Richard Alan Loomis

Professor of Chemistry
Washington University in Saint Louis

Department of Chemistry
Campus Box 1134
Washington University
One Brookings Drive
Saint Louis, MO 63130-4899

Tel. (314) 935-8534
Fax (314) 935-4481
Office: Bryan Hall, Room 413B
e-mail: loomis@wustl.edu
www.chemistry.wustl.edu/Faculty/Loomis

Professional History:

2017-present: Professor of Chemistry, Washington University, Saint Louis, MO.
2012-present: Member of the Institute for Materials Science and Engineering Washington University, Saint Louis, MO.
2010-present: Director of Graduate Studies, Department of Chemistry, Washington University, Saint Louis, MO.
2010-2011: Associate Director of the Center for Materials Innovation, Washington University, Saint Louis, MO.
2005-2017: Associate Professor of Chemistry, Washington University, Saint Louis, MO.
2003-2012: Member Center for Materials Innovation, Washington University, Saint Louis, MO.
Nanostructured Materials Thrust Area; Chair, 2006-2010.
1998-2005: Assistant Professor of Chemistry, Washington University, Saint Louis, MO.

Education:

1996-1998: National Research Council Postdoctoral Fellow, National Institute of Standards and Technology, University of Colorado, Boulder, CO. Advisor: Stephen R. Leone.
1996: Postdoctoral Fellow, University of Colorado, Boulder, CO. Advisor: Stephen R. Leone.
1989-1995: Ph.D. in Chemistry, University of Pennsylvania, Philadelphia, PA. Advisor: Marsha I. Lester.
1985-1989: B.S. with Honors, Dickinson College, Carlisle, PA. Advisor: John W. Luetzelschwab.

Research Interests:

Physical chemistry, chemical reaction dynamics, chemical kinetics, and molecular spectroscopy especially as these fields pertain to investigating intermolecular interactions and optical properties of nanostructured materials.

While the push toward faster and more efficient electronic circuitry relies on the ability to synthesize semiconductor structures on nanometer scales, the optical and electronic properties of these nanostructures are interesting in their own right. We are investigating quantum effects that arise from the reduced dimensionality of semiconductor nanodots, nanowires, and nanoplatelets using absorption and fluorescence spectroscopy. Our group is also developing novel optical microscopy experiments that will enable us to use multiple femtosecond lasers to excite and monitor the dynamics of excitons in and along single nanostructures with temporal and spatial resolution.

The techniques implemented to investigate intermolecular interactions include femtosecond to nanosecond time scale linear and non-linear laser spectroscopy, quantum-mechanical wave packet dynamics and coherent control, and intramolecular and intermolecular energy redistribution. Molecular beam and supersonic expansion techniques are used to lower the internal energies of molecules and to form weakly bound pre-reactive complexes. These complexes represent the launching pad for the subsequent intermolecular dynamics experiments. The experiments utilize numerous fluorescence-based spectroscopies and ion time-of-flight mass spectrometry and ion velocity-map-imaging techniques to fully map the identities and energetics of the parents and products. Past experiments have focused on characterizing the interactions of and dynamics between rare gas atoms or molecular hydrogen with dihalogen molecules. Current experiments are centered on charge transfer complexes, including I_2, Br_2, or NO^+ with C_2H_4 or C_6H_6.

Awards:

American Chemical Society, Saint Louis Section Award (2020).
Wash. U., Arts & Sciences, ArtSci Council Excellence in Teaching Award (2019).
Wash. U., Arts & Sciences David Hadas Teaching Award (2012).
Wash. U., Congress of the South Forty, Last Lecture (2012).
Wash. U., Student Life, Best Professor (2010).
Wash. U., Freshman Class Council – Outstanding Professor of the Year Award (2010).
Wash. U., Council of Students of Arts & Sciences Faculty Award (2008, 2004, 2000).
Fellow of the Kavli Frontiers of Science (2008).
Wash. U., Graduate Student Senate – Outstanding Faculty Mentor Award (2008).
Wash. U., Graduate Student Senate – Special Recognition for Excellence in Mentoring (2007, 2001).
National Science Foundation – CAREER Award (2004).
David and Lucile Packard Fellowship in Science and Engineering (2001).
Research Corporation, Research Innovation Awardee (1999).
Camille and Henry Dreyfus New Faculty Awardee (1998).
National Research Council Postdoctoral Fellowship, NIST and University of Colorado (1996-8).
Chairman's Teaching Award, Department of Physics, University of Pennsylvania (1990).
Magna Cum Laude, Dickinson College (1989).
Horace Elton Rogers Science Award, for "Most Promising Science Student", Dickinson College (1988).
Dana Fellowship, "Young Researcher's Grant", Dickinson College (1988).
Charles Zugg Memorial Scholarship, for "Academic Excellence", Dickinson College (1986).

Research Grants Received:

NSF-DMR (#1905751; $450,000 – 6/30/19 to 6/29/22), "Measuring the Dynamics of Excitons in 1D Semiconductor Quantum Wires with Quantum State Resolution." (*Principal Investigator*)
American Chemical Society – Petroleum Research Fund New Directions (#58232-ND6; $110,000 – 7/1/17 to 8/31/20), "Characterization of Reaction Dynamics and Interactions Using a Bottom-up Approach." (*Principal Investigator*)
NSF-DMR (#1611149; $416,798 – 7/1/16 to 6/30/19), "Investigating the Competition Between Exciton Delocalization and Radiative Recombination in 1D Semiconductor Quantum Wires." (*Principal Investigator*)
NSF-DMR (#0906966; $356,048 – 7/1/09 to 6/30/13), "Experimental Interrogation of Exciton Dynamics within One-Dimensional Semiconductor Quantum Materials." (*Principal Investigator*)
NSF-CHE (#0346745; $537,665 – 3/1/04 to 2/28/11), "Career: Experimental Investigation of the Dependence of Intermolecular Dynamics on Molecular Orientation." (*Principal Investigator*)
David and Lucile Packard Fellowship in Science and Engineering (#2001-18985; $625,000 – 10/1/01 to 9/30/08), "How Do Molecules React: Determining the Pathways of Radical-Molecule Bimolecular Reactions." (*Principal Investigator*)
American Chemical Society – Petroleum Research Fund Series G (#36990-G 6; $25,000 – 9/1/01 to 8/31/03), "Time-resolved Quantum-mechanical Studies of Photo-initiated Bimolecular Reaction Dynamics." (*Principal Investigator*)
Research Corporation – Research Innovation Award (#RI0243; $35,000 – 1/1/99 – 1/1/03), "Probing and Controlling Ultrafast Radical-Molecule Bimolecular Reaction Dynamics Using Femtosecond Pump-Probe and Optical Pulse Shaping Techniques." (*Principal Investigator*)
Camille and Henry Dreyfus Foundation – New Faculty Award (#NF-98-053; $25,000 – 9/1/98 to 8/31/00), "Probing and Controlling Ultrafast Radical-Molecule Bimolecular Reaction Dynamics." (*Principal Investigator*)

Undergraduate Student Research Advisees:

Kevin K. Maddox (A.B., Wash. U., 2000); Present position unknown.
Andrew C. Crowther (A.B., Wash. U., 2002); NSF Predoctoral Fellow 2002 – Ph.D., F.F. Crim at the U. Wisconsin, Madison, 2008; postdoc, L.E. Brus at Columbia U.; assistant professor at Barnard Coll.
David B. Strasfeld (A.B., Wash. U., 2004); Ph.D., M. Zanni at the U. Wisconsin, Madison, 2009; postdoc, M.G. Bawendi at MIT; senior scientist, Lumicell Diagnostics.
Jeffrey R. Lancaster (A.B., Wash. U., 2005); Ph.D., N.J. Turro at Columbia U., 2011; emerging technologies coordinator, Columbia U. Libraries.
Elizabeth J. Fesser (A.B., Wash. U., 2006); veterinarian in St. Louis, MO.
Lauren E. Buchanan (A.B., Wash. U., 2008); NSF Predoctoral Fellow 2008 – Ph.D., M. Zanni at the U. Wisconsin, Madison, 2013; postdoc, R. Van Duyne at Northwestern University; assistant professor, Vanderbilt University.

