Peter M. Weber

Dean of the Graduate School
Professor, Department of Chemistry
Brown University
Providence, R. I, 02912

Education:

The University of Chicago, Ph.D., December 1987 (with S. A. Rice).

Universität Karlsruhe, Germany, Diplom (Masters) in Chemistry, 1983.

Academic Appointments:

Brown University Dean of the Graduate School, 2010 -
Chair, Department of Chemistry, 2005 -2010
Professor, since 2001
Associate Professor, 1996 – 2001
Assistant Professor 1989 - 95

University of California, Berkeley, Post-doc, with Y. T. Lee, 1988-89.

Non-academic Appointments:

Founder and President, Ryon Technologies, Inc., Providence, R.I.

Honors & Awards:

Member, College of Reviewers for the Canada Research Chairs program, 2005

Salomon Research Award, Brown University, 2003.

Guest lecturer, Ohio State University, 'Frontiers in Spectroscopy,' Jan 29 to 31, 2003.

Dreyfus Distinguished New Faculty Grant, 1989

IBM Fellowship, 1987-1988

Swift Fellowship, 1986-1987

Research Areas:

Ultrafast time-resolved spectroscopy:

Chemical reaction dynamics and electronic relaxation phenomena

Rydberg Fingerprint Spectroscopy

Femtosecond time-resolved multi-photon ionization photoelectron spectroscopy

Unimolecular isomeric and conformeric reaction dynamics and kinetics

Memberships:

American Chemical Society

American Physical Society

Bunsen Gesellschaft (Germany)

American Association for the Advancement of Science.

Publications:

75. "Ultrafast Electron Microscopy for Chemistry, Biology and Material Science" S.A. Aseyev, P.M. Weber and A.A. Ischenko, Journal of Analytical Sciences, Methods and Instrumentation, Vol. 3, p. 30-53, 2013.

74. "Ultrafast structural and isomerization dynamics in the Rydberg-exited Quadricyclane – Norbornadiene System," Fedor Rudakov and Peter M. Weber, The Journal of Chemical Physics, 136, 1343031 - 7 (2012). See also Virtual Journal of Ultrafast Science, May 2012 (http://www.vjultrafast.org).

73. "The Far-UV Photochemical Bond Cleavage of n-Amyl Nitrite: Bypassing a Repulsive Surface" Michael P. Minitti, Yao Zhang, Martin Rosenberg, Rasmus Y. Brogaard, Sanghamitra Deb, Theis I. Sølling and Peter M. Weber; *J. Phys. Chem*. A 2012, 116, 810 – 819.

72. "Structural Dynamics and Energy Flow in Rydberg-Excited Clusters of N,N-Dimethylisopropylamine," Sanghamitra Deb, Michael P. Minitti, and Peter Weber, The Journal of Chemical Physics 135, 044319 (**2011**). See also Virtual Journal of Ultrafast Science, August 2011.

71. "Ultrafast Dynamics of 1,3-Cyclohexadiene in Highly Excited States," Christine C. Bühler, Michael P. Minitti, Sanghamitra Deb, Jie Bao, Peter M. Weber, Journal of Atomic, Molecular, and Optical Physics, Vol. 2011, Article ID 637593, 6 pages, **2011**. doi:10.1155/2011/637593.

70. "Electronic Effects on Photochemistry: The Diverse Reaction Dynamics of Highly Excited Stilbenes and Azobenzene," Jie Bao and Peter M. Weber, J. Am. Chem. Soc. **2011**, 133, 4164–4167.

69. "Structural Dynamics in Floppy Systems: Ultrafast Conformeric Motions in Rydberg-Excited Triethylamine," Sanghamitra Deb, Brian Bayes, Michael P. Minitti and Peter M. Weber, A. J. Phys. Chem. A **2011**, 115, 1804–1809.

68. "Ring-Closing and Dehydrogenation Reactions of Highly Excited Cis-Stilbene: Ultrafast Spectroscopy and Structural Dynamics" Jie Bao, Michael P. Minitti, and Peter M. Weber; J. Phys. Chem. A **2011**, 115, 1508–1515.

67. "Dissociative energy flow, vibrational energy redistribution and conformeric structural dynamics in bifunctional amine model systems," Joseph C. Bush, Michael P. Minitti and Peter M. Weber, *J. Phys. Chem. A* **2010**, *114,* 11078–11084.

66. "The Ultrafast Pathway of Photon-Induced Electrocyclic Ring Opening Reactions: The case of 1,3-cyclohexadiene" Sanghamitra Deb and Peter M. Weber, Annu. Rev. Phys. Chem. 2011. 62:19–39.

65. "Electron Diffraction with Bound Electrons: the Structure Sensitivity of Rydberg Fingerprint Spectroscopy" Xiao Liang, Michael G. Levy, Sanghamitra Deb, Joseph D. Geiser, Richard M. Stratt, and Peter M. Weber, Journal of Molecular Structure 978 (**2010**), pp. 250-256.

64. "Probing the Lifetimes of Internally Excited Amyl Nitrite Cations" Martin Rosenberg, Michael P. Minitti, Nerijus Rusteika, Christer Z. Bisgaard, Sanghamitra Deb, Peter M. Weber, Theis I. Sølling, *J. Phys. Chem. A* **2010**, *114,* 7021–7025.

63. "Ultrafast Formation of an Intramolecular Cation-Pi Bond," Joseph C. Bush, Michael P. Minitti and Peter M. Weber. Journal of Photochemistry and Photobiology A: Chemistry 213 (**2010**) 70–72.

62. "Ultrafast Curve Crossing Dynamics through Conical Intersections in Methylated Cyclopentadienes," Fedor Rudakov and Peter M. Weber, J. Phys. Chem. A, **2010**, 114 (13), pp 4501–4506.

61. "Ultrafast Dynamics of Highly Excited Trans-Stilbene: A Different Twist" Jie Bao and Peter M. Weber, J. Phys. Chem. Lett. **2010**, 1, 224–227.

