

# Sean T. Roberts

University of Texas at Austin ▪ Department of Chemistry  
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## Education

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**Massachusetts Institute of Technology** (Cambridge, MA)

*Ph.D. in Physical Chemistry*, Awarded February 2010 (g.p.a. 5.0/5.0)

Thesis: Hydrogen Bond Rearrangements and the Motion of Charge Defects in Water Viewed using Multidimensional Ultrafast Infrared Spectroscopy.

**University of California Los Angeles** (Los Angeles, CA)

*B.S. in Chemistry, Physical Chemistry Concentration*, Completed May 2003

g.p.a. 3.954/4.0, Highest Departmental Honors, Summa Cum Laude

## Employment & Research History

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**Assistant Professor of Chemistry** (January 2014 – Present)

University of Texas at Austin, Department of Chemistry

Research Group website: [www.RobertsGroupUT.org](http://www.RobertsGroupUT.org)

**Postdoctoral Research Associate** (January 2010 – November 2013)

University of Southern California Department of Chemistry

Advisors: Stephen Bradforth & Alexander Benderskii

**Doctoral Candidate** (August 2003 – December 2009)

Massachusetts Institute of Technology Department of Chemistry

Advisor: Andrei Tokmakoff

**Undergraduate Researcher** (August 2001 – July 2003)

University of California Los Angeles Department of Chemistry

Advisor: Benjamin Schwartz

## Awards

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*Cottrell Scholars Award (2018)*

*National Science Foundation CAREER Award (2017)*

*Rom Rhone Endowed Teaching Excellence Award (2017)*

*Rom Rhone Professional Development Award (2016)*

*ACS Petroleum Research Fund Doctoral New Investigator Award (2015)*

*Natural Sciences Foundation Advisory Council Teaching Award (2014)*

### Postdoctoral:

*Adamson Postdoctoral Research Award (2012)*

*Burg Postdoctoral Teaching Fellowship (2012)*

*American Chemical Society Postdoctoral Research Award (2011)*

*NSF American Competitiveness in Chemistry Postdoctoral Fellowship (ACC-F) (2009-2011)*

### Graduate:

*Coblentz Society Student Award (2009)*

*FACSS Student Poster Award (2009)*

*Morse Travel Grant (2008)*

*Massachusetts Institute of Technology Presidential Fellowship (2003-2004)*

### Undergraduate:

*Phi Beta Kappa Graduate Fellowship (2003)*

*Ramsey Award (2003)*

*Arnold O. Beckman Undergraduate Research Fellowship (2002-2003)*

*University of California Los Angeles Summer Research Scholarship (2002)*

## **Research Funding**

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### **Active Grants:**

- 1. Tracking Singlet Fission with Ultrafast Time-resolved Microscopy and A Focused Research Experience for Community College Students**  
Sponsor: Research Corporation for Science Advancement;  
Grant: Cottrell Scholars Award (single investigator); \$100,000; 7/1/18 – 6/30/21
- 2. CAREER: Tracking Charge and Energy Transfer at Buried Organic Interfaces**  
Sponsor: National Science Foundation (CHE: CSDM-A)  
Grant: NSF CAREER Award (single investigator); \$550,000; 3/15/17 – 3/14/22
- 3. Controlling the Conductivity of Nanocrystal Solids through their Surface Chemistry**  
Sponsor: National Science Foundation (CHE: MSN)  
Grant: Renewable (single investigator); \$437,352; 9/1/16 – 8/31/19
- 4. Repackaging Electronic Energy with Molecular Semiconductors**  
Sponsor: The Welch Foundation  
Grant: Renewable (single investigator); \$250,000; 6/1/18 – 5/31/21
- 5. Cottrell Scholars Collaborative (CSC) for a Science Communication Enabled Community**  
Sponsor: Research Corporation for Science Advancement;  
Grant: Cottrell Scholars Collaborative Project (one of 10 co-PIs); \$25,000; 9/15/18 – 9/14/20;  
Purpose: Funds Support the Creation of a Science Communication Workshop for Chemistry Faculty