Joseph Brown (A.B., Wash. U., 2008); M.D., Northwestern U. Feinberg School of Medicine, 2014; resident, UCSD Medical Center.
John Cheairs (A.B., Wash. U., 2008); tutor, Huntington Learning Center.
Jesse G. McDaniel (A.B., Wash. U., 2008); Ph.D., J.R. Schmidt at U. Wisconsin, Madison, 2014; postdoc, Arun Yethiraj at U. Wisconsin, Madison; assistant professor, Georgia Institute of Technology.
Michael A. Love, Jr. (B.A, Morehouse College, May 2009); current position unknown.
Sarah Rajaram (A.B., Wash. U., 2010); NSF Predoctoral Fellow 2012 – M.S., N. Trivedi at The Ohio State U., 2012; M.S., Georgia Institute of Technology, 2016; research associate, Institute for Defense Analyses.
Caryn K. Rubanovich (A.B., Wash. U., 2013); M.S., Columbia U. (2014); Ph.D. student at San Diego State U.
Lindsey K. Steinberg (A.B., Wash. U., May 2013); M.D./Ph.D. student, Wash. U. School of Medicine.
Robert A. Burnett (A.B., Wash. U., May 2013); M.D., U. Iowa Carver College of Medicine (2015); resident at Rush U.
Marilee Fisher (A.B., Wash. U., May 2013); research technician, Wash. U. School of Medicine.
Benjamin S. Hoener (A.B., Wash. U., May 2013); Ph.D., C.F. Landes at Rice U.; staff scientist at Intel Corp.
Brian C. Lynch (A.B., Wash. U., May 2013); Ph.D., U. Pittsburgh. (2018); ALM Sr. Associate w/ PNC, Pittsburgh.
Max B. Wasserman (A.B., Wash. U., May 2013); senior portfolio manager, UBS Financial Services.
Ethan Kahn (A.B., Wash. U., May 2014); graduate student in Materials Science, Pennsylvania State U.
Hilah Kohen (A.B., Wash. U., May 2018); graduate student in Literature at U. Pennyslvania.
Anderson Moore (B.S., Christopher Newport U., May 2018).
Sarah Willson (A.B., Wash. U., May 2018); NSF Predoctoral Fellow 2018; graduate student, University of Chicago.
Lucy Summer (A.B., Wash. U., May 2020).

Washington University Undergraduate Chemistry Major Advisees:

Neal Burton (A.B., 2001)
John T. Russell (A.B., 2002)
Jennifer Schwartz (A.B., 2002)
Beverly R. Chen (A.B., 2003)
Erin A. Geordi (A.B., 2003)
Brian P. Rajca (A.B., 2003)
Kathleen M. Antony (A.B., 2004)
Robert D. Cooper (A.B., 2004)
Bryce K. Fukunaga (A.B., 2004)
N.H. Gunawardena (A.B./A.M., 2004)
Kevin Mayo (A.B., 2004)
Jeremy O'Brien (A.B., 2004)
Laura A. Richards (A.B., 2004)
Corinna J. Yu (A.B., 2004)
Joshua Zwickl (A.B., 2004)
Sushant Govindan (A.B., 2006)
Emily E. Nuse (A.B., 2006)
Jane Ratner (A.B., 2007)
Jill Savla (A.B., 2007)
Kristen Voss (A.B., 2007)
Joseph Brown (A.B., 2008)
Lauren E. Buchanan (A.B., 2008)
Lonia R. Friedlander (A.B., 2008)
Myrtle M. Karam (A.B., 2010)
Jesse G. McDaniel (A.B., 2008)
Daniel R. Tilden (A.B., 2008)
Musa R. Abdelaziz (A.B., 2009)
Michael A. Bevilacqua (A.B., 2009)
Stephanie Brosius (A.B., 2009)
Christian A. Koziatek (A.B., 2009)
Nathania W. Hau (A.B., 2010)
Aaron L. Hecht (A.B., 2010)
Myrtle M. Karam (A.B., 2010)
Lucy Liu (A.B., 2010)
Lai Xue (A.B., 2010)
Harry J. Alper (A.B., 2011)
Zachary Buchbinder (A.B., 2011)
Hiu Y. Lam (A.B., 2012)
Brenden McDearmon (A.B., 2012)
Harris U. Onugha (A.B., 2012)
Robert M. Richler (A.B., 2012)
Gregory M. Schwartz (A.B., 2012)
Diana D. Shen (A.B., 2012)
Yue Shi (A.B., 2012)
Kurt W. Stahlfeld (A.B., 2012)
Robert A. Burnett (A.B., 2013)
Spencer J. Fish (A.B., 2013)
Benjamin S. Hoener (A.B., 2013)
Brian C. Lynch (A.B., 2013)
Lindsey K. Steinberg (A.B., 2013)
Phillip S. Azanov (A.B., 2014)
Alexander J. Dressler (A.B., 2014)
Dalen C. Kuang (A.B., 2014)
Tony Sun (A.B., 2014)
Richard B. Wickersham (A.B., 2014)
Warren C. Chang (A.B., 2015)
Kaavya Cherukuri (A.B., 2015)
Tyler L. Frank (A.B., 2015)
Katherine H. Li (A.B., 2015)
Claire L. Simons (A.B., 2015)
Anthony M. Zunica (A.B., 2015)
Ryan Delabar (A.B., 2017)
Jimmy Wang (A.B., 2017)
Mark C. Xu (A.B., 2017)
Justin Chu (A.B., 2018)
Jeremy Fisher (A.B., 2018)
Laura Hagenah (A.B., 2018)
Hannah Olsen (A.B., 2018)
Maxwell Sorensen (A.B., 2018)
Emma Streff (A.B., 2018)
Justin Vincent (A.B., 2018)
Aly Wayne (A.B., 2018)
Sarah Willson (A.B., 2018)
Alex Benton (A.B., 2019)
Jack Broitman (A.B., 2019)
Jason Singer (A.B., 2019)
Brandon Hutchison (A.B., 2020)
Mickey Shearer (A.B., 2020)
Joey Spellberg (A.B., 2020)
Lucy Summer (A.B., 2020)
Evan Xu (A.B., 2020)
Jessie Bao (A.B. expected 2021)
Lucas Cruz (A.B. expected 2021)
Enid Ibarra (A.B. expected 2021)
Anna Vaclavek (A.B. expected 2021)
Dalton Walsh (A.B., expected, 2021)
Tallulah Letscher (A.B., expected, 2023)

Graduate Student Thesis Advisees:

Matthew D. Bradke (A.M., Wash. U., 2001); senior Chemist, Arkansas Dept. of Health, Little Rock, AR.
David S. Boucher (Ph.D., Wash. U., 2006); associate professor, College of Charleston, Charleston, SC.
Joshua P. Darr (Ph.D., Wash. U., 2006); associate professor, University of Nebraska, Omaha, NE.
John J. Glennon (Ph.D., Wash. U., 2007); senior staff scientist, Lockheed Martin Coherent Technologies, Louisville, CO.
Kenneth W. Hartman (A.M., Wash. U., 2007); security officer, MO Department of Corrections.
Virginia L. Wayman (Ph.D., Wash. U., 2012); analyzer engineer, ExxonMobil, Baytown, TX.
Jessica Hoy (Ph.D., Wash. U., 2013); journal manager, American Institute of Physics.
Jeremy T. Buckingham (A.M., Wash. U., 2009); Dr. Pepper in St. Louis, MO.
Ashley L. Reinitz (A.M., Wash. U., 2010); Neels Pharmacy & Wellness Center in St. Louis, MO.
Kenny Buyle (A.M., Wash. U., 2011)
Camille Makarem (Ph.D., Wash. U., 2016); research scientist, OptoKnowledge Systems, Inc., Torrance, CA)
W. Matthew Sanderson (Ph.D., Wash. U., 2019); central lab chemist, Wacker Chemie AG, Charleston, TN
Luis Mendoza (A.M., Wash. U., 2013)
Brian Wieliczka (Ph.D., Wash. U., 2018); postdoctoral fellow, National Renewable Energy Laboratories, Golden, CO)
Calynn Johnson-Morrison (Ph.D., Wash. U., 2020); lecturer at St. Charles Community College.
Will Stephans (A.M., Wash. U., 2015)
Nicholas R. Zeigler (A.M., Wash. U., 2019)
Jie Chen (Ph.D. student, 2017-present)
Guillermo Turcios (Ph.D. student 2018-present)

Postdoctoral Fellows:

Dr. Jeanette A. Fiss (Ph.D., University of Illinois – Chicago, 2000), 11/01/00-10/31/01; deceased.
Dr. Paul R. Winter (Ph.D., University of Colorado, 1999), 07/01/02-11/01/02; senior chemist, Chemir Analytical Services, St. Louis, MO.
Dr. Bailin Zhang (Ph.D., Dalian Institute of Chemical Physics, 2002), 02/11/03-07/01/03; staff scientist, Institute of Atomic and Molecular Sciences, Academia Sinica, Taipei, Taiwan.
Dr. Kevin Raffael (Ph.D., Exeter – Exeter, U.K., 2003), 10/01/06-7/15/07; deceased.
Dr. Todd D. Jaeger (Ph.D., University of Georgia, 2004), 6/15/07-2/23/08; North American Research Market Manager, CVI Melles Griot, Springfield, MO.
Dr. Jie Wei (Ph.D., Anhui Institute of Optics and Fine Mechanics, CAS), 7/01/10-6/01/12; programming specialist, U.S. Postal Service.

