel, M. K. Nazeeruddi, and J. H. Delcamp, Indolizine-Based Donors as Organic Sensitizer Compounds for Dye-Sensitized Solar Cells, *Advanced Energy Materials*, **5**, 201401629 (2015). DOI: 10.1002/aenm.201401629
57. *D. J. George* and N. I. Hammer, "Studying the Binomial Distribution Using LabVIEW," *Journal of Chemical Education*, **92**, 389–394 (2014). DOI: 10.1021/ed500684k
56. J. T. Kelly, S. Xu, J. Graham, J. M. Nilles, D. Radisic, A. M. Buonaugurio, K. H. Bowen, Jr., N. I. Hammer, and G. S. Tschumper, "Photoelectron Spectroscopic and Computational Study of Hydrated Pyrimidine Anions," *Journal of Physical Chemistry A*, **118**, 11901–11907 (2014). DOI: 10.1021/jp504724v
55. *E.R. Frey*, A. Sygula, N.I. Hammer, "Particle in a Disk: A Spectroscopic and Computational Laboratory Exercise Studying the Polycyclic Aromatic Hydrocarbon Corannulene," *Journal of Chemical Education*, **91**, 2186–2190 (2014). DOI: 10.1021/ed4005062
54. R. N. Compton and N. I. Hammer, "Raman Under Liquid Nitrogen (RUN)," *Journal of Physics: Conference Series*, **548**, 012017 (2014). DOI: 10.1088/1742-6596/548/1/012017
53. L. Xu, V. R. Manda, L. E. McNamara, M. Jahan, H. Rathnayake, and N. I. Hammer, "Covalent Synthesis of Perylenediimide-Silsesquioxane Nanostructures with Controlled Morphology," *RSC Advances*, **4**, 30172-30179 (2014). DOI: 10.1039/C4RA03260H
52. *D. N. Reinemann*, G. S. Tschumper, and N. I. Hammer, "Characterizing the B-P Stretching Vibration in Phosphorous Substituted Phosphine Boranes," *ChemPhysChem*, **15**, 1867-1871 (2014). DOI: 10.1002/cphc.201400036
51. K. A. Cuellar, K. L. Munroe, D. H. Magers, and N. I. Hammer, "Noncovalent Interactions in Micro-solvated Networks of Trimethylamine N-oxide," *Journal of Physical Chemistry B*, **118**, 449-459 (2014). DOI: 10.1021/jp408659
50. A. M. Wright, *A. A. Howard*, J. C. Howard, G. S. Tschumper, and N. I. Hammer, "Charge Transfer and Blue Shifting of Vibrational Frequencies in a Hydrogen Bond Acceptor," *Journal of Physical Chemistry A*, **117**, 5435-5446 (2013). DOI: 10.1021/jp401642b (Cover Article)
49. A. Huckaba, B. Cao, T. K. Hollis, H. Valle, J. Kelly, N. I. Hammer, and A. Oliver "Platinum CCC-NHC Benzimidazolyl Pincer Complexes: Synthesis, Characterization, Photostability, and Theoretical Investigation of a Blue-Green Emitter," *Dalton Transactions*, **42**, 8820-8826 (2013).

48. H. Rathnayakea, N. Wright, A. Patel, J. Binion, L. E. McNamara, D. J. Scardino, and N. I. Hammer, "Synthesis and Characterization of Poly(3-Hexylthiophene)-Funtionalized Siloxane Nanoparticles," *Nanoscale*, **5**, 3212-3215 (2013). DOI: 10.1039/C3NR34249B
47. D. J. Scardino, R. Kota, D. L. Mattern, and N. I. Hammer, "Single Molecule Spectroscopic Studies of Two Organic Rectifiers," *Chemical Physics Letters*, **550**, 138-145 (2012). DOI: 10.1016/j.cplett.2012.09.008
46. W.-Y. Chen, G. Shi, *A. K. Hailey*, E. S. T. Tsai, N. I. Hammer, and Z. Wu, "Photocatalytic Conversion of CO_2 to Organic Compounds Using A Green Photocatalyst – an Undergraduate Research Experiment," *The Chemical Educator*, **17**, 166-171 (2012). DOI: 10.1007/s00897122438
45. H. Rathnayake, J. Binion, A. McKee, D. J. Scardino, and N. I. Hammer, "Perylenediimide Functionalized Bridged-Siloxane Nanoparticles: Synthesis, Particle Morphology and Photovoltaic Performance," *Nanoscale* **4**, 4631-4640 (2012). DOI: 10.1039/C2NR30538K
44. X. Zhang, A. M. Wright, N. J. DeYonker, T. K. Hollis, N. I. Hammer, C. E. Webster, and E. Valente, "Synthesis, Air-stability, Photo-bleaching, and DFT Modeling of Blue Light-Emitting Platinum CCC-N-Heterocyclic Carbene Pincer Complexes," *Organometallics*, **31**, 1664-1672 (2012). DOI: 10.1021/om200687w
43. J. C. Howard, N. I. Hammer, and G. S. Tschumper, "Structures, Energetics and Vibrational Frequency Shifts of Hydrated Pyrimidine," *ChemPhysChem*, **12**, 3262-3273 (2011). DOI: 10.1002/cphc.201100457
42. K. L. Munroe, D. H. Magers, and N. I. Hammer, "Raman Spectroscopic Signatures of Noncovalent Interactions Between Trimethylamine N-oxide (TMAO) and Water," *Journal of Physical Chemistry B*, **115**, 7699-7707 (2011). DOI: 10.1021/jp203840w
41. *D. N. Reinemann*, A. M. Wright, J. D. Wolfe, G. S. Tschumper, and N. I. Hammer, "Vibrational Spectroscopy of N-Methyliminodiacetic Acid (MIDA)-Protected Boronate Ester: Assignment of the B-N Dative Bond Stretching Frequency," *Journal of Physical Chemistry B*, **115**, 6426-6431 (2011). DOI: 10.1021/jp112016j (Cover Article)
40. D. J. Scardino, A. A. Howard, *M. D. McDowell*, and N. I. Hammer, "Raman Spectroscopy as the Method of Detection for Constructing a Binary Liquid-Vapor Phase Diagram," *Journal of Chemical Education,* **88**, 1162-1165 (2011). DOI: 10.1021/ed100016g
39. A. M. Wright, *L. V. Joe*, *A. A. Howard*, G. S. Tschumper, and N. I. Hammer, "Spectroscopic and Computational In-sight into Weak Noncovalent Interactions in Crystalline Pyrimidine," *Chemical Physics Letters*, **501**, 319-323 (2011). DOI:10.1016/j.cplett.2010.11.046
38. D. J. Scardino, *M. McDowell*, *J. D. Graham*, and N. I. Hammer, "The Multiphoton Ionization Spectrum of Methyl Iodide Revisted: 1.67 - 2.2 eV Excitation," *Journal of Atomic and Molecular Sciences*, **2**, 93-98 (2011). DOI: 10.4208/jams.010511.011411a
37. Q. Zhao, J. Wang, J. L. Freeman, M. Murphy-Jolly, A. M. Wright, D. J. Scardino, N. I. Hammer, C. M. Lawson, and G. M. Gray, "Syntheses, and Optical, Fluorescence and Nonlinear Optical Characterization of Phosphine-Substituted Terthiophenes," *Inorganic Chemistry,***50**, 2015-2027 (2011). DOI: 10.1021/ic101624y
36. *A. A. Howard*, G. S. Tschumper, and N. I. Hammer, "Effects of Hydrogen Bonding on Vibrational Normal Modes of Pyrimidine," *Journal of Physical Chemistry A*, **114**, 6803-6810 (2010). DOI: 10.1021/jp101267w
35. S. N. Murthy, A. B. Nair, N. I. Hammer, S. R. Kiran Vaka, and A. E. Wright, "Dermatokinetics of Nanoparticles (25 nm)," *International Journal of Innovative Pharmaceutical Research*, 1, 37-43 (2010).