60. "Ground State Recovery and Molecular Structure upon Ultrafast Transition through Conical Intersections in Cyclic Dienes," Fedor Rudakov and Peter M. Weber, Chemical Physics Letters 470, pp 187-190, (**2009**).

59. "Excited-state ions in femtosecond time-resolved mass spectrometry: An investigation of highly excited chloroamines", N. Rusteika, R. Y. Brogaard, T. I. Sølling, F. M. Rudakov and P. M. Weber, *J. Phys. Chem. A*, **2009**, *113* (1), pp 40–43.

58. "Electronic Spectroscopy and Ultrafast Energy Relaxation Pathways in the lowest Rydberg States of Trimethylamine," Job D. Cardoza, Fedor M. Rudakov and Peter M. Weber; J. Phys. Chem. A, **2008**, 112 (43), pp 10736–10743.

57. "Identification of isomeric flame components by Rydberg ionization spectroscopy," J. D. Cardoza, F. M. Rudakov, N. Hansen, P. M. Weber, Journal of Electron Spectroscopy and Related Phenomena, 165, 5–10 (**2008**).

56. "Resolved: Electronic states underneath broad absorptions," J. D. Cardoza and P. M. Weber, J. Chem. Phys. **127**, 036101-2 (**2007**). (See also: Virtual Journal of Ultrafast Science -- August 2007 Volume 6, Issue 8, http://www.vjultrafast.org).

55. "Time-resolved conformational dynamics in hydrocarbon chains," Michael P. Minitti and Peter M. Weber, *Phys. Rev. Lett.*, 98, 253004-1 to 4 (**2007**). (See also: Virtual Journal of Ultrafast Science -- July 2007 Volume 6, Issue 7, http://www.vjultrafast.org).

54. "The Ultrafast Photofragmentation Pathway of N,N-Dimethylisopropylamine," M.P. Minitti, J.L. Gosselin, T.I. Sølling and P.M. Weber, FemtoChemistry VII, Ed. A. W. Castleman Jr & M. L. Kimble, Elsevier (**2006**) p. 44 - 48.

53. "Spectroscopy and femtosecond dynamics of the ring-opening reaction of 1,3-cyclohexadiene," N. Kuthirummal, F. M. Rudakov, C. Evans, and P. M. Weber, J. Chem. Phys. **125**, 133307-1 to -8 (**2006**).

52. "Ultrafast time-resolved electron diffraction with megavolt electron beams," J. B. Hastings, F. M. Rudakov, D. H. Dowell, J. F. Schmerge, J. Cardoza, J.M. Castro, S.M. Gierman, H. Loos, and P. M. Weber, Appl. Phys. Lett. 89, 184109 (**2006**).

51. "Megavolt electron beams for ultrafast time-resolved electron diffraction," F. M. Rudakov, J. B. Hastings, D. H. Dowell, J. F. Schmerge, and P. M. Weber, AIP Conf. Proc. 845, 1287 (**2006**); doi: 10.1063/1.2263560.

50. "Rydberg Fingerprint Spectroscopy of Hot Molecules: Structural Dispersion in Flexible Hydrocarbons" M.P. Minitti, J.D. Cardoza and P.M. Weber, *J. Phys. Chem. A* **2006,** *110,* 10212-10218.

49. "Edward Forbes Greene,' (Obituary), Peder Estrup, Peter Toennies, Peter Weber, *Physics Today*, June 2006, p. 79 (**2006**).

48. "Structure sensitive photoionization via Rydberg levels," N. Kuthirummal and P. M. Weber, *J. Mol. Structure*, *787*, 163 – 166 (**2006**).

47. "Energy Flow and Fragmentation Dynamics of N, N, Dimethyl-isopropyl amine," Jaimie L. Gosselin, Michael P. Minitti, Fedor M. Rudakov, Theis I. Sølling and Peter M. Weber, *Journal of Physical Chemistry A*, **2006,** *110,* 4251-4255.

46. "Ultrafast Electron Microscopy in Materials Science, Biology, and Chemistry," Wayne E. King, Geoffrey H. Campbell, Alan Frank, Bryan Reed, John Schmerge, Bradley J. Siwick, Brent C. Stuart, and Peter M. Weber, Journal of Applied Physics, **97**, 111101 (**2005**).

45. "Rydberg Fingerprint Spectroscopy: A New Spectroscopic Tool With Local And Global Structural Sensitivity," J. L. Gosselin and Peter M. Weber, J. Phys. Chem. A, 109, pp 4899 – 4904 (**2005**). (See cover)

44. "Control of local ionization and charge transfer in the bifunctional molecule 2-phenylethyl-N,N-dimethylamine using Rydberg fingerprint spectroscopy," W. Cheng, N. Kuthirummal, J. Gosselin, T. I. Sølling, R. Weinkauf, and P. M. Weber, Journal of Physical Chemistry A, 109, pp 1920 – 1925 (**2005**).

43. "Experimental and theoretical studies of pump-probe electron diffraction: time-dependent and state-specific signatures in small cyclic molecules," Peter M. Weber, Ray C. Dudek, Seol Ryu, and Richard M. Stratt, in "*Femtochemistry and Femtobiology: Ultrafast Events in Molecular Science,"* Eds. M. Martin and J. T. Hynes, Elsevier, p. 19, (**2004**).

42. "Probing reaction dynamics with Rydberg states: The ring opening reaction of 1, 3-cyclohexadiene," N. Kuthirummal and P. M. Weber, in "*Femtochemistry and Femtobiology: Ultrafast Events in Molecular Science,"* Eds. M. Martin and J. T. Hynes, Elsevier, p. 37, (**2004**).

41. "Centering of ultrafast time-resolved pump-probe electron diffraction patterns" J. D. Cardoza, R. C. Dudek, R. J. Mawhorter, and P. M. Weber. *Chemical Physics*, **299**, 307 – 312, (**2004**).