Recent Collaborators:

William E. Buhro (Wash. U.); *Joshua P. Darr* (Univ. Nebraska, Omaha); *Michael L. Gross* (Wash. U.); *Bryce Sadtler* (Wash. U.); *Li Yang* (Wash. U.); Martin Zanni (Univ. Wisconsin)

Teaching Experience at Washington University:

- Modern Spectroscopy, Chem 488 – upper-level course with lecture and laboratory components and 9 students, (Fall, 2013).
- Freshman Seminar in Chemical Sciences, Chem 181 – freshman-level seminar course with 30 students, (Fall, 2012, 18).
- Physical Properties of Quantum Nanostructures, Chem 543 – graduate lecture course with 5-20 students, including students from Engineering and Physics, (Spring, 2012-20).
- General Chemistry, Chem 111A – freshman-level lecture course with 250-340 students in my sections and 600-880 students overall, (Fall, 2000, 04, 08, 09-11, 14-17, 19-20).
- Physical Chemistry I, Chem 401 – upper-level lecture course required for chemistry majors with 55-75 students, (Fall, 2001, 02, 06, 07).
- Molecular Spectroscopy, Chem 584 – graduate-level course with 4-16 students, (Spring, 2006, 08, 10).
- Special Topics in Inorganic Chemistry, Chem 542 – graduate-level lecture course with 17 students, including students from Engineering and Physics, (Fall, 2010).
- Special Topics in Physical Chemistry: Modern Spectroscopy, Chem 580 – graduate-level course with 14 students, (Spring, 2005).

- Instrumental Methods: Physical Chemistry, Chem 445 – upper-level laboratory course with 19 students, (Spring, 2004).
- Quantum Chemistry, Chem 422 – upper-level lecture course that was an elective and required for honors with 25 & 50 students, (Fall, 1999 and Spring, 2001).
- Special Topics in Physical Chemistry: Recent Advances in Probing Reaction Dynamics, Chem 580 –graduate-level lecture course with 5 students, (Fall, 1998).

Washington University Service and Committee Activities:

Wash. U. Academic Calendar Committee (2020-)
Wash. U. Committee on Research Integrity (2019-22).
Wash. U. Arts & Sciences Review Committee on Faculty Personnel Procedures (2019-22).
Wash. U. MOSAIC Committee (2013-4); Co-chair of the MOSAIC Diversity and Inclusion in the Classroom Committee (2013-4).
Wash. U. Undergraduate Council (2012-20).
Wash. U. Center for the Integration of Research, Teaching, and Learning (CIRTL) Advisor Committee, (2011-9).
Wash. U. Arts & Sciences Professor of the Practice Selection Committee, (2011-20).
Wash. U., Department of Chemistry Research Fellows Program, (2010-6). Obtained internal funding ($47,183) to begin this program, which is aimed at attracting scientists, especially those from diverse backgrounds, to careers in academia in the field of chemistry and ideally at Wash. U. by providing them with funding and research opportunities at Wash. U.
Department of Chemistry, Director of Graduate Studies, (2010-present).
Wash. U. Arts & Sciences Faculty Council, (2006-9) – Chair (2008-9).
Executive Committee of the Graduate Council, (2005-6, 2007-8, 2011-9) – Chair (2005-6, 2007-8, 2011-2, 2015-7).
Florence Moog Fellowships in the Biological Sciences & Chemistry Selection Committee – Chair (2005-8, 2012-7, 2018-9).
Faculty Associate for William Greenleaf Elliot College, (2005-8).
Graduate Council Teaching and Professional Development Committee, (2002-3, 2004-8, 2009-10, 2012-7) – Chair (2002-3, 2005-6, 2013-7, 2018-9).
Ervin and Enterprise Scholars Program Selection Committee, (2003-16).
Panelist for Wash. U., Orientation for New Graduate Students in Arts & Sciences, (2003, 2004).
Department of Chemistry, Seminar Committee, (2001-6).
Residential Life, Residential Advisor Selection Committee, (2001).
Faculty Associate for Liggett/Koenig Residential College, (2000-1).
Wash. U. Arts & Sciences Graduate Council Departmental Representative, (1999-).
Department of Chemistry, Graduate Work Committee, (1999-2008, 2010-) – Chair (2004-8, 2010-).
Department of Chemistry, Graduate Admissions and Recruitment Committee, (1998-2008) – Chair of Recruitment Committee (2002-8, 2010-).
Department of Chemistry, Library Committee, (1998-2006).

Professional Activities:

Chair of the Molecular Interactions and Dynamics Gordon Research Conference (2018).
Vice Chair of the Molecular Interactions and Dynamics Gordon Research Conference (2016).
Vice Chair of the Atomic and Molecular Interactions Gordon Research Conference (2014).
Co-organizer of the Kavli Foundation and US National Academy of Sciences Frontiers in Science Symposia held jointly with the Indonesian National Academy of Sciences (July 12-15, 2012 in Solo, Indonesia and July 7-12, 2011 in Bogor, Indonesia).
Session Chair at the OSU International Symposium on Molecular Spectroscopy (2004, 2007).
Peer Review Panel for the 30th International Symposium on Combustion (January, 2004).
Review Panel for NSF-SBIR/STTR (March, 2003).
Scientific/technical consultant for Oakwood Medical Management, L.L.C., Saint Louis, MO (2000-1).
Co-organizer of "Reactions in Small Clusters Workshop", Telluride, CO (August 1-6, 1999).
Co-founder and Advisor of the St. Louis Section of the Younger Chemists Committee (1998-2003), which received the ChemLuminary Award for "Outstanding Local Section of the Younger Chemists Committee" (1998).
Reviewer of proposals submitted to NSF, DOE, NASA ACS-PRF, and U.S. Civilian Research and Development.

Reviewer of manuscripts submitted to *ACS Nano*, *Chemical Physics*, *Chemical Physics Letters*, *Chemistry of Materials*, *Journal of Chemical Physics*, *Journal of Physical Chemistry Letters*, *Journal of Physical Chemistry A*, *Journal of Physical Chemistry C*, *Journal of Physics B*, *Journal of the American Chemical Society*, *Nano Letters*, *Nature Materials*, *Physical Chemistry Chemical Physics*, *Spectrochimica Acta Part A.*

Memberships:

American Chemical Society, American Physical Society - Divisions of Laser Science and Chemical Physics.

Publications:

69. V.L. Wayman and R.A. Loomis*, "Observation of the delocalization of 1D excitons over the entire lengths of CdSe quantum wires", in preparation.
68. C. Makarem, J. Wei, and R.A. Loomis*, "Intramolecular vibrational energy redistribution (IVR) in $Ar\cdots I_2(B,v')$ observed with velocity-map imaging", in preparation.
67. C. Makarem and R.A. Loomis*, "Interrogation of the $Ar\cdots I_2(E,v^{\dagger})$ intermolecular levels using two-color, laser-induced fluorescence and velocity-map imaging", submitted to *J. Chem. Phys*.
66. W.M. Sanderson, J. Schrier, and R.A. Loomis*, "Photo-induced state shifting in 1D semiconductor quantum wires", *J. Phys. Chem. C*, **124**, 16702-16713 (2020). doi: 10.1021/acs.jpcc.0c04755
65. W.M. Sanderson, F. Wang, J. Schrier, W.E. Buhro, and R.A. Loomis*, "Intraband relaxation dynamics of charge carriers within CdTe quantum wires", *J. Phys. Chem. Lett.*, **11**, 4901-4910 (2020). doi: 10.1021/acs.jpclett.0c01326
64. W.M. Sanderson, J. Hoy, C. Morrison, F. Wang, Y. Wang, P.J. Morrison, W.E. Buhro, and R.A. Loomis*, "Excitation energy dependence of photoluminescence quantum yields in semiconductor nanomaterials with varying dimensionalities", *J. Phys. Chem. Lett.*, **11**, 3249-3256 (2020). doi: 10.1021/acs.jpclett.0c00489
63. C. Morrison, H. Sun, Y. Yao, R.A. Loomis*, and W.E. Buhro*, "Methods for the ICP-OES analysis of semiconductor materials", *Chem. Mater.*, **32**, 1760-1768 (2020). doi: 10.1021/acs.chemmater.0c00255
62. N. Zeigler, C. Makarem, J. Wei, and R.A. Loomis*, "Electronic predissociation in rare gas-dihalogen complexes", *J. Chem. Phys.*, **152**, 094303 (2020). doi: 10.1063/1.5145106
61. W.M. Sanderson, F. Wang, W.E. Buhro, and R.A. Loomis*, "Long-lived 1D excitons in bright CdTe quantum wires", *J. Phys. Chem. C*., **123**, 3144-51 (2019). doi: 10.1021/acs.jpcc.8b09588
60. B. Wieliczka, A.L. Kaledin, W.E. Buhro, and R.A. Loomis*, "Wave function engineering in CdSe/PbS core/shell quantum dots", *ACS Nano*, **12**, 5539-50 (2018). doi: 10.1021/acsnano.8b01248
59. Y. Yao, Y. Zhou, W.M. Sanderson, R.A. Loomis, W.E. Buhro*, "Metal-halide-ligated cadmium selenide quantum belts by facile surface exchange", *Chem. Mater.*, **30**, 2848-2857 (2018). doi: 10.1021/acs.chemmater.8b01294
58. C.E. Morrison, F. Wang, N.P. Rath, B.M. Wieliczka, R.A. Loomis, and W.E. Buhro*, "Cadmium bis(phenyl-dithiocarbamate) as a nanocrystal shell-growth precursor", *Inorg. Chem.*, **56**, 12920-9 (2017). doi: 10.1021/acs.inorgchem.7b01711
57. F. Wang*, R.A. Loomis, and W.E. Buhro*, "Spectroscopic properties of phase-pure and polytypic colloidal semiconductor quantum wires", *ACS Nano*, **10**, 9745-54 (2016). doi**:** 10.1021/acsnano.6b06091
56. C. Makarem and R.A. Loomis*, "Spectroscopic identification of the $Ar\cdots I_2$ intermolecular levels bound throughout the $Ar + I_2(B,v')$ potential", *Chem. Phys. Lett.*, **651**, 119-23 (2016). doi: 10.1016/j.cplett.2016.03.039
55. L. Mu, F. Wang, B. Sadtler, R.A. Loomis, and W.E. Buhro*, "Influence of the nanoscale Kirkendall effect on the morphology of copper indium disulfide nanoplatelets synthesized by ion exchange", *ACS Nano*, **9**, 7419-28 (2015). doi: 10.1021/acsnano.5b02427
54. F. Wang, Y. Wang, Y.-H. Liu, P.J. Morrison, R.A. Loomis, and W.E. Buhro*, "2D semiconductor nanocrystals – Properties, templated formation, and magic-size nanocluster intermediates", *Acc. Chem. Res.*, **48**, 13-21 (2015). doi: 10.1021/ar500286j
53. P.J. Morrison, R.A. Loomis, and W.E. Buhro*, "Synthesis and growth mechanism of lead sulfide quantum platelets in lamellar mesophase templates", *Chem. Mater.*, **26**, 5012-9 (2014). doi: 10.1021/cm5020702
52. Y. Wang, Y. Zhang, F. Wang, D.E. Giblin, J. Hoy, H.W. Rohrs, M.L. Gross, R.A. Loomis, and W.E. Buhro*, "The magic-size nanocluster $(CdSe)_{34}$ as a low-temperature nucleant for cadmium selenide nanocrystals; room-temperature growth of crystalline quantum platelets", *Chem. Mater.*, **26**, 2233-43 (2014). doi: 10.1021/cm404068e
51. J.P. Darr* and R.A. Loomis*, "Dissociation dynamics of higher-order $He_2\cdots I^{35}Cl(B,v'=3)$ complexes", *Chem. Phys. Lett.*, **586**, 34-9 (2013). doi: 10.1016/j.cplett.2013.09.022
50. J. Hoy, P.J. Morrison, L.K. Steinberg, W.E. Buhro, and R.A. Loomis*, "Excitation energy dependence of the photoluminescence quantum yields of core and core/shell quantum dots", *J. Phys. Chem. Lett.*, **4**, 2053-60 (2013). doi: 10.1021/jz4004735

49. Y.-H. Liu, F. Wang, J. Hoy, V.L. Wayman, L.K. Steinberg, R.A. Loomis*, and W.E. Buhro*, "Bright core-shell semiconductor quantum wires", *J. Am. Chem. Soc.*, **134**, 18797-803 (2012). doi: 10.1021/ja3088218
48. V.L. Wayman, P.J. Morrison, F. Wang, R. Tang, W.E. Buhro, and R.A. Loomis*, "Bound 1D excitons in single CdSe quantum wires", *J. Phys. Chem. Lett.*, **3**, 2627-32 (2012). doi: 10.1021/jz301210a
47. Y. Wang, Y.-H. Liu, Y. Zhang, F. Wang, P.J. Kowalski, H.W. Rohrs, R.A. Loomis, M.L. Gross, and W.E. Buhro*, "Isolation of the magic-size CdSe nanoclusters [$(CdSe)_{13}$(*n*-octylamine)$_{13}$] and [$(CdSe)_{13}$(*n*-oleylamine)$_{13}$]", *Angew. Chem. Int. Ed.*, **51**, 6154-7 (2012). doi: 10.1002/anie.201202380
46. J. Wei, C. Makarem, A.L. Reinitz, J.P. Darr, and R.A. Loomis*, "Accurate measurement of the T-shaped and linear Ar···I_2(X,v''=0) binding energies using vibronic-specific I_2(B,v) fragment velocity-map imaging", *Chem. Phys*., **399**, 172-9 (2012). doi: 10.1016/j.chemphys.2011.06.039
45. F. Wang, V.L. Wayman, R.A. Loomis, and W.E. Buhro*, "Solution-liquid-solid growth of semiconductor quantum-wire films", *ACS Nano*, **5**, 5188-94 (2011). doi: 10.1021/nn201336z
44. J.P. Darr, R.A. Loomis*, S.A. Ray-Helmus, and A.B. McCoy*, "Probing the dependence of long-range, four-atom interactions on intermolecular orientation: 3. Hydrogen and iodine", *J. Phys. Chem. A*. **115**, 7368-77 (2011). doi: 10.1021/jp201549d
43. J. Wen, J. Harada, K. Buyle, K. Yuan, H. Tamiaki, H. Oh-oka, R.A. Loomis, and R.E. Blankenship*, "Characterization of an FMO variant of *chlorobaculum tepidum* carrying bacteriochlorophyll *a* esterified by geranylgeraniol", *Biochem.* **49**, 5455-63 (2010). doi: pdf/10.1021/bi1006805
42. Y.-H. Liu, V.L. Wayman, P.C. Gibbons, R.A. Loomis*, and W.E. Buhro*, "Origin of high photoluminescence efficiencies in CdSe quantum belts", *Nano Lett.*, **10**, 352-7 (2010). doi: 10.1021/nl0714583
41. J.J. Glennon, R. Tang, W.E. Buhro, R.A. Loomis*, D.A. Bussian, H. Htoon, V.I. Klimov*, "Exciton localization and migration in individual CdSe quantum wires at low temperatures", *Phys. Rev. B*, **80**, 081303(R) (2009). doi: 10.1103/PhysRevB.80.081303
40. Y. Zhang, K. Vidma, D.H. Parker*, and R.A. Loomis, "Photodissociation of the linear Ar-I_2 van der Waals complex: velocity-map imaging of the I_2 fragment", *J. Chem. Phys.* **130**, 104302 (2009). doi: 10.1063/1.3075561
39. D.S. Boucher, J.P. Darr, D.B. Strasfeld, and R.A. Loomis*, "Spectroscopic identification of higher-order rare gas-dihalogen complexes with different geometries: $He_{2,3}$···Br_2 and $He_{2,3}$···ICl", *J. Phys. Chem. A*, **112**, 13393-401 (2008). doi: 10.1021/jp808368j
38. J.P. Darr, R.A. Loomis*, and A.B. McCoy, "Probing the dependence of long-range, four-atom interactions on intermolecular orientation: 2. Molecular deuterium and iodine monochloride", *J. Phys. Chem. A*, **112**, 9494-502 (2008). doi: 10.1021/jp802917f
37. J.P. Darr and R.A. Loomis*, "Experimental interrogation of the multidimensional He + ICl(E,$v^{\dagger}$) and He + ICl(β,$v^{\dagger}$) intermolecular potential energy surfaces", *J. Chem. Phys.*, **129**, 144306 (2008). doi: 10.1063/1.2990661
36. J.J. Glennon, W.E. Buhro, and R.A. Loomis*, "Simple surface-trap-filling model for photoluminescence blinking spanning entire CdSe quantum wires", *J. Phys. Chem. C*, **112**, 4813-7 (2008). doi: 10.1021/jp710067b
35. D.S. Boucher and R.A. Loomis*, "Stabilization of different conformers of weakly bound complexes to access varying excited-state intermolecular dynamics", *Adv. Chem. Phys.*, **138**, 375-419 (2008). doi: 10.1002/9780470259474.ch7
34. J.P. Darr, A.C. Crowther, and R.A. Loomis*, "Probing the dependence of long-range, four-atom interactions on intermolecular orientation: 1. Molecular hydrogen and iodine monochloride", *J. Phys. Chem. A*, **111**, 13387-96 (2007). doi: 10.1021/jp076465u
33. J.J. Glennon, R. Tang, W.E. Buhro*, and R.A. Loomis*, "Synchronous photoluminescence intermittency (blinking) along whole semiconductor quantum wires", *Nano Lett.*, **7**, 3290-5 (2007). doi: 10.1021/nl0714583
32. S.A. Ray, A.B. McCoy*, J.J. Glennon, J.P. Darr, E.J. Fesser, J.R. Lancaster, and R.A. Loomis*, "Experimental and theoretical investigations of the He···I_2 rovibronic spectra in the I_2 *B*–*X*, 20–0 region", *J. Chem. Phys.*, **125**, 164314 (2006). doi: 10.1063/1.2363378
31. J.P. Darr and R.A. Loomis*, "Vibrational relaxation dynamics of $I^{35}Cl$(B,v') induced by low-temperature collisions with He atoms", *Phys. Chem. Chem. Phys*., **7**, 3323-30 (2005). doi: 10.1039/b508229c
30. D.S. Boucher, D.B. Strasfeld, R.A. Loomis*, J.M. Herbert, S.A. Ray, and A.B. McCoy*, "Stabilization and rovibronic spectra of the T-shaped and linear ground-sate conformers of a weakly bound rare-gas–homonuclear dihalogen complex: He···$^{79}Br_2$", *J. Chem. Phys.*, **123**, 104312 (2005). doi: 10.1063/1.2006675
29. J.P. Darr, J.J. Glennon, R.A. Loomis*, "Observation of bound-free transitions of the linear Ar···I_2(X,v''=0) complex in and above the I_2 *B*–*X* region", *J. Chem. Phys*., **122**, 131101 (2005). doi: 10.1063/1.1885001
28. J.P. Darr, R.A. Loomis*, and A.B. McCoy, "The dissociation dynamics of He···ICl(B,v'=2,3) complexes with varying amounts of internal energy", *J. Chem. Phys*., **122**, 044318/1-12 (2005). doi: 10.1063/1.1829971