---------- *Prior to Becoming an Independent Investigator at the University of Mississippi* ----------

34. A. Muraoka, Y. Inokuchi, N. I. Hammer, J-W. Shin, M. A. Johnson, and T. Nagata, "Structural Evolution of the $[(CO_2)_n(H_2O)]^-$ Cluster Anions: Quantifying the Effect of Hydration on the Excess Charge Accommodation Motif," *Journal of Physical Chemistry A*, **113**, 8942–8948 (2009). DOI: 106 3/1.2827475
33. J. R. Roscioli, N. I. Hammer, M. A. Johnson, K. Diri and K. D. Jordan, "Exploring the correlation between network structure and electron binding energy in the $(H_2O)_7^-$ cluster through isomer photoselected vibrational predissociation spectroscopy and ab initio calculations: Addressing complexity beyond types I-III," *Journal of Chemical Physics*, **128**, 104314 (2008). DOI: 10.1063/1.2827475
32. M. Y. Odoi, N. I. Hammer, K. T. Early, K. D. McCarthy, R. Tangirala, T. Emrick and M. D. Barnes, "Fluorescence lifetimes and correlated photon statistics from single CdSe/oligo-(phenylene vinylene) composite nanostructures," *Nano Letters*, **7**, 2769-2773, (2007). DOI: 10.1021/nl0713068
31. K. T. Early, K. D. McCarthy, N. I. Hammer, M. Y. Odoi, R. Tangirala, T. Emrick and M. D. Barnes, "Blinking suppression and intensity recurrences in single CdSe-oligo(phenylene vinylene) nanostructures: experiment and kinetic model," *Nanotechnology*, **18**, 424027, (2007). DOI: 10.1088/0957-4484/18/42/424027

30. M. Y. Odoi, N. I. Hammer, H. P. Rathnayake, P. M. Lahti, and M. D. Barnes, "Single Molecule Studies of a Model Fluorenone," *ChemPhysChem*, **8**, 1481-1486 (2007). DOI: 10.1021/nl0713068
29. H. P. Rathnayake, A. Cirpan, F. E. Karasz, M. Y. Odoi, N. I. Hammer, M. D. Barnes, and P. M. Lahti, "Luminescence of Molecular and Block Copolymeric 2,7-Bis(phenylethenyl)-fluorenones; Identifying Green-band Emitter Sites in a Fluorene-Based Luminophore," *Chemistry of Materials*, **19**, 3265-3270 (2007). DOI: 10.1021/cm070552h
28. N. I. Hammer, K. T. Early, M. Y. Odoi, R. Tangirala, K. Sill, T. Emrick, and M. D. Barnes, "Modification of Blinking Statistics in Solid State Quantum Dot/Conjugated Organic Polymer Composite Nanostructures," in *Quantum Dots – Growth, Behavior, and Applications*, edited by Eric A. Stach, Curtis R. Taylor, Zhiming M. Wang, and Qi-Kun Xue (Mater. Res. Soc. Proc. 959, Warrendale, PA, 2007), 0959-M2-3.
27. M. Y. Odoi, N. I. Hammer, H. Rathnayake, P. M. Lahti and M. D. Barnes, "Single Molecule Studies of a 2,7-Bis-(Phenylethenyl)fluorenone: Implications for Green-Emission Bands in Fluorene-based OLEDs," in *Organic Electronics – Materials, Devices, and Applications*, edited by Franky So, Graciela B. Blanchet, and Yutaka Ohmori (Mater. Res. Soc. Proc. 965, Warrendale, PA, 2007), 0965-S3-28.
26. R. Hassey, E. Swain, N. I. Hammer, D. Venkataraman, and M. D. Barnes, "Robust Circular Polarized Emission from Nanoscopic Single-Molecule Sources: Application to Solid State Devices," in *Organic Electronics – Materials, Devices, and Applications*, edited by Franky So, Graciela B. Blanchet, and Yutaka Ohmori (Mater. Res. Soc. Proc. 965, Warrendale, PA, 2007), 0965-S12-8.
25. N. I. Hammer, K. T. Early, M. Y. Odoi, K. Sill, T. Emrick, and M. D. Barnes, "Quantum Dot/Polymer Composites for Quantum Informatics and Sensor Applications," *J. Intel. Com. Res. Dev.* (JICRD) (2006).
24. R. Hassey, E. Swain, N. I. Hammer, D. Venkataraman, and M. D. Barnes, "Probing the Chiroptical Response of a Single Molecule," *Science*, **314**, 1437-1439 (2006). DOI: 10.1126/science.1134231
23. N. I. Hammer, K. T. Early, K. Sill, M. Y. Odoi, T. Emrick, and M. D. Barnes, "Coverage-mediated suppression of blinking in solid state quantum dot-conjugated organic composite nanostructures," *Journal of Physical Chemistry B*, **110**, 14167-14171 (2006). DOI: 10.1021/jp0620645f (Cover Article)
22. M. Y. Odoi, N. I. Hammer, K. Sill, T. Emrick, and M. D. Barnes, "Observation of enhanced energy transfer in individual quantum dot-oligophenylene vinylene nanostructures," *Journal of the American Chemical Society*, 128, 3506-3507 (2006). DOI: 10.1021/ja058429j (Communication)
21. J. R. Roscioli, N. I. Hammer, and M. A. Johnson, "Infrared Spectroscopy of Water Cluster Anions, $(H_2O)_{n=3-24}^-$ in the HOH Bending Region: Persistence of the Double H-Bond Acceptor (AA) Water Molecule in the Excess Electron Binding Site of the Class I Isomers," *Journal of Physical Chemistry A*, **110**, 7517-7520 (2006). DOI: 10.1021/jp062029g
20. N. I. Hammer, J. R. Roscioli, J. C. Bopp, J. M. Headrick, and M. A. Johnson, "Vibrational predissociation spectroscopy of the $(H_2O)_{6-21}^-$ clusters in the OH stretching region: Evolution of the excess electron binding signature into the intermediate cluster size regime," *Journal of Chemical Physics*, **123**, 244311 (2005). DOI: 10.1063/1.2134701
19. N. I. Hammer, J. R. Roscioli, M. A. Johnson, E. M. Myshakin, and K. D. Jordan, "Infrared Spectrum and Structural Assignment of the Water Trimer Anion," *Journal of Physical Chemistry A*, **109**, 11526-11530 (2005). DOI: 10.1021/jp053769c
18. J. M. Headrick, E. G. Diken, R. S. Walters, N. I. Hammer, R. A. Christie, J. Cui, E. M. Myshakin, M. A. Duncan, M. A. Johnson, and K. D. Jordan, "Spectral signatures of hydrated proton vibrations in water clusters," *Science*, **308**, 1765-1769 (2005). DOI: 10.1126/science.1113094
17. N. I. Hammer, J. R. Roscioli, and M. A. Johnson, "Identification of two distinct electron binding motifs in the anionic water clusters: A vibrational spectroscopic study of the $(H_2O)_6^-$ isomers," *Journal of Physical Chemistry A*, **109**, 7896-7901 (2005). DOI: 10.1021/jp052144b (Cover Article)
16. E. G. Diken, N. I. Hammer, M. A. Johnson, R. A. Christie, and K. D. Jordan, "Mid infrared characterization of the $NH_4^+ \cdot (H_2O)_n$ clusters in the neighborhood of the n = 20 magic number," *Journal of Chemical Physics*, **123**, 164309 (2005). DOI: 10.1063/1.2074487
15. N. I. Hammer, E. G. Diken, J. R. Roscioli, E. M. Myshakin, K. D. Jordan, A. B. McCoy, X. Huang, S. Carter, J. M. Bowman, and M. A. Johnson, "The vibrational predissociation spectra of the $H_5O_2^+ \cdot RG_n$ (RG = Ar, Ne) clusters: Correlation of the solvent perturbations in the free OH and shared proton transitions of the Zundel ion," *Journal of Chemical Physics*, **123**, 244301 (2005). DOI:10.1063/1.1927522
14. N. I. Hammer, R. N. Compton, L. Adamowicz, and S. Stepanian, "Isotope Effects in Dipole-Bound Anions of Acetone," *Physical Review Letters*, **94**, 153004 (2005). DOI: 10.1103/PhysRevLett.94.153004
13. W. D. Robertson, N. I. Hammer, J. E. Bartmess, R. N. Compton, K. Diri, and K. D. Jordan, "Negative Ions of Ethylene Sulfite," *Journal of Chemical Physics*, **123**, 204319 (2005). DOI: 10.1063/1.1913578