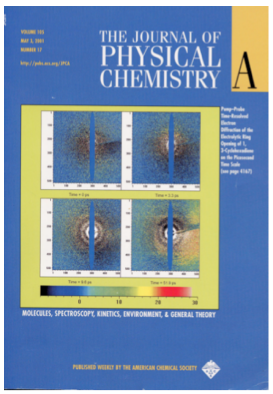
40. "Electron diffraction of molecules in specific quantum states: a theoretical study of vibronically excited s-tetrazine" S. Ryu, R. M. Stratt, K. K. Baeck and P. M. Weber, *Journal of Physical Chemistry A,* **2004**, *108*, 1189 - 1199.

39. "Rydberg states: sensitive probes of molecular structure," N. Kuthirummal and P. M. Weber, Chemical Physics Letters, **378**, 647 – 653 (**2003**).

38. "Diffraction signals of aligned molecules in the gas phase: tetrazine in intense laser fields," S. Ryu, R. M. Stratt, and P. M. Weber, *Journal of Physical Chemistry A*, **107**, 6622-6629 (**2003**).

37. "A 9 eV superexcited state of 1,3-cyclohexadiene revealed by double resonance ionization photoelectron spectroscopy." Wei Cheng, Conor L. Evans, Narayanan Kuthirummal, and Peter M. Weber; Chem. Phys. Lett. **349**(5,6), 405-410 (2001).

36. "Ultrafast diffraction imaging of the electrocyclic ring-opening reaction of 1,3-cyclohexadiene," Ray C. Dudek and P. M. Weber, *Journal of Physical Chemistry A,* **105**, 4167-4171 (2001). (See cover)



35. "Ultrafast dynamics in the 3-photon double resonance ionization of phenol via the S_2 electronic state," Carolyn P. Schick and P. M. Weber; *J. Phys. Chem. A*, **105**, 3735-3740 (2001).

34. "Ultrafast dynamics in superexcited states of phenol," Carolyn P. Schick and P. M. Weber; *J. Phys. Chem. A*, **105**, 3725-3734 (2001).

33. "The Diffraction Signatures of Individual Vibrational Modes in Polyatomic Molecules," S. Ryu, P. M. Weber, and R. M. Stratt; *J. Chem. Phys.* **112**, 1260-1270, (2000).

32. "Femtosecond Multi-Photon Ionization Photoelectron Spectroscopy of the S_2 State of Phenol," C. P. Schick, S. D. Carpenter, and P. M. Weber; *J. Phys. Chem. A*, **103**, 10470-10476 (1999).

31. "Experimental Adaptive Optimization of Mass Spectrometer Ion Optic Voltages Using a Genetic Algorithm;" S. D. Carpenter, C. P. Schick, and P. M. Weber; *Review of Scientific Instruments*, **70**, 2262-2267 (1999).

30. "Feedback Quantum Control of Population Transfer Using Shaped Femtosecond Pulses;" C. J. Bardeen, V. V. Yakovlev, K. R. Wilson, S. D. Carpenter, P. M. Weber, and W. S. Warren; in Ultrafast Phenomena XI, eds. T. Elsaesser, J. G. Fujimoto, D. Wiersma and W. Zinth. Berlin: Springer-Verlag, p. 645-647, (1998).

29. "New Ways to Observe and Control Dynamics" K. R. Wilson, C. J. Bardeen, C. P. J. Barty, G. J. Brakenhoff, A. H. Buist, J. Cao, S. D. Carpenter, J. Che, D. N. Fittinghoff, M. Müller, J. A. Squier, W. S. Warren, P. M. Weber, V. V. Yakovlev; In Laser Techniques for Condensed-Phase and Biological Systems, eds. N. Scherer and J. M. Hicks, Proceedings of SPIE--the International Society for Optical Engineering, 3273. Bellingham, WA: SPIE, 1998; p. 214 - 218.

28. "Pump-probe diffraction imaging of vibrational wave functions" J. D. Geiser and P. M. Weber; *J. Chem. Phys.* **108**, 8004-8011 (1998).

27. "Structure and Dynamics of the S_3 state of CS_2" R. T. Sadeghi, S. R. Gwaltney, J. L. Krause, R. T. Skodje, and P. M. Weber. *J. Chem. Phys.* **107**, 6570-6576 (1997).

26. "Feedback Quantum Control of Molecular Electronic Population Transfer" C. J. Bardeen, V. V. Yakovlev, K. R. Wilson, S. D. Carpenter, P. M. Weber, and W. S. Warren. *Chem. Phys. Lett.* **280**, 151-158 (1997).

25. "Ultrafast x-ray diffraction and absorption." C. P. J. Barty, M. Ben-Nun, T. Guo, F. Ráksi, C. Rose-Petruck, J. Squier, K. R. Wilson, V. Yakovlev, P. M. Weber, Z. Jiang, A. Ikhlef and J. C. Kieffer, in "*Time resolved electron and x-ray diffraction*", Eds. P. M. Rentzepis and J. Helliwell, Oxford University Press, New York, (1997) pp. 44-70.

24. "Time-resolved surface electron diffraction." H. E. Elsayed-Ali and P. M. Weber, in "*Time resolved electron and x-ray diffraction*", Eds. P. M. Rentzepis and J. Helliwell, Oxford University Press, New York, (1997) pp. 284-323.

23. "Direct imaging of Excited Electronic States using Diffraction Techniques: Theoretical Considerations" M. Ben-Nun, T. J. Martinez, P. M. Weber, and K. R. Wilson. *Chem. Phys. Lett.* **262**, 405-414 (1996).

22. "Sub-20-fs multiterawatt laser and ultrafast x-ray source." C. P. J. Barty, T. Guo, C. LeBlanc, F. Ráksi, C. Rose-Petruck, J. A. Squier, B. Walker, P. M. Weber, K. R. Wilson, V. V. Yakovlev, and K. Yamakawa; in "*Ultrafast Phenomena X,*", Eds. J. Fujimoto, W. Zinth, P. F. Barbara and W. H. Knox, Springer Verlag, Berlin, p. 77 (1996).