27. D.S. Boucher, J.P. Darr, M.D. Bradke, R.A. Loomis*, and A.B. McCoy*, "Combined experimental/ theoretical investigation of the He + ICl interactions: Determination of the binding energies of the T-shaped and linear He···$I^{35}Cl(X,v''=0)$ conformers", *Phys. Chem. Chem. Phys*., **6**, 5275-82 (2004). doi: 10.1039/b411914b
26. D.B. Strasfeld, J.P. Darr, and R.A. Loomis*, "Experimental characterization of the Ne + ICl($X,v''=0$) and Ne + ICl($B,v'=2$) intermolecular potentials", *Chem. Phys. Lett*., **397**, 116-22 (2004). doi: 10.1016/j.cplett.2004.08.083
25. A.B. McCoy*, J.P. Darr, D.S. Boucher, P.R. Winter, M.D. Bradke, and R.A. Loomis*, "Combined experimental/theoretical investigation of the He + ICl interactions: I. The ro-vibronic spectrum of He···ICl complexes in the ICl *B*–*X*, 3–0 region", *J. Chem. Phys*., **120**, 2677-85 (2004). doi: 10.1063/1.1636693
24. J.P. Darr and R.A. Loomis*, "Experimental observation of competing pathways in the relaxation of ICl* in a He supersonic expansion", *Faraday Discuss*., **127**, 213-26 (2004). doi: 10.1039/b316117j
23. H. Yu, J. Li, R.A. Loomis, P.C. Gibbons, L-W. Wang, and W.E. Buhro*, "Cadmium selenide quantum wires and the transition from 3D to 2D confinement", *J. Am. Chem. Soc*., **125**, 16168-9 (2003). doi: 10.1021/ja037971+
22. J.P. Darr, A.C. Crowther, and R.A. Loomis*, "Direct measurement of the binding energy of the linear He···$I^{35,37}Cl$(X) isotopomers", *Chem. Phys. Lett*., **378**, 359-67 (2003). doi: 10.1016/S0009-2614(03)01343-5
21. D.S. Boucher, M.D. Bradke, J.P. Darr, and R.A. Loomis*, "Preferential stabilization of different isomers of weakly bound complexes", *J. Phys. Chem. A*, **107**, 6901-4 (2003). doi: 10.1021/jp035284z
20. H. Yu, J. Li, R.A. Loomis, L.-W. Wang*, and W.E. Buhro*, "2D vs. 3D quantum confinement in indium phosphide; experimental comparison of quantum wires and quantum dots", *Nature Mater*. **2**, 517-20 (2003). doi:10.1038/nmat942
19. M.D. Bradke and R.A. Loomis*, "Spectroscopic observation of the preferentially stabilized, linear He···ICl($X\ ^1\Sigma^+$) complex", *J. Chem. Phys*., **118**, 7233-44 (2003). doi: 10.1063/1.1562622
18. J.P. Reid, R.A. Loomis, and S.R. Leone*, "Competition between N–H and N–D bond cleavage in the photodissociation of NH_2D and ND_2H", *J. Phys. Chem. A*, **104**, 10139-49 (2000). doi: 10.1021/jp001065r
17. J.P. Reid, R.A. Loomis, and S.R. Leone*, "The effect of parent zero-point motion on the ND_2 ($\tilde{A}$) rotational state distribution in the 193.3 nm photolysis of ND_3", *Chem. Phys. Lett.*, **324**, 240-8 (2000). doi: 10.1016/S0009-2614(00)00605-9
16. J.P. Reid, and R.A. Loomis, and S.R. Leone*, "Characterization of dynamical product-state distributions by spectral extended cross-correlation: Vibrational dynamics in the photofragmentation of NH_2D and ND_2H", *J. Chem. Phys.*, **112**, 3181-91 (2000). doi: 10.1063/1.480902
15. R.A. Loomis, J.P. Reid and S.R. Leone*, "Photofragmentation of ammonia at 193.3 nm: Bimodal rotational distributions and vibrational excitation of $NH_2(\tilde{A})$", *J. Chem. Phys.*, **112**, 658-69 (2000). doi: 10.1063/1.480677
14. R. Uberna, Z. Amitay, R.A. Loomis, and S.R. Leone*, "Phase control of wave packet dynamics using shaped femtosecond pulses", *Faraday Discuss.*, **113**, 385-400 (1999). doi: 10.1039/a901679a
13. R.A. Loomis, S.R. Leone*, and M.K. Gilles, "Novel five-membered ring intermediates in gas phase reactions", *Res. Chem. Intermed.*, **24**, 707-53 (1998). doi: 10.1163/156856798X00384
12. J. Lindner, R.A. Loomis, J.J. Klaassen, and S.R. Leone*, "A laser photolysis/time-resolved Fourier transform infrared emission study of OH($X\ ^2\Pi$, v) produced in the reaction of alkyl radicals with O(^{3}P)", *J. Chem. Phys.*, **108**, 1944-52 (1998). doi: 10.1063/1.475575
11. M.I. Lester*, R.A. Loomis, R.L. Schwartz, and S.P. Walch, "Electronic quenching of OH $A\ ^2\Sigma^+$ ($v' = 0, 1$) in complexes with hydrogen and nitrogen", *J. Phys. Chem.*, **101**, 9195-206 (1997). doi: 10.1021/jp9727557
10. R.A. Loomis and M.I. Lester*, "OH-H_2 entrance channel complexes", *Ann. Rev. Phys. Chem.*, **48**, 643-73 (1997). doi: 10.1146/annurev.physchem.48.1.643
9. R.A. Loomis, J.J. Klaassen, J. Lindner, P.G. Christopher, and S.R. Leone*, "Fourier transform infrared emission study of the mechanism and dynamics of HOI formed in the reaction of alkyl iodides with O(^{3}P)", *J. Chem. Phys.*, **106**, 3934-47 (1997). doi: 10.1063/1.473510
8. R.L. Schwartz, L.C. Giancarlo, R.A. Loomis, R.T. Bonn, and M.I. Lester*, "Intermolecular vibrations and relaxation dynamics in complexes of OH A $^2\Sigma^+$ ($v'=0, 1$) with N_2", *J. Chem. Phys.*, **105**, 10224-36 (1996). doi: 10.1063/1.472732
7. R.A. Loomis, R.L Schwartz, and M.I. Lester*, "Electronic spectroscopy and quenching dynamics of OH-H_2/D_2 pre-reactive complexes", *J. Chem. Phys.*, **104**, 6984-96 (1996). doi: 10.1063/1.471408
6. R.A. Loomis and M.I. Lester*, "Stabilization of reactants in a weakly bound complex: OH-H_2 and OH-D_2", *J. Chem. Phys.*, **103**, 4371-4 (1995). doi: 10.1063/1.470678
5. M.I. Lester*, R.A. Loomis, L.C. Giancarlo, M.T. Berry, C. Chakravarty, and D.C. Clary, "Refinement of the OH A $^2\Sigma^+$ ($v=0$) + Ar intermolecular potential energy surface", *J. Chem. Phys.*, **98**, 9320-34 (1993). doi: 10.1063/1.464411
4. M.T. Berry, R.A. Loomis, L.C. Giancarlo, and M.I. Lester*, "Stimulated emission pumping of intermolecular vibrations in OH-Ar($X\ ^2\Pi$)", *J. Chem. Phys.*, **96**, 7890-903 (1992). doi: 10.1063/1.462342
3. G. Vandegrift* and R. Loomis, "End-loss analyzer for plasma diagnosis", *Rev. Sci. Instr*. **62**, 1368-9 (1991). doi: 10.1063/1.1142502