12. J-W. Shin, N. I. Hammer, M. A. Johnson, H. Schneider, A. Glöß, and J. M. Weber, "Infrared determination of core-ion switching in the $(CO_2)_n^-$ clusters from both the ion and solvent perspectives," *Journal of Physical Chemistry A*, **109**, 3146-3152 (2005). DOI: 10.1021/jp050092k
11. N. I. Hammer, J-W. Shin, J. M. Headrick, E. G. Diken, J. R. Roscioli, G. H. Weddle, and M. A. Johnson, "How do small networks bind an excess electron?" *Science*, **306**, 675-679 (2004). DOI: 10.1126/science.1102792
10. J-W. Shin, N. I. Hammer, J. M. Headrick, and M. A. Johnson, "Preparation and photoelectron spectrum of the 'missing' $(H_2O)_4^-$ cluster," *Chemical Physics Letters*, **399**, 349-353 (2004). DOI: 10.1016/j.cplett.2004.10.015
9. E. G. Diken, N. I. Hammer, and M. A. Johnson, "Preparation and photoelectron spectrum of the glycine molecular anion: Assignment to a dipole-bound electron species with a high-dipole moment, non-zwitterionic form of the neutral core," *Journal of Chemical Physics*, **120**, 9899-9902 (2004). DOI: 10.1063/1.1755196
8. J-W. Shin, N. I. Hammer, E. G. Diken, M. A. Johnson, R. S. Walters, T. D. Jaeger, M. A. Duncan, R. A. Christie, and K. D. Jordan, "Infrared signature of structural motifs associated with the $H^+(H_2O)_n$, n = 6-27, clusters," *Science*, **304**, 1137-1140 (2004). DOI: 10.1126/science.1096466
7. E. A. Price, N. I. Hammer, and M. A. Johnson, "A cluster study of Cl_2^- microhydration: Size-dependent competition between symmetrical H-bonding to the anion and the formation of cyclic water networks in the $Cl_2^-\cdot(H_2O)_{1\text{-}5}$ series," *Journal of Physical Chemistry A*, **108**, 3910-3915 (2004). DOI: 10.1021/jp031239f
6. C. Desfrançois, Y. Bouteiller, J. P. Schermann, D. Radisic, S. T. Stokes, K. H. Bowen, N. I. Hammer, and R. N. Compton, "Long-range electron binding to quadrupolar molecules," *Physical Review Letters*, **92** (8), 083003 (2004). DOI: 10.1103/PhysRevLett.92.083003
5. N. I. Hammer, R. J. Hinde, K. Diri, K. D. Jordan, D. Radisic, K. H. Bowen, and R. N. Compton, "Dipole-Bound Anions of Highly Polar Molecules: Ethylene Carbonate and Vinylene Carbonate," *Journal of Chemical Physics*, **120**, 685-690 (2004).
4. N. I. Hammer, K. Diri, K. D. Jordan, C. Desfrançois, and R. N. Compton, "Dipole-Bound Anions of Carbonyl, Nitrile, and Sulfoxide Containing Molecules," *Journal of Chemical Physics*, **119**, 3650-3660 (2003). DOI: 10.1063/1.1590959
3. N. I. Hammer and R. N. Compton, "Effects of Electric Fields and Collisions on Highly Excited Rubidium Atoms," *European Physical Journal D*, **26**, 27-32 (2003). DOI: 10.1140/epjd/e2003-00200-0
2. N. I. Hammer, F. Gao, R. M. Pagni, and R. N. Compton, "Charge Transfer Reactions between Chiral Rydberg Atoms and Chiral Molecules," *Journal of Chemical Physics*, **117**, 4299-4305 (2002). DOI: 10.1063/1.1496760
1. N. I. Hammer and R. N. Compton, "Effects of dc Electric Fields on Multiphoton Ionization of Rubidium Atoms at Low and High Densities" in *Tenth International Symposium on RIS Proceedings*, edited by J. Parks and J. Young (American Institute of Physics, 2001), 145-153. DOI: 10.1063/1.1405596

Book Chapters, Invited Reviews, and Comments

8. N. I. Hammer, S. Sutton, J. Delcamp, and J. D. Graham, "Photocatalytic Water Splitting and Carbon Dioxide Reduction," Handbook of Climate Change Mitigation and Adaptation, Springer, 2nd Edition (2016).
7. J. T. Kelly, J. A. Maner, and N. I. Hammer, "Recent Advancements in Chemical Physics," *Journal of Physical Chemistry A*, 119, 12909–12910 (2015). DOI: 10.1021/acs.jpca.5b12096
6. J. D. Graham and N. I. Hammer, "Photocatalytic Water Splitting and Carbon Dioxide Reduction," in *Handbook of Climate Change Mitigation*, Springer, 2012.
5. G. S. Tschumper and N. I. Hammer, "Non-Covalent Interactions: Theory and Experiment," *Journal of the American Chemical Society*, 132, 9512 (2010). (Book Review)
4. M. McDowell, A. E. Wright and N. I. Hammer, "Semiconductor Nanocrystals Hybridized with Functional Ligands: New Composite Materials with Tunable Properties," *Materials*, 3, 614-637 (2010). (Review)
3. M. D. Barnes, R. H. Paradise, E. Swain, D. Venkataraman, and N. I. Hammer, 'Comment on "Limits on Fluorescence Detected Circular Dichroism of Single Helicene Molecules" *Journal of Physical Chemistry A*, 113, 9757–9758 (2009).
2. N. I. Hammer, T. Emrick, and M. D. Barnes, "Quantum dots coordinated with conjugated organic ligands: new nanomaterials with novel photophysics," *Nanoscale Research Letters*, 2, 282-290 (2007). (Review)
1. R. N. Compton and N. I. Hammer, "Multipole-Bound Molecular Anions" in *Advances in Gas-Phase Ion Chemistry Volume 4*, edited by N. Adams and L. Babcock (Elsevier Science, 2001), 257-291.