### **Completed Projects:**

- 1. Tracking Energy Relaxation within Plasmonic Metal Oxide Nanocrystals**  
Sponsor: Air Force Office of Scientific Research (RTB2)  
Grant: Non-renewable (single investigator); \$100,000; 9/1/15 – 8/31/16
- 2. Visualizing Molecular Organization and Energy Transport Dynamics at Organic Surfaces and Heterojunctions with Interface Specific Femtosecond Spectroscopy**  
Sponsor: American Chemical Society – Petroleum Research Fund  
Grant: Doctoral New Investigator (single investigator); \$110,000; 1/1/15 – 5/31/17
- 3. Mapping Singlet Exciton Fission and Energy Transport Pathways in Perylene Diimide Thin Films and Crystals with Femtosecond Time-resolved Spectroscopy**  
Sponsor: The Welch Foundation  
Grant: Renewable (single investigator); \$195,000; 6/1/15 – 5/31/18
- 4. GReen Energy At Texas (GREAT): Increasing Student Retention in the Physical Sciences**  
Sponsor: American Chemical Society  
Grant: Collaborative Research Grant (w/ Co-PI: Dr. Shawn Amorde, Austin Community College)  
\$2,500 + \$2,500 match from UT Austin; 9/1/16 – 8/31/17
- 5. Using Surface Ligands to Electrically Wire Semiconducting Nanocrystals**  
Sponsor: UT Austin Vice Provost's Office for Research  
Grant: Faculty Research Grant; \$6,000; 10/22/15 – 8/31/16
- 6. Exciton Transport and Charge Separation in Organic Solar Cells Visualized with Interface Specific Femtosecond Spectroscopy**  
Sponsor: National Science Foundation (CHE: CSDM-A)  
Grant: American Competitiveness in Chemistry Postdoctoral Fellowship (ACC-F)  
\$200,000; 10/1/09 – 9/30/12

**Courses Taught**

<i>Course Taught</i>	<i>Course Title</i>	<i>Enrollment</i>	<i>Instructor Rating (Course Rating)</i>	<i>% of Enrolled Students Responding</i>
CH354 (Spring 2018)	Quantum Mechanics & Molecular Spectroscopy	56	4.9 (4.6)	58%
CH353 (Fall 2017)	Physical Chemistry I: Thermodynamics & Kinetics	77	4.9 (4.6)	70%
CH354 (Spring 2017)	Quantum Mechanics & Molecular Spectroscopy	39	4.9 (4.6)	85%
CH354L (Fall 2016)	Physical Chemistry II: Quantum Mechanics	60	4.6 (4.0)	80%
CH353 (Spring 2016)	Physical Chemistry I: Thermodynamics & Kinetics	81	4.8 (4.5)	84%
CH353M (Fall 2015)	Physical Chemistry I: Thermodynamics for Life Sciences	149	4.5 (3.9)	65%
CH353 (Spring 2015)	Physical Chemistry I: Thermodynamics & Kinetics	79	4.6 (4.1)	46%
CH353 (Spring 2014)	Physical Chemistry I: Thermodynamics & Kinetics	80	4.7 (4.1)	59%

**Students & Postdoctoral Scholars Advised****Postdoctoral Scholars:**

Dr. Ravindra Pandey (October 2014 – April 2017): Assistant Professor, IIT Roorkee

**Graduate Students:**

Michael S. Azzaro (December 2013 – present)

Aaron K. Le (December 2013 – present)

Aaron P. Moon (December 2013 – present)

Jon A. Bender (October 2014 – present)

Michelle A. Blemker (September 2015 – present)

Daniel E. Cotton (October 2016 – present)

Emily Raulerson (October 2016 – present)

Brittany Pollok (Co-advised with Michael Rose: October 2018 – present)

Honghao Wang (October 2018 – present)

Atlantis Frost (Co-advised with Lauren Webb: November 2016 – December 2017)

**Undergraduate Students:**

Annie L. Zhang (January 2018 – present)

Inki Lee (October 2017 – present)

James J. Hall (April 2018 – August 2018)

Benjamin A. Renard (September 2015 – December 2017)