2. G. Vandegrift*, T. Baker, J. DiGrazio, A. Dohne, A. Flori, R. Loomis, C. Steel, and D. Velat, "Wave cutoff on a suspended slinky", *Amer. J. Phys.*, **57**, 949-51 (1989). doi: 10.1119/1.15855
1. J.W. Luetzelschwab*, T.W. Baker, R.A. Loomis, and W.L. Phillis, "Effect of humidity on radon adsorption by charcoal", *Proceedings of the Health Physics Meeting*, Albuquerque, NM, (1989)

Presentations:

103. R.A. Loomis, "Dynamics in semiconductor quantum wires." Department of Chemistry, University of Nebraska, Omaha, Omaha, NE, October 4, 2019. (Departmental Seminar)
102. R.A. Loomis, "Dynamics in semiconductor quantum wires." Department of Chemistry, Creighton University, Omaha, NE, October 3, 2019. (Departmental Seminar)
101. R.A. Loomis, "From 8th grade through tenure… Nearly the same stuff, but it gets even better!" St. Louis Section of the American Chemical Society, Awards Night, St. Louis, MO, April 15, 2019. (Guest Speaker)
100. R.A. Loomis, "Dynamics in semiconductor quantum wires." Department of Chemistry, Xiamen University, Xiamen, China, January 23, 2019. (Departmental Seminar)
99. R.A. Loomis, "Dynamics in semiconductor quantum wires." Department of Chemistry, Texas Tech University, Lubbock, TX, November 28, 2018. (Departmental Seminar)
98. R.A. Loomis, "Dynamics of 1D excitons in semiconductor quantum wires." Chemistry Graduate Student Association Seminar, Department of Chemistry, Rice University, Houston, TX, January 10, 2018. (Student-selected Seminar)
97. R.A. Loomis, "Dynamics of 1D excitons in semiconductor quantum wires." Department of Chemistry, Tulane University, New Orleans, LA, April 3, 2017. (Departmental Seminar)
96. R.A. Loomis, "Dynamics of 1D excitons in semiconductor quantum wires." Department of Chemistry, Southern Illinois University Edwardsville, Edwardsville, IL, January 12, 2017. (Departmental Seminar)
95. R.A. Loomis, "Dynamics of 1D excitons in semiconductor quantum wires." Gordon Research Conference, Mount Snow, West Dover, VT, July 31-August 5, 2016. (Invited Talk)
94. R.A. Loomis, "Investigating the dynamics of 1D excitons in semiconductor quantum wires." Department of Chemistry, Fudan University, February 25, 2016. (Departmental Seminar)
93. R.A. Loomis, "Investigating the dynamics of 1D excitons in semiconductor quantum wires." Department of Chemistry, Peking University, February 23, 2016. (Departmental Seminar)
92. R.A. Loomis, "Investigating the dynamics of 1D excitons in semiconductor quantum wires." Department of Chemistry, University of Colorado, December 11, 2015. (Departmental Seminar)
91. R.A. Loomis, "Spectroscopic exploration of the quantum nature of excitons in semiconductor quantum wires." Institute for Materials Science and Engineering, Washington University in St. Louis, April 18, 2014. (Departmental Seminar)
90. R.A. Loomis, "Spectroscopic exploration of the quantum nature of excitons in semiconductor quantum wires." American Chemical Society National Meeting, Dallas, TX, March 16-21, 2014. (Invited Talk)
89. J. Hoy, V.L. Wayman, L.K. Steinberg, Y.-H. Liu, F. Wang, P.J. Morrison, W.E Buhro, and R.A. Loomis, "Dynamics of 1D excitons in CdSe and CdTe/CdS core-shell quantum wires." 2013 MRS Spring Meeting & Exhibit, San Francisco, CA, April 2, 2013. (Invited Talk)
88. R.A. Loomis, "Interrogation of the competing relaxation pathways involved in the dissociation of excited-state rare gas-dihalogen complexes." Molecular Energy Transfer Gordon Research Conference, Ventura, CA, January 13-18, 2013. (Invited Talk)
87. R.A. Loomis, "Can quantum mechanics be observed on the macroscopic scale in semiconductor nanostructures?" Department of Chemistry and Biochemistry, College of Charleston, Charleston, SC, September 23, 2012. (Departmental Seminar)
86. R.A. Loomis, "Experimental interrogation of the competing relaxation pathways of Ar$\cdots$I$_2$(B,v′)." Molecular and Ionic Clusters Gordon Research Conference, Ventura, CA, January 29-February 3, 2012. (Hot Topics Talk)
85. R.A. Loomis, "Achieving the reality of 1-D excitons in semiconductor quantum wires." Department of Materials Science and Engineering, Stanford University, Stanford, CA, December 9, 2011. (Departmental Seminar)
84. R.A. Loomis, "Delocalization of bound, 1-D excitons in single CdSe quantum wires." Clusters, Nanocrystals & Nanostructures Gordon Research Conference, Mount Holyoke College, South Hadley, MA, July 24-29, 2011. (Poster)
83. R.A. Loomis, "Colloidal semiconductor nanowires: Can they behave as model 1-D quantum systems?" Department of Chemistry, Texas A&M, College Station, April 5, 2011. (Departmental Seminar)
82. R.A. Loomis, "Colloidal semiconductor nanowires: Can they behave as model 1-D quantum systems?" Department of Physical Chemistry, Peking University, Beijing, China, March 9, 2011. (Departmental Seminar)