21. "Extended operation of a wide-range, all magnetic bearing turbomolecular pump without backing" J. R. Thompson, P. M. Weber, and R. Hellmer. *J. Vac. Sci. Technol.* **A 14(5)**, 2965-2967 (1996).

20. "High Repetition Rate Time-Resolved Gas Phase Electron Diffraction." J. D. Geiser and P. M. Weber. Proceedings, SPIE conference on Time Resolved Electron and X-ray Diffraction, July 1995, San Diego, Vol. 2521, pp.136-144.

19. "A Reflectron Design for Femtosecond Electron Guns." P. M. Weber, S. D. Carpenter, and T. Lucza. Proceedings, SPIE conference on Time Resolved Electron and X-ray Diffraction, July 1995, San Diego, Vol. 2521, p23-30.

18. "Pump-Probe Low Energy Electron Diffraction." J. Thompson, P. M. Weber, and P. J. Estrup. SPIE conference on Time Resolved Electron and X-ray Diffraction, July 1995, San Diego, Vol. 2521, pp. 113-122.

17. "Time-delayed two-color photoelectron spectra of aniline, 2-aminopyridine, and 3-aminopyridine: snapshots of the nonadiabatic curve crossings." B. Kim, C. P. Schick, and P. M. Weber; *J. Chem. Phys* **103**, 6903-6913 (1995).

16. "Two-Color Laser Photoelectron Spectroscopy of Electronically Excited Cations: Vibrationally Resolved Spectrum of the $^2A_2$ State of Aniline$^+$." B. Kim and P. M. Weber, *J. Phys. Chem* **99**, 2583-2588 (1995).

15. "Ultrafast Dynamics as reflected in MPI-Photoelectron spectra: Aniline, Azulene, Phenanthrene and Carbon Disulfide." N. Thantu, B. Kim, and P. M. Weber. *Ultrafast Phenomena IX*, Editors: P. F. Barbara, W. H. Knox, G. A. Mourou and A. H. Zewail, Springer, 1994, pp. 497-498.

14. "Broad band superfluorescence emission of the $^3H_4$->$^3H_6$ transition in a Tm-doped multicomponent silicate fiber." K. Oh, A. Kilian, L. Reinhart, Q. Zhang, T. F. Morse, and P. M. Weber, *Optics Lett.,* **19**, 1131-1133, (1994).

13. "Continuous-wave oscillation of thulium sensitized holmium doped silica fiber laser." K. Oh, T. F. Morse, A. Kilian, L. Reinhart, and P. M. Weber, *Optics Lett.*, **19**, 278-280, (1994).

12. "Dependence of two photon ionization photoelectron spectra on laser coherence bandwidth." N. Thantu and P. M. Weber, *Chem. Phys. Lett.* **214**, 276-280, (1993).

11. "Resonant two photon ionization of phenanthrene via its transient S_2 state." N. Thantu and P. M. Weber, *Z. Phys. D.*, **28**, 191-194 (1993).

10. "High resolution photoelectron spectroscopy: The vibrational spectrum of the 2-aminopyridine cation." B. Kim, N. Thantu and P. M. Weber, *J. Chem. Phys.*, **97**, 5384-5391 (1992).

9. "Photoionization via transient states: A coherent probe of molecular eigenstates." P. M. Weber and N. Thantu., *Chem. Phys. Lett.*, **197**, 556-561 (1992).

8. "A novel source design for molecular beam machines." P. M. Weber, J. Stanks, N. Thantu and R. Hellmer, *Journal of Vacuum Science and Technology*, **A10**, 408-410 (1992).

7. "Mode specific intramolecular vibrational relaxation in S_1 Tetrazine-Argon: a perturbation theory analysis." P. M. Weber and S. A. Rice; *J. Phys. Chem.*, **92**, 5470-5474 (1988).

6. "Intramolecular vibrational relaxation in the S_0 state of s-Tetrazine-X (X= Ar, Kr and Xe)." P. M. Weber and S. A. Rice; *J. Chem. Phys.*, **88**, 6120-6133 (1988).

5. "Ensemble Dephasing in vibrationally excited jet cooled Tetrazine and its complexes with Ar, Kr and Xe." P. M. Weber and S. A. Rice; *J. Chem Phys.*, **88**, 6107-6119 (1988).

4. "van der Waals bond stretch and bend frequencies in the molecules Tetrazine-X (X = Xe, Kr, Ar)." P. M. Weber, J. T. Buontempo, F. Novak and S. A. Rice; *J. Chem. Phys.*, **88**, 6082-6091 (1988).

3. "Distribution of atoms at the surface of liquid mercury." S. W. Barton, B. N. Thomas, F. Novak, P. M. Weber, J. Harris, P. Dolmer, J. M. Bloch and S. A. Rice; *Nature* **321**, 685-687 (1986).

2. "Interface between an oscilloscope and a multichannel analyzer." P. M. Weber and D. Smith; *Rev. Sci. Instrum.* **57**, 3132 (1986).

1. "Picosecond CARS as a probe of ground electronic state intramolecular vibrational redistribution." D. J. Tannor, S. A. Rice and P. M. Weber; *J. Chem. Phys.* **83**, 6158-614 (1985).

Patents:

"Methods and Apparatus for the Characterization and Analysis of the shape of molecules and molecular clusters, and for the separation of desired isomers, based on Rydberg states." US patent #7220972, May 22, 2007.

Grants:

National Science Foundation: "Combustion of Highly Strained Hydrocarbons: Non-Intrusive Isomer Specific Detection of Complex Combustion Intermediates". With Fedor Rudakov, Co-PI. 9/1/2013 – 8/31/2016.

Department of Energy: "Probing Chemical Dynamics by Structurally Sensitive Photoionization." 11/01/12-10/31/13.

Andrew W. Mellon Foundation: "Open Graduate Programs: Graduate Education - Uniquely Brown". August 2011.

National Science Foundation: "Piloting an Inter-Ivy League Alliance for Graduate Education and the Professoriate". August 2011. PI: Medeva Ghee.