Diana Y. Zhang (July 2016 – May 2017)

Brooks T. Clingman (March 2017 – May 2017)

Mark C. Babin (June 2014 – July 2016): Graduate Student at UC Berkeley, Chemistry

Mirna M. Gonzalez (August 2015 – December 2016)

John Gao (January 2016 – December 2016)

Jacob P. Anderson (June 2016 – December 2016)

Zachary Tobin (September 2016 – December 2016): Graduate Student at Texas A&M, Chemistry

**Community College Students:**

Mitchell Haecker (June 2017 – July 2017)

Adam Peasley (June 2018 – July 2018)

**High School Students:**

Kelby Erickson (Welch Summer Scholar: June 2015 – July 2015): Currently attending UT Austin

Lauren Dossett (Welch Summer Scholar: June 2016 – July 2016): Currently attending MIT

Abhilash Potluri (Welch Summer Scholar: June 2017 – July 2017): Currently attending UT Austin

Benjamin Li (Welch Summer Scholar: June 2018 – July 2018): Currently attending UT Austin

**Education Activities**

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**Green Energy At Texas (GREAT)** (Spring/Summer 2017, 2018)

Austin Community College (ACC) & University of Texas at Austin, Department of Chemistry

Program Website: [www.GreenEnergyATX.org](http://www.GreenEnergyATX.org)

- Co-created with Dr. Shawn Amorde (ACC) a program designed to attract students to the physical sciences through a summer research program focused on current topics in green energy research.
- Currently funded by NSF and the American Chemical Society

**ACS Symposium on Energy and Charge Transfer at Nanoscale Interfaces**

American Chemical Society National Meeting, Spring 2018, New Orleans

- Co-organizer, with Dr. Katherine Willets (Temple) and Dr. Libai Huang (Purdue), of an ACS symposium focused on energy and charge migration in nanostructured materials.

**2016 Southwest Ultrafast Conference (June 16-17, 2016, University of Texas at Austin)**

- Co-organizer with Assistant Prof. Carlos Baiz (UT Austin) of a symposium on ultrafast nonlinear spectroscopy sponsored by Coherent, Inc. that featured 17 speakers and >100 registered attendees.

**UT Austin Student Group Presentations & Faculty Panels**

Professional Development Seminar on Faculty Jobs Panel Participant (August 2018)

SURE “Graduate School at UT” Faculty Panel Participant (September 2017)

NSF CAREER Award Q&A Faculty Discussion Panel Participant (April 2017)

Omega Chi Epsilon (OXE) Graduate School Q&A Panel Participant (February 2017)

ACS UT Austin Student Chapter (April 2018, April 2016, May 2015)

College of Natural Sciences Dean’s Scholars (October 2015)

Graduate School Fair “Is Graduate School for Me?” Faculty Panel Participant (October 2015)

Welch Summer Scholars (June 2015)

SURGe (November 2014)

College of Natural Sciences Professional Development Panel Participant (May 2014)

**Cerritos College Summer Research Program** (Summer 2010, Summer 2011, Summer 2012)

University of Southern California, Department of Chemistry

- Implemented an undergraduate summer research program between USC and Cerritos Community College (CCC). Led the program’s student selection and recruitment process and served as a research mentor. Work by CCC participants has been featured in *J. Phys. Chem. Lett.* and *J. Amer. Chem. Soc.*

**Burg Postdoctoral Teaching Fellowship** (Spring 2012)

University of Southern California, Department of Chemistry

- Co-taught Chemistry 115B, a second semester introductory honors chemistry course.

**Teaching Assistant** (Fall 2003, Spring 2005)

Massachusetts Institute of Technology Department of Chemistry

**Journal Publications**

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1. Z. A. Kasun, H. Sato, J. Nie, Y. Mori, J. A. Bender, S. T. Roberts, & M. J. Krische, "Alternating oligo(o,p-Phenylenes) via Ruthenium Catalyzed Diol-Diene Benzannulation: Orthogonality to Cross-Coupling Enables De Novo Nanographene and PAH Construction" *Chem. Sci.*, **9**, 7866-73, (2018).