81. R.A. Loomis, "Colloidal semiconductor nanowires: Can they behave as model 1-D quantum systems?" Department of Chemistry, Hefei National Laboratory for Physical Sciences at Microscale, USTC, Hefei, China, March 7, 2011. (Departmental Seminar)
80. R.A. Loomis, "Colloidal semiconductor nanowires: Can they behave as model 1-D quantum systems?" Saint Louis Award Symposium, St. Louis, MO, October 15, 2010. (Invited Talk)
79. R.A. Loomis, "Hot lasers, fast particles, and snapshots of quantum cats." Science on Tap Lecture Series – Washington University in St. Louis, St. Louis, MO, May 26, 2010. (Invited Talk)
78. R.A. Loomis, "Spectroscopic characterization of 1-D excitons in semiconductor quantum wires." American Physical Society National Meeting, Portland, OR, March 14-19, 2010. (Contributed Talk)
77. R.A. Loomis, "Spectroscopic characterization of the quantum-mechanical nature of excitons in semiconductor nanowires." Department of Chemistry, Xiamen University, Xiamen, China, March 5, 2010.
76. R.A. Loomis, "Spectroscopic characterization of the quantum-mechanical nature of excitons in semiconductor nanowires." Department of Chemistry, East China Normal University, Shanghai, China, March 2, 2010.
75. R.A. Loomis, "Energetics and dynamics of excitons within single CdSe quantum wires." Clusters, Nanocrystals & Nanostructures Gordon Research Conference, Mount Holyoke College, South Hadley, MA, July 19-24, 2009. (Poster)
74. R.A. Loomis, "Photochemistry within single semiconductor quantum wires." Department of Chemistry, University of Missouri, Kansas City, Kansas City, MO, April 23, 2009. (Departmental Seminar)
73. R.A. Loomis, "Quantum mechanics: What, where, why and when?" Kansas City Section of ACS, Awards Ceremony, Kansas City, Kansas City, MO, April 22, 2009. (Invited Talk)
72. R.A. Loomis, "Spectroscopy and dynamics of higher-order rare gas-dihalogen complexes with different geometries." Molecular Energy Transfer Gordon Research Conference, Ventura, CA, January 18-23, 2009. (Poster)
71. R.A. Loomis, "Spectroscopy and dynamics of multiexciton states in single CdSe quantum wires." American Chemical Society National Meeting, New Orleans, LA, April 5-10, 2008. (Contributed Talk)
70. R.A. Loomis, J.J. Glennon, D.A. Bussian, H. Htoon, V.I. Klimov, R. Tang, W.E. Buhro, "Energetic relaxation of excitons prepared within single CdSe quantum wires." American Chemical Society National Meeting, New Orleans, LA, April 5-10, 2008. (Poster)
69. R.A. Loomis, "Interrogation of the energetics and dynamics of excitons prepared within single CdSe quantum wires." Department of Chemistry, Pittsburgh State University, Pittsburgh, KS, February 1, 2008. (Departmental Seminar)
68. R.A. Loomis, "Probing the details of the full dimensionality of intermolecular potential energy surfaces." Department of Chemistry, University of Missouri, Kansas City, Kansas City, MO, January 31, 2008. (Departmental Seminar)
67. R.A. Loomis, "Interrogation of the energetics and dynamics of excitons prepared within single CdSe quantum wires." Department of Chemistry, Northwest Missouri State University, Maryville, MO, January 30, 2008. (Departmental Seminar)
66. R.A. Loomis, "Experimental interrogation of the spectroscopy and dynamics within single CdSe quantum wires." Department of Physical Chemistry, Peking University, Beijing, China, September 19, 2007. (Departmental Seminar)
65. R.A. Loomis, "Dissociation dynamics of hydrogen-dihalogen complexes." Dynamics of Molecular Collisions Conference, Santa Fe, NM, July 8-13, 2007. (Poster)
64. R.A. Loomis and J.J. Glennon, "Spectroscopy and dynamics within single cadmium selenide quantum wires." 62nd Ohio State University International Symposium on Molecular Spectroscopy, Columbus, OH, June 18-22, 2007. (Invited Talk)
63. R.A. Loomis, "Dissociation dynamics of hydrogen-dihalogen complexes." 62nd Ohio State University International Symposium on Molecular Spectroscopy, Columbus, OH, June 18-22, 2007. (Contributed Talk)
62. R.A. Loomis, "Characterization of the photophysics within single CdSe quantum wires at low temperature." Center of Integrated Nanotechnologies, Sandia and Los Alamos National Laboratories, Albuquerque, NM, April 18, 2007. (Invited Talk)
61. R.A. Loomis, "Experimental interrogation of the photophysics within CdSe nanostructures and its dependence on dimensionality." University of Georgia, Athens, GA, February 1, 2007. (Departmental Seminar)
60. R.A. Loomis, "Experimental interrogation of the photophysics within CdSe nanostructures and its dependence on dimensionality." Notre Dame University, South Bend, IN, January 18, 2007. (Departmental Seminar)
59. R.A. Loomis, "Probing the details of the full dimensionality of intermolecular potential energy surfaces." Department of Chemical Physics, University of Science and Technology of China, Hefei, Anhui, China, October 11, 2006. (Departmental Seminar)
58. R.A. Loomis, "Probing the details of the full dimensionality of intermolecular potential energy surfaces." Key Laboratory of Molecular Reaction Dynamics, Beijing, China, October 10, 2006. (Departmental Seminar)
57. R.A. Loomis, "Probing bimolecular interactions with atomic resolution." Hope College, Holland, MI, September 22, 2006. (Departmental Seminar)

56. R.A. Loomis, "Probing bimolecular interactions with atomic resolution." Calvin College, Grand Rapids, MI, September 21, 2006. (Departmental Seminar)
55. J.P. Darr and R.A. Loomis, "Spectroscopic identification of multiple conformers of *o*,*p*-H_2···ICl and *o*,*p*-H_2···I_2 complexes." American Physical Society National Meeting, Baltimore, MD, March 12-17, 2006. (Contributed Talk)
54. J.J. Glennon, R. Tang, W.E. Buhro, and R.A. Loomis, "Observation of synchronous photoluminescence intensity fluctuations within single CdSe quantum wires." American Physical Society National Meeting, Baltimore, MD, March 12-17, 2006. (Contributed Talk)
53. R.A. Loomis, "Probing bimolecular interactions with atomic resolution." Morehouse College, Atlanta, GA, January 31, 2006. (Departmental Seminar)
52. R.A. Loomis, "Experimental interrogation of the photophysics within CdSe nanostructures and its dependence on dimensionality." Emory University, Atlanta, GA, January 30, 2006. (Departmental Seminar)
51. R.A. Loomis, "The interactions of rare gas atoms with dihalogen molecules: finding the surprise ending of an old story." Marquette University, Milwaukee, WI, November 4, 2005. (Departmental Seminar)
50. R.A. Loomis, "The interactions of rare gas atoms with dihalogen molecules: finding the surprise ending of an old story." Brigham Young University, Provo, UT, October 7, 2005. (Departmental Seminar)
49. R.A. Loomis, "The interactions of rare gas atoms with dihalogen molecules: finding the surprise ending of an old story." University of Wisconsin-Madison, Madison, WI, October 4, 2005. (Departmental Seminar)
48. R.A. Loomis, "Spectroscopic interrogation of the multi-dimensional intermolecular potentials of rare gas-dihalogen complexes.", 230th American Chemical Society National Meeting, Washington, DC, August 28 – September 1, 2005. (Invited Talk)
47. J.P. Darr, J.J. Glennon, and R.A. Loomis, "Identification of bound-free transitions of the linear Ar···I_2 complex throughout the I_2 B–X region." 230th American Chemical Society National Meeting, Washington, DC, August 28 – September 1, 2005. (Contributed Talk)
46. J.P. Darr and R.A. Loomis, "The origin of the Ar···I_2 *B–X* continuum excitation signal below and above the I_2(*B*) dissociation limit: bound-free transitions of the linear complex." 60th Ohio State University International Symposium on Molecular Spectroscopy, Columbus, OH, June 20-24, 2005. (Contributed Talk)
45. R.A. Loomis, "Spectroscopic interrogation of the multi-dimensional intermolecular potentials of rare gas atoms and dihalogens." 60th Ohio State University International Symposium on Molecular Spectroscopy, Columbus, OH, June 20-24, 2005. (Contributed Talk)
44. R.A. Loomis, "The dependence of intermolecular dynamics on internal energy within rare gas-dihalogen complexes." Molecular Energy Transfer Gordon Research Conference, Buellton, CA, January 9-15, 2005. (Invited Talk)
43. R.A. Loomis, "The characterization of the subtle dependences of intermolecular interactions on molecular orientation." U.S. National Academy of Sciences, Beckman Frontiers of Science Symposium, Irvine, CA, November 4-6, 2004. (Invited Participant)
42. J.P. Darr, D.S. Boucher, D.B. Strasfeld, R.A. Loomis, and A.B. McCoy, "The experimental and theoretical interrogation of the intermolecular potential energy surfaces of rare gas-dihalogen systems." Atomic and Molecular Interactions Gordon Research Conference, New London, NH, July 11-16, 2004. (Poster)
41. J.P. Darr and R.A. Loomis, "Observation of competing pathways in the relaxation of ICl* in a He supersonic expansion." 59th Ohio State University International Symposium on Molecular Spectroscopy, Columbus, OH, June 21-26, 2004. (Contributed Talk)
40. R.A. Loomis, "The spectroscopic characterization of multidimensional intermolecular potential energy surfaces." University of Pittsburgh, Pittsburgh, PA, May 6, 2004. (Departmental Seminar)
39. R.A. Loomis, "The spectroscopic characterization of multidimensional intermolecular potential energy surfaces." University of California-San Diego, San Diego, CA, April 20, 2004. (Departmental Seminar)
38. R.A. Loomis, "The spectroscopic characterization of multidimensional intermolecular potential energy surfaces." University of Southern California, Los Angeles, CA, April 19, 2004. (Departmental Seminar)
37. R.A. Loomis, "Characterizing the intermolecular potential energy surfaces that dominate dynamics at low temperatures." Saint Louis University, Saint Louis, MO, April 16, 2004. (Departmental Seminar)
36. J.P. Darr and R.A. Loomis, "The competing pathways of ICl* relaxation in a He supersonic expansion." Faraday Discussion 127, Non-adiabatic Effects in Chemical Dynamics, Saint Catherine's College, Oxford, UK, April 5-7, 2004. (Invited Talk)
35. R.A. Loomis, "The characterization of intermolecular interactions at very low temperatures: Even for dihalogens with rare gas atoms, it's not so simple!" University of California, Irvine, Irvine, CA, January 20, 2004. (Departmental Seminar)