Ryon Tecnologies, Inc.: "Rydberg Fingerprint Spectroscopy for Sensitive & Shape-Specific Molecular Identification". 8/26/11 - 2/25/12.

Department of Energy: "Probing Chemical Dynamics by Structurally Sensitive Photoionization." 11/01/06-10/31/12.

Department of Energy: "Brown Energy Initiative" 9/1/2009 – 8/30/2010.

National Institute of Health: "Sequencing by Nanopore Mass Spectrometry." PI: Prof. Derek Stein. 8/1/09 to 7/30/11.

Ryon Technologies, Inc., "Molecular Shape Detection for Chemical Analysis," 8/27/08 – 8/26/10.

Army Research Office: "Nanoscale Structural Dynamics by Pulsed Electron Microscopy." 09/15/09-05/30/10.

Charles Draper Laboratories: "Online Real-time Diagnostics for Combustion Performance in Coal-Fired Power Plants" 2009-2010. PI: Prof. E. Suuberg.

Brown University Seed Fund: "Alignment Between High School and University Chemistry Curricula," PI: Prof. K. Wong.

Ryon Technologies, Inc.: "Molecular Shape Detection for Chemical Analysis." 08/07/07-02/06/08.

National Institute of Health: "A shape-sensitive mass spectrometer for protein analysis." (R21) 9/15/05 to 9/30/08.

Cosmos Corporation: "Program Evaluation of the Math and Science Partnership Program," PI: Prof. K. Wong, 09/01/05-09/30/07.

Army Research Office: "Instrumentation for shape-sensitive mass spectrometry." 4/1/2005.

Department of Energy: "Time-resolved structural dynamics: the ring-opening reaction of 1,3-cyclohexadiene." 9/1/2003 – 10/14/06.

Army Research Office: "Instrumentation for time-resolved scanning electron microscopy." 8/1/2003.

Army Research Office: "Time-resolved scanning electron microscopy." 6/16/2003 – 6/15/2006.

Brown University: "Rydberg fingerprint spectroscopy of Proteins." Salomon Research Award

Army Research Office: "The quest for the direct observation of quantum mechanical wave functions." 6/1/2002.

The Andrew W. Mellon Foundation: "Evaluating Web-Based Instruction in Chemistry." 2000 - 2005. Joint grant with Profs. C. Rose-Petruck, J. D. Doll, and J. Tyler.

ACS Petroleum Research Fund: "Molecular Photoelectron Spectroscopy at the ACS National Meeting, April 2001, San Diego, CA." Joint with S. T. Pratt, Argonne National Laboratory.

Army Research Office: "Wave functions and reaction pathways of energetic molecules." 3/1/2000 to 2/28/2003.

Anocoil Corp.: Unrestricted research funds. 10/1999.

Torrey Foundation: Unrestricted funds. 10/1996.

Army Research Office: "Ultrashort electron pulses." 6/1/96 to 1/31/00.

The Alfred P. Sloan Foundation: "Integrated Learning Networks in Chemical Education." 1995. Joint grant with Profs. J. D. Doll, M. M. Banaszak Holl, J. Oliver, C. T. Seto and M. B. Zimmt.

The Alfred P. Sloan Foundation: "Asynchronous Interactive Learning Tools in the Undergraduate Chemistry Curriculum." 1994. Joint grant with Prof. J. D. Doll.

Army Research Office: "Coherent control and time resolved electron diffraction: a new tool for imaging molecular motions and inversion." Joint grant with Prof. H. Rabitz, Princeton; 12/1/1994.

National Science Foundation: "The generation and characterization of ultrashort electron pulses." Joint grant with Dr. A. Lorincz, Institute of Isotopes, Hungary. 9/1/93 to 2/29/96.

Army Research Office: "The generation and characterization of ultrashort electron pulses and their application to time resolved electron diffraction." 7/1/92 to 12/31/95.

Army Research Office: "Ultrashort electron pulse experiments." 9/1/93 to 8/31/96.

The Dreyfus Foundation: "A modern spectroscopy laboratory." 1992. Joint grant with Prof. P. J. Estrup.

Ford Motor Corp: "Time resolved surface studies by pulsed electron beam techniques." 1991. Joint grant with Prof. P. J. Estrup.

Petroleum Research Fund: "Photoelectron spectroscopy of molecules in transient states." 1989.

The Dreyfus Foundation: "Photoelectron spectroscopy of molecules in transient states." 1989.

Invited Lectures: 2008 - Present

1. Femto11, The Copenhagen Conference on Femtochemistry, Copenhagen, Denmark, July 7 – 12, 2013, "Structural Molecular Dynamics as Probed through Rydberg States: the Ultrafast Internal Conversion and the Slow Charge Transfer of N,N'-Dimethyl Piperazine."
2. 15th European Symposium on Gas Electron Diffraction Frauenchiemsee, Germany June 23rd – 28th 2013, "Electron and x-ray probes of molecular structure on ultrafast time scales."
3. Danish Technical University, Copenhagen, Denmark, March 21, 2013, "Molecules in Motion: Watching Chemical Reactions."
4. Banff Meeting on Structural Dynamics, Banff, Canada, Feb. 17-20, 2012, "Watching Chemical Dynamics in Real Time: Can Gas-Phase x-Ray Diffraction Probe the Dynamics of 1,3-Cyclohexadiene?" Peter M. Weber[1], Michael P. Minitti[2], James Budarz[1], Vale Cofer-Shabica[1], Christine Buehler[1], Jerome B. Hastings[2] (Talk given by James Budarz because of scheduling conflicts).
5. Gordon Conference on Energetic Materials, June 17-22, 2012, Mount Snow Resort, VT, USA, "Fast reactions of hot molecules: Probing ultrafast structural dynamics using Rydberg Fingerprints."
6. Banff Meeting on Structural Dynamics, Banff, Canada, Feb. 19-22, 2012, "Structurally Sensitive Spectroscopy for Ultrafast Chemical Dynamics: Applications to Dimethylpiperazine and Quadricyclane."
7. University of Iceland, Reykjavik, July 16, 2010: "Fast and Furious – Slow and Soft: Chemical Dynamics in the Ballistic and the Conformeric Limits."
8. 239th ACS National Meeting, San Francisco, CA, March 21, 2010, "Ultrafast Conformeric Transformations of Floppy Molecules and Reorganization of Molecular Clusters Probed with Rydberg Electrons."
9. 23rd Austin Symposium on Molecular Structure, March 7– 9, 2010, Austin, TX, "Ultrafast structural dynamics in tertiary amines and cyclic dienes."
10. Banff Meeting on Structural Dynamics, Banff, Canada, Feb. 25-28, 2010, "Structural Dynamics with Bound Electrons: Isomeric and Conformeric Motions of Hot Molecules."
11. Universität Bielefeld, Germany, January 12, 2010, "Spying Transient Molecular Structures using Rydberg Electrons."
12. 238th ACS National Meeting, Washington, DC, August 16-20, 2009, "From photoelectron spectroscopy to structural dynamics: Molecular motions and conformeric transformations in extended molecular systems."
13. Universität Karlsruhe, Germany, July 09, 2009: "Fast and furious - subtle and slow: Electrocyclic and Conformeric Transformations as seen with Ultrafast Structure-Sensitive Electron Spectroscopy."