2. J. A. Bender, E. K. Raulerson, X. Li, T. Goldzak, P. Xia, T. Van Voorhis, M. L. Tang, & S. T. Roberts, "Surface States Mediate Triplet Energy Transfer in Nanocrystal-Acene Composite Systems" *J. Am. Chem. Soc.* **140**(24), 7543-53, (2018).
3. M. S. Azzaro, A. Dodin, D. Y. Zhang, A. P. Willard, & S. T. Roberts, "Exciton-Delocalizing Ligands Can Speed Up Energy Migration in Nanocrystal Solids" *Nano Letters*, **18**(5), 3259-70, (2018).
4. H. Sato, J. A. Bender, S. T. Roberts, & M. J. Krische, "Helical Rod-like Phenylene Cages via Ruthenium Catalyzed Diol-Diene Benzannulation: A Cord of Three Strands" *J. Am. Chem. Soc.* **140**(7), 2455-59, (2018).
5. A. K. Le, J. A. Bender, D. H. Arias, D. E. Cotton, J. C. Johnson, & S. T. Roberts, "Singlet Fission Involves an Interplay Between Energetic Driving Force and Electronic Coupling in Perylene Diimide Films" *J. Am. Chem. Soc.* **140**(2), 814-26, (2018).
6. R. E. McAnally, J. A. Bender, L. Estergreen, R. Haiges, S. E. Bradforth, J. M. Dawlaty, S. T. Roberts, & A. S. Rury, "Defects Cause Tails in the Optical Spectra of a Crystalline Tetracene Derivative" *J. Phys. Chem. Lett.* **8**, 5993-6001, (2017).
7. A. P. Moon, R. Pandey, J. A. Bender, D. E. Cotton, B. A. Renard, & S. T. Roberts, "Using Heterodyne-Detected Electronic Sum Frequency Generation to Probe the Electronic Structure of Buried Interfaces" *J. Phys. Chem. C.* **121**(34), 18653-64, (2017).
8. R. W. Johns, M. A. Blemker, M. S. Azzaro, S. Heo, E. L. Runnerstrom, D. J. Milliron, & S. T. Roberts, "Charge Carrier Concentration Dependence of Ultrafast Plasmonic Relaxation in Conducting Metal Oxide Nanocrystals" *J. Mater. Chem. C.* **5**, 5757-63, (2017).
9. M. S. Azzaro, M. C. Babin, S. K. Stauffer, G. Henkelman, & S. T. Roberts, "Can Exciton-Delocalizing Ligands Facilitate Hot Hole Transfer from Semiconductor Nanocrystals?" *J. Phys. Chem. C.* **120**(49), 28224-34, (2016).
10. A. K. Le, J. A. Bender, & S. T. Roberts, "Slow Singlet Fission Observed in a Perylenediimide Thin Film" *J. Phys. Chem. Lett.* **7**, 4922-28, (2016).
11. R. Pandey, A. P. Moon, J. A. Bender, & S. T. Roberts, "Extracting the Density of States of Copper Phthalocyanine Films at the SiO<sub>2</sub> Interface with Electronic Sum Frequency Generation" *J. Phys. Chem. Lett.* **7**(6), 1060-66, (2016).
12. S. T. Roberts, "Singlet to Triplet and Back Again" *Nature Chem.* **7**, 764-65, (2015) *Invited News and Views Article*.