34. R.A. Loomis, "The characterization of intermolecular interactions at very low temperatures: Even for dihalogens with rare gas atoms, it's not so simple!" Southern Illinois University, Carbondale, IL, January 16, 2004. (Departmental Seminar)
33. R.A. Loomis, "Determining the precise pathways of bimolecular reactions." University of Southern Indiana, Evansville, IN, November 18, 2003. (Departmental Seminar)
32. R.A. Loomis, "The somewhat complicated interactions and dynamics of dihalogen molecules with rare gas atoms at low temperatures." University of Pennsylvania, Philadelphia, PA, November 6, 2003. (Departmental Seminar)
31. R.A. Loomis, "The somewhat complicated interactions and dynamics of dihalogen molecules with rare gas atoms at low temperatures." JILA, University of Colorado, Boulder, CO, October 31, 2003. (Departmental Seminar)
30. R.A. Loomis, "The somewhat complicated interactions and dynamics of dihalogen molecules with rare gas atoms at low temperatures." The Ohio State University, Columbus, OH, October 13, 2003. (Departmental Seminar)
29. R.A. Loomis, "The somewhat complicated interactions and dynamics of dihalogen molecules with rare gas atoms at low temperatures." Columbia University, New York, NY, October 8, 2003. (Departmental Seminar)
28. R.A. Loomis, "The somewhat complicated interactions and dynamics of dihalogen molecules with rare gas atoms at low temperatures." Combustion Research Facility, Sandia National Laboratory, Livermore, CA, August, 6 2003. (Departmental Seminar)
27. J.P. Darr, D.S. Boucher, A.C. Crowther, and R.A. Loomis, "The formation, interaction, and dissociation of the linear and T-shaped He···ICl weakly bound complexes." Spectroscopy and Dynamics on Multiple Surfaces Workshop, Telluride, CO, July 20-27, 2003. (Invited Talk)
26. R.A. Loomis, "The dynamics of ICl in a He supersonic expansion." Dynamics of Molecular Collisions Conference, Lake Tahoe, CA, July 13-18, 2003. (Invited Talk)
25. J.P. Darr, D.S. Boucher, A.C. Crowther, and R.A. Loomis, "The formation, interaction, and dissociation of the linear and T-shaped He···ICl weakly bound complexes." Dynamics of Molecular Collisions Conference, Lake Tahoe, CA, July 13-18, 2003. (Poster)
24. R.A. Loomis, "The Intermolecular Interactions and Dynamics of Molecules at Very Low Temperatures: It's Not So Simple." University of Nevada, Reno, NV, April 11, 2003. (Departmental Seminar)
23. R.A. Loomis, "The Intermolecular Interactions and Dynamics of Molecules at Very Low Temperatures: It's Not So Simple." University of California, Davis, CA, April 10, 2003. (Departmental Seminar)
22. R.A. Loomis, "The Intermolecular Interactions and Dynamics of Molecules at Very Low Temperatures: It's Not So Simple." University of North Carolina, Chapel Hill, NC, April 2, 2003. (Departmental Seminar)
21. R.A. Loomis, "Watching Chemistry in Real-time: Catching Reactions in the Act and Teaching Them to Do What You Want Them to Do." CASW's 40th Annual New Horizons in Science Briefing, Washington University, Saint Louis, MO, October 27-30, 2002. (Invited Talk)
20. D.S. Boucher, J.P. Darr, A.C. Crowther, and R.A. Loomis, "Experimental interrogation of the He + ICl(X,v″=0) and He + ICl(B,v′) interactions and dissociation dynamics." Atomic and Molecular Interactions Gordon Research Conference, Bristol, RI, July 7-12, 2002. (Poster)
19. R.A. Loomis and M.D. Bradke, "Laser-induced fluorescence spectra of the linear He···ICl(X $^1\Sigma^+$) Complex." 57th Ohio State University International Symposium on Molecular Spectroscopy, Columbus, OH, June 17-21, 2002. (Contributed Talk)
18. R.A. Loomis and D.S. Boucher, "Using Femtosecond Pulse Shaping to Control and Interrogate the Evolution of Bimolecular Reaction Dynamics." Quantum Control of Atomic and Molecular Motion Gordon Research Conference, South Hadley, MA, July 29-August 2, 2001. (Poster)
17. M.D. Bradke and R.A. Loomis, "Experimental investigation of He···ICl intermolecular levels and dynamics: Evidence for a linear isomer in the ground state." Dynamics of Molecular Collisions Conference, Copper Mountain, CO, July 15-20, 2001. (Poster)
16. R.A. Loomis, "Using Lasers and Quantum Chemistry to Determine the Pathways of Chemical Reactions." University of Missouri – Saint Louis, Saint Louis, MO, April 9, 2001. (Departmental Seminar)
15. R.A. Loomis, "How can reactions be monitored and controlled experimentally in small clusters." Reactions in Small Clusters Workshop, Telluride, CO, August 1-6, 1999. (Invited Talk)
14. R.A. Loomis, "Probing and controlling bimolecular reaction dynamics using pre-reactive complexes as a launching pad." Reactions in Small Clusters Workshop, Telluride, CO, August 1-6, 1999. (Invited Talk)
13. R. Uberna, R.A. Loomis, and S.R. Leone, "Coherent control of the Li_2 E $^1\Sigma g^+$ ionization probability using ultrashort optical pulse shaping techniques." Atomic and Molecular Interactions Gordon Research Conference, New London, NH, June 28-July 3, 1998. (Poster)

12. R.A. Loomis, J.P. Reid, and S.R. Leone, "The role of tunneling in the alignment of product species following the photodissociation of ammonia species." Atomic and Molecular Interactions Gordon Research Conference, New London, NH, June 28-July 3, 1998. (Poster)
11. R.A. Loomis, J.P. Reid, and S.R. Leone, "Mechanisms and dynamics of alkyl radical/atom reactions determined by time-resolved Fourier transform infrared emission spectroscopy." 215th American Chemical Society National Meeting, Dallas, TX, March 29-April 2, 1998. (Poster)
10. R.A. Loomis and S.R. Leone, "Photodissociation dynamics of jet-cooled species using time-resolved FTIR emission spectroscopy." 13th Interdisciplinary Laser Science Conference, Long Beach, CA, October 12-17, 1997. (Contributed Talk)
9. R.A. Loomis and S.R. Leone, "Photodissociation dynamics of jet-cooled ammonia using time-resolved FTIR emission spectroscopy." Dynamics of Molecular Collisions Conference, Gull Lake, MN, July 20-25, 1997. (Poster)
8. R.A. Loomis and S.R. Leone, "Photodissociation dynamics of ammonia species cooled in a supersonic expansion." Molecular Energy Transfer Gordon Research Conference, Ventura, CA, January 5-10, 1997. (Poster)
7. R.A. Loomis, J.K. Klaassen, J. Lindner, P.G. Christopher, and S.R. Leone, "Vibrational deactivation and nascent vibrational state distributions of HOI / OH formed in the reaction of alkyl iodides + O / alkyl radicals + O atoms." Molecular Energy Transfer Gordon Research Conference, Ventura, CA, January 5-10, 1997. (Poster)
6. R.A. Loomis and M.I. Lester, "Stabilization of reactants in a weakly bound complex: OH–H_2 and OH–D_2." Dynamics of Molecular Collisions Conference, Asilomar, CA, July 16-21, 1995. (Poster)
5. R.A. Loomis, R.L. Schwartz, and M.I. Lester, "Cavity ring-down absorption spectroscopy of halogen systems." 10th Interdisciplinary Laser Science Conference, Dallas, TX, October 2-7, 1994. (Contributed Talk)
4. R.A. Loomis, R.L. Schwartz, and M.I. Lester, "Cavity ring-down absorption spectroscopy of halogen systems." 208th American Chemical Society National Meeting, Washington, DC, August 21-26, 1994. (Poster)
3. R.A. Loomis, R.L. Schwartz, and M.I. Lester, "Cavity ring-down absorption spectroscopy of halogen systems." Electronic Spectroscopy Gordon Research Conference, Andover, NH, August 14-19, 1994. (Poster)
2. L.C. Giancarlo, R.A. Loomis, M.T. Berry, M.I. Lester, and D.C. Clary, "Experimental determination of the intermolecular bending potential in OH–Ar ($A\ ^2\Sigma^+$)." 204th American Chemical Society National Meeting, Washington, DC, August 23-28, 1992. (Poster)
1. R.A. Loomis, L.C. Giancarlo, M.T. Berry, and M.I. Lester, "Experimental determination of the intermolecular bending potential in OH–Ar ($A\ ^2\Sigma^+$)." Atomic and Molecular Interactions Gordon Research Conference, New London, NH, July 20-24, 1992. (Poster)