STUDENT PRESENTATIONS

115. Louis McNamara "Time-Correlated Single Photon Counting (TCSPC) for Excited State Lifetime Measurements," Feeding and Powering the World 2017: Building the Knowledge Base, Oxford, MS, June 2017. (oral)
114. Shane Autry "Spectroscopic Characterization of the Physical and Photophysical Properties of Newly Developed Pincer Complexes," Feeding and Powering the World 2017: Building the Knowledge Base, Oxford, MS, June 2017. (oral)
113. April Steen "Photophysical Characterization of Bipyridyl Hybrid Oligomers: Examining Mixed Furan-Thiophene Systems Using Spectroscopy and DFT Methods," Feeding and Powering the World 2017: Building the Knowledge Base, Oxford, MS, June 2017. (oral)
112. Leigh Anna Hunt, Roberta R. Rodrigues, Yanbing Zhang, Adithya Peddapuram, Louis McNamara, Jared H. Delcamp, and Nathan I. Hammer, "Measuring Electron Injection Efficiencies for Optimization of Dye-Sensitized Solar Cells," Feeding and Powering the World 2017: Building the Knowledge Base, Oxford, MS, June 2017.
111. Ashley E. Williams, John T. Kelly, Steven R. Davis, and Nathan I. Hammer, "Spectroscopic and computational studies of the hydrogen bonding interactions of hydroxyethyl ethers," Feeding and Powering the World 2017: Building the Knowledge Base, Oxford, MS, June 2017.
110. Sarah C. Sutton, Walter E. Cleland, and Nathan I. Hammer, "Spectroscopic and computational study of chlorine dioxide/water interactions," Feeding and Powering the World 2017: Building the Knowledge Base, Oxford, MS, June 2017.
109. April E. Steen, Suong Nguyen, Thomas L. Ellington, Gregory S. Tschumper, Davita L. Watkins, and Nathan I. Hammer, "Synthesis and photophysical characterization of bipyridyl hybrid oligomers: Examining mixed furan-thiophene systems using spectroscopy and DFT methods," 253rd National Meeting of the American Chemical Society, San Francisco, CA, April 2017.
108. Shane A. Autry, Mihn Zhang, V. Dixit, T. Keith Hollis, C. Edwin Webster, and Nathan I. Hammer, "Spectroscopic characterization of the physical and photo-physical properties of newly developed platinum pincer complexes," 253rd National Meeting of the American Chemical Society, San Francisco, CA, April 2017.
107. Louis E. McNamara, Hamad Cheema, Jared H. Delcamp, and Nathan I. Hammer, "Photophysical investigation of electron ejection efficiencies of novel organic near-IR absorbing dyes into TiO_2 based semiconductor surfaces for dye-sensitized solar cell applications," 253rd National Meeting of the American Chemical Society, San Francisco, CA, April 2017. (oral)
106. Katelyn A. Allen, Suong Nguyen, Thomas L. Ellington, Gregory S. Tschumper, Davita L. Watkins, and Nathan I. Hammer, "Raman spectroscopic and computational study of the electron withdrawing effects on halogen bonding," 253rd National Meeting of the American Chemical Society, San Francisco, CA, April 2017.
105. Sarah C. Sutton, Walter E. Cleland, and Nathan I. Hammer, "Spectroscopic and computational study of chlorine dioxide/water interactions," 253rd National Meeting of the American Chemical Society, San Francisco, CA, April 2017.
104. Ashley E. Williams, John T. Kelly, Steven R. Davis, and Nathan I. Hammer, "Spectroscopic and computational studies of the hydrogen bonding interactions of hydroxyethyl ethers," 253rd National Meeting of the American Chemical Society, San Francisco, CA, April 2017.
103. Rachael A. Nelson, Louis E. McNamara, Tana Rill, Aron Huckaba, Jared H. Delcamp, and Nathan I. Hammer, "Investigating the photophysical properties of indolizine-squaraines," 253rd National Meeting of the American Chemical Society, San Francisco, CA, April 2017.
102. Lemuel Tsang and Nathan I. Hammer, "Fundamental structural studies of thiolate-protected gold clusters using Raman spectroscopy" 253rd National Meeting of the American Chemical Society, San Francisco, CA, April 2017.
101. Louis McNamara, Tana Rill, Jared Delcamp, Nathan I. Hammer, "Indolizines-Squaraine based NIR Emissive Materials: Characterization and Applications," Feeding and Powering the World 2016: Building the Network, Oxford, MS, July 2016. (oral)
100. Katelyn Allen, Suong Nguyen, John Kelly, Gregory S. Tschumper, Davita L. Watkins, and Nathan I. Hammer, "A Raman Spectroscopic and Computational Study of the Electron Withdrawing Effects on Halogen Bonding," Feeding and Powering the World 2016: Building the Network, Oxford, MS, July 2016.
99. Shane A. Autry, T. Keith Hollis, Nathan I. Hammer, "Spectroscopic Characterization of the Physical and Photo-Physical Properties of Newly Developed Platinum Pincer Complexes," Feeding and Powering the World 2016: Building the Network, Oxford, MS, July 2016.

98. Kim Hamilton-Wims, Nathan Hammer, and Jared H. Delcamp, "Research Experience for Community College Instructors in the Water-Energy-Food Nexus: Preparation of a Cobalt-Based Dye-Sensitized Solar Cell," Feeding and Powering the World 2016: Building the Network, Oxford, MS, July 2016.
97. Cameron L. Smith, Han Thuy An Truong,2 Wei-Yin Chen, and Nathan I. Hammer, "Raman Spectroscopic Characterization of Functionalized Graphene Nanomaterials," Feeding and Powering the World 2016: Building the Network, Oxford, MS, July 2016.
96. April E. Steen, Suong T. Nguyen, Thomas L. Ellington, Gregory S. Tschumper, Davita L. Watkins, and Nathan I. Hammer, "A Spectroscopic and Computational Study of Newly- Synthesized Mixed Furan-Thiophene Oligomers," Feeding and Powering the World 2016: Building the Network, Oxford, MS, July 2016.
95. Sarah Sutton, Walter E. Cleland, Jr., and Nathan I. Hammer, "Spectroscopic and Computational Study of Chlorine Dioxide/Water Interactions," Feeding and Powering the World 2016: Building the Network, Oxford, MS, July 2016.
94. Daniel Touzeau, Nalaka Liyanage, Nathan I. Hammer, and Jared H. Delcamp, "Synthesis and Characterization of an Indolizine-based Donor-Acceptor Molecule for Use in Dye Sensitized Solar Cells," Feeding and Powering the World 2016: Building the Network, Oxford, MS, July 2016.
93. Vy Tran and Nathan Hammer, "The Application of Surface-Enhanced Raman Spectroscopy (SERS) for Materials Characterization," Feeding and Powering the World 2016: Building the Network, Oxford, MS, July 2016.
92. Katelyn E. Allen, Suong Nguyen, John T. Kelly, Davita L. Watkins, and Nathan I. Hammer, "A Raman Spectroscopic and Computational Study of the Electron Withdrawing Effects on Halogen Bonding," Posters in the Rotunda, Jackson, MS, March 2016.
91. John T. Kelly and Nathan I. Hammer, "Indirect radiation damage to DNA by low-energy electron attachment to nucleobase subunits,"2016 University of Mississippi/ University of Mississippi Medical Center Research Day, Jackson, MS, March 2016.
90. April E. Steen, Kerri D. Scott, and Nathan I. Hammer, "Using Spectroscopy to Engage Students in STEM and Physical Chemistry," Research Day at the Capitol, Jackson, MS, February 2016.
89. Katelyn E. Allen and Nathan I. Hammer, "Spectroscopic Studies of the Physical and Photophysical Properties of Biological and Materials Building Blocks," Research Day at the Capitol, Jackson, MS, February 2016.
88. Sarah C. Sutton, Walter E. Cleland, Jr., and Nathan I. Hammer, "Spectroscopic and Computational Study of Chlorine Dioxide/Water Interactions," 48th Annual Southeast Undergraduate Research Conference, Atlanta, GA, February 2016.
87. Rachael A. Nelson, Louis E. McNamara, Steven J. Cassidy, Mallory Smith, Ian A. Adam, Paul A. Rupar, and Nathan I. Hammer, "Spectroscopic Investigations of a BoraFluorene Derivative," 48th Annual Southeast Undergraduate Research Conference, Atlanta, GA, February 2016.
86. Christopher B. Boland, Kayla Warren, John C. Prather, Jordan Cauley, Hannah K. Trent, Ashton T. Nicholson, David H. Magers, and Nathan Hammer, "Spectroscopic Studies of the Noncovalent Interactions Involving Osmolytes," 48th Annual Southeast Undergraduate Research Conference, Atlanta, GA, February 2016.
85. Ashley E. Williams, Nathan I. Hammer, "Spectroscopic and Computational Studies of the Hydrogen Bonding Interactions of Hydroxyethyl Ethers," 48th Annual Southeast Undergraduate Research Conference, Atlanta, GA, February 2016.
84. Jonathan A. Ishee, Peyton Reves, Jamey L. Wilson, Davita L. Watkins, Gregory S. Tschumper, and Nathan I. Hammer, "Raman Spectroscopic and Computational Studies of Halogen Bonded Pyrimidine Complexes," 48th Annual Southeast Undergraduate Research Conference, Atlanta, GA, February 2016. (oral)
83. Katelyn E. Allen, Suong Nguyen, John T. Kelly, Davita L. Watkins, and Nathan I. Hammer, "A Raman Spectroscopic and Computational Study of the Electron Withdrawing Effects on Halogen Bonding," 48th Annual Southeast Undergraduate Research Conference, Atlanta, GA, February 2016.
82. Vy T. Tran, John T. Kelly, Annie K. McClellan, Lawson T. Lloyd, Lynn V. Joe, Gregory S. Tschumper, and Nathan I. Hammer, "Elucidating the Competition for Charge Transfer between Solvents and Silver in Surface-Enhanced Raman Spectroscopy (SERS)," 48th Annual Southeast Undergraduate Research Conference, Atlanta, GA, February 2016.
81. Louis E. McNamara, Tana Rill, Emily A. Sharpe, Aron J. Huckaba, Jared H. Delcamp, and Nathan Hammer, "Characterizing the Effects of Noncovalent Interactions on the Photophysics of Newly Developed Near Infrared Emissive Materials," 67th Annual Meeting of the Southeastern Region of the American Chemical Society (SERMACS), Memphis, TN, November 2015. (oral)