#### From Postdoctoral Work:

13. S. Das, P. P. Khlyabich, B. Burkhardt, S. T. Roberts, E. Couderc, B. C. Thompson, & S. E. Bradforth, "Quantifying charge recombination in solar cells based on donor-acceptor P3HT analogs" *J. Phys. Chem. C.* **118**, 6650-60, (2014).
14. R. Sarkissian, S. T. Roberts, T.-W. Yeh, S. Das, S. E. Bradforth, J. O'Brien, & P. D. Dapkus, "Photon quenching in InGaN quantum well light emitting devices" *Appl. Phys. Lett.* **103**, 041123, (2013).
15. J. N. Mastron, S. T. Roberts, R. E. McAnally, M. E. Thompson, & S. E. Bradforth, "Aqueous colloidal acene nanoparticles: A new platform for studying singlet fission" *J. Phys. Chem. B.* **117**(49), 15519-26, (2013).
16. P. Dhar, P. P. Khlyabich, B. Burkhardt, S. T. Roberts, S. S. Malyk, B. C. Thompson, & A. V. Benderskii, "Annealing induced changes in the molecular orientation of poly-3-hexylthiophene at buried interfaces" *J. Phys. Chem. C.* **117**(29), 15213-20, (2013).
17. Q. Zhong, V. V. Diev, S. T. Roberts, S. E. Bradforth, & M. E. Thompson, "Fused porphyrin-single walled carbon nanotube hybrids: Efficient formation and photophysical characterization" *ACS Nano.* **7**(4), 3466-75, (2013).
18. S. T. Roberts, R. E. McAnally, J. N. Mastron, D. H. Webber, M. T. Whited, R. L. Brutchey, M. E. Thompson, & S. E. Bradforth, "Efficient singlet fission discovered in a disordered acene film" *J. Am. Chem. Soc.* **134**(14), 6388-400, (2012).

19. M. T. Whited, N. M. Patel, S. T. Roberts, P. I. Djurovich, S. E. Bradforth, & M. E. Thompson, "Symmetry-breaking intramolecular charge transfer in the excited state of *meso*-linked BODIPY dyads" *Chem. Comm.* **48**, 284-86, (2012).
20. S. T. Roberts, C. W. Schlenker, V. Barlier, R. E. McAnally, Y. Zhang, J. N. Mastron, M. E. Thompson, & S. E. Bradforth, "Observation of triplet exciton formation in a platinum sensitized organic photovoltaic device" *J. Phys. Chem. Lett.* **2**(2), 49-54, (2011).
21. M. T. Whited, P. I. Djurovich, S. T. Roberts, A. C. Durrell, C. W. Schlenker, S. E. Bradforth, & M. E. Thompson, "Singlet and triplet excitation management in a bichromophoric near-infrared-phosphorescent BODIPY-benzoporphyrin platinum complex" *J. Am. Chem. Soc.* **133**(1), 88-96 (2011).