14. Universität Basel, Switzerland, July 08, 2009: "Fast and furious - subtle and slow: Electrocyclic and Conformeric Transformations as seen with Ultrafast Structure-Sensitive Electron Spectroscopy."
15. U.S. Department of Energy, Office of Basic Energy Sciences Combustion Research Meeting, May 27, 2009, "Ultrafast Structural Dynamics as seen through Rydberg Electrons"
16. Brown University, DUG meeting, November 11, 2008: "Thoughts on alternative energy"
17. The University of Connecticut, Storrs, CT, November 12, 2008: "Time-resolved studies of ultrafast relaxation processes: internal conversion, crossings through conical sections, isomerization and conformerization"
18. Nordic Femtochemistry Conference, Aarhus, Denmark, Oct. 1 – 4, 2008: "Rydberg electrons as spies for molecular structures and motions "
19. 235th ACS National Meeting & Exposition, April 7, 2008, New Orleans, LA, "Probing time-dependent molecular structures with Rydberg electrons."
20. 22nd Austin Symposium on Molecular Structure, March 1 – 4, 2008, Austin, TX, "Spying molecular structures with electrons"

Previous research Lectures:

1. 2007 APS March Meeting, March 5-9, 2007, Denver, Colorado: "Pump-Probe Photoionization Spectroscopy of pentamethyl cyclopentadiene."
2. 2007 APS March Meeting, March 5-9, 2007, Denver, Colorado: "Ultrafast Time-resolved Electron Diffraction with Megavolt Electron Beams."
3. 2007 APS March Meeting, March 5-9, 2007, Denver, Colorado: "Rydberg electrons spy conformational dynamics of hot molecules."
4. Wesleyan University, Middletown, CT, December 08, 2006: "Molecular Structure And Dynamics As Seen By Rydberg Electrons
5. Universität Karlsruhe, Germany, June 30, 2006: "Purely Electronic Spectroscopy to Probe Molecular Structure and Dynamics"
6. U.S. Department of Energy, Office of Basic Energy Sciences Combustion Research Meeting, May 31, 2006, "Time-Resolved Structural Probes of Molecular Dynamics"
7. 21st Austin Symposium on Molecular Structure, March 06, 2006, "Structural Dynamics of Tertiary Amines probed by Rydberg Fingerprint Spectroscopy,"
8. University of Colorado, Boulder; February 10, 2006: "Observing Molecular Dynamics with Electrons."
9. 2005 Frontiers in Optics/Laser Science XXI Tucson, Arizona October 19, 2005, "Molecular Structure and Dynamics as Seen through Rydberg States".

10. 2005 Meeting of the Atomic, Molecular and optical sciences program, Office of Basic Energy Sciences, US Department of Energy, Airlie Center, Warrenton, VA, September 11 – 14, 2005 (Plenary Lecture): "Ultrafast Molecular Dynamics with Ultrashort Electron Pulses
11. Excited State Processes in Electronic and Bio Nanomaterials, Santa Fe, NM, August 8 - 11, 2005: "Characterization of Molecular Shape and Charge Distributions by Rydberg Fingerprint Spectroscopy"
12. 14th biennial APS Topical Conference on Shock Compression of Condensed Matter (SCCM-05), Baltimore, August 1, 2005: "Ultrafast Probes of Structural Dynamics"
13. Lawrence Livermore National Laboratory, July 22 2005: "MeV-UED: A Start!"
14. 11th European Symposium on Gas Electron Diffraction, Blaubeuren, Germany, June 27, 2005: "Pump-probe diffraction with very slow and very fast electrons."
15. 88th Canadian Chemistry Conference, Saskatoon, CA, May 29, 2005: "Excited state structure and dynamics as probed with very slow and very fast electrons."
16. MIT, May 03, 2005: "New Techniques for Time-Dependent Structure Characterization."
17. Barrington High School, January 21, 2005: "Chemistry: Molecules – Structure – Function."
18. Lawrence Livermore National Laboratory, July 23 2004: "Electron Probes of Molecular Dynamics"
19. 1st National Laboratory and University Alliance Workshop on Ultrafast Electron Microscopies, Pleasanton, CA, April 16 2004: "Ultrafast electron diffraction in Chemistry."
20. Stanford Synchrotron Radiation Laboratory, Palo Alto, CA, April 15 2004: "Probing molecular dynamics with electrons."
21. 227th ACS National Meeting, Anaheim, CA, March 28-April 1, 2004: "Molecular structure and dynamics observed by ultrafast photoionization via Rydberg states."
22. 20th Austin Symposium on Molecular Structure, Austin, March 8, 2004: "Rydberg fingerprints: a tool to characterize molecular structures."
23. University of Toronto, Toronto, Canada, December 17, 2003: "Probing molecular dynamics with short photon and electron pulses."
24. American Crystallographic Association, 2003 Meeting, Covington, Kentucky, July 28 2003: "Probing excited molecular states with pulsed electron beams."
25. Femtochemistry VI, Paris, France, July 7 2003: "Pump-probe electron diffraction."
26. 10th European Symposium on Gas Electron Diffraction, St. Petersburg, Russia, June 27 2003: "Experimental and theoretical investigations of pump-probe electron diffraction."