80. John T. Kelly, Yi Wang, Kit H. Bowen, Gregory S. Tschumper, and Nathan Hammer, "Unraveling Proton Transfer in Stepwise Hydrated N-Heterocyclic Anions," 67th Annual Meeting of the Southeastern Region of the American Chemical Society (SERMACS), Memphis, TN, November 2015. (oral)
79. Vy T. Tran, Louis E. McNamara, John T. Kelly, and Nathan I. Hammer, "Investigating the Effects of Solvent on the Surface-Enhanced Raman Scattering (SERS) of Nitrogen Containing Molecules: Azabenzenes and 1H-1,2,3 Triazole," 67th Annual Meeting of the Southeastern Region of the American Chemical Society (SERMACS), Memphis, TN, November 2015.
78. April E. Steen, Kerri D. Scott, and Nathan I. Hammer, "Using Spectroscopy to Engage Students in STEM and Physical Chemistry," 67th Annual Meeting of the Southeastern Region of the American Chemical Society (SERMACS), Memphis, TN, November 2015.
77. Hannah K. Trent, Ashton T. Nicholson, Gregory S. Tschumper, David H. Magers, and Nathan I. Hammer, "Raman Spectroscopic and Computational Analysis of the Effects of Noncovalent Interactions on DMSO," 67th Annual Meeting of the Southeastern Region of the American Chemical Society (SERMACS), Memphis, TN, November 2015.
76. Kayla Warren, John C. Prather, Jordan Cauley, David H. Magers, and Nathan I. Hammer, "Non-Covalent Interactions Between Trimethylamine N-Oxide (TMAO) and Urea in Water," 67th Annual Meeting of the Southeastern Region of the American Chemical Society (SERMACS), Memphis, TN, November 2015.
75. Sarah C. Sutton, Walter E. Cleland, and Nathan I. Hammer, "Spectroscopic and Computational Study of Chlorine Dioxide/Water Interactions," 67th Annual Meeting of the Southeastern Region of the American Chemical Society (SERMACS), Memphis, TN, November 2015.
74. Katelyn E. Allen, Hunter A. Dulaney, Jonah W. Jurss, and Nathan I. Hammer, "Reinvestigation of the Resonance Raman Spectrum of the Blue Ruthenium Dimer," 67th Annual Meeting of the Southeastern Region of the American Chemical Society (SERMACS), Memphis, TN, November 2015.
73. John T. Kelly, Kit Bowen, Gregory Tschumper, and Nathan I. Hammer "Unraveling Proton Transfer in Stepwise Hydrated N-Heterocyclic Anions," 70th International Symposium on Molecular Spectroscopy, University of Illinois at Urbana–Champaign, June 2015. (oral)
72. Louis E. McNamara, Nalaka Liyanage, Adithya Peddapuram, Joseph S. Murphy, Jared H. Delcamp, and Nathan I. Hammer "Spectroscopic Investigation of Newly-developed Near Infrared Emitting Dyes," 70th International Symposium on Molecular Spectroscopy, University of Illinois at Urbana–Champaign, June 2015. (oral)
71. Peyton L. Reves, Davita L. Watkins, Gregory S. Tschumper, and Nathan I. Hammer "Raman Spectroscopic and Computational Studies of Halogen Bonded Pyrimidine Complexes," 8th Annual Mississippi Biophysical Consortium Meeting, Oxford, MS, June 2015.
70. Katelyn E. Allen, Nathan I. Hammer, and Gregory S. Tschumper "Assessing the Ability of Turbomole Basis Sets to Accurately Describe Noncovalent Interactions Between Pyrimidine and Water," 8th Annual Mississippi Biophysical Consortium Meeting, Oxford, MS, June 2015.
69. Louis E. McNamara, Dana N. Reinemann, Henry U. Valle, T. Keith Hollis, Gregory S. Tschumper, and Nathan I. Hammer "Characterizing the Effects of Intermolecular Interactions Between Trimethylamine N-oxide (TMAO) Molecules" 8th Annual Mississippi Biophysical Consortium Meeting, Oxford, MS, June 2015. (oral)
68. John T. Kelly, Kit Bowen, Gregory Tschumper, and Nathan I. Hammer "Investigating Excess Charge Accommodation in Biological Building Blocks with Solution-Phase and Gas-Phase Spectroscopy," 8th Annual Mississippi Biophysical Consortium Meeting, Oxford, MS, June 2015. (oral)
67. John T. Kelly, Kit Bowen, Gregory Tschumper, and Nathan I. Hammer "Characterizing the effects of noncovalent interactions on hydrated azabenzene clusters: Charge localization and charge transfer," 249th National Meeting of the American Chemical Society, Denver, CO, March 2015.
66. Louis McNamara, Dana Reinemann, Henry Valle, John Prather, Peyton Reves, David Magers, Thedford Hollis, Gregory Tschumper, and Nathan Hammer "Spectroscopic study of the effects of local environment and deuteration on the structure of trimethylamine N-oxide (TMAO)," 249th National Meeting of the American Chemical Society, Denver, CO, March 2015.
65. Jordan Cauley, Leeann Smith, Wells Prather, Nathan I. Hammer, and David H. Magers "Noncovalent Interactions in Networks of Trimethylamine-N-oxide, Urea, and Water," 70th Southwest Regional Meeting of the American Chemical Society, Fort Worth, Texas, November 2014.
64. John T. Kelly and Nathan I. Hammer "Spectroscopic and Computational Characterization of Hydrated Pyrimidine Anions," 69th International Symposium on Molecular Spectroscopy, University of Illinois at Urbana–Champaign, June 2014. (oral)

63. Louis E. McNamara and Nathan I. Hammer "Spectroscopic Investigation of the Effects of Environment on Newly Developed Emissive Materials," 69th International Symposium on Molecular Spectroscopy, University of Illinois at Urbana–Champaign, June 2014. (oral)
62. John T. Kelly, Nathan I. Hammer, Gregory S. Tschumper, "Spectroscopic and Computational Characterization of the Interaction Between Biological Building Blocks and Excess Electrons," 2014 Mississippi State EPSCoR Meeting, Starkville, MS, April 2014.
61. Kristina A. Cuellar, Katherine L. Munroe, David H. Magers, and Nathan I. Hammer, "Noncovalent Interactions in Micro-Solvated Networks of Trimethylamine N-Oxide (TMAO)," 2014 Mississippi State EPSCoR Meeting, Starkville, MS, April 2014.
60. Louis E. McNamara, Nathan I. Hammer, Hemali Rathnayake, "Probing the Chiral Heterogeneity of Perylene Diimide (PDI) Nano-Ribbons Using Single Molecule Fluorescence Detected Circular Dichroism (FDCD)," 2014 Mississippi State EPSCoR Meeting, Starkville, MS, April 2014.
59. Inga P. Juchheim and Nathan Hammer, "Computational Chemistry in Chemical Education," 2014 Mississippi State EPSCoR Meeting, Starkville, MS, April 2014.
58. Peyton L. Reves, Davita L. Watkins, Gregory S. Tschumper, Nathan I. Hammer, "Investigations of Halogen Bonding Interactions in Solutions of Pyrimidine and Bromobenzene," 2014 Mississippi State EPSCoR Meeting, Starkville, MS, April 2014.
57. Ashton Nicholson, Kristina Cuellar, David H. Magers, Nathan I. Hammer, "Raman Spectroscopic and Computational Analysis of the Effects of Noncovalent Interactions on DMSO," 2014 Mississippi State EPSCoR Meeting, Starkville, MS, April 2014.
56. April E. Steen, Louis E. McNamara, Nathan I. Hammer, "Comparison of Emission Spectra from Different Lighting Sources: A Physical Chemistry Outreach Project," 2014 Mississippi State EPSCoR Meeting, Starkville, MS, April 2014.
55. Anna E. Craig, Aron J. Huckaba, Jared H. Delcamp, Gregory S. Tschumper, Nathan I. Hammer, "Raman Spectroscopic and Computational Study of the Liquid Structure of 1H-1,2,3-Triazole," 2014 Mississippi State EPSCoR Meeting, Starkville, MS, April 2014.
54. John T. Kelly, Nathan I. Hammer, Gregory S. Tschumper, "Towards the Origins of Radiation Damage in Biology: Experimental and Computational Study of Excess Charge Localization in Pyrimidine/Water Hydrogen Bonded Networks," 2013 Mississippi State EPSCoR Meeting, Hattiesburg, MS, April 2013.
53. Kristina A. Cuellar, Katherine L. Munroe, David H. Magers, and Nathan I. Hammer, "Investigations of Noncovalent Interactions in Micro-solvated Networks of Trimethylamine N-oxide," 2013 Mississippi State EPSCoR Meeting, Hattiesburg, MS, April 2013.

