

Heather Cecile Allen

The Ohio State University
Department of Chemistry and Biochemistry
100 West 18th Avenue
Columbus, OH 43210
Ph. (614) 292-4707; Fax (614) 292-1685
allen@chemistry.ohio-state.edu
<https://research.chemistry.ohio-state.edu/allen/>

Academic Background

1997 Ph.D. Physical Chemistry; University of California, Irvine
Ph.D. 1997; M.S. 1995
Advisor John C. Hemminger & coAdvisor Barbara J. Finlayson-Pitts

1993 B.S. Chemistry; University of California, Irvine
UG Research Advisors: F. Sherwood Rowland & Don Blake

Professional Appointments

2008 - present Professor of Chemistry, The Ohio State University, Columbus, OH
2011 - present Professor of Pathology, The Ohio State University, Columbus, OH
2012 - 2013 Faculty Fellow, OSU VP Strategic Planning office, Discovery Themes
2011 Visiting Scholar, Wexner Medical School, James Cancer Center, OH
2008 - 2009 Chair - Ohio State University Senate Steering Committee
2007 - 2010 Ohio State University Senator, College of Math and Physical Sciences
2005 - 2008 Associate Professor of Chemistry, The Ohio State University, Columbus, OH
2005 Chair – National Science Foundation: Workshop on Chemistry & Sustainability
2000 - 2005 Assistant Professor of Chemistry, The Ohio State University, Columbus, OH
1997 - 1999 NOAA/UCAR Postdoctoral Program in Climate and Global Change, Fellow
University of Oregon, Advisor: Geraldine L. Richmond

Honors, Awards and Fellowships

2015 Alexander von Humboldt Research Award
2013 American Chemical Society National Award for
Encouraging Women into Careers in the Chemical Sciences
2012 - 2013 CIC Academic Leadership Program Fellow
2012 American Association for the Advancement of Science (AAAS) Fellow
2010-2011 Visiting Scholar, Wexner Medical School @ Ohio State James Cancer Center,
Pathology and Surgery/Surgical Oncology Departments/Divisions
2007 Distinguished Diversity Enhancement Award – Ohio State University
2006 Camille Dreyfus Teacher – Scholar Award
2006 Columbus Public Schools Service Award - *An Empowered Woman Award*
2005 Alfred P. Sloan Research Award, Fellow
2003 Beckman Young Investigator Award
2002 NSF CAREER Award (2002 – 2007)
2002 Research Innovation Award, Research Corporation
2001 Ohio State OMA Distinguished Professional Mentor Award 2000-2001
1997 - 1999 NOAA Postdoctoral Fellowship in Climate and Global Change
1996 - 1997 Fannie and John Hertz Foundation Graduate Student Fellowship
1996 - 1997 Environmental Protection Agency (EPA) Graduate Student Fellowship
(awarded but declined due to Hertz Fellowship offer)
1996 Joan Rowland Nobel Award, UCI
1994 - 1995 National Science Foundation Traineeship Fellowship, UCI

1993 - 1994 Department of Education Fellowship, UCI
1993 Outstanding Senior in Chemistry, UCI; Magna Cum Laude
1992 - 1993 Science Scholarship Foundation Fellowship - Saddleback, UCI
1990 - 1991 ACS Outstanding Chemistry Student,
Saddleback Community College, Mission Viejo, CA

Editorial Boards

2010 - 2013 Journal of Physical Chemistry Editorial Board Member

Professional Affiliations

- American Chemical Society
- American Physical Society
- American Geophysical Union
- American Association for the Advancement of Science
- OSU Chemical Physics Program
- OSU Spectroscopy Institute
- OSU Byrd Polar Research Center
- OSU Environmental Science Graduate Program
- OSU Biophysics Program
- OSU Comprehensive Cancer Center

Collaborators

- James Coe, Ohio State, Department of Chemistry and Biochemistry
- Louise Criscenti, Sandia National Laboratory, NM
- Vicki Grassian, University of Iowa, Department of Chemistry
- Martina Havenith, Ruhr University, Physical Sciences, Bochum, Germany
- Charles Hitchcock, Ohio State University, Department of Pathology
- Pavel Jungwirth, Academy of Sciences of the Czech Republic
- Lynn Katz, University of Texas, Austin, Civil Engineering
- Edward Martin, Ohio State University, Department of Surgery, Surgical Oncology
- David O'Malley, Ohio State University, Department of OBGYN, Surgical Oncology
- Gilbert Nathanson, University of Wisconsin, Department of Chemistry
- Francesco Paesani, UCSD, Department of Chemistry and Biochemistry
- Kimberly Prather, UCSD, Department of Chemistry and Biochemistry
- Stephen Povoski, Ohio State University, Department of Surgery, Surgical Oncology
- Martina Roeselova, Academy of Sciences of the Czech Republic
- Larry Schlesinger, Ohio State University, Director of the Center for Infectious Diseases
- Douglas Tobias, University of California, Irvine, Department of Chemistry
- Ravi Tripathi, Ohio State University, Department of Anesthesiology, Critical Care Medicine
- Veronica Vaida, University of Colorado, Boulder, Department of Chemistry
- Joe Williams, Ohio State University, College of Biological Sciences
- Barbara Wyslouzil, Ohio State University, Chemical Engineering and Chemistry
- Sotiris Xantheas, PNNL, Richland, WA

Summary of Presentations and Publications from 4/2000 – 10/2014

- 61 Invited talks at professional meetings
 - ✓ 7 Gordon Conference invited talks
 - ✓ 1 Plenary Lecture
 - ✓ Additional >120 Contributed talks by Allen lab members
- 76 Invited Seminars at Universities and Colleges (2 public seminars)
 - ✓ ~20 Departmental Colloquia and Named Lectures
- 89 Peer-reviewed journal publications

TEACHING/MENTORING

Courses Taught (UG/Grad)

General Chemistry; Physical Chemistry Laboratory (UG); Advanced Analytical Instrumentation (UG); Quantitative Analysis (UG); Physical Chemistry (UG): Thermodynamics & Kinetics (Grad); Atmospheric Chemistry (Grad)

Current affiliations of past graduate and *postdoctoral students

- Dr. Dana Marie Telesford, PhD Allen Lab 12/2014
- Dr. Minette Ocampo, PhD Allen Lab 2014, Research Associate with PH Matter
- Dr. Wei Hua, PhD Allen Lab 2013, Postdoctoral Researcher Allen Lab
- Mr. Zishuai Huang, Instructor, China
- Mr. Xiao Shou, The Limited, Columbus OH
- Dr. Aaron Jubb, Research Scientist/postdoc, NOAA Aeronomy lab, Boulder, CO
- Dr. Christine Lemon, Naval Research Lab, Key West, FL
- Dr. Xiangke Chen, Research Scientist, Syngenta, Switzerland
- Dr. Cheng Tang, PPG Industries, Pittsburgh, PA
- Dr. Roxana Sierra-Hernandez; Byrd Polar Research Center Researcher, E. Moseley-Thompson & L. Thompson
- Dr. Nadia Ninel Casillas-Ituarte, Researcher, Prof. Steven Lower, OSU Earth Sciences / Am Heart Assoc Fellow
- Dr. Christopher Beekman, Ohio EPA
- Dr. Man Xu, Research Scientist Pacific Northwest National Laboratory, WA; as of 10/14 Evans Analytical Group, CA
- Dr. Lisa Van Loon, Research Scientist, Light Source Laboratory, Canada
- Dr. Lisa Hommel, Director of the OSU Chemistry Department Surface Science Laboratory
- *Prof. Laura Voss, Johns Hopkins, Education
- *Dr. Sandhya Gopalakrishnan, Research Assoc., KLA Tencor (& Intel Corp), California
- *Dr. Dingfang Liu, Senior Project Engineer, Rizzo Associate, Inc., a Tetra Tech Company, Boston, Mass
- *Prof. Gang Ma, Professor of Chemistry, Hebei University, Hebei Province, China
- Mr. Hardy Castada, Ohio State, PhD program in Food/Ag
- Ms. Lori Levering, Research Assoc, Battelle Corp, Aerosol Division
- Mr. Chad Cucksey, Research Assoc., Battelle Corp
- Lt. Anthony Davis, Wesleyan Univ
- Ms. Ashley Swartzwelder, Chemical Abstracts Service, Ohio
- Mr. Nathan Gaubert, Research Assoc., Spartan Chemical, Ohio

Current Graduate Students (PhD), Postdoctoral Researchers, and Undergraduate Researchers

- Dr. Wei Hua, PhD Allen Lab 2013, Postdoctoral Researcher Allen Lab
- Dr. Dominique Verreault, PhD University of Heidelberg, Michael Grunze group
- Dana Telesford, Chemistry Graduate Program
- Ellen Adams, Chemistry Graduate Program
- Ran Li, Chemistry Graduate Program
- Ting Zhang, Chemistry Graduate Program
- Brant Finzer, Chemistry Graduate Program
- Victoria Reick-Mitrisin, Undergraduate Researcher
- Clayton Casper, Undergraduate Researcher
- Andrew Vidalis, Undergraduate Researcher
- (Annabell Pan, Upper Arlington High School Student Researcher)

Past Undergraduate Researchers (26 since 2000; *authored peer reviewed publications while in the Allen Group)

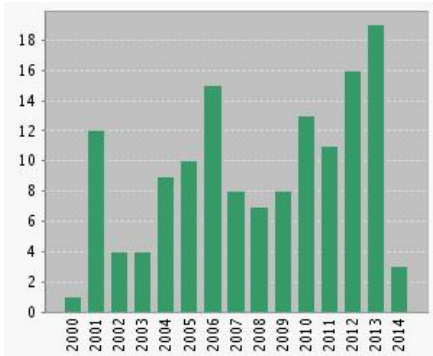
- Jessica Gilman, Elizabeth Coogan, Charles Rhoads, Jacob Schlegel, Julie Thompson, Angela Hudnall, Patrick Veres, *Karen Callahan, Josephine Aimiwu, Nikki (Lisa) Fox, *Rena Minor, Michael Franklin, David Slocum, Imran Shaikh, Amanda Storm, John Mbagwu, *Mohamad Bazerbashi, Joselyn Del Plar, Johnna Burns, *Mazen Roshdy, Kyle Fairchild, Latisha Fields, Tyler Frank

RESEARCH

H-Index taken from Web of Science August 2014:

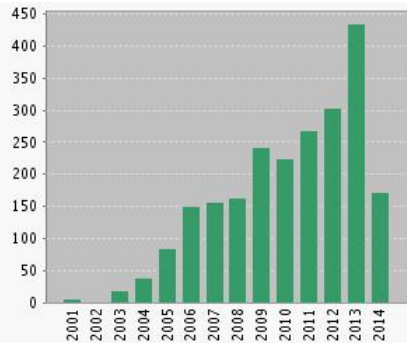
This report reflects citations to source items indexed within All Databases. Articles, abstracts, reviews.

Published Items in Each Year



The latest 20 years are displayed.

Citations in Each Year



The latest 20 years are displayed.

Results found: 140

Sum of the Times Cited [\[?\]](#) : 2264

Sum of Times Cited without self-citations [\[?\]](#) : 1867

Citing Articles [\[?\]](#) : [1355](#)

Citing Articles without self-citations [\[?\]](#) : [1285](#)

Average Citations per Item [\[?\]](#) : 16.17

h-index [\[?\]](#) : 24

Current Funding

- NSF-Chemistry, **UCSD \$20,000,000, (PI Prather)**; 9/2013-8/2014, SubContract Allen, **\$100,000/yr**, *CAICE II: CCI Center for Aerosol Impacts on Climate and the Environment*
- NIH – NCI/NIBIB, **\$407,868**, 3/2012-3/2015, PI (Allen, cols Coe & Hitchcock) *Cancer Margin Detection using Infrared Spectroscopy and Plasmon Resonance*
- NSF-Chemistry, Analytical/Surface Science; **\$565,000**, 7/2011-6/2015, PI *Water Organization at Environmental Interfaces by Phase-Sensitive Sum Frequency*
- Department of Energy: DOE-BES Geosciences, **\$415,754**, 11/2012-11/2015, PI *Geochemistry of Interfaces: From Surfaces to Interlayers To Clusters*

- *Summary Prior funding*
 - DoD, Office of the Secretary of Defense
 - Army Aviation Applied Tech Directorate
 - Mandaree Enterprise Corporation
 - NSF-CHE SGER
 - NSF-ATM
 - NSF-CRIF
 - ACS-PRF
 - DOE
 - Sloan Foundation
 - Beckman Foundation
 - Dreyfus Foundation
 - OSU Climate Water Carbon program

Research Summary

Dr. Allen's research focus is the study of molecular organization and structure at interfaces and spectroscopic instrumentation development. Understanding water and hydration including solvation structure in the bulk liquid and at the surface is an area of expertise. Salts, ion solvation, interfacial electric fields, and how ions perturb the hydrogen bonding network of water in the interfacial region are studied. Understanding lipid organization in monolayers for both atmospheric aerosol and biological applications with focus on marine aerosol and on understanding lung surfactant and function, and cellular membrane biophysics inclusive of understanding the molecular organization of skin is also of great interest. In addition to structure studies at the air-water interface, Dr. Allen is also conducting studies of oxide surface hydration and adsorption for geochemical applications. As of November of 2010, Dr. Allen is working to develop molecular level methods to evaluate normal versus cancerous tissues. These projects are in close collaboration with faculty from OSU Departments of Chemistry and Biochemistry, Pathology, and Surgery. Furthermore, instrumentation development in several areas, broad band sum frequency generation, Brewster angle microscopy, and total internal reflection Raman spectroscopy is ongoing.

Publications (reverse order; cover images feature Allen articles)

90. E.C. Griffith, R.J. Perkins, D. Telesford, E.M. Adams, L. Cwiklik, H.C. Allen, M. Roeselova, V. Vaida; Interaction of L-Phenylalanine with a Phospholipid Monolayer at the Water-Air Interface, *J. Phys. Chem. B.*, accepted (2014).

89. W. Hua, D. Verreault, H. C. Allen; Surface Electric Fields of Aqueous Solutions of NH_4NO_3 , $\text{Mg}(\text{NO}_3)_2$, NaNO_3 , and LiNO_3 : Implications for Atmospheric Aerosol Chemistry, *J. Phys. Chem. C*, 118(43), 24941-24949 (2014) [Prof. John C. Hemminger Festschrift Issue].

88. R. Li, D. Verreault, A. Payne, C. L. Hitchcock, S. P. Povoski, E. W. Martin Jr., H. C. Allen; Effects of Laser Excitation Wavelength and Optical Mode on Raman Spectra of Human Fresh Colon, Pancreas, and Prostate Tissues, *J. Raman Spectrosc.* 45(9), 773-780 (2014).

87. W. Hua, D. Verreault, Z. Huang, E. M. Adams, H. C. Allen; Cation Effects on Interfacial Water Organization of Aqueous Chloride Solutions. I. Monovalent Cations: Li^+ , Na^+ , K^+ , and NH_4^+ , *J. Phys. Chem. B* 118(28), 8433-8440 (2014).

86. J. V. Coe, Z. Chen, R. Li, R. Butke, B. Miller, C. L. Hitchcock, H. C. Allen, S. P. Povoski, E. W. Martin, Jr; Imaging Infrared Spectroscopy for Fixation-Free Liver Tumor Detection, *Proc. SPIE* 8947, 89470B/1-89470B/6 (2014).

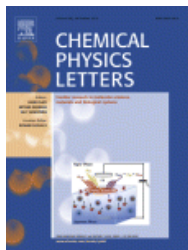
85. W. Hua, D. Verreault, H. C. Allen; Surface Prevalence of Perchlorate Anions at the Air/Aqueous Interface, *J. Phys. Chem. Lett.* 4(24), 4231-4236 (2013).

84. Z. Chen, R. Butke, B. Miller, C. L. Hitchcock, H. C. Allen, S. P. Povoski, E. W. Martin, Jr., J. V. Coe; Infrared Metrics for Fixation-Free Liver Tumor Detection, *J. Phys. Chem. B* 117(41), 12442-12450 (2013).

83. E. M. Adams, H. C. Allen; Palmitic Acid on Salt Subphases and in Mixed Monolayers of Cerebrosides: Application to Atmospheric Aerosol Chemistry, *Atmosphere* 4(4), 315-336 (2013).

82. Z. Huang, W. Hua, D. Verreault, H. C. Allen; Influence of Salt Purity on Na^+ and Palmitic Acid Interactions, *J. Phys. Chem. A* 117(50), 13412-13418 (2013) [Prof. Terry A. Miller Festschrift Issue].

81. W. Hua, D. Verreault, E. M. Adams, Z. Huang, H. C. Allen; Impact of Salt Purity on Interfacial Water Organization Revealed by Conventional and Heterodyne-Detected Vibrational Sum Frequency Generation Spectroscopy, *J. Phys. Chem. C* 117(38), 19577-19585 (2013).



80. D. Verreault, H. C. Allen; Bridging the gap between microscopic and macroscopic views of air/aqueous salt interfaces, *Chem. Phys. Lett.* 586, 1-9 (2013).
79. Z. Huang, W. Hua, D. Verreault, H. C. Allen; Salty Glycerol Versus Salty Water Surface Organization: Bromide and Iodide Surface Propensities, *J. Phys. Chem. A* 117, 6346-6353 (2013) [Prof. John C. Wright Festschrift Issue].
78. A. M. Jubb, D. Verreault, R. Posner, L. J. Criscenti, L. E. Katz, H. C. Allen; Sulfate Adsorption at the Buried Hematite/Solution Interface Investigated using Total Internal Reflection (TIR)-Raman Spectroscopy, *J. Colloid Interface Sci.* 400, 140-146 (2013).
77. D. Verreault, A. M. Jubb, G. S. Frankel, M. Stratmann, H. C. Allen, R. Posner; Laser Effects on Volta Potential Transients Recorded by a Kelvin Probe, *ECS Electrochem. Lett.* 2(5), H19-H21 (2013).
76. D. Verreault, W. Hua, H. C. Allen; From Conventional to Phase-Sensitive Vibrational Sum Frequency Generation Spectroscopy: Probing Water Organization at Aqueous Interfaces, *J. Phys. Chem. Lett.* 3(20), 3012-3028 (2012).
75. E. C. Griffith, E. M. Adams, H. C. Allen, V. Vaida; Hydrophobic Collapse of a Stearic Acid Film by Adsorbed L-phenylalanine at the Air-Water Interface, *J. Phys. Chem. B* 116(27), 7849-7857 (2012).
74. A. M. Jubb, H. C. Allen; Bisulfate Dehydration at the Air/Solution Interface Probed by Vibrational Sum Frequency Generation Spectroscopy, *J. Phys. Chem. C* 116(24), 13161-13168 (2012).
73. R. Posner, A. M. Jubb, G. S. Frankel, M. Stratmann, H. C. Allen; A Simultaneous Kelvin Probe and Raman Spectroscopy Approach for In-Situ Surface and Interface Analysis, *Electrochim. Acta* 76, 34-42 (2012).
72. A. M. Jubb, H. C. Allen; Sulfate Adsorption at the Buried Fluorite – Solution Interface Revealed by Vibrational Sum Frequency Generation Spectroscopy, *J. Phys. Chem. C* 116 (16), 9085-9091 (2012).
71. A. M. Jubb, W. Hua, H. C. Allen; Environmental Chemistry at Vapor/Water Interfaces: Insights from Vibrational Sum Frequency Generation Spectroscopy, *Annu. Rev. Phys. Chem.* 63, 107-130 (2012).
70. W. Hua, A. M. Jubb, H. C. Allen, Electric Field Reversal of Na_2SO_4 , $(\text{NH}_4)_2\text{SO}_4$, and Na_2CO_3 relative to CaCl_2 and NaCl at the Air/Aqueous Interface revealed by Phase-Sensitive Sum Frequency, *J. Phys. Chem. Lett.*, 2011, 2, 2515-2520.
69. A. G. F. de Beer, J. S. Samson, W. Hua, Z. Huang, X. Chen, H. C. Allen, S. Roke; Direct comparison of Phase-Sensitive Vibrational Sum Frequency generation with Maximum Entropy Method: Case Study of Water, *J. Chem. Phys.*, 2011, **135**, 224701; [pdhttp://www.mf.mpg.de/en/abteilungen/roke/simulation.html](http://www.mf.mpg.de/en/abteilungen/roke/simulation.html)
68. A. M. Jubb, W. Hua, H. C. Allen, Organization of Water and Atmospherically Relevant Ions and Solutes: Vibrational Sum Frequency Spectroscopy at the Vapor/Liquid and Liquid/Solid Interfaces, *Accounts of Chemical Research*, special issue invitation – Water, 2012, 45(1), 110-119.



67. S. H. Lee, H. C. Allen; Analytical Measurements of Atmospheric Urban Aerosol, News Article, Analytical Chemistry, 2012, 84 (3), 1196–1201.

66. W. Hua, X. Chen, H.C. Allen; Phase-Sensitive Sum Frequency Revealing Accommodation of Bicarbonate Ions, and Charge Separation of Sodium and Carbonate Ions within the Air/Water Interface, J. Phys. Chem. A 2011, 115, 6233-6238; (Memorial Issue for Victoria Buch).

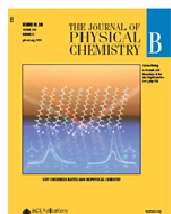
65. C. Y. Tang, Z. Huang, H. C. Allen; Interfacial Water Structure and Effects of Mg^{2+} and Ca^{2+} Binding to the COOH Headgroup of Palmitic Acid Monolayer Studied by Vibrational Sum Frequency Generation Spectroscopy, J Phys Chem B. 2011 Jan 13;115(1):34-40.

64. H. Laksmono, S. Tanimura, H. C. Allen, G. Wilemski, M. S. Zahniser, J. H. Shorter, D. D. Nelson, J. B. McManus, B. E. Wyslouzyl, Monomer, clusters, liquid: An integrated spectroscopic study of methanol condensation, Phys. Chem. Chem. Phys., 2011, 13, 5855-5871.

63 X. Chen, W. Hua, Z. Huang, H. Castada, H. C. Allen; Reorganization and Caging of DPPC, DPPE, DPPG, and DPPS Mono layers Caused by Dimethylsulfoxide Observed Using Brewster Angle Microscopy, Langmuir, 2010, 26 (24), pp 18902-18908.

62. M. R. Sierra-Hernandez and H. C. Allen, Incorporation and Exclusion of Long Chain Alkyl Halides in Fatty Acid Monolayers at the Air-Water Interface, Langmuir, 2010, 26 (24), pp 18806-18816.

61. X. Chen and H. C. Allen, Water Structure at Aqueous Solution Surfaces of Atmospherically Relevant Dimethyl Sulfoxide and Methanesulfonic Acid Revealed by Phase Sensitive Sum Frequency Spectroscopy, J. Phys. Chem. B, 2010, 114 (46), pp 14983-14988.



60. C. Y. Tang, Z. Huang, H. C. Allen; Binding of Mg^{2+} and Ca^{2+} to Palmitic Acid and Deprotonation of the COOH Headgroup Studied by Vibrational Sum Frequency Generation Spectroscopy, J. Phys. Chem. B. **2010** Dec 30;114(51):17068-76.

59. X. Chen, B. Minofar, P. Jungwirth, H. C. Allen; Interfacial Molecular Organization at Aqueous Solution Surfaces of Atmospherically Relevant Dimethylsulfoxide and Methane Sulfonic acid using Sum Frequency Spectroscopy and Molecular Dynamics Simulation, J. Phys. Chem. B, 2010, 114 (47), pp 15546-15553.

58. A.M. Jubb and H.C. Allen; Vibrational Spectroscopic Characterization of Hematite, Maghemite, and Magnetite Thin Films Produced by Vapor Deposition; ACS Applied Materials and Interfaces, **2010**, 2 (10), 2804-2812.

57. X. Chen, W. Hua, Z. Huang, H. C. Allen; Interfacial Water Structure Associated with Phospholipid Membranes Studied by Phase-Sensitive Vibrational Sum Frequency Generation Spectroscopy, J. Am. Chem. Soc., **2010**, 132 (32), pp 11336–11342.

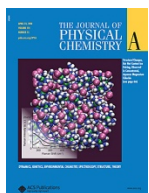
56. N. N. Casillas-Ituarte, X. Chen, H. Castada, H. C. Allen; Na^+ and Ca^{2+} effect on the hydration and orientation of the phosphate group of DPPC at air–water and air–hydrated silica interfaces; J. Phys. Chem. B, **2010**, 114, 9485–9495.

55. K. M. Callahan, N. N. Casillas-Ituarte, M. Xu, M. Roeselova, H. C. Allen, D. Tobias; The Effect of Magnesium Cation on the Interfacial Properties of Aqueous Salt Solutions; *J. Phys. Chem. A*, **2010**, 114 (32), pp 8359–8368.

54. N. N. Casillas-Ituarte, K. M. Callahan, C. Y. Tang, X. Chen, M. Roeselova, D. J. Tobias, H. C. Allen; Surface Organization of aqueous $MgCl_2$ and Application to Atmospheric Marine Aerosol Chemistry; *Proceedings of the National Academy of Sciences (PNAS)*, **2010**, 107 (15) 6616-6621.

53. D. Liang, H. C. Allen, G. S. Frankel, Z. Y. Chen, R. G. Kelly, Y. Wu and B.E. Wyslouzil; Effects of Sodium Chloride Particles, Ozone, UV, and Relative Humidity on Atmospheric Corrosion of Silver; *J. Electrochem. Soc.*, **2010**, V 157 (4), pp. C146-C156.

52. Z. Y. Chen, D. Liang, G. Ma, G. S. Frankel, H. C. Allen, R. G. Kelly; Influence of UV Irradiation and Ozone on Atmospheric Corrosion of Bare Silver; *Corrosion Engineering, Science and Technology*, **2010** V45 (2), 169-180.



51. K. M. Callahan, N. N. Casillas-Ituarte, M. Roeselova, H. C. Allen, D. J. Tobias; Solvation of Magnesium Dication: Molecular Dynamics Simulation and Vibrational Spectroscopic Study of Magnesium Chloride in Aqueous Solutions; *J. Phys. Chem. A*, **2010**, 114, 5141-5148.

50. X. Chen, H. Allen; Interactions of Dimethylsulfoxide with a Dipalmitoylphosphatidylcholine Monolayer Studied by Vibrational Sum Frequency Generation; *J. Phys. Chem A* **2009**, 113 (45), pp 12655-12662.

PCCP



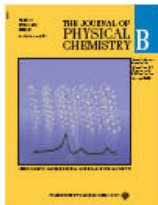
49. H. C. Allen*, N. N. Casillas-Ituarte, M. R. Sierra-Hernandez, X. Chen, C. Y. Tang; PCCP Perspective: Shedding Light on Water Structure at Air-Aqueous Interfaces: Ions, Lipids, and Hydration; *Phys. Chem. Chem. Phys.*, **2009**, 11, 5521-5852.

48. C. Y. Tang, H. C. Allen; Ionic Binding of K^+ and Na^+ to the Carboxylic Acid Head Group of Palmitic Acid in Monolayers using Vibrational Sum Frequency Spectroscopy; *J. Phys. Chem. A*, **2009**, 113, 7383–7393.

47. K. Harper, B. Minofar, M. R. Sierra-Hernandez, N. N. Casillas-Ituarte, M. Roeselova, H.C. Allen; Surface Residence and Uptake of Methyl Chloride and Methyl Alcohol at the Air/Water Interface Studied by Vibrational Sum Frequency Spectroscopy and Molecular Dynamics; *J. Phys. Chem. A*, **2009**, 113, 2015-2024 (Max Wolfsberg Festschrift Issue). DOI: 10.1021/jp808630v

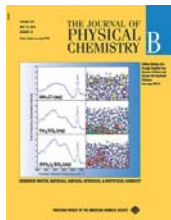
46. M. Xu, R. Spinney, H. C. Allen; Water Structure at the Air-Aqueous Interface of Divalent Cation and Nitrate Solutions; *J. Phys. Chem. B*, **2009**, 113, 4102-4110. DOI: 10.1021/jp806565a

45. N. N. Casillas-Ituarte, H. C. Allen; Water, Chloroform, Acetonitrile, and Atrazine Adsorption to the Amorphous Silica Surface Studied by Vibrational Sum Frequency Generation Spectroscopy, *Chem. Phys. Lett.*, **2009**, V483, Issue: 1-3, 84-89.

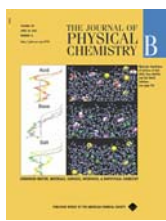
44. M. Xu, C. Y. Tang, A. M. Jubb, X. Chen, H. C. Allen; Nitrate Anions and Ion Pairing at the Air/Aqueous Interface; *J. Phys. Chem. C*, **2009**, 113, 2082-2087. DOI: 10.1021/jp805376x
43. L. Van Loon, H. C. Allen, B. E. Wyslouzil; Effective Diffusion Coefficients for Methanol in Sulfuric Acid Solutions Measured by Raman Spectroscopy; *J. Phys. Chem. A*, **2008**, 112, 10758-10763. DOI: 10.1021/jp805336b
42. M. Xu, J. P. Larentzos, M. Roshdy, L. J. Criscenti, H. C. Allen; Aqueous Divalent Metal–Nitrate Interactions: Hydration versus Ion Pairing; *Phys. Chem. Chem. Phys.*; **2008**, 10, 4793-4801. DOI: 10.1039/b807090n
41. L. Van Loon, H. C. Allen; Uptake and Surface Reaction of Methanol by Sulfuric Acid Solutions Investigated by Vibrational Sum Frequency Generation and Raman Spectroscopies; *J. Phys. Chem. A*, **2008**, 112, 7873-7880. DOI: 10.1021/jp712134s
40. G. Ma, X. Chen, H. C. Allen; Dangling OD Confined in a Langmuir Monolayer; *J. Am. Chem. Soc.*, **2007**, 129, 14053-14057.
39. K. Harper, H. C. Allen*; Competition between DPPC and SDS at the Air-Aqueous Interface; *Langmuir*, **2007**, 23, 8925-8931. DOI: 10.1021/la7006974
38. L. L. VanLoon, R. N. Minor, H. C. Allen*; Structure of Butanol and Hexanol at Aqueous, Ammonium Bisulfate, and Sulfuric Acid Solution Surfaces Investigated by Vibrational Sum Frequency Generation Spectroscopy; *J. Phys. Chem. A*, **2007**, 111, 7338-7346 (special issue in honor of Roger Miller). DOI: 10.1021/jp070625k
37. L. M. Levering, M. R. Sierra-Hernández, H. C. Allen*; Observation of Hydronium Ions at the Air-Aqueous Acid Interface: Vibrational Spectroscopic Studies of Aqueous HCl, HBr, and HI; *J. Phys. Chem. C*, **2007**, 111, 8814-8826 (special issue honor of Kenneth B. Eisenthal).
36. G. Ma, H. C. Allen; Condensing Effect of Palmitic Acid on DPPC in Mixed Langmuir Monolayers; *Langmuir*, **2007**, 23, 589-597.
35. Voss, L. F., M. F. Bazerbashi, C. P. Beekman, C. M. Hadad, H. C. Allen; Oxidation of Oleic Acid at Air/Liquid Interfaces, *J. Geophys. Res.*, **2007**, 112, D06209/1-D06209/9. DOI:10.1029/2006JD007677
34. G. Ma, H. C. Allen; New Insights into Lung Surfactant Monolayers using Vibrational Sum Frequency Generation Spectroscopy; *Photochem. Photobiol.*, **2006**, 82, 1517-1529.
- 
33. L. F. Voss, C. M. Hadad*, H. C. Allen*; Competition between Atmospherically Relevant Fatty Acid Monolayers at the Air/Water Interface; *J. Phys. Chem. B*, **2006**, 110, 19487-19490. DOI: 10.1021/jp062595b
32. G. Ma, H. C. Allen; Real-Time Investigation of Lung Surfactant Respreading with Surface Vibrational Spectroscopy; *Langmuir*, **2006**, 22, 11267-11274.
31. G. Ma, H.C. Allen; DPPC Langmuir Monolayer at the Air-Water Interface: Probing the Tail and Head Groups by Vibrational Sum Frequency Generation Spectroscopy; *Langmuir*, **2006**, 22, 5341-5349. DOI: 10.1021/la0535227
30. L. M. Levering, C. Hayes, K. M. Callahan, C. M. Hadad, H. C. Allen; Non-Aqueous Solvation of n-Octanol and Ethanol: Spectroscopic and Computational Studies; *J. Phys. Chem. B*, **2006**, 110, 6325-6331.

29. S. Gopalakrishnan, D. Liu, H. C. Allen*, M. Kuo, M. J. Shultz*; Vibrational Spectroscopic Studies of Aqueous Interfaces: Salts, Acids, and Nanodrops; Chem. Rev., **2006**, 106, 1155-1175.

28. M. Xu, D. Liu, H. C. Allen; Ethylenediamine at Air/Liquid and Air/Silica Interfaces: Protonation Versus Hydrogen Bonding Investigated by Sum Frequency Generation Spectroscopy; Environ. Sci. Technol., **2006**, 40, 1566-1572.



27. S. Gopalakrishnan, P. Jungwirth, D. J. Tobias, H. C. Allen*; Air-Liquid Interfaces of Aqueous Solutions Containing Ammonium and Sulfate: Spectroscopic and Molecular Dynamics Studies; J. Phys. Chem. B, **2005**, 109, 8861 - 8872.



26. M. Mucha, T. Frigato, L. M. Levering, H. C. Allen, D. J. Tobias, L. X. Dang, P. Jungwirth; Unified Molecular Picture of the Surfaces of Aqueous Acid, Base, and Salt Solutions; J. Phys. Chem. B, **2005**, 109, 7617 - 7623.

25. D. Liu, G. Ma, H. C. Allen*; Adsorption of 4-Picoline and Piperidine onto Hydrated SiO₂ Surface: Probing the Surface Acidity with Vibrational Sum Frequency Generation Spectroscopy; Environ. Sci. Technol., **2005**, 39, 2025-2032.

24. E. L. Hommel, J. K. Merle, G. Ma, C. M. Hadad,* H. C. Allen*; Spectroscopic and Computational Studies of Aqueous Ethylene Glycol Solution Surfaces; J. Phys. Chem. B, **2005**, 109, 811-818.

23. G. Ma, D. Liu, and H. C. Allen*; Piperidine Adsorption on Hydrated α -Alumina (0001) Surface Studied by Vibrational Sum Frequency Generation Spectroscopy; Langmuir, **2004**, 20, 11620-11629.

22. L. Van Loon, H. C. Allen*; Methanol Reaction with Sulfuric Acid: A Vibrational Spectroscopic Study; J. Phys. Chem. B, **2004**, 108, 17666-17674.

21. D. Liu, G. Ma, M. Xu, H. C. Allen*; Adsorption of Ethylene Glycol Vapor on α -Al₂O₃ (0001) and Amorphous SiO₂ Surfaces: Observation of Molecular Orientation and Surface Hydroxyl Groups as Sorption Sites; Environ. Sci. Technol., **2005**, 39, 206-212.

20. G. Ma, D. Liu, H. C. Allen*; Vibrational Broad Bandwidth and Scanning Sum Frequency Generation Spectroscopy of Air-Solid and Air-Liquid Interfaces; SPIE Conf. proceedings, Invited Article, Denver, CO, Aug. **2004**.

19. D. Liu, G. Ma, L. Levering, H. C. Allen; Vibrational Spectroscopy of Aqueous Sodium Halide Solutions and Air-Liquid Interfaces: Observation of Increased Interfacial Depth; J. Phys. Chem. B, **2004**, 108, 2252-2260.



18. E. L. Hommel and H. C. Allen*; 1-Methyl Naphthalene Reorientation at the Air-Liquid Interface upon Water Saturation Studied by Vibrational Broad Bandwidth Sum Frequency Generation Spectroscopy; *J. Phys. Chem. B*, **2003**, 107, 10823-10828.
17. E. L. Hommel, H. C. Allen*; The Air-Liquid Interface of Benzene, Toluene, M-xylene, and Mesitylene: A Sum Frequency, Raman, and Infrared Spectroscopic Study; *Analyst*, **2003**, 128, 750-755.
16. G. Ma, H. C. Allen*; Surface Studies of Aqueous Methanol Solutions by Vibrational Broad Bandwidth Sum Frequency Generation Spectroscopy; *J. Phys. Chem. B*, **2003**, 107, 6343-6349.
15. M. M. Ivey, K. A. Layman, A. Avoyan, H. C. Allen, J. C. Hemminger*; Characterization of Ultrathin Films of $g\text{-Al}_2\text{O}_3$ and the Chemistry of 1,3-Butadiene on NiAl(001) and $g\text{-Al}_2\text{O}_3$; *J. Phys. Chem. B*, **2003**, 107, 6391-6400.
14. A. P. Davis, G. Ma, H.C. Allen*; Surface Vibrational Sum Frequency and Raman Studies of PAMAM G0, G1, and Acylated PAMAM G0 Dendrimers; *Anal. Chim. Acta*, **2003**, 496, 117-131.
13. G. Ma, H. C. Allen*; Diffuse Reflection Broad Bandwidth Sum Frequency Generation from Particle Surfaces; *J. Am. Chem. Soc.*, **2002**, 124, 9374-9375.
12. E. L. Hommel, G. Ma, H. C. Allen*; Broadband Vibrational Sum Frequency Generation Spectroscopy of a Liquid Surface; *Anal. Sci.*, **2001**, 17, 1325-1329.
11. H. C. Allen; *Interfacial Analysis*; McGraw-Hill Yearbook of Science & Technology **2002**.
10. E. L. Hommel, H. C. Allen*; Broadband Sum Frequency Generation with Two Regenerative Amplifiers: Temporal Overlap of Femtosecond and Picosecond Light Pulses; *Anal. Sci.*, **2001**, 17,137-139.
9. H. C. Allen, E. A. Raymond, G. L. Richmond*; Nonlinear Vibrational Sum Frequency Spectroscopy of Atmospherically Relevant Molecules at Aqueous Solution Surfaces; *Curr. Opin. Colloid Interface Sci.*, **2000**, 5, 74-80.
8. H. C. Allen, E. Raymond, G. L. Richmond; Surface Structural Studies of Methane Sulfonic Acid at Air/Aqueous Solution Interfaces using Vibrational Sum Frequency Spectroscopy; *J. Phys. Chem. A*, **2001**, 105, 1649-1655.
7. M. G. Brown, E. A. Raymond, H. C. Allen, L. F. Scatena, G. L. Richmond*; The Analysis of Interference Effects in the Sum Frequency Spectra of Water Interfaces; *J. Phys. Chem. A*, **2000**, 104, 10220-10226.
6. H. C. Allen, D. E. Gragson, G. L. Richmond*; Molecular Structure and Adsorption of Dimethyl Sulfoxide at the Surface of Aqueous Solutions; *J. Phys. Chem. B*, **1999**, 103, 660-666.
5. M. M. Ivey, H. C. Allen, A. Avoyan, K. A. Martin, J. C. Hemminger; Dimerization of 1,3-Butadiene on Highly Characterized Hydroxylated Surfaces of Ultrathin Films of $g\text{-Al}_2\text{O}_3$; *J. Am. Chem. Soc.*, **1998**, 120, 10980-10981.
4. H. C. Allen, M. L. Mecartney, J. C. Hemminger; Minimizing Transmission Electron Microscopy Beam Damage during the Study of Surface Reactions on Sodium Chloride; *Microsc. Microanal.*, **1998**, 4, 23-33.

3. H. C. Allen, T. Brauers, B. J. Finlayson-Pitts; Illustrating Deviations in the Beer-Lambert Law in an Instrumental Analysis Laboratory: Measuring Atmospheric Pollutants by Differential Optical Absorption Spectrometry; *J. Chem. Educ.*, **1997**, *74*, 1459-1462.

2. H. C. Allen, J. M. Laux, R. Vogt, B. J. Finlayson-Pitts, J. C. Hemminger; Water Induced Reorganization of Ultra-thin Nitrate Films on NaCl: Implications for the Tropospheric Chemistry of Sea Salt Particles; *J. Phys. Chem.*, **1996**, *100*, 6371-6375.

1. R. Vogt, C. Elliott, H. C. Allen, J. M. Laux, J. C. Hemminger, B. J. Finlayson-Pitts; Some New Laboratory Approaches to Studying Tropospheric Heterogeneous Reactions; *Atmos. Environ.*, **1996**, *30*, 1729-1737.

- H. C. Allen; Fundamental Surface Processes in Heterogeneous Atmospheric Chemistry: Applications to Sea-Salt (NaCl) and Oxide Particulate Chemistry, Dissertation, June 1997.

Presentations

i. Invited lectures at professional meetings

1. 2000 Central Regional ACS meeting, Nonlinear Optics, Covington, KY, 5/18/2000.
Vapor-Liquid Interfaces of Aqueous Solutions, Vibrational Sum Frequency Studies
2. 2002 ACS National Meeting, Boston, Mass. 8/2002
Within Colloids Div.; *Interfacial Structure of Liquid and Particle Surfaces using Vibrational Broadband Sum Frequency Generation Spectroscopy*
3. 2002 International Symposium: Frontiers in Molecular Science; Qingdao, China 7/2002
Structure and Chemistry of Liquid and Particle Surfaces: Vibrational Broadband Sum Frequency Spectroscopy
4. 2003 UCI CRC Workshop on Chemistry at Interfaces , Beckman Center, Irvine, CA, 7/2003
Air-Liquid Interfaces: From Water to Aromatic Hydrocarbons
5. 2003 Mesilla Workshop: Environmental Chemistry at Interfaces, Mesilla, NM 2/2003
Understanding the Molecular-level Landscape at Air-liquid and Liquid-solid Interfaces: From Water to Aromatic Hydrocarbons
6. 2004 Telluride Workshop on Studies of ice, icy particles, ice surfaces, and ice adsorbate interactions: a molecular view, Telluride, CO
7. 2004 American Physical Society (APS) National Meeting, Montreal 3/22-26/2004; Symposium: Dynamics at Gas-Solid and Gas-Liquid Interfaces, title: *Air-Liquid Interfaces I & II*
8. 2004 SPIE 49th Annual Meeting, Denver, CO, 8/6/2004
Symposium: Physical Chemistry of Interfaces and Nanomaterials, abstract # AM04-AM225-46, title: *Vibrational broad bandwidth and scanning sum frequency generation spectroscopy of air-solid and air-liquid interfaces*
9. 2004 ACS Fall National Meeting, Philadelphia 8/24/2004
Symposium: Chemical Physics and Atmospheric Science within the Physical Division; title: *Interfacial vibrational spectroscopic studies of acids, oleic to sulfuric: Application to atmospheric aerosol chemistry*
10. 2004 ACS Spring National Meeting, San Diego 3/2005
Symposium: Hydrogen Bonds: Developments in Experiment and Theory / Physical Chemistry Division; Title: *Interfacial spectroscopic studies of aqueous phase acids and salts: sodium chloride, bromide, iodide, and ammonium and sulfate*
11. 2005 ACS Spring National Meeting, San Diego 3/2005
Symposium: Applications of Physical Chemistry to Environmental and Biogeochemical Research / Physical Chemistry Division; Title: *Reactions at aqueous surfaces: Alkenes, oleic acid, ozone and ammonium sulfate*
12. 2005 National Goldschmidt Conference, Moscow, Idaho, 5/2005
Symposium: S04: Advances in experimental and theoretical methods for characterization of mineral-fluid interfaces; Title: *Water and organic adsorption and structure at alumina and silica surfaces*

13. 2005 ACS Fall National Meeting, Wash DC, 8/2005
Symposium: Analytical and Biological Applications of Nonlinear Optics / Analytical and Physical Divisions; Title: *Interfacial structure of model lung surfactant monolayers*,
14. 2006 Western Spectroscopy Association (WSA), Monterey, CA 2/3/2006
Title: *Air-Liquid Interfaces studied by Vibrational Sum Frequency Spectroscopy: Understanding Lung Surfactant Systems*
15. 2006 **Gordon Conference on Chemistry at Interfaces**, Biddeford, ME, Chair N. Spencer; *Molecular Arrangement and Chemistry at the Surface of Liquids and Solids: Understanding Atmospheric Aerosol Chemistry*
16. 2006 **Gordon Conference on Water and Aqueous Solutions**, NH; Chair B. Ladanyi
Solution Surfaces: from Water to Lung Surfactant
17. 2006 Beckman Young Investigator Conference, Irvine, CA 8/2006
Title: *Pulmonary Surfactants, Proteins & Membranes Understanding Interfacial Structure using Nonlinear Spectroscopy*
18. 2006 ACS Fall National Meeting, San Francisco, CA
Division of Colloid and Surface Science
Symposium: "Environmental Interfaces"; F. Geiger; G. Smith, H. Fairbrother: organizers
Title: *Structure and Reactivity at Air-Aqueous/Organic Interfaces*
19. 2006 ACS Fall National Meeting, San Francisco, CA
Division of Colloid and Surface Science
Symposium: "Water at Interfaces"; Seong Kim, organizer
Title: *Aqueous surface structure of water and organic monolayers on water*
20. 2006 First Annual Conference on the Physics, Chemistry, and Biology of Water, 10/2006 Organized by Gerald Pollack & Sponsored by Vermont Photonics, Brattleboro, Vermont
Title: *Structure at Air-Aqueous Salt and Lipid Interfaces*
21. 2007 ACS Fall National Meeting, Boston, Mass 8/2007, Division of Physical Chemistry
Symposium: "Hydration: From Clusters to Aqueous Solution";
Organized by Dan Neumark and Ken Jordan, Title: "Hydration of anions, cations, and lipids at air-aqueous interfaces"
22. 2008 Telluride Workshop on Liquid and Solid Aqueous Surfaces and Interfaces, Telluride, CO, Solvation of Ions at Air-Aqueous Interfaces, organizers V. Buch, M. J. Shultz, and P. Devlin
23. 2008 ACS Fall National Meeting, Philadelphia, PA Aug, Division of Physical Chemistry Symposium Spectroscopic Probes of Chemical Dynamics in Gaseous and Condensed Phases, Organizers S. Corcelli and M. Johnson; Ions at the air-water interface: Nitrate, halides, mono and divalent cations, and water
24. 2008 ACS Spring National Meeting, Colloids Division Symposium The Physical Chemistry of Environmental Interfaces; New Orleans, LA; Structure & Chemistry at Air-Aqueous Interfaces
25. 2008 **Gordon Research Conference on Vibrational Spectroscopy**, Mount Holyoke College South Hadley, MA; Studying vibrations of Lipids, Salts, Acids, and Water at Air-Aqueous Interfaces,
26. 2008 FACSS Meeting, Reno, NV, Air-Aqueous Interfaces studied using Vibrational Sum Frequency Spectroscopy

27. 2008 Department of Defense Corrosion Meeting, University of Hawaii, Honolulu, Hawaii; Spectroscopic Role and Corrosion Studies
28. 2009 **Gordon Research Conference on Chemistry Reactions at Surfaces**, Ventura, CA, Molecular Organization and Structure at the Air-Liquid Interface, Chair P. Reid
29. 2009 ACS Spring National Meeting, Salt Lake City, Vibrational sum frequency studies of carboxylic acid deprotonation initiated by cation binding; Division of Analytical Chemistry, Session: Nonlinear Optical Methods for Surface Analysis and Characterization, organizer J. Conboy
30. 2009 ACS and Colloids National Meeting, Columbia University, June 2009, Ionic Binding of Na⁺ versus K⁺ to Palmitic Acid Monolayers Studied by Vibrational Sum Frequency Spectroscopy
31. 2009 Telluride Workshop - Electrification: Liquid surfaces and ion pairing studied by nonlinear surface vibrational spectroscopy, organizers: G. Ewing (U. Indiana), M. Jarrold (U. Indiana), and E. Williams (MIT)
32. 2010 The Future Ocean - Chemistry at Marine Interfaces 9/2010; University of Kiel Cluster of Excellence, Kiel, Germany; **PLENARY LECTURE: Molecular Organization at the Ocean Surface: Ions, Water and the Microlayer**; Organizers: G. Friedrichs and F. Temps
33. 2011 Pittcon,: ACS-DAC: Analytical Chemistry/Characterization at the Interfaces, March 17th, 2011, "Molecular Organization at Air-aqueous Interfaces: Advances in Vibrational Sum Frequency Spectroscopy" (Organizer: Nick Winograd), Atlanta, Georgia.
34. 2011 Dynamics of Molecular Collisions Meeting (DMC), July 13th, 2011: "Water, Carbonate, Bicarbonate, Sulfate, Bisulfate, and Cation Organization within the Air/Aqueous Interface revealed by Phase Sensitive Sum Frequency Spectroscopy" (Organizer: David Nesbitt), Snowbird, UT.
35. 2011 Vibrational Dynamics TSRC, July 24-28th, 2011, "Organization at the Air/Aqueous Interface" (Organizers: James Skinner & Martina Havenith), Telluride, CO.
36. 2011 FACCS Meeting, Oct 4th, 2011, "Molecular Organization and Reversed Electric Field at Air/Aqueous Interfaces revealed from Phase-Sensitive Sum Frequency Generation Spectroscopy" (Organizers: Tahai Tahara and Rob Walker), Reno, NV.
37. 2011 ACS National Meeting, Aug 28-Sept 1, 2011, "Organization of Sodium, Ammonium, Carbonate, Bicarbonate, Sulfate, Halides, and Phospholipids at the Air-Aqueous Interface" (Organizer: Amanda Grannas; symposium: Air-Surface Interactions: Chemistry from Molecular to Global Climate Scales), Denver, CO.
38. 2011 IGERT Univ. Cincinnati, Sept 30th, 2011, "Bio-membrane and lung surfactant organization: Interfacial spectroscopy and microscopy studies" (Organizer: IGERT on Biomembranes Committee, Engineering), Cincinnati, OH. (also listed as invited seminar)
39. 2011 Eastern Analytical Society, EAS Gold Medal Session for Gary Blanchard, Nov 14th-17th, 2011, "Molecular Organization and Electric Field Reversal at Air/Aqueous Interfaces revealed from Phase-Sensitive Sum Frequency Generation Spectroscopy: Sulfate, Carbonate, Chloride, Ammonium, and Sodium" (Organizer: Lydia Breckenridge), Somerset, NJ.2.
40. 2012 APS meeting, Feb 26-27, 2012, Boston convention Center, (organizers: Don Baer, PNNL, Ilja Seipleman, U. Minn) "Organization at the Air-Aqueous Interface by Heterodyne-detected Phase-Sensitive Sum Frequency Spectroscopy"

41. International Molecular Spectroscopy Conference, June 2012, Spectroscopy at Interfaces session, Ion Organization and Reversed Electric Field at Air/Aqueous Interfaces Revealed by Heterodyne-Detected Sum Frequency Generation Spectroscopy, (organizer: Michael Duncan), Columbus, OH
42. Goldschmidt Conference, June 2012, Structure and dynamics of ions and water at mineral-water interfaces: Insights from experimental and computational studies session, Sulfate adsorption at buried mineral/solution interfaces probed by TIR-Raman spectroscopy, D. Verreault presented (organizers: Sang Soo Lee, Man Xu, Louise Criscenti), Montreal, QC, Canada
- 43 ACS national meeting, March 25th 2012, Geochemistry Division, San Diego; PAPER ID: 22108
PAPER TITLE: "Water and ion organization at environmental interfaces" (final paper number: 4)
DIVISION: GEOC: Division of Geochemistry (organizers: Franz Geiger, NW; Dennis Hore, Univ Victoria)
SESSION: Atmospheric and Geochemical Interfaces
44. 2012 International Symposium on Molecular Spectroscopy, Ohio State, OH, June 19th 2012, Organizer of Interfacial Session: Michael Duncan; "Ion organization and Reversed Electric Fields revealed by Heterodyned Sum Frequency"
45. 244th ACS National Meeting & Exposition - August 19-23, 2012, Philadelphia, PA; Document ID: 13483
Title: Organization of sodium, ammonium, carbonate, bicarbonate, sulfate, halides, and phospholipids at the air-aqueous interface
Division: ENVR: Division of Environmental Chemistry (Hind Al-Abadleh organizer) Session: Air-Surface Interactions: Chemistry from Molecular to Global Climate Scales
46. 244th ACS National Meeting & Exposition - August 19-23, 2012, Philadelphia, PA; PAPER ID: 16311
PAPER TITLE: "Lipid and water organization at biological surfaces" (final paper number: 17)
DIVISION: PHYS: Division of Physical Chemistry (Casey Londergan and Steve Corcelli organizers)
SESSION: Solvent Dynamics at Biomolecular Interfaces: Experiment and Theory
47. 244th ACS National Meeting & Exposition - August 19-23, 2012, Philadelphia, PA; Document ID: 16174
Title: Lipid and ion organization at air-aqueous interfaces revealed by sum frequency spectroscopy and Brewster angle microscopy studies
Division: COMP: Division of Computers in Chemistry (Liem Dang and Hongfei Wang organizers)
Session: Recent Advances in Studies of Molecular Processes at Liquid Interfaces
48. 244th ACS National Meeting & Exposition - August 19-23, 2012, Philadelphia, PA; Document ID: 16186
Title: Organization at the surface of atmospheric aerosols and the ocean of ions, water, and organic molecules revealed by vibrational sum frequency spectroscopy and Brewster angle microscopy
Division: COLL: Division of Colloid and Surface Chemistry (Eric Borguet and Andre W. organizers)
Session: Applications of Vibrational Spectroscopy to Studies of Environmental Interfaces
49. **2012 Gordon Research Conference on Aqueous Corrosion** held at Colby-Sawyer College, New London, NH, USA, July 8-13, 2012; Invited talk; "Atmospheric Chemistry and Corrosion" (organized by Chair David Shoesmith)
50. 2013 Air-UCI Workshop, NSF CCI on Atmospheric Aerosols, February 1, 2013, Laguna Beach CA (organized by Barbara Finlayson-Pitts), "Ions, Lipids, Water and Electric Fields: From the Oceans to the Surface of Aerosol"
51. 2013 Cleveland Meeting on Corrosion: Yeager Award Symposium, March 15, 2013, Case Western Reserve "Corrosion and Atmospheric Chemistry" Honor of J Frankel@OSU

52. 2013 ACS National Meeting, New Orleans, LA, April 9, 2013, Chemical Pictures of Environmental Interfaces, Colloids (invited by Shaw, Soerno), "Air-Aqueous Interfaces, ion distributions, and lipid organization by vibrational SFG"
53. 2013 ACS National Meeting, New Orleans, LA, April 10, 2013, WCC award Symposium: ACS Award for Encouraging Women into Careers into the Chemical Sciences, "Water, Ions, and Organization at the Air-Aqueous Interface"
54. 2013 RESOLV Cluster of Excellence meeting, June 4, 2013, Ruhr-University at Bochum (organizer Martina Havenith), "Ions, Lipids, Water and Solvation at the Air-Water Interface"
55. 2013 ACS Colloids National Meeting, June 25, 2013, Wet and Dry Atmospheric Aerosol symposium (organizers Akua Asa-Awuku and Paul Ziemann), Riverside, CA, "Water Surfaces and Impact on Aerosol: Nitrates, Sulfates, and Carbonates with Mono and Divalent Cations"
56. **2013 Gordon Research Conference on Chemistry and Physics of Liquids**, Holderness, NH, August 6, 2013 (organized by Mark Ediger and Phil Geissler), "Organization at Air/Aqueous Interfaces: Water and Ions"
57. 2013 ACS National Meeting, Theory and Experiment on Water and Hydration symposium, Indianapolis, IN, September 12, 2013 (organized by Sotiris Xantheas and Rich Saykally) "Air-aqueous interfacial organization of solvated inorganic salts"
58. 2014 ACS National Meeting, Award Symposium Honoring Ken Eisenhal, Dallas, TX, March 17 (organized by Franz Geiger) "~Organization of Lipids, Ions, and Water at Air/Aqueous Interfaces"
- 59.- 2014 **Gordon Research Conference on Vibrational Spectroscopy**, Maine, August 5, 2014 (organized by Mischa Bonn and Art Utz), "Hydration, Electric Fields, and Interfacial Organization of Ions and Lipids"
60. 2014 ICMR UCSB - Materials Research Center at UC Santa Barbara, Conference/Workshop, July 7, 2014 (organized by NMira Todorova) "Electric Fields at the Air/Water Interface"
61. 2014 Nordita, Stockholm, Sweden, Workshop on Water, "Water - the Most Anomalous Liquid" Oct 19-24, 2014, International Conference (organized by Anders Nilsson & Lars Pettersson), "The Air-Water Interface: As Influenced by Ions, Lipids, and Electric Fields"

ii. Invited seminars and colloquia

1. 2000 Wright State University Chemistry Department, 10/13/2000
From Global Change to the Antarctic Ozone Hole: An Atmospheric Chemistry Perspective
2. 2001 Indiana State University; Terre Haute, IN 11/2001
Understanding Heterogeneous Atmospheric Chemistry: Surface Studies to Instrumentation Advances
3. 2001 CMR – Center for Materials Research, Ohio State, 10/25/2001
Surface Vibrational Studies of Liquids and Particles: Recent Advances in Sum Frequency Generation Spectroscopy
4. 2001 Miami University; Oxford, OH 10/18/2001
Understanding Heterogeneous Atmospheric Chemistry: Surface Studies to Instrumentation Advances
5. 2001 SUNY (State University of New York) Brockport; NY, 0/11/2001
Understanding Heterogeneous Atmospheric Chemistry: Surface Studies to Instrumentation Advances
6. 2002 Ashland Chemical, Dublin, OH 1/10/2002
Recent Advances in Surface Vibrational Sum Frequency Spectroscopy: Understanding Structure and Chemistry of Liquid and Particle Surfaces, (Invited by Drs. Alex Krawczak and Jeff Warmkessel)
7. 2002 OSU Physics AMO talk, Columbus, OH 6/2002
Applications and Advances in Vibrational Sum Frequency Generation Spectroscopy
8. 2002 Cal Poly San Luis Obispo, Calif., 9/2002
Heterogeneous Atmospheric Chemistry: Understanding Surface Structure of Solutions and Particles
9. 2002 Wayne State University, Detroit, Mich. 10/2002
Broadband Sum Frequency Generation: Understanding the Surface Structure of Liquids
10. 2002 Central Michigan University, Mich. 3/2002
Recent Advances in Surface Vibrational Sum Frequency Spectroscopy: Understanding Structure and Chemistry of Liquid and Particle Surfaces
11. 2003 Mesilla Workshop, Environmental Chemistry at Interfaces, 2/2003
Understanding the Molecular-level Landscape at Air-liquid and Liquid-solid Interfaces: From Water to Aromatic Hydrocarbons
12. 2003 Smith College, Amherst, Mass. 4/2003
Heterogeneous Atmospheric Chemistry: The Molecular Landscape of Interfaces
13. 2003 CCERCI seminar series, Ohio State, Rattan Lal organizer, 5/30/2003
Heterogeneous Atmospheric Chemistry: Understanding the Molecular-level Landscape of Aerosol Surfaces
14. 2003 EMSI Annual Meeting, Columbus, OH 6/2003
From ice grain-boundaries to water surface structure, What do they have in common?
15. 2003 EMSI Annual Meeting, Columbus, OH 6/2003
Aromatic Hydrocarbons and Atmospheric Aerosols
16. 2003 Workshop on Chemistry at Interfaces, Irvine, CA 7/1/2003
Air-Liquid Interfaces: Alcohols, Aromatic Hydrocarbons, and Water
17. 2003 Indiana University, Bloomington, Indiana, 10/2003
Air-Liquid Interfaces: Alcohols, Aromatic Hydrocarbons, and Water
18. 2003 Butler University, Indianapolis, Indiana, 10/2003

Air-Liquid Interfaces: Alcohols, Aromatic Hydrocarbons, and Water

19. 2003 Amherst College, Amherst, Mass., 10/2003

Air-Liquid Interfaces: Alcohols, Aromatic Hydrocarbons, and Water

20. 2003 University of New Hampshire, NH, EOS & Dept of Chem., 11/2003

Air-Liquid Interfaces: Alcohols, Aromatic Hydrocarbons, and Water

21. 2003 Michigan State University, Lansing, Mich., 11/2003

Air-Liquid Interfaces: Alcohols, Aromatic Hydrocarbons, and Water

22. 2003 Texas A&M University, College Station, TX, 12/5/2003

Air-Liquid Interfaces: Alcohols, Aromatic Hydrocarbons, and Water

23. 2004 Wooster College, Wooster, OH, Invited by PSI (Pursuing Science Interests student club), 4/26/2004

Atmospheric Chemistry and Particles: Understanding Liquid Particle Surfaces and Their Role in the Atmosphere

24. 2004 Southern Illinois University, Carbondale, Indiana, 4/30/2004; *Air-Liquid Interfaces...*

25. 2004 University of Colorado, Boulder, CO, 4/12/2004

Atmospheric Chemistry and Particles: Understanding Liquid Particle Surfaces and Their Role in the Atmosphere

26. 2004 NOAA Aeronomy Lab, Boulder, CO, 4/13/2004

Organics, acids and reactions: Understanding atmospheric aerosol chemistry at the molecular-level

27. 2004 EMSI Annual Meeting, Columbus, OH 6/2004; *Oxide Surfaces...*

28. 2004 Central State University, Ohio, January 20th 2005, *Atmospheric Aerosol Chemistry.*

29. 2005 Purdue University, Analytical chemistry division (host: G. Simpson), 4/19/2005

Acids, salts, and water: Spectroscopy at air-liquid interfaces

30. 2005 University of Wisconsin, Madison, Physical chemistry division (host: G. Nathanson), 4/12/2005

Acids, salts, and water: Spectroscopy at air-liquid and air-oxide interfaces

31. 2005 University of Michigan, Ann Arbor, Analytical chemistry division (host: Z. Chen), 4/19/2006

Understanding Structure and Reactivity of Liquid Surfaces: Atmospheric Aerosols to Lung Surfactant

32. 2006 Kent State, Ohio, 2006 (host: Shanhu Lee) – Seminar was given by postdoc Laura Voss, *Oxidation and replacement of oleic acid at the air/water interface to understand fat-coated aerosols*

33. 2006 Youngstown State University, Ohio, 4/7/2006 (host: Allen Hunter) – Seminar was given by my postdoc Laura Voss, *Oxidation and replacement of oleic acid at the air/water interface to understand fat-coated aerosols*

34. 2007 University of Texas at Austin, Physical/Analytical joint chemistry seminar (host: P. Rossky), 2/8/2007

Structure at Air - Aqueous Interfaces: Salts, Acids, Lipids, and Water

35. 2007 University of California, Berkeley, Physical division chemistry seminar (host: D. Neumark), 2/28/2007

Structure at Air - Aqueous Interfaces: Lipids, Acids, and Water

36. 2007 University of Pennsylvania, Institute for Environmental Medicine, U Penn Medical School (host: Director A. Fisher), 4/6/2007

Biophysics and Chemistry of Lipids, Water, and Lung Surfactant

37. 2007 Oberlin College (host: Jason Belitsky), 09/12/07

Air-Aqueous Interfacial Structure: Lipids, Salts, Acids, and Water

38. 2007 University of Notre Dame (host: Masaru Kuno), 10/04/07

Structure at Air - Aqueous Interfaces: Lipids, Salts, Acids, and Water

39. 2007 Johns Hopkins University, **Departmental Colloquium** -Chemistry Department (host: H. Fairbrother), *Air - Aqueous Interfaces and Life, Lipids, Salts, Acids, and Water*
40. 2007 University of Maryland, Physical division chemistry seminar (host: R. Walker), *Structure at Air - Aqueous Interfaces: Lipids, Salts, Acids, and Water*
41. 2007 University of Notre Dame (host: Masaru Kuno), 10/04/07
Structure at Air - Aqueous Interfaces: Lipids, Salts, Acids, and Water
42. 2007 Georgia Tech, **Departmental Colloquium** -Chemistry Department (hosts: Paul Wine & Jean-Luc Bredas), 10/25/07
Structure at Air - Aqueous Interfaces: Lipids, Salts, Acids, and Water
43. 2007 Georgia Tech, Earth & Atmospheric Sciences (EAS) (host: P. Wine), 10/26/07
Atmospheric Aerosol Chemistry and Interfacial Science
44. 2008 Ohio Wesleyan University, Dept. of Chemistry, Delaware, OH,
Physical Chemistry of Atmospheric Particles: Understanding Aqueous Surfaces
45. 2008 Environmental Science Graduate Program Seminar Series, Kottman Hall, Ohio State;
Atmospheric Chemistry and its Role in the Earth System
46. 2008 University of California Santa Cruz, Santa Cruz, CA ;
Structure & Chemistry at Air-Aqueous Interfaces: Lipids, Salts, Acids, and Water
47. 2008 Denison University, Granville, OH; *Biophysical Chemistry and Beyond: Understanding Aqueous Surfaces*
48. 2009 Northwestern University, Chicago, IL ; *Shedding light on air-aqueous interfaces*
49. 2009 Howard University, Washington D.C.; *Molecular Organization within the Lung Lining*
50. 2010 Northern Kentucky University, Newport, KY; *Molecular Organization at Aqueous Interfaces: Lipids, Fatty Acids, Salts, and Acids*
51. 2010 University of North Carolina, Chapel Hill, NC;
Molecular Organization at Aqueous Interfaces: Lipids, Fatty Acids, Salts, and Acids
52. 2011 University of Delaware, Newark, DE (March 9th, 2011)
Molecular Organization at Aqueous Interfaces: A Global View
53. 2012 University of Cincinnati, Pulmonary Biology Division of Children's Hospital, OH, March 15, 2012, (Invited by Jeff Whittsett)
Biophysics and Organization of Lipids and Water at the Air/Aqueous Interface: Application to Lung Surfactant
54. 2013 University of California Irvine, Irvine, CA (January 29, 2013)
Sum Frequency & Brewster Angle: Atmospheric Aerosols and Lung Surfactant
55. 2013 Czech Institute of Chemistry, Prague, Jungwirth/Roesolova (February 28, 2013)
Ions, Water, and Electric Fields: Aerosols and Flat Aqueous Surfaces
56. 2013 Czech Institute of Organic Chemistry, Prague Bio Seminar (March 4, 2013)
Lipid, Fatty Acid, and Water Organization: Lung Surfactant and Biomembrane Mimics
57. 2013 Penn State, State College, PA, **Department of Chemistry Colloquium** (March 28, 2013)
Ions, Lipids, Water, Electric Fields: From the oceans to the Surface of Aerosol

58. 2013 Temple University, Philadelphia, PA, Department of Chemistry (April 26, 2013)
Air/Aqueous Interfaces: Interfacial Ion Distributions and Lipid Organization by Sum Frequency Spectroscopy and Brewster Angle Microscopy
59. 2013 University of Chicago, **James Franck Institute Colloquium** (May 7, 2013)
Lipid and Ion Organization at the Air-Aqueous Interface by Vibrational Sum Frequency Spectroscopy and Brewster Angle Microscopy
60. 2013 University of California San Diego, San Diego, CA, Department of Chemistry (May 14, 2013)
Ions, Lipid, and Water Organization at the Air-Aqueous Interface by Vibrational Sum Frequency Spectroscopy and Brewster Angle Microscopy
61. 2013 Pacific Northwest National Laboratory, Richland, WA, **EMSL Director's Distinguished Scientist Seminar** (July 10, 2013) *Ions, Lipid, and Water at the Air-Aqueous Interface: Organization and Electric Fields*
62. 2013 University of Toronto, Department of Chemistry, Toronto, Canada (July 17, 2013)
Water Surfaces and Impact on Atmospheric Aerosol: Nitrate, Sulfate, Carbonate, Magnesium and Lipids
63. 2013 H.C. Allen, "I. Understanding Aqueous Surfaces, Atmospheric Chemistry and Biophysics of Lung Connecting as a Mentor – Gender Neutral & Encouraging Women into Science Careers, AWIS EMINENT SCHOLAR SERIES, Biological Research Tower, OSU, Columbus, OH, September 6, 2013, [Invited PUBLIC LECTURE]
64. 2013 H.C. Allen, "Atmospheric aerosols and the lung: Basic Science" Columbus Science Pubs, @ the Shrunken Head Pub, Columbus, OH, September 17, 2013 [Invited PUBLIC LECTURE]
65. 2013 Michigan State University, Department of Chemistry, **Science at the EDGE seminar** (September 25, 2013)
Ions, Lipid, and Water at the Air-Aqueous Interface: Organization and Electric Fields
66. 2013 H.C. Allen, "Atmospheric aerosols and the lung: Basic Science" Prometheus Intellectual Leaders, @ Downtown Columbus business: Traycer THz, Columbus, OH, October 22, 2013, Organizer: Lee Mosbacker [Invited PUBLIC LECTURE]
67. 2013 H.C. Allen, "Molecular Organization at the Air/Aqueous Interface" University of Iowa, Iowa City, IA, November 14, 2013, Organizer: Grassian [Invited Dept. of Chemistry **Colloquium** Speaker]
68. 2013 University of Colorado, Boulder, **Physical Chemistry/Chemical Physics Colloquium** (November 1, 2013)
Ions, Lipid, and Water at the Air-Aqueous Interface: Organization and Electric Fields
69. 2013 H.C. Allen, "Ions, Lipids, Water and Solvation at the Air-Water Interface" Ruhr-Universität, Bochum, Germany, December 3, 2013, Organizer: Havenith [Invited **Colloquium** Speaker]
70. 2014 Jan 17 UCSD Chemistry Department, Phys/Anal/Atm division Seminar, "Organization of Ions & Lipids at Aqueous Surfaces: Atmospheric Aerosols to Lung Surfactant"
71. 2014 Feb 25 Cal Tech **Colloquium**, Chemistry Department
72. 2014 Mar 3 University of Victoria, BC Canada, Department of Chemistry Seminar
73. 2014 Mar 4, University of British Columbia, BC Canada. Lectures in Modern Chemistry **Colloquium**

74. 2014 Mar 5, Simon Fraser University, BC, Canada, Colloquium

75. 2014 May 1, University of Connecticut, Conn., Colloquium

76. 2014, May 27, EPFL, Lausanne, Switzerland, Colloquium

SERVICE

University and College Service

2000-2002 Academic/minority program; OSU minority mentoring program

2001-2003 Environmental Science Graduate Program, Interdisciplinary University Program, Recruiting committee member, K. Mancl, chair

2002-2008 Annual speaker on behalf of OSU/MPS; Young Women's Empowerment Conference, Columbus City School District. Organized to encourage young women into science and math careers/education (2002, 2003, 2004, 2005, 2006, 2007, 2008)

2005 OSU Honors recruitment seminars (2 open lectures; parents and prospective students); Honors and Scholars, "Atmospheric Chemistry: The Good, The Bad, And the Ugly"

2005 Columbus School District: Columbus District School Board Meeting; scholarship recognition; Gene Harris

2005 Young Women's Empowerment Conference (YWEC), College of Biological Sciences Scholarship Fundraising; \$2000

2005-2008 University Interdisciplinary program service: Environmental Science Graduate Program Graduate Studies Committee Member

2006-2007 OSU Welcome Speaker, new undergraduate student orientation

2007 President's Undergraduate Salute to Achievement; Speaker, "Energy and Environment and Undergraduates", 5/2

2007 OSU NSF funding panel participant, Project GRO (C. Anderson organizer), Ohio State

2007-2010 Ohio State University College of Math and Physical Sciences Senator

2007-2008 Ohio State University Senate Steering Committee member, committee oversight & university affairs

2008 Maximus Scholars Selection Committee Member— University Honors and Scholars undergraduate awards

2008 University Faculty recruitment activities for OSU Mech. Engineering; B. Cola and J. Greene; developed position for JG.

2008-2009 Climate, Water, Carbon (CWC) Advisory Board Member

2008-2009; OSU Faculty Leadership Group (group of 4: Steering Chair, Faculty Council Chair and Chair-elect, Senate Secretary)

2008-2009, Faculty Representative (with R. Gunther & T. Gerber) and Advisor to President Gee

2008-2009, Faculty Representative (with R. Gunther & T. Gerber) and Advisor to Provost Alutto

2008-2009, Faculty Cabinet member, University Senate

2008-2009, Chair, Ohio State University Senate Steering Committee; committee oversight & university affairs

2008-2009, Arts & Sciences Executive Dean and Vice Provost Search Committee member

2009, Ohio State Scholarship YWEC Fundraising, \$2000, University Outreach and Engagement

2009, Chair, Arts and Sciences Environmental Studies Undergraduate Degree recommendation committee

2009-2010, University Committee on Enrollment and Student Progress, committee member

2008-2010, Faculty Council member, University Senate

2005-2013; Young Women's Empowerment Conference (YWEC), MPS Scholarship Presenter and annual Fundraising, \$2,500 – 3,500 annually; *Annual presentations of scholarships.*

2012-2013, University Faculty Fellow, Discovery Themes Initiative, Office of Academic Affairs, VP Mike Boehm

2012-2015, Committee on Academic Affairs (CAA), committee member, 3 year commitment

2014-2017, University Level Advisory Committee (ULAC) for the General Education Program, committee member

Departmental Service

2000-2001, 2010-2012 Graduate Admissions Committee 3 years

2000-2006 Physical Chemistry Seminar Chair & Coordinator, 6 years

2003 **Organizer**, Second Annual Ohio Analytical Consortium Meeting held at Ohio State; October 31st, intercollegiate analytical chemistry consortium

2003-2006 Carnegie Initiative on the Doctorate Committee Member

2003-2004 Departmental Structure Committee Member; T. Miller, chair

2003 Department machinist hiring committee

2004-2005 Graduate Chemistry Curriculum Committee

2004-2006, **Organizer**, Faculty Careers Experience Graduate Student Gatherings, sponsors: dept & CID

2005-2006 **Chair**, Departmental Junior **Faculty Search** Committee – 380 applicants, 17 interviewees

2006 Assessment Plan committee member for Chemistry 121 and 122; J Parson, chair

2006-2007 Analytical junior faculty search committee member

2006 Chemistry appointments committee

2006-2012 Honors Academic Advisor MPS – Chemistry

2007-2009 Department Diversity committee member

2009-2010 **Chair**, Department Colloquium Committee

2012-2014 **Chair**, Department Diversity Committee

2013-present Committee for Department Services, committee member

2013-present **Chair**, Assistant Professor Mentoring Committee

National Chemistry Community Service

2001 NSF: National Science Foundation AINM Workshop; March 2-3rd,
'Analytical Instrumentation for the New Millennium – Materials'; panel member
Prof. Tom Mallouk-organizer

2001 ACS: American Chemical Society National Meeting, Chicago Illinois,
Session Chair of 'Nucleation, Theory, and Experiment'
in the Physical Chemistry Symposium titled, 'Physical Chemistry of Gas-Particle Interactions', at the ACS National Meeting, Chicago, Illinois, August 29th, 2001.

2002 International Symposium on Frontiers in Molecular Science,
Session Chair of Environmental Chemistry, Qingdao, China

2002 ACS: American Chemical Society National Meeting, 8/2002
Symposium Organizer with Dr. Douglas Worsnop (3 ½ day symposium) 'Frontiers in Atmospheric Chemistry',
physical chemistry division (cosponsored by the colloids and environmental chemistry divisions)

2002 NRC: National Research Council Workshop on the Environment,
'Challenges for the Chemical Sciences in the 21st Century: The Environment', being convened by the Board on
Chemical Sciences and Technology (BCST) of the National Research Council; National Academy of Sciences;
participant

2002 State Science Fair Judge on behalf of local ACS section,

2003 CRC workshop, University of California, Irvine, Beckman Center,
Participant, "Workshop on Chemistry at Interfaces"

2004 ACS: American Chemical Society National Meeting, Anaheim, CA,
Co-organizer, 4-day symposium, "Vibrational analyses of dry and wet surfaces", Surface and Colloids Division

2004 NSF: NSF Chemical Education Division; 2-days, panel member

2004 ACS Fall National Meeting, Philadelphia, Penn, Fall meeting

Session Chair - Chemical Physics in Atmospheric Science, session on Atmospheric Aerosol Chemistry (Physical Division)

2005 International Molecular Spectroscopy Conference, Ohio State
Session Chair – (T.A., Miller, organizer)

2005 Gordon Conference: Dynamics at Surfaces,
Session Chair - (G. Nathanson organizer)

2005 NSF-Chemistry: “National Science Foundation Workshop on Chemistry and Sustainability”, PNNL, November 2005
Organizer with Geoffrey Coates (Cornell); NSF-Chemistry Division; workshop on chemistry and sustainability to guide NSF-CHE in its funding endeavors with respect to environmental chemistry (water, energy, air, and green chemistry). Pacific Northwest National Laboratory, November 3rd and 4th, 2005. (Program Officer: Kathy Covert, NSF-CHE)

2006 International Molecular Spectroscopy Conference, OSU
Session Chair of “Electronic” session

2006 NSF-Chemistry: CRIF-ID instrumentation panel, 5/2006

2006 ACS: American Chemical Society National Meeting, Spring 2006, Atlanta Georgia
Symposium Organizer. 4-day symposium, “Spectroscopy of Interfaces”, co-organizer Mary Jane Shultz. Atmospheric, geochemistry, electrochemical, and biological sub areas

2006 Pacific Northwest National Laboratory: Environmental Molecular Science Laboratory (EMSL), nonlinear optical tools recommendations

2006 PNNL EMSL Peer Review Committee

2007 OSU International Symposium on Molecular Spectroscopy, June, Columbus, Ohio
Organizer. sum frequency generation symposium; 2 days

2008 ACS: American Chemical Society National Meeting, Spring, New Orleans, LA
Symposium Co-Organizer. 4-day symposium; Geochemistry division, Organizer: L. Criscenti (Sandia) and L. Katz (UT Austin)

2008 Tufts University; PhD defense committee member, Shultz group, M. Kuo PhD

2010 NSF-Chemistry: CRIF-ID instrumentation panel member

2010 Gordon Conference: Water and Aqueous Solutions,
Session Chair - (P. Jungwirth organizer)

2011 Fall 2011 ACS National Meeting, Denver, CO, Physical Chemistry Division 4-day symposium organizer:
Organizer with Martina Roeselova, Atmospheric Aerosol Chemistry

2010- 2013 Journal of Physical Chemistry Advisory Board member

2011 NSF Panel member, CHE-ECS

2012 ACS Physical Division Award Committee Member

2012 DOE-BES GEOSCIENCES SITE REVIEW, Oakridge National Laboratory Geo Renewal

2013 APS Plyler Award Committee Co Chair

2014 ACS PHY Division ELECTED Member at Large, Executive Committee

2014 APS Plyler Award Committee Chair

2014 ACS Award for Creative Advances in Environmental Science and Technology, Committee member

2014 Gordon Conference: Water and Aqueous Solutions, Holderness, NH

Session Chair - (D. Tobias organizer)

2014 Co Editor with Matthew Brown, Hendrik Bluhm, Barbara Finlayson-Pitts, Journal of Physical Chemistry, Prof. John C. Hemminger Festschrift Issue

2014 Nominated for APS Chemical Physics Chair, waiting on vote

2000- present, Reviewer for journals and grant awarding agencies:

Journals for which review has been completed: JACS, Journal of the American Chemical Society; JPC, Journal of Physical Chemistry; GRL, Geophysical Research Letters; Geoc, Geochemica et Cosmochimica Acta; AC, Analytical Chemistry; ACA, Analytica Chimica Acta; Angewandte Chemie ; AS, Applied Spectroscopy; BBA, BBA Biomembranes; BJ, Biophysical Journal; BP, Biotechnology Progress; CEur, Central European Journal of Science; COLL, Colloids and Surfaces; CPL, Chemical Physics Letters; CR, Chemical Reviews; EST, Environmental Science & Technology; JAerS, Journal of Aerosol Science; JCP, Journal of Chemical Physics; JCC, Journal of Computational Chemistry; JGR Journal of Geophysical Research ; Langmuir; Nature; PCCP, Physical Chemistry Chemical Physics; Pol, Polymer; RScil, Review of Scientific Instruments; Science; TSF, Thin Solid Films; WR, Water Research

Grant awarding agencies: ACS/PRF, American Chemical Society Petroleum Research Fund; ARO, Army Research Office; BR, Book Reviews (JACS); BSF, US-Israel Binational Science Foundation; CRDF, STCU, U.S. Civilian Research and Development Foundation; CWC Grants, Climate, Water, Carbon Program at OSU; DOE, Department of Energy; NCBP, North Carolina Biotechnology Center Grants; NIH, National Institute of Health; NSERC, Canadian National funding ;NSF, National Science Foundation CHE, GEO, ATM; OSC, Ohio State University OSC Computing Center; PNNL/EMSL, Pacific Northwest Lab / Environmental Molecular Science Laboratory; RES.CORP, Research Corporation; UK, EHH ; WG, Westgec, NIGEC Nat'l Inst. For Global Environmental Change

International Service

2010-2012 KTH Stockholm, Panel member, Promotion and Hiring

2013-present Science Advisory Board Member: RESOLV Cluster of Excellence, Ruhr University, Bochum, Germany