**From Graduate Work:**

22. S. T. Roberts, A. Mandal, & A. Tokmakoff, "Local and collective reaction coordinates in the transport of the aqueous hydroxide ion" *J. Phys. Chem. B.* **118**(28), 8062-69, (2014).
23. K. Ramasesha, S. T. Roberts, R. A. Nicodemus, A. Mandal, & A. Tokmakoff, "Ultrafast 2D IR anisotropy of water reveals reorientation during hydrogen-bond switching" *J. Chem. Phys.* **135**, 054509, (2011).
24. S. T. Roberts, K. Ramasesha, P. B. Petersen, A. Mandal, & A. Tokmakoff, "Proton transfer in concentrated aqueous hydroxide visualized using ultrafast infrared spectroscopy" *J. Phys. Chem. A.* **115**(16), 3957-72, (2011).
25. S. T. Roberts, J. J. Loparo, K. Ramasesha, & A. Tokmakoff, "A fast-scanning Fourier transform 2D IR interferometer" *Opt. Commun.* **284**, 1062-66, (2010).
26. R. A. Nicodemus, K. Ramasesha, S. T. Roberts, & A. Tokmakoff, "Hydrogen bond rearrangements in water probed with temperature-dependent 2D IR" *J. Phys. Chem. Lett.* **1**(7), 1068-72, (2010).
27. S. T. Roberts, P. B. Petersen, K. Ramasesha, A. Tokmakoff, I. S. Ufimtsev, & T. J. Martinez, "Observation of a Zundel-like transition state during proton transfer in aqueous hydroxide" *Proc. Natl. Acc. Sci. U.S.A.* **106**(36), 15154-59, (2009).
28. S. T. Roberts, K. Ramasesha, & A. Tokmakoff, "Structural rearrangements in water viewed through two-dimensional infrared spectroscopy" *Acc. Chem. Resh.* **42**(9), 1239-49, (2009). **Cover Article**
29. P. B. Petersen, S. T. Roberts, K. Ramasesha, D. G. Nocera, & A. Tokmakoff, "Ultrafast N-H vibrational dynamics of cyclic doubly hydrogen-bonded homo- and heterodimers" *J. Phys. Chem. B.* **112**, 13167-71, (2008).
30. J. J. Loparo, S. T. Roberts, R. A. Nicodemus, & A. Tokmakoff, "Variation of the transition dipole moment across the OH stretching band of water" *Chem. Phys.* **341**(1-3), 218-29 (2007).
31. J. R. Schmidt, S. T. Roberts, J. J. Loparo, A. Tokmakoff, M. D. Fayer, & J. L. Skinner, "Are water simulation models consistent with steady-state and ultrafast vibrational spectroscopy experiments?" *Chem. Phys.* **341**(1-3), 143-57, (2007).
32. S. T. Roberts, J. J. Loparo, & A. Tokmakoff, "Characterization of spectral diffusion from two-dimensional line shapes" *J. Chem. Phys.* **125**, 084502 (2006).
33. J. J. Loparo, S. T. Roberts, & A. Tokmakoff, "Multidimensional infrared spectroscopy of water. I. Vibrational dynamics in two-dimensional IR line shapes" *J. Chem. Phys.* **125**, 194521, (2006).
34. J. J. Loparo, S. T. Roberts, & A. Tokmakoff, "Multidimensional infrared spectroscopy of water. II. Hydrogen bond switching dynamics" *J. Chem. Phys.* **125**, 194522, (2006).
35. J. D. Eaves, J. J. Loparo, C. J. Fecko, S. T. Roberts, A. Tokmakoff, & P. L. Geissler, "Hydrogen bonds in liquid water are broken only fleetingly" *Proc. Natl. Acc. Sci. U.S.A.* **102**(37) 13019-22. (2005).
36. C. J. Fecko, J. J. Loparo, S. T. Roberts, & A. Tokmakoff, "Local hydrogen bonding dynamics and collective reorganization in water: Ultrafast infrared spectroscopy of HOD/D<sub>2</sub>O" *J. Chem. Phys.* **122**, 054506 (2005).

37. J. J. Loparo, C. J. Fecko, J. D. Eaves, S. T. Roberts, & A. Tokmakoff, "Reorientational and configurational fluctuations in water observed on molecular length scales" *Phys. Rev. B.* **70**, 180201(R), (2004).

#### **From Undergraduate Work:**

38. A. D. Smith, C. K.-F. Shen, S. T. Roberts, R. Helgeson, & B. J. Schwartz, "Ionic strength and solvent control over the physical structure, electronic properties and superquenching of conjugated polyelectrolytes" *Res. Chem. Intermed.* **33**(1-2), 125-42, (2007).

#### **Conference Proceedings**

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1. S. T. Roberts, P. B. Petersen, K. Ramasesha, & A. Tokmakoff, "The dynamics of aqueous hydroxide ion transport probed via ultrafast vibrational echo experiments," in *Ultrafast Phenomena XVI*, edited by P. Corkum, S. De Silvestri, K. A. Nelson, E. Riedle, & R. W. Schoenlein, (Springer-Verlag, Berlin, 2008).
2. J. J. Loparo, S. T. Roberts, & A. Tokmakoff, "2D IR spectroscopy of hydrogen bond switching in liquid water," in *Ultrafast Phenomena XV*, edited by P. Corkum, D. Jonas, D. Miller, & A. M. Weiner, (Springer-Verlag, Berlin, 2006).
3. C. J. Fecko, J. D. Eaves, J. J. Loparo, S. T. Roberts, A. Tokmakoff, & P. L. Geissler, "Dynamics of hydrogen bonds in water: Vibrational echoes and two-dimensional infrared spectroscopy," in *Ultrafast Phenomena XIV*, edited by T. Kobayashi, T. Okada, T. Kobayashi, K. A. Nelson, & S. De Silvestri, (Springer-Verlag, Berlin, 2004).