27. 225th National Meeting of the American Chemical Society, New Orleans,, LA, March 23-27, 2003: "Dynamics of Rydberg-excited 1,3-cyclohexadiene." (Talk held by Narayanan Kuthirummal.)
28. Workshop "Ultrafast science with x-rays and electrons," Montreux, Switzerland, April 11, 2003: "Excited state structure, dynamics and wave functions by electron diffraction."
29. Ohio State University, Columbus, Ohio, January 31, 2003: "Pump-probe electron diffraction for probing excited states and chemical dynamics."
30. Ohio State University, Columbus, Ohio, January 29, 2003: "The foundations of electron diffraction."
31. Universität Karlsruhe, Karlsruhe, Germany, June 19, 2002: "Energy and structure: ultrafast dynamics in excited molecules."
32. 223rd National Meeting of the American Chemical Society, Orlando, FL, April 9, 2002: "Electron diffraction and photoelectron studies of the electrocyclic ring opening reaction of 1,3-cyclohexadiene."
33. University of Connecticut, Storrs, March 7, 2002: "Energy and structure: ultrafast dynamics in excited molecules."
34. 19th Austin Symposium on Molecular Structure, Austin, TX, March 4, 2002: "Time-Resolved Pump-Probe Electron Diffraction of 1,3-cyclohexadiene."
35. Universität Düsseldorf, Düsseldorf, Germany, January 17, 2002: "Spectroscopic and structural approaches to ultrafast molecular dynamics."
36. Universität Köln, Köln, Germany, January 14, 2002: "Energy and structure: ultrafast dynamics in excited molecules."
37. Gordon Research Conference 'Photoions, Photoionization and Photodetachment', July 2001: "Probing the electrocyclic ring opening reaction of 1,3-cyclohexadiene." ('Hot-topic' talk).
38. New England Regional Meeting of the American Chemical Society, June 25, 2001, Durham, New Hampshire: "The ring opening reaction of 1,3-cyclohexadiene: photoelectron and electron diffraction studies on femtosecond and picosecond time scales." Narayanan Kuthirummal, Ray C. Dudek, Conor L. Evans, Wei Cheng, Job D. Cardoza, Jaimie Gosselin and Peter M. Weber. (Invited talk held by Narayanan Kuthirummal.)
39. 9th Symposium on Gas Electron Diffraction, Blaubeuren, Germany, June 28, 2001: "Progress in real-time pump-probe electron diffraction."
40. Brookhaven National Laboratory, March 8, 2001: "Pump-probe diffraction experiments"
41. University of Massachusetts, Amherst, February 8, 2001: "Ultrafast spectroscopy and diffraction."
42. Technische Universität, München, Germany, October 12, 2000: "Ultrafast dynamics in superexcited phenol."

43. Max-Born Institut, Berlin, Germany, October 10, 2000: “Pump-probe diffraction experiments.”
44. UConn-Wesleyan-Yale Chemical Physics Seminar, October 3, 2000: "Ultrafast dynamics in superexcited phenol."
45. North Eastern Regional Meeting of the ACS, June 20, 2000; "Ultrafast dynamics in superexcited states of phenol."
46. 55th Ohio State University International Symposium on Molecular Spectroscopy, June 16 2000: “Studying the dynamics of the ring opening reaction of 1,3-cyclohexadiene.” (talk held by Ray Dudek)
47. Argonne National Laboratory, Chicago, IL; March 6, 2000: “Fundamental and technical aspects of pump-probe diffraction.”
48. Clark University, Worcester, MA; December 6, 1999: "Adventures in Femtosecond Resonance Ionization."
49. Gordon Research Conference: Photoions, Photoionization & Photodetachment; July 1999: “Pathways in Photoionization: the Femtosecond Resonance Ionization of Phenol.”
50. University of Connecticut, Storrs, CT, January 1999: "Pump-Probe Diffraction."
51. 53rd International Symposium on Molecular Spectroscopy, June 15-19 1998: "Femtosecond Multi-Photon Ionization via Short-Lived Resonances."
52. The University of Rhode Island, Kingstown RI, November 1996: "Pump-Probe Diffraction Experiments."
53. Max Planck Institut für Quantenoptik, Munich, July 1996; "Ultrafast Dynamics Experiments with short Laser and Electron Pulses."
54. American Chemical Society Conference, New Orleans, March 1996; "MPI - Photoelectron Spectroscopy of short lived species."
55. Yale University, New Haven, CT, Oct. 10, 1995; "Ultrafast Dynamics Experiments with short Laser and Electron Pulses."
56. SPIE, July 1995, San Diego; "High Repetition Rate Time-Resolved Gas Phase Electron Diffraction." (talk held by J. Geiser)
57. SPIE, July 1995, San Diego; "Femtosecond Reflectron Guns."
58. SPIE, July 1995, San Diego; "Pump-Probe Low Energy Electron Diffraction." (talk held by J. Thompson)
59. Institute of Isotopes, Hungary, Oct 12, 1994; "Ultrafast Dynamics in isolated Molecules and on Surfaces: experiments with short Laser and Electron Pulses."
60. University of Szeged, Hungary, Oct 11, 1994; "Ultrafast Dynamics of free Molecules."
61. ILS-X, 10th Interdisciplinary Laser Science Conference, Dallas, TX, Oct 2-7, 1994; "Coherent Superposition States in large Molecules."