53. Loan Tran, Kristina Cuellar, John T. Kelly, Gregory S. Tschumper, and Nathan I. Hammer, "Effects of Microsolvation on Pyrazine, Pyridazine, and S-Triazine," 2013 Mississippi State EPSCoR Meeting, Hattiesburg, MS, April 2013.
52. Louis E. McNamara, Nathan I. Hammer, Hemali Rathnayake, "Probing the Chiral Heterogeneity of Perylene Diimide (PDI) Nano-Ribbons using Single Molecule Fluorescence Detected Circular Dichroism," 2013 Mississippi State EPSCoR Meeting, Hattiesburg, MS, April 2013.
51. Loan Tran, Kristina Cuellar, John T. Kelly, Gregory S. Tschumper, and Nathan I. Hammer, "Effects of Microsolvation on Pyrazine, Pyridazine, and S-Triazine," 245th National Meeting of the American Chemical Society, New Orleans, LA, April 2013.
50. Kristina A. Cuellar, Katherine L. Munroe, David H. Magers, and Nathan I. Hammer, "Investigations of Noncovalent Interactions in Micro-solvated Networks of Trimethylamine N-oxide," 245th National Meeting of the American Chemical Society, New Orleans, LA, April 2013.
49. Dana N. Reinemann, Gregory S. Tschumper, and Nathan I. Hammer, "Computational Study of Substituent Effects on B-N and B-P Dative Bond Containing Molecules," 245th National Meeting of the American Chemical Society, New Orleans, LA, April 2013.
48. Annie K. McClellan, Ashley M. Wright, Lynn V. Joe, Thomas Ellington, Gregory S. Tschumper, and Nathan I. Hammer, "Charge Transfer Induced Vibrational Blue Shifts in Pyrimidine Mixtures on Silver Substrates," 245th National Meeting of the American Chemical Society, New Orleans, LA, April 2013.
47. Annie K. McClellan, Lynn V. Joe, Ashley M. Wright, Ciara M. Frizzell, Gregory S. Tschumper, and Nathan I. Hammer, "Surface Enhanced Raman (SERS) Spectroscopic and Computational Studies of Charge Transfer Induced Vibrational Blue Shifts in Pyrimidine/Water Mixtures on Silver Substrates," 2012 Mississippi State EPSCoR Meeting, Oxford, MS, April 2012.
46. Ashley M. Wright, Gregory S. Tschumper, and Nathan I. Hammer, "Computational and Spectroscopic Studies of the Effects of Weak Intermolecular Interactions in Ammonia Borane," 2012 Mississippi State EPSCoR Meeting, Oxford, MS, April 2012.

45. Debra J. Scardino, Rajesh Kota, Daniell L. Mattern, and Nathan I. Hammer, "Single Molecule Spectroscopic and Computational Studies of Organic Rectifiers Composed of Pyrene and Perylenebisimide," 2012 Mississippi State EPSCoR Meeting, Oxford, MS, April 2012.
44. Joseph Golden, Kristina Cuellar, Charles L. Hussey, Gregory S. Tschumper, and Nathan I. Hammer, "Effects of Micro-Solvation on Room Temperature Ionic Liquids," 2012 Mississippi State EPSCoR Meeting, Oxford, MS, April 2012.
43. Kristina A. Cuellar, Katherine L. Munroe, David H. Magers, and Nathan I. Hammer, "Investigations of Noncovalent Interactions in Micro-solvated Networks of Trimethylamine N-oxide," 2012 Mississippi State EPSCoR Meeting, Oxford, MS, April 2012.
42. Lynn V. Joe, Siyam Ansar, Nuwan Kothalawala, Amal Dass, Dongmao Zhang, and Nathan I. Hammer, "Spectroscopic Characterization of Gold Nanomolecules," 2012 Mississippi State EPSCoR Meeting, Oxford, MS, April 2012.
41. Dana N. Reinemann, Ashley M. Wright, Jonathan D. Wolfe, Gregory S. Tschumper, and Nathan I. Hammer, "Vibrational Spectroscopy of Molecules Containing B-N and B-P Dative Bonds," 2012 Mississippi State EPSCoR Meeting, Oxford, MS, April 2012.
40. Talyr Hall, Xiaoyun Howard, Nagamani Vunnam, Nathan I. Hammer, and Susan Pedigo, "Dynamics of Strand-Crossover Formation in Cadherin," 2012 Mississippi State EPSCoR Meeting, Oxford, MS, April 2012.
39. Kristina A. Cuellar, Katherine L. Munroe, David H. Magers and Nathan I. Hammer, "Investigations of Noncovalent Interactions in Micro-solvated Networks of Trimethylamine N-oxide," University of Memphis Undergraduate Research Conference, February 2012.
38. Katherine L. Munroe, David H. Magers, Kristina A. Cuellar, and Nathan I. Hammer, "Investigations of Noncovalent Interactions in Micro-solvated Networks of Trimethylamine N-oxide," 2011 Conference on Current Trends in Computational Chemistry, Jackson State University, MS, October 2011.
37. Annie K. McClellan, Lynn V. Joe, James C. Howard, Ashley M. Wright, Gregory S. Tschumper, and Nathan I. Hammer, "Surface enhanced Raman spectra (SERS) of pyrimidine/water mixtures," 242nd National Meeting of the American Chemical Society, Denver, CO, August 2011.
36. Debra J. Scardino, Rajesh Kota, Daniell L. Mattern, and Nathan I. Hammer, "Single Molecule Spectroscopic and Computational Studies of Two Organic Rectifiers," 242nd National Meeting of the American Chemical Society, Denver, CO, August 2011.
35. Ashley M. Wright, Gregory S. Tschumper, and Nathan I. Hammer, "Computational study of dihydrogen bonding in ammonia borane and its derivatives," 242nd National Meeting of the American Chemical Society, Denver, CO, August 2011.
34. Lynn V. Joe, Murrell Godfrey, Nathan I. Hammer, "Latent fingerprint analysis using single molecule surface enhanced Raman scattering (SERS)," 242nd National Meeting of the American Chemical Society, Denver, CO, August 2011.
33. Dana N. Reinemann, Ashley M. Wright, Jonathan D. Wolfe, Gregory S. Tschumper, and Nathan I. Hammer, "Elucidation of the B-N and B-P Stretching Frequencies in Organic Molecules," 242nd National Meeting of the American Chemical Society, Denver, CO, August 2011.
32. Ashley M. Wright, Gregory S. Tschumper, and Nathan I. Hammer, "Computational and Spectroscopic Study of the B-N Dative Bond in Ammonia Borane," 66th International Symposium on Molecular Spectroscopy, Columbus, OH, June 2011. (oral)
31. Dana N. Reinemann, Ashley M. Wright, Jonathan D. Wolfe, Gregory S. Tschumper, and Nathan I. Hammer, "Elucidation of the B-N stretching vibration in N-methyliminodiacetic acid boronates," 2011 Southeastern Regional Meeting of the American Institute of Chemical Engineers, Atlanta, GA, April 2011. (oral)
30. Ashley M. Wright, Nathan I. Hammer, and Gregory S. Tschumper, "Computational and Spectroscopic Study of Ammonia Borane," Southeast Theoretical Chemistry Association (SETCA), Jackson, MS, March 2011.
29. Annie K. McClellan, Lynn V. Joe, James C. Howard, Ashley M. Wright, Gregory S. Tschumper, and Nathan I. Hammer, "Surface enhanced Raman spectra (SERS) of pyrimidine/water mixtures," 2011 Mississippi State EPSCoR Meeting, Starkville, MS, April 2011.
28. Ashley M. Wright, Gregory S. Tschumper, and Nathan I. Hammer, "Computational and Spectroscopic Study of the B-N Coordinate Covalent Bond in Ammonia Borane," 2011 Mississippi State EPSCoR Meeting, Starkville, MS, April 2011.
27. Debra J. Scardino, Rajesh Kota, Daniell L. Mattern, and Nathan I. Hammer, "Single Molecule Spectroscopic and Computational Studies of Two Organic Rectifiers," 2011 Mississippi State EPSCoR Meeting, Starkville, MS, April 2011.