#### **Invited Oral Presentations (past and future)**

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1. American Chemical Society National Meeting, San Diego, CA, August 2019.
2. International Workshop on Nonlinear Optics at Interfaces, Shanghai, China, June 2019.
3. University of Washington, Materials Science & Engineering Seminar, Seattle, WA, May 2019.
4. Materials Research Society Meeting, Phoenix, AZ, April 2019.
5. University of Illinois at Urbana-Champaign, Physical Chemistry Seminar, Urbana, IL, April 2019.
6. Ohio State University, Physical Chemistry Seminar, Columbus, OH, April 2019.
7. University of Minnesota, Physical Chemistry Seminar, Minneapolis, MN, March 2019.
8. Univ. of North Carolina Chapel Hill, Physical Chemistry Seminar, Chapel Hill, NC, January 2019.
9. University of California Los Angeles, Physical Chemistry Seminar, Los Angeles, CA, January 2019.
10. University of Pennsylvania, Physical Chemistry Seminar, Philadelphia, PA, December 2018.
11. University of Chicago, Physical Chemistry Seminar, Chicago, IL, December 2018.
12. University of Houston, Chemistry Departmental Seminar, Houston, TX, December 2018.
13. Rice University, Physical Chemistry Seminar, Houston, TX, December 2018.
14. State University of New York Geneseo, Physical Chemistry Seminar, Geneseo, November 2018.
15. Materials Research Society Meeting, Boston, MA, November 2018.
16. Purdue University, Physical Chemistry Seminar, West Lafayette, IN, November 2018.
17. University of California San Diego, Physical Chemistry Seminar, La Jolla, CA, October 2018.
18. University of California Riverside, Physical Chemistry Seminar, Riverside, CA, October 2018.
19. University of California Berkeley, Physical Chemistry Seminar, Berkeley, CA, October 2018.
20. Texas A&M, Physical Chemistry Seminar, College Station, TX, September 2018.
21. Montana State University, Chemistry Departmental Seminar, Bozeman, MT, September 2018.
22. SPIE Optics and Photonics National Meeting, San Diego, CA, August 2018.
23. American Chemical Society National Meeting, Boston, MA, August 2018.
24. Electron Donor-Acceptor Interactions Gordon Research Conference, Newport, RI, August 2018.
25. Advances of Multidimensional Vibrational Spectroscopy in Water, Biology and Materials Science Workshop, Telluride, CO, July 2018.
26. Nonlinear Optics at Interfaces Workshop, Telluride, CO, June 2018.
27. Canadian Society for Chemistry Annual Meeting, Edmonton, Canada, May 2018.

28. University of Colorado, Boulder, Physical Chemistry Seminar, Boulder, CO, April 2018.
29. American Chemical Society National Meeting, New Orleans, LA, March 2018.
30. University of Southern California, Physical Chemistry Seminar, Los Angeles, CA, February 2018.
31. Atomic, Molecular, and Optical Physics Seminar, UT Austin, Austin, TX, November 2017.
32. SPIE Optics and Photonics National Meeting, San Diego, CA, August 2017.
33. 9th International Conference on Advanced Vibrational Spectroscopy, Victoria, Canada, June 2017.
34. Temple University, Physical Chemistry Seminar, Philadelphia, PA, April 2017.
35. American Chemical Society National Meeting, San Francisco, CA, March 2017.
36. Louisiana State University, Physical Chemistry Seminar, Baton Rouge, LA, November 2016.
37. American Chemical Society National Meeting, Philadelphia, PA, August 2016.
38. Nonlinear Optics at Interfaces Workshop, Telluride, CO, June 2016.
39. 2016 Southwest Ultrafast Conference, UT Austin, Austin, TX, June 2016.
40. Atomic, Molecular, and Optical Physics Seminar, UT Austin, Austin, TX, April 2016.
41. Center for Excitonics, Massachusetts Institute of Technology, Cambridge, MA, April 2016.
42. 1st Sino-German Symposium on Structures and Dynamics at Surfaces, Peking University, Beijing, China, November 2015.
43. EMN (Energy Materials Nanotechnology) Meeting, Cancun, Mexico, June 2015.
44. Nonlinear Optics at Interfaces Workshop, Telluride, CO, June 2014.
45. Atomic, Molecular, and Optical Physics Seminar, UT Austin, Austin, TX, March 2014.