62. University of Wisconsin, Madison, WI, Sep 6, 1994; "Ultrafast Dynamics in isolated Molecules and on Surfaces: experiments with short Laser and Electron Pulses."
63. Los Alamos National Laboratory, Los Alamos, NM, May 12, 1994; "Pump-Probe experiments in Molecular Beams with short Laser and Electron Pulses."
64. Tufts University, Medford, MA, April 19, 1994; "Ultrafast Dynamics in isolated Molecules and on Surfaces: experiments with short Laser and Electron Pulses."
65. Providence College, Providence, RI, March 4, 1994; "Ultrafast Dynamics in isolated Molecules and on Surfaces: experiments with short Laser and Electron Pulses."
66. University of California, San Diego, February 8, 1994; "Pump-Probe experiments in Molecular Beams with short Laser and Electron Pulses."
67. Life Technologies, Inc., Baltimore, MD, February 3, 1994; "Rapid Sequencing by Mass Spectroscopy."
68. Brookhaven National Laboratory, January 6, 1994; "Pump-Probe experiments in Molecular Beams with short Laser and Electron Pulses."
69. Boston College, December 10, 1993; "Multi-Photon Ionization Photoelectron Spectroscopy with short laser pulses."
70. North Eastern Regional Meeting of the ACS, June 23, 1993; "Effects of Ultrashort-lived Resonances on Multiphoton Ionization."
71. Wesleyan University, December 4, 1992; "Tuning Properties of large molecules with short Laser Pulses: Coherence effects in 2-Photon Ionization."
72. University of Rhode Island, October 23, 1992; "Tuning Properties of large molecules with short Laser Pulses: Coherence effects in 2-Photon Ionization."
73. University of Missouri, Columbia, October 25, 1991; "Photoionization via Transient resonances: a new probe for vibronic coupling effects."

Posters, contributions by graduate students and talks by research collaborators:

68th Ohio State University International Symposium on Molecular Spectroscopy, June 2013, "Structural Motions and Charge Delocalization in Electronically Excited N, N'-Dimethylpiperazine," Xinxin Cheng, Sanghamitra Deb and Peter M. Weber.

66th Ohio State University International Symposium on Molecular Spectroscopy, June 2011, "Ultrafast Structural Dynamics of 1,3-Cyclohexadiene: Electronic State Dependence" Christine Bühler and Peter M. Weber.

66th Ohio State University International Symposium on Molecular Spectroscopy, June 2011, "The Structural Response to Electronic Excitation: Tertiary Amines" Xinxin Cheng, Yao Zhang, Michael P. Minitti, Sanghamitra Deb, James Budarz, Peter M. Weber.

ACS 240th National Meeting, Boston, August 2010 "Structural Dynamics of 1,3-Cyclohexadiene" Christine Buehler, Michael P. Minitti, Sanghamitra Deb, Jie Bao, Peter M. Weber.

Gordon Conference, July 2010: "Structure, Energetics, Dynamics and Ultrafast Proton Transfer in N, N-Dimethylisopropylamine Clusters" Sanghamitra Deb, Michael P. Minitti and Peter M. Weber.

239th ACS National Meeting, San Francisco, CA, March 24, 2010, "Ultrafast conformational dynamics of hot, Rydberg-excited triethylamine: Determined by the Rydberg electron" S. Deb, Peter M. Weber.

239th ACS National Meeting, San Francisco, CA, March 24, 2010, "Nanopore mass spectrometry: A new approach to single-molecule DNA sequencing" Joseph Bush, Derek Stein, Peter M. Weber.

239th ACS National Meeting, San Francisco, CA, March 24, 2010, "Ultrafast structural dynamics in highly excited trans-stilbene" Jie Bao, Peter M. Weber.

238th ACS National Meeting, Washington, DC, August 16-20, 2009, "Conformer dynamics in vibrationally hot tertiary amines probed with ultrafast Rydberg Fingerprint Spectroscopy." M. P. Minitti and P. M. Weber.

238th ACS National Meeting, Washington, DC, August 16-20, 2009, "N,N-Dimethylisopropyl amine clusters and ultrafast proton transfer dynamics." S. Deb and P. M. Weber.

Femtochemistry, Femtobiology and Femtophysics – Frontiers in Ultrafast Science and Technology (Femtochemistry IX), Beijing, China, August 8 – 13, 2009: "Conformeric Transformations and Cluster Dynamics in Energized Tertiary Amines" M. P. Minitti, S. Deb, B. Bayes and P. M. Weber.

Femtochemistry, Femtobiology, and Femtophysics – Frontiers in Ultrafast Science and Technology (Femtochemistry IX), Beijing, China August 8~13, 2009: "Ultrafast structural dynamics of trans-stilbene," J. Bao and P. M. Weber.

64th Ohio State University International Symposium on Molecular Spectroscopy, The Ohio State University June 22-26, 2009: "Ultrafast structural dynamics of trans-stilbene," J. Bao and P. M. Weber.

64th Ohio State University International Symposium on Molecular Spectroscopy, The Ohio State University June 22-26, 2009: "Ultrafast hydrogen transfer in N,N-dimethylisopropyl amine clusters," S. Deb M. P. Minitti and P. M. Weber.

63th annual Ohio St. University International Symposium on Molecular Spectroscopy, The Ohio State University June 16-19 2008: "Rydberg states: stealthy spies of molecular structure," M. Minitti and P. M. Weber.

235th ACS National Meeting & Exposition, April 7, 2008, New Orleans, LA, "1,2,3,4,5-Pentamethyl-cyclopentadiene dynamics probed by photoionization spectroscopy" F. Rudakov and P. M. Weber.

62th annual Ohio St. University International Symposium on Molecular Spectroscopy, The Ohio State University June 18-22 2007: "Pump-probe photoionization and mass

spectroscopy of pentamethylcyclopentadiene," F. Rudakov and P. M. Weber.

2007 APS March Meeting, March 5-9, 2007, Denver, Colorado: "Pump-Probe Photoionization and Mass Spectrometry of