26. Katherine L. Munroe, David H. Magers, and Nathan I. Hammer, "Raman Spectroscopic Signatures of Noncovalent Interactions Between Trimethylamine N-oxide (TMAO) and Water," 2011 Mississippi State EPSCoR Meeting, Starkville, MS, April 2011.
25. Ashley M. Wright, Lynn V. Joe, Austin A. Howard, Gregory S. Tschumper, and Nathan I. Hammer, "Spectroscopic and computational studies of weak noncovalent interactions in crystalline pyrimidine," 2011 Mississippi State EPSCoR Meeting, Starkville, MS, April 2011.
24. Dana N. Reinemanny, Ashley M. Wright, Jonathan D. Wolfe, Gregory S. Tschumper, and Nathan I. Hammer, "Vibrational Spectroscopy of N-Methyliminodiacetic Acid (MIDA)-Protected Boronate Ester: Examination of the B-N Dative Bond," 2011 Mississippi State EPSCoR Meeting, Starkville, MS, April 2011.
23. Dana N. Reinemann, Ashley M. Wright, Jonathan D. Wolfe, Gregory S. Tschumper, and Nathan I. Hammer, "Infrared, Raman, and SERS Spectroscopy of N-Methyliminodiacetic Acid (MIDA)-Protected Boronate Esters," 62nd Annual Meeting of the Southeastern Region of the American Chemical Society (SERMACS), New Orleans, LA, December 2010. (oral)
22. Ashley M. Wright, Austin A. Howard, Gregory S. Tschumper, and Nathan I. Hammer, "Spectroscopic and computational investigations of noncovalent interactions between pyrimidine and hydrogen bonded networks," 62nd Annual Meeting of the Southeastern Region of the American Chemical Society (SERMACS), New Orleans, LA, December 2010. (oral)
21. Debra J. Scardino, Rajesh Kota, Daniell L. Mattern, and Nathan I. Hammer, "Single Molecule Spectroscopic and Computational Studies of Two Organic Rectifiers," 62nd Annual Meeting of the Southeastern Region of the American Chemical Society (SERMACS), New Orleans, LA, December 2010. (oral)
20. Anna K. Hailey, Guang Shi, Wei-Yin Chen, and Nathan I. Hammer, "New Catalysts for the Photocatalytic Conversion of Carbon Dioxide to Hydrocarbons," 62nd Annual Meeting of the Southeastern Region of the American Chemical Society (SERMACS), New Orleans, LA, December 2010. (oral)
19. Ashley M. Wright, Lynn V. Joe, Austin A. Howard, Gregory S. Tschumper, and Nathan I. Hammer, "Spectroscopic and computational studies of weak noncovalent interactions in crystalline pyrimidine," 62nd Annual Meeting of the Southeastern Region of the American Chemical Society (SERMACS), New Orleans, LA, December 2010.
18. Katherine L. Munroe, David H. Magers, and Nathan I. Hammer, "Raman Spectroscopic Signatures of Noncovalent Interactions Between Trimethylamine N-oxide (TMAO) and Water," 62nd Annual Meeting of the Southeastern Region of the American Chemical Society (SERMACS), New Orleans, LA, December 2010.
17. Ashley M. Wright, Gregory S. Tschumper, and Nathan I. Hammer, "High level ab initio calculations on ammonia borane," 62nd Annual Meeting of the Southeastern Region of the American Chemical Society (SERMACS), New Orleans, LA, December 2010.
16. Annie K McClellan, Lynn V. Joe, James C. Howard, Ashley M. Wright, Gregory S. Tschumper, and Nathan I. Hammer, "Surface enhanced Raman spectra (SERS) of pyrimidine/water mixtures," 62nd Annual Meeting of the Southeastern Region of the American Chemical Society (SERMACS), New Orleans, LA, December 2010.
15. Ashley M. Wright, Austin A. Howard, Gregory S. Tschumper, and Nathan I. Hammer, "Raman Spectroscopic Investigations of Noncovalent Interactions between Pyrimidine and Hydrogen Bonded Networks," XXII International Conference on Raman Spectroscopy, Boston, MA, August 2010.
14. Dana N. Reinemann, Ashley M. Wright, Jonathan D. Wolfe, Gregory S. Tschumper, and Nathan I. Hammer, "Raman and SERS Spectroscopy of N-Methyliminodiacetic Acid (MIDA)-Protected Boronate Esters," XXII International Conference on Raman Spectroscopy, Boston, MA, August 2010.
13. Katherine L. Munroe, David H. Magers, and Nathan I. Hammer, "Raman Spectroscopic Signatures of Noncovalent Interactions Involving Trimethylamine N-oxide (TMAO)," XXII International Conference on Raman Spectroscopy, Boston, MA, August 2010.
12. Anna K. Hailey, Guang Shi, Wei-Yin Chen, and Nathan I. Hammer, "New Catalysts for the Photocatalytic Conversion of Carbon Dioxide to Hydrocarbons," 2010 Mississippi State EPSCoR Meeting, Jackson, MS, April 2010. (Won 1st Prize in Poster Competition)
11. Ashley M. Wright, Gregory S. Tschumper, Nathan I. Hammer, "High Level ab Initio Calculations on Ammonia Borane: Sensitivity of the B–N Dative Bond to Method and Basis Set," 2010 Mississippi State EPSCoR Meeting, Jackson, MS, April 2010.
10. Katherine L. Munroe, David H. Magers, and Nathan I. Hammer, "Computational and Raman Spectroscopic Studies Of Trimethylamine N-oxide (TMAO)/Water Mixtures," 2010 Mississippi State EPSCoR Meeting, Jackson, MS, April 2010.