**From Postdoctoral Work:**

46. International Conference on Optical Probes of Conjugated Polymers & Organic Nanostructures, Durham University, Durham, UK, July 2013.
47. Materials Research Society Meeting, Boston, MA. December 2011.

**From Graduate Work:**

48. Physical Chemistry Seminar, Kobe University. Japan. September 2008.

**Contributed Oral Presentations**

1. Colloidal Semiconductor Nanocrystals Gordon Research Conference, Poster Selected for Elevation to Short Presentation, Smithfield, RI, July 2018.
2. International Conference on Optical Probes of Conjugated Polymers & Organic Nanostructures, Quebec City, Canada, June 2017.
3. Singlet Fission Workshop, Estes Park, CO, June 2017.
4. International Conference on Coherent Multidimensional Spectroscopy, University of Groningen, Groningen, Netherlands, June 2016.
5. Singlet Fission Workshop, Estes Park, CO, June 2016.
6. American Chemical Society National Meeting, San Diego, CA. March 2016.
7. American Chemical Society National Meeting, Boston, MA. August 2015.
8. Singlet Fission Workshop, Estes Park, CO, June 2015.
9. Materials Research Society Meeting, San Francisco, CA. April 2015.
10. American Physical Society Meeting, San Antonio, TX. March 2015.

**From Postdoctoral Work:**

11. Singlet Fission Workshop, Estes Park, CO, June 2013.
12. Singlet Fission Workshop, Estes Park, CO, June 2012.
13. Western Spectroscopy Association Conference, Asilomar, CA. January 2012.
14. American Chemical Society National Meeting, Denver, CO. August 2011.
15. Materials Research Society Meeting, San Francisco, CA. April 2011.
16. International Conference on Electroluminescence and Organic Optoelectronics, Univ. of Michigan, Ann Arbor, MI, October 2010.

**From Graduate Work:**

17. International Conference on Time-Resolved Vibrational Spectroscopy, Meredith, NH. May 2009.
18. Coherent Multidimensional Spectroscopy Conference, Kyoto, Japan. August 2008.
19. American Chemical Society National Meeting, Philadelphia, PA. August 2008.

**Professional Affiliations & Service**

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*Reviewer:* Journal of Physical Chemistry (A/B/C/Letters), Journal of the American Chemical Society, Journal of Chemical Physics, ACS Energy Letters, ACS Nano, Nanoletters, Angewandte Chemie, Optics Letters, Nature Chemistry, Nature Materials, Nature Communications, Proceedings of the National Academy of Sciences, Chemical Science, Advanced Functional Materials, Journal of Materials Chemistry (A/C), Chem, Journal of the Optical Society of America B, MRS Advances, Chemical Physics Letters, DOD NDSEG, DOE BES, NSF CHE (MSN & CSDM-A), ACS PRF, Research Corporation for Science Advancement, UT Austin Undergraduate Research Fellowship (URF) Program

*Member:* Phi Beta Kappa (inducted 2003), American Chemical Society (since 2003)

*College Committees:* 21<sup>st</sup> Century Curriculum Implementation Task Force (2016-2017), Texas Materials Institute Executive Committee (2016-present), Center for Nano & Molecular Science Advisory Committee (2016), Welch Hall Renovation Research Advisory Committee (2015-2016), Ad Hoc Committee for Academic and Research Opportunities in Materials Science and Engineering (2017-present)

*Departmental Committees:* Chemistry Course & Curriculum Committee (2018 – present), Senior Faculty Hiring Committee (2018 – present), Graduate Admissions (co-chair, 2014-2018), Analytical/Physical Junior Faculty Search (2014-2015, 2015-2016), Graduate Program Committee (2016), Faculty Advisory Committee (2016), Chemical Safety Committee (2014-present)