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Daniel A. Thomas

Education

California Institute of Technology; Pasadena, CA **2010-2016**

Ph.D. Chemistry, Advisor: J. L. Beauchamp

Dissertation: "Chemical Reaction Dynamics of the Liquid/Vapor Interface Studied by Mass Spectrometry"

University of North Carolina at Chapel Hill; Chapel Hill, NC **2006-2010**

B.S. Chemistry, Advisor: Gary L. Glish

Professional Experience

Assistant Professor of Chemistry **2020-Present**

Department of Chemistry, University of Rhode Island

- Novel instrumentation for cryogenic spectroscopy of ions
- Helium nanodroplet capture of molecular ions and ion clusters stored in an ion trap
- New reagents and methods for the characterization of biomolecular ions
- Investigation of inter- and intramolecular interactions in novel solvent systems
- Spectroscopic interrogation of reaction intermediates captured in helium nanodroplets

Alexander von Humboldt Postdoctoral Fellow **2017-2020**

Department of Molecular Physics, Fritz-Haber-Institut der Max-Planck-Gesellschaft

Advisors: Gert von Helden and Gerard Meijer

- Infrared spectroscopy of ions trapped in helium nanodroplets
- Structure and properties of proton-bound dimers, with focus on anharmonicity and nuclear quantum effects
- Spectroscopic interrogation of the reactions of the fluorine anion with carbon dioxide and water in the gas phase
- Variable-temperature infrared spectroscopy of biomolecular ions for thermochemical studies

Postdoctoral Researcher **2016-2017**

Department of Molecular Physics, Fritz-Haber-Institut der Max-Planck-Gesellschaft

Advisors: Gert von Helden and Gerard Meijer

- Infrared spectroscopy of ions trapped in helium nanodroplets

Doctoral Researcher **2010-2016**

Division of Chemistry and Chemical Engineering, California Institute of Technology

Advisor: J. L. Beauchamp

- Analysis of chemical processes occurring at the liquid/vapor interface utilizing novel sampling methods coupled with mass spectrometry
- Fundamental studies of reagents for gas-phase free radical sequencing of biomolecules via mass spectrometry

Undergraduate Researcher **2008–2010**

Department of Chemistry, University of North Carolina at Chapel Hill

Advisor: Gary L. Glish

- Investigation of the mechanism of electron capture dissociation mass spectrometry (ECD-MS) in peptides containing histidine residues
- Experimental and theoretical investigation of axial pseudopotentials applied to linear ion traps for improved resolution and sensitivity in quadrupole time-of-flight mass spectrometers

Teaching and Learning

Instructor, CHM 432: Physical Chemistry II **2024**

Department of Chemistry, University of Rhode Island

- Overview of quantum chemistry for upper-level undergraduate students.
- Topics include the Schrödinger equation, the hydrogen atom, multielectron systems, atomic and molecular spectroscopy, statistical mechanics, and chemical kinetics.

Instructor, CHM 335: Physical Chemistry Laboratory **2024, 2025**

Department of Chemistry, University of Rhode Island

- Laboratory course focusing largely on experiments related to thermodynamics and kinetics, including experiments on diffusion in salt solutions, phase diagram construction, heat capacity ratio, and vapor pressure measurement.
- Emphasis on statistical error analysis and propagation of uncertainty, introduction of basic coding skills for the processing and display of experimental results.

Instructor, CHM 532: Advanced Physical Chemistry **2022**

Department of Chemistry, University of Rhode Island

- Advanced graduate course covering topics including group theory, light-matter interactions, molecular beams, ion spectroscopy, and time-dependent spectroscopy.
- Emphasis on experimental approaches and interpretation of the research literature by applying concepts covered in the course.

Instructor, CHM 507: Graduate Quantum Chemistry **2020–2025**

Department of Chemistry, University of Rhode Island

- Graduate course for all incoming chemistry students, overview of quantum chemistry
- Run with a “flipped” classroom model, complete with notes featuring interactive modules and problems based on research applications

Instructor, CHM 642-644: Graduate Research Presentation **2021, 2023, 2025**

Department of Chemistry, University of Rhode Island

- Series of graduate seminar courses designed to develop research presentation skills

Instructor, Talent Development STEM Summer Academy **2023**

Department of Chemistry, University of Rhode Island

- Three-week preparatory chemistry course for incoming first-year students in the URI Talent Development program.

Participant, Strategies and Tools for Teaching Workshop **2020**

Office for the Advancement of Teaching and Learning, University of Rhode Island

- Five-day workshop covering best practices in teaching and learning, including course design; inclusive teaching; race, equity, and the learning environment; and effective assessment

Graduate Director, Caltech Project for Effective Teaching **2013–2016**

Center for Teaching, Learning, and Outreach, California Institute of Technology

- Administered certificate of interest program and associated seminar and workshop series to encourage graduate students and postdocs to investigate teaching strategies
- Developed and administered new certificate of practice program that guides participants in best practices in STEM teaching
- Served on the planning committee and for the annual Caltech teaching conference; directed sessions on teaching in laboratory courses (2013), microteaching (2014), and office hour sessions (2015)

Student Mentorship

Graduate Advisor **2020–2025**

Department of Chemistry, University of Rhode Island

- Serving as advisor to three graduate students as of fall 2025, with one student having completed their Ph.D.

Undergraduate Research Advisor **2020–2025**

Department of Chemistry, University of Rhode Island

- Serving as research advisor to one undergraduate student as of fall 2025, with a total of four undergraduate students having participated in research.

Undergraduate Chemistry Majors Advisor **2023–2024**

Department of Chemistry, University of Rhode Island

- Serving as curriculum advisor to Class of 2026 and Class of 2030 chemistry majors.

Participant, Inclusive Mentoring Workshop **2021**

University of Rhode Island

- Six-session workshop covering best practices in mentoring, including effective communication, aligning expectations, equity and inclusion, and power and privilege

Undergraduate Research Mentor **2010–2015**

Department of Chemistry, California Institute of Technology

- Served as mentor to ten summer undergraduate research fellows; facilitated project design and oversaw laboratory research

Participant – Research Mentor Development Series **2015**

Center for Teaching, Learning, and Outreach, California Institute of Technology

- Attended effective mentoring workshops; topics included knowledge assessment, effective communication, equity and inclusion, and fostering independence

Science Outreach

ACS SEED Program Student Advisor **2025**

University of Rhode Island

- Oversaw a student participant in the ACS SEED program performing research with our group in the summer of 2025.

Afterschool Program with Rhode **Island Computer Museum** **2023–2024**

University of Rhode Island

- Collaborated with the Rhode Island Museum of Science and Art (RIMOSA, part of the Rhode Island Computer Museum) to develop activities for local school and YMCA programs.
- Activities were based on current research and included rubber-band guitars to learn about the electromagnetic spectrum, magnet mazes to investigate magnetism, thin film formation to study nanoscale effects, and polarization and color filters to discover light properties.
- Programs were implemented at a local elementary school.

Community Science Event Volunteer **2015**

Center for Teaching, Learning, and Outreach, California Institute of Technology

- Community science events highlight the research of a Caltech faculty member and connect this research to in-class activities for K-12 teachers that fulfill criteria in the next-generation science standards.
- Prepared demonstrations of a cloud chamber, a homemade spectrophotometer for tablets and smartphones, and a photosynthesis laboratory activity for events focusing on physics, planetary science, and biology, respectively.

Community Science Event Volunteer **2015**

Center for Teaching, Learning, and Outreach, California Institute of Technology

- Community science events highlight the research of a Caltech faculty member and connect this research to in-class activities for K-12 teachers that fulfill criteria in the next-generation science standards.
- Prepared demonstrations of a cloud chamber, a homemade spectrophotometer for tablets and smartphones, and a photosynthesis laboratory activity for events focusing on physics, planetary science, and biology, respectively.

High School Science Research Mentor **2013–2015**

Department of Chemistry, California Institute of Technology

- Served as mentor to six students from local high schools performing scientific research in the Beauchamp group laboratory, both during the summer and throughout the academic year.
- Projects undertaken include novel ionization sources, detection of neurotransmitters, analysis of energy drinks, sunscreen decomposition, and glycan analysis.

Research Funding

Department of Energy Early Career Award, Office of Basic Energy Sciences, Gas Phase Chemical Physics Program, DE-SC0026371, “Probing the Chemistry of the Liquid/Vapor Interface by Infrared Action Spectroscopy of Solvent-Ion Nanoclusters” $875,747.65. 08/01/2025 - 07/31/2030

American Chemical Society Petroleum Research Fund, 65719-DNI6, “Unraveling the Structural Motifs of Deep Eutectic Solvents by Infrared Action Spectroscopy of Ionic Clusters”, $110,000. 09/01/2022–08/31/2025

National Science Foundation, MPS Division, CHE-2212926, “LEAPS-MPS: Innovative Approaches to the Structural Characterization of Biomolecular Ions by Mass Spectrometry and Infrared Action Spectroscopy”, $249,990. 09/01/2022–08/31/2025

Honors and Awards

Alexander von Humboldt Postdoctoral Fellowship, 2017–2020

Graduate Mentoring Excellence Award, University of Rhode Island College of Arts and Sciences, 2022

Publications

Accepted Publications:

Schultz, M.; Banor, N. D.; Ober, K.; Torres-Boy, A. Y.; Fernando, M. T.; Wellalage, M. M.; Ellis, N. A.; Helden, G. v.; **Thomas, D. A.** Examining the Effect of an Anion-Binding Reagent on the Structure of Deprotonated Leucine Enkephalin Using Cryogenic-Ion Infrared Action Spectroscopy. *J. Phys. Chem. A* **2025**, *129*, 8303-8311. https://doi.org/10.1021/acs.jpca.5c03984
Mark A. Johnson Festschrift Issue

Schultz, M.; Ellis, N. A.; Banor, N. D.; **Thomas, D. A.** Complexation of diserinol isophthalamide with phosphorylated biomolecules in electrospray ionization mass spectrometry. *Int. J. Mass Spectrom.* **2025**, *507*, 117364. https://doi.org/10.1016/j.ijms.2024.117364
Mary T. Rodgers Festschrift Issue

Schultz, M.; Parker, S. L.; Fernando, M. T.; Wellalage, M. M.; **Thomas, D. A.**, Diserinol Isophthalamide: A Novel Reagent for Complexation with Biomolecular Anions in Electrospray Ionization Mass Spectrometry. *J. Am. Soc. Mass Spectrom.* **2023,** *34* (4), 745-753. https://doi.org/10.1021/jasms.3c00010

Taccone, M. I.; **Thomas, D. A.**; Ober, K.; Gewinner, S.; Schöllkopf, W.; Meijer, G.; von Helden, G., Infrared action spectroscopy of the deprotonated formic acid trimer, trapped in helium nanodroplets. *Phys. Chem. Chem. Phys.* **2023,** *25* (15), 10907-10916. https://doi.org/10.1039/D2CP05409D

Mucha, E.; **Thomas, D.**; Lettow, M.; Meijer, G.; Pagel, K.; von Helden, G., Spectroscopy of Small and Large Biomolecular Ions in Helium-Nanodroplets. In *Molecules in Superfluid Helium Nanodroplets: Spectroscopy, Structure, and Dynamics*, Slenczka, A.; Toennies, J. P., Eds. Springer International Publishing: Cham, **2022**; pp. 241-280. https://doi.org/10.1007/978-3-030-94896-2_6

Thomas, D. A.; Taccone, M.; Ober, K.; Mucha, E.; Meijer, G.; von Helden, G. Helium Nanodroplet Infrared Action Spectroscopy of the Proton-Bound Dimer of Hydrogen Sulfate and Formate: Examining Nuclear Quantum Effects. *J. Phys. Chem. A*, **2021**, *125*, 9279–9287. https://doi.org/10.1021/acs.jpca.1c05705

Greis, K.; Mucha, E.; Lettow, M.; **Thomas, D. A.**; Kirschbaum, C.; Moon, S.; Pardo-Vargas, A.; von Helden, G.; Meijer, G.; Gilmore, K.; Seeberger, P. H.; Pagel, K. The Impact of Leaving Group Anomericity on the Structure of Glycosyl Cations of Protected Galactosides. *ChemPhysChem*, **2020**, *21*, 1905–1907. https://doi.org/10.1002/cphc.202000473

Lettow, M.; Grabarics, M.; Greis, K.; Mucha, E.; **Thomas, D. A.**; Chopra, P.; Boons, G.-J.; Karlsson, R.; Turnbull, J. E.; Meijer, G.; Miller, R. L.; von Helden, G.; Pagel, K. Cryogenic Infrared Spectroscopy Reveals Structural Modularity in the Vibrational Fingerprints of Heparan Sulfate Diastereomers. *Anal. Chem.* **2020**, *92*, 10228–10232. https://doi.org/10.1021/acs.analchem.0c02048

Thomas, D. A.; Chang, R.; Mucha, E.; Lettow, M.; Greis, K.; Gewinner, S.; Schöllkopf, W.; Meijer, G.; von Helden, G. Probing the Conformational Landscape and Thermochemistry of DNA Dinucleotide Anions *via* Helium Nanodroplet Infrared Action Spectroscopy. *Phys. Chem. Chem. Phys.* **2020**, *22*, 18400–18413. https://doi.org/10.1039/D0CP02482A

Lettow, M.; Grabarics, M.; Mucha, E.; **Thomas, D. A.**; Polewski, L.; Freyse, J.; Rademann, J.; Meijer, G.; von Helden, G.; Pagel, K. IR Action Spectroscopy of Glycosaminoglycan Oligosaccharides. *Anal. Bioanal. Chem.* **2020**, *412*, 533–537. https://doi.org/10.1007/s00216-019-02327-7

Marianski, M.; Mucha, E.; Greis, K.; Moon, S.; Pardo, A.; Kirschbaum, C.; **Thomas, D. A.**; Meijer, G.; von Helden, G.; Gilmore, K.; Seeberger, P. H.; Pagel, K. Remote Participation during Glycosylation Reactions of Galactose Building Blocks: Direct Evidence from Cryogenic Vibrational Spectroscopy. *Angew. Chem., Int. Ed.* **2020**, *59*, 6166–6171. https://doi.org/10.1002/anie.201916245

Fabijanczuk, K.; Gaspar, K.; Desai, N.; Lee, J.; **Thomas, D. A.**; Beauchamp, J. L.; Gao, J. Resin and Magnetic Nanoparticle-Based Free Radical Probes for Glycan Capture, Isolation, and Structural Characterization. *Anal. Chem.* **2019** *91*, 15837–15396. https://doi.org/10.1021/acs.analchem.9b01303

Thomas, D. A.; Mucha, E.; Lettow, M.; Meijer, G.; Rossi, M.; von Helden, G. Characterization of a trans–trans Carbonic Acid–Fluoride Complex by Infrared Action Spectroscopy in Helium Nanodroplets. *J. Am. Chem. Soc.* **2019** *141*, 5815–5823. http://dx.doi.org/10.1021/jacs.8b13542

Lettow, M.; Mucha, E.; Manz, C.; **Thomas, D. A.**; Marianski, M.; Meijer, G.; von Helden, G.; Pagel, K. The Role of the Mobile Proton in Fucose Migration. *Anal. Bioanal. Chem.* **2019**, *411*, 4637–4645. http://dx.doi.org/10.1007/s00216-019-01657-w

Marianski, M.; Seo, J.; Mucha, E.; **Thomas, D. A.**; Jung, S.; Schlögl, R.; Meijer, G.; Trunschke, A.; von Helden, G. Structural Characterization of Molybdenum Oxide Nanoclusters Using Ion Mobility Spectrometry–Mass Spectrometry and Infrared Action Spectroscopy. *J. Phys. Chem. C* **2019**, *123*, 7845–7853. http://dx.doi.org/10.1021/acs.jpcc.8b06985
Hans-Joachim Freund and Joachim Sauer Festschrift Issue

Mucha, E.; Marianski, M.; Xu, F.-F.; **Thomas, D. A.**; Meijer, G..; von Helden, G.; Seeberger, P. H..; Pagel, K. Unraveling the Structure of Glycosyl Cations via Cold-Ion Infrared Spectroscopy. *Nat. Commun.* **2018**, *9*, 4174. http://dx.doi.org/10.1038/s41467-018-06764-3

Thomas, D. A.; Marianski, M.; Mucha, E.; Meijer, G.; Johnson, M. A.; von Helden, G. Ground-State Structure of the Proton-Bound Formate Dimer by Cold-ion Infrared Action Spectroscopy. *Angew. Chem., Int. Ed.* **2018**, *57*, 10615–10619. http://dx.doi.org/10.1002/anie.201805436

Mucha, E.; Lettow, M.; Marianski, M.; **Thomas, D. A.**; Struwe, W. B.; Harvey, D. J.; Meijer, G..; Seeberger, P. H.; von Helden, G.; Pagel, K. Fucose Migration in Intact Protonated Glycan Ions: A Universal Phenomenon in Mass Spectrometry. *Angew. Chem., Int. Ed.* **2018**, *57*, 7440–7443. http://dx.doi.org/10.1002/anie.201801418

Thomas, D. A.; Mucha, E.; Gewinner, S.; Schöllkopf, W; Meijer, G.; von Helden, G. Vibrational Spectroscopy of Fluoroformate, FCO_2^-, Trapped in Helium Nanodroplets. *J. Phys. Chem. Lett.* **2018**, *9*, 2305–2310. http://dx.doi.org/10.1021/acs.jpclett.8b00664

Mucha, E.; González Flórez, A. I.; Marianski, M.; **Thomas, D. A.**; Hoffmann, W.; Struwe, W. B.; Hahm, H. S.; Gewinner, S.; Schöllkopf, W.; Seeberger, P. H.; von Helden, G.; Pagel, K. Glycan Fingerprinting via Cold-Ion Infrared Spectroscopy. *Angew. Chem., Int. Ed.* **2017**, *56*, 11248–11251. http://dx.doi.org/10.1002/anie.201702896

Thomas, D. A.*; Coggon, M. M.*; Lignell, H.; Schilling, K. A.; Zhang, X.; Schwantes, R. H.; Flagan, R. C.; Seinfeld, J. H.; Beauchamp, J. L. Real-Time Studies of Iron Oxalate-Mediated Oxidation

of Glycolaldehyde as a Model for Photochemical Aging of Aqueous Tropospheric Aerosols. *Environ. Sci. Technol.* **2016**, *22*, 12241–12249. http://dx.doi.org/10.1021/acs.est.6b03588
*Authors contributed equally

Desai, N.; **Thomas, D. A.**; Lee, J.; Gao, J.; Beauchamp, J. L. Eradicating Mass Spectrometric Glycan Rearrangement by Utilizing Free Radicals. *Chem. Sci.* **2016**, *7*, 5390-5397. http://dx.doi.org/10.1039/C6SC01371F

Sohn, C. H.; Gao, J.; **Thomas, D. A.**; Kim, T.-Y.; Goddard III, W. A.; Beauchamp, J. L. Mechanisms and Energetics of Free Radical Initiated Disulfide Bond Cleavage in Model Peptides and Insulin by Mass Spectrometry. *Chem. Sci.*, **2015**, 6, 4550-4560. http://dx.doi.org/10.1039/C5SC01305D

Thomas, D. A.; Wang, L.; Goh, B.; Kim, E. S.; Beauchamp, J.L. Mass Spectrometric Sampling of a Liquid Surface by Nanoliter Droplet Generation from Bursting Bubbles and Focused Acoustic Pulses: Application to Studies of Interfacial Chemistry. *Anal. Chem.* **2015**, *87*, 3336-3344. http://dx.doi.org/10.1021/ac504494t

Thomas, D. A.; Sohn, C. H.; Gao, J.; Beauchamp, J. L. Hydrogen Bonding Constrains Free Radical Reaction Dynamics at Serine and Threonine Residues in Peptides. *J. Phys. Chem. A* **2014**, *118*, 8380-8392. http://dx.doi.org/10.1021/jp501367w
A. W. Castleman, Jr. Festschrift Issue

Gao, J.; **Thomas, D. A.**; Sohn, C. H.; Beauchamp, J. L. Biomimetic Reagents for the Selective Free Radical and Acid–Base Chemistry of Glycans: Application to Glycan Structure Determination by Mass Spectrometry. *J. Am. Chem. Soc.* **2013**, *135*, 10684-10692. http://dx.doi.org/10.1021/ja402810t

Mui, W.; **Thomas, D. A.**; Downard, A. J.; Beauchamp, J. L.; Seinfeld, J. H.; Flagan, R. C. Ion Mobility-Mass Spectrometry with a Radial Opposed Migration Ion and Aerosol Classifier (ROMIAC). *Anal. Chem.* **2013**, *85*, 6319-6326. http://dx.doi.org/10.1021/ac400580u

PRESENTATIONS

Cooling Ions to 0.4 K: New Instrumentation for Capture of Ions in He Nanodroplets. N. A. Ellis, M. Schultz, M. M. Wellalage, N. D. Banor, **D. A. Thomas**. American Society for Mass Spectrometry Annual Conference, Baltimore, MD, 2025. *Poster Presentation*.

Leveraging the Vacuum "Clean Room" to Probe Biomolecular Structure by Ion Infrared Spectroscopy. **D. A. Thomas**, M. Schultz, S. L. Parker, N. A. Ellis, M. M. Wellalage, M. T. Fernando, N. D. Banor. University of New Hampshire Chemistry Seminar, Durham, NH, 2025. *Invited Seminar*

New Instrumentation for Infrared Action Spectroscopy of Trapped Ions from Ambient Temperature to 400 mK. M. Schultz, N. A. Ellis, N. D. Banor, M. T. Fernando, M. M. Wellalage, **D. A. Thomas**. American Society for Mass Spectrometry Annual Conference, Anaheim, CA, 2024. *Poster Presentation*.

Leveraging the Vacuum “Clean Room” to Probe Chemical Structure and Reactivity by Ion Infrared Spectroscopy. **D. A. Thomas**, M. Schultz, S. L. Parker, N. A. Ellis, M. M. Wellalage, M. T. Fernando, N. D. Banor. Rhode Island Chapter of the American Chemical Society Annual Meeting, Kingston, RI, 2024. *Invited Seminar*

Structural Characterization of Biomolecular Ions in Vacuum: Disentangling the Effects of Intramolecular Charge Solvation. **D. A. Thomas**, M. Schultz, S. L. Parker, N. A. Ellis, M. M. Wellalage, M. T. Fernando, N. D. Banor. Wayne State University Physical and Analytical Chemistry Seminar, Detroit, MI, 2023. *Invited Seminar*

A Quadrupole Time-of-Flight Mass Spectrometer with Off-Axis Ion Trap for Infrared Ion Spectroscopy in the Hydrogen Stretching Region. M. Schultz, N. A. Ellis, M. T. Fernando, M. M. Wellalage, **D. A. Thomas**. American Society for Mass Spectrometry Annual Conference, Houston, TX, 2023. *Poster Presentation.*

New Anion Microsolvation Reagents for the Study of Biomolecular Ions in Vacuum. M. Schultz, S. L. Parker, M. T. Fernando, M. M. Wellalage, **D. A. Thomas**. ACS Spring 2023, Indianapolis, IN, 2023. *Invited Oral Presentation.*

Probing the Conformational Landscape and Thermochemistry of Dinucleotide Anions via Helium Nanodroplet Infrared Action Spectroscopy. **D. A. Thomas**, R. Chang, E. Mucha, M. Lettow, K. Greis, G. Meijer, and G. von Helden. International Symposium on Molecular Spectroscopy, Champaign, IL, 2021. *Oral Presentation (Virtual).*

Characterization of the Intriguing Products of Fluoride-Carbon Dioxide Chemistry by Helium Nanodroplet Infrared Action Spectroscopy. **D. A. Thomas**, E. Mucha, M. Lettow, M. Rossi, G. Meijer, and G. von Helden. GRC Conference on Gaseous Ions, Ventura, CA, 2019. *Poster Presentation.*

Investigating Structure and Thermochemistry of Molecular Ions Using Infrared Action Spectroscopy in He Nanodroplets. **D. A. Thomas**, R. Chang, E. Mucha, G. Meijer, and G. von Helden. GRC Conference on Vibrational Spectroscopy, Biddeford, ME, 2018. *Poster Presentation.*

Infrared Spectroscopy of Ions Trapped in Helium Nanodroplets: From Baroque Biomolecules to Curious Carboxylates. **D. A. Thomas**, E. Mucha, M. Marianski, S. Gewinner, W. Schöllkopf, G. Meijer, and G. von Helden. Applications of IR Free-Electron Lasers: Latest Developments and Future Directions, Ringberg, Germany, 2018. *Invited Oral Presentation.*

Vibrational Spectroscopy of Ions Trapped in Helium Nanodroplets: Application to the Analysis of Biomolecules. **D. A. Thomas**, E. Mucha, A. I. González Flórez, K. Pagel, and G. von Helden. Conference on Quantum Fluid Clusters, Innsbruck, Austria, 2017. *Poster Presentation.*

Exploring Photochemical Oxidation in Liquid Droplets Using Field-Induced Droplet Ionization Mass Spectrometry. **D. A. Thomas** and J. L. Beauchamp, Lake Arrowhead Ion Conference, 2016. *Oral Presentation.*

A Peer-led Teaching Certificate Program for Post-Graduate STEM Education. **D. A. Thomas**, K. Boyle, and H. Ferguson, POD Network Conference, San Francisco, CA 2015. *Poster Presentation.*

Finding Sweet Spots in Proteins: Glycan Analysis by Liquid Chromatography Coupled with Gas-Phase Proton-Catalyzed and Free Radical-Initiated Dissociation. **D. A. Thomas**, L. Chen, Jinshan Gao, and J. L. Beauchamp, Lake Arrowhead Ion Conference, 2015. *Poster Presentation.*

Generating Ions from Droplets without Electric Fields: Mass Spectrometry of Droplets Acoustically Ejected from a Liquid Surface. **D. A. Thomas**, L. Wang, E. S. Kim, and J. L. Beauchamp, Lake Arrowhead Ion Conference, 2014. *Oral Presentation.*

Studying the Environmental Chemistry of the Liquid/Vapor Interface Using Novel Ionization Techniques Coupled with Mass Spectrometry. **D. A. Thomas**, L. Wang, B. Goh, K. M. Barraza, E. S. Kim, and J. L. Beauchamp, Asilomar Conference on Mass Spectrometry in Environmental Chemistry, Toxicology, and Health, Asilomar, CA, 2013. *Poster Presentation.*

A Bursting Bubble that Won't Ruin Your 401(k): Sampling the Air-Water Interface with Bursting Bubble Ionization. **D. A. Thomas**, B. Goh, and J. L. Beauchamp, Lake Arrowhead Ion Conference, Lake Arrowhead, CA, 2013. *Oral Presentation.*

Monitoring the Effect of pH Changes on Chemical and Biological Processes at the Air/Water Interfaces Using Field-Induced Droplet Ionization Mass Spectrometry, **D. A. Thomas** and J. L. Beauchamp, Lake Arrowhead Ion Conference, Lake Arrowhead, CA, 2012. *Oral Presentation*.

Hydrogen Bonding Constraints Lead to Unusual Free Radical Chemistry at Serine and Threonine Residues in Peptides, **D. A. Thomas**, C. H. Sohn, and J. L. Beauchamp, Lake Arrowhead Ion Conference, Lake Arrowhead, CA, 2011, *Oral Presentation*.

Study of Radical z Ions Produced by Electron Capture Dissociation (ECD). **Daniel A. Thomas**, N. J. Thompson, T. Baba, and G. L. Glish, American Society for Mass Spectrometry Annual Conference, Salt Lake City, UT, 2010. *Poster Presentation*.

Probing Electron Capture Dissociation (ECD) Charge Reduced Ions using ECD and Collision-Induced Dissociation (ECD/ECD and ECD/CID). **Daniel A. Thomas**, T. Baba, and G. L. Glish, American Society for Mass Spectrometry Annual Conference, Philadelphia, PA, 2009. *Poster Presentation*.