9. Ryan A. Gregg, Brock Sain, Murrell Godfrey, and Nathan I. Hammer, "Development of a Laser-Induced Breakdown Spectrometer for Lead-Free Gunshot Residue Analysis," 2010 Mississippi State EPSCoR Meeting, Jackson, MS, April 2010.
8. Dana N. Reinemann, Ashley M. Wright, Gregory S. Tschumper, and Nathan I. Hammer, "Computational and Raman Spectroscopic Studies of N-methyliminodiacetic acid (MIDA) - Protected Boronate Esters," 2010 Mississippi State EPSCoR Meeting, Jackson, MS, April 2010.
7. Matthew D. McDowell, Debra Jo Scardino, Emily J. Carrell, Jacob D. Graham, and Nathan I. Hammer, "The Multiphoton Ionization Spectrum of Methyl Iodide Revisted: Fragmentation Patterns from Highly Excited States," 2010 Mississippi State EPSCoR Meeting, Jackson, MS, April 2010.
6. Jonathan Wolfe, Ashley Wright, Dana Reinemann, and Nathan I. Hammer, "Surface Enhanced Raman Scattering (SERS) Spectroscopy of Molecules Containing B–N Dative Bonds," 2010 Mississippi State EPSCoR Meeting, Jackson, MS, April 2010.
5. Debra Jo Scardino, Ashley M. Wright, Rajesh Kota, Daniell L. Mattern, and Nathan I. Hammer, "Single Molecule Spectroscopic and Computational Studies of Two Organic Rectifiers," 2010 Mississippi State EPSCoR Meeting, Jackson, MS, April 2010.
4. Suzanne Sereduck and Nathan I. Hammer, "Computational and Raman Spectroscopic Studies of Allyboronic Acid Pinacol Ester – Water Interactions," 2010 Mississippi State EPSCoR Meeting, Jackson, MS, April 2010.
3. Debra Jo Scardino, Matthew D. McDowell, Emily J. Carrell, Jacob D. Graham, and Nathan I. Hammer, "The Multiphoton Ionization Spectrum of Methyl Iodide Revisted," 61st Annual Meeting of the Southeastern Region of the American Chemical Society (SERMACS), San Juan, Puerto Rico, October 2009.
2. Dana N. Reinemann, Ashley E. Wright, Austin A. Howard, Gregory S. Tschumper, and Nathan I. Hammer, "Vibrational Spectroscopy of N-Methyliminodiacetic Acid (MIDA)-Protected Boronate Esters: Assignment of the B-N Dative Bond Stretching Frequency," 61st Annual Meeting of the Southeastern Region of the American Chemical Society (SERMACS), San Juan, Puerto Rico, October 2009.
1. A. A. Howard and N. I. Hammer, "Raman Spectroscopic Investigation of Noncovalent Interactions in Pyrimidine," 60th Annual Meeting of the Southeastern Region of the American Chemical Society (SERMACS), Nashville, TN, November 2008. (oral)

SELECTED PRESENTATIONS

"Competitive partial charge transfer interactions with hydrogen-bonded solvent networks," Nanostructure Engineering & Surface Chemistry for Spectroscopy, Imaging & Alternative Energy Harvesting & Conversion, 253rd National Meeting of the American Chemical Society, San Francisco, CA, April 2017. (invited)

"Securing a tenure-track position at a research university: The hiring process," Looking Beyond Your Current Boundaries: What's the Next Step? Academic Route: PhD to Postdoc to Assistant Professor, 253rd National Meeting of the American Chemical Society, San Francisco, CA, April 2017. (invited)

"The Importance of a Truly Cohesive Theme in a Research Experience for Undergraduates (REU) Program," Successful REU Programs, 251st National Meeting of the American Chemical Society, San Diego, CA, March 2016. (invited)

"Tracking the Effects of Noncovalent Interactions on Osmolytes and Nitrogen Containing Biological Building Blocks," Western Kentucky University, April 2016, Jackson State University, March 2016.

"Spectroscopically Tracking the Evolution of Noncovalent Interactions from the Single Molecule Level to the Condensed Phases," Tulane University, Nov. 2015, Memphis Section of the ACS, Sept. 2012, 2012 Mississippi Academy of Sciences Meeting, Feb. 2012, 2011 CAREER Award Regional Forum, Baton Rouge, LA, Nov. 2011.

"Accurate Descriptions of the Effects of Noncovalent Interactions and Excess Charge on Nitrogen Containing Heterocyclic Molecules," University of Alabama-Birmingham, Feb. 2015; Auburn University, Nov. 2014; 248th National Meeting of the American Chemical Society, San Francisco, CA, Aug. 2014.

"Effects of Noncovalent Interactions on the Osmolyte TMAO and the Biological Building Block Pyrimidine," University of Tennessee, March 2014, University of Charleston, November 2013, Georgia Southern University, November 2013, University of Georgia, April 2013; Johns Hopkins University, Oct. 2012; LSU, March 2011; University of Memphis, April 2011; Kentucky Lake Local Section of the ACS, April 2011; 4th Annual Mississippi Biophysical Consortium Meeting, June 2011; University of Alabama, September 2011; Mississippi State University Department of Chemistry, Oct. 2011.

"Nanohydration of Biological Building Blocks," 2011 Mississippi EPSCoR Fall Forum, Oxford, MS, Sept. 2011.

"Raman spectroscopic studies to investigate molecular properties and weak intermolecular interactions: Pyrimidine, TMAO, and Methylboronic acid MIDA ester," Mercer University, Nov. 2010; Georgia College & State University, Nov. 2010; University of South Alabama, Aug. 2009; University of Memphis, Feb. 2010.

"Laser spectroscopy of single molecules and interacting molecular systems," Southeastern Louisiana University, Oct. 2008; East Tennessee State University, Oct. 2008; Western Kentucky University, Sept. 2008.

"Single Molecule Spectroscopy," Inaugural Meeting of the Mississippi Biophysical Consortium, Oxford, MS, May 2008.

"Spectroscopy of Single Molecules and Nanostructures: Probing the Individual Contributions to Bulk Observables," University of Alabama, Birmingham, AL, September 2007.

"Conjugated Polymer - Quantum Dot Composite Nanostructures: Enhanced Properties and Stability," Intelligence Community Postdoctoral Research Fellowship Colloquium, Chantilly, VA, May 2007.

"Photophysics and Enhanced Properties of Quantum Dot/Conjugated Organic Composite Nanostructures Revealed by Single Molecule Spectroscopy," University of Tennessee, Knoxville, TN, March 2007.

"Modified Blinking Kinetics in Solid State Quantum Dot/Conjugated Organic Polymer Composite Nanostructures," Materials Research Society (MRS) Fall Meeting, Boston, MA, November 2006.

"Suppression of Blinking in Solid State Quantum Dot/Conjugated Organic Polymer Composite Nanostructures," Frontiers in Optics 2006/Laser Science XXII, Rochester, NY, October 2006.

"Novel-Polymer-Quantum Dot Composites for IR-based Photonic Quantum Information Processing and Sensor Applications," Intelligence Community Postdoctoral Research Fellowship Colloquium, Tysons Corner, VA, April 2006.

"Elucidation of the Local Binding Motifs of Electrons Trapped on Water," 60th Annual International Symposium on Molecular Spectroscopy, The Ohio State University, Columbus, OH, June 2005.

"Identification and elucidation of the local binding motifs of electrons trapped on water," Gordon Research Conference on Molecular Energy Transfer, Buellton, CA, January 2005.

"Reactions of Dipole-Bound Anions," XX International Symposium on Molecular Beams, Lisbon, Portugal, June 2003.

"Resonance Charge Transfer in Dipole Bound Anions," Japan-US Workshop on Resonances, Shonan Village, Hayama, Japan, December 2002.

"Spectroscopy of Dipole-Bound Anions," 57th Annual International Symposium on Molecular Spectroscopy, The Ohio State University, Columbus, OH, June 2002.

"Rydberg Charge Exchange Formation of Dipole Bound Anions," 2002 Division of Atomic, Molecular and Optical Physics Annual Meeting (DAMOP), The College of William and Mary, Williamsburg, VA, May 2002.

"Studies of Electron Transfer Between Rydberg Atoms and Polar Molecules," 53rd Annual Meeting of the Southeastern Region of the American Chemical Society (SERMACS), Savannah, GA, September 2001.

"Dipole Bound Anions: Rydberg Electron Transfer to a Series of Cyanogens," XXII International Conference on Photonic, Electronic and Atomic Collisions (ICPEAC), Santa Fe, NM, July 2001.

"Effects of Electric Fields on Multiphoton Ionization of Rubidium Atoms at Low and High Densities," The Tenth International Symposium on Resonance Ionization Spectroscopy and Its Applications, Knoxville, TN, October 2000.

"The Interaction of Free-Electron Laser Light with C60," Centennial Celebration Meeting of the American Physical Society, Atlanta, GA, March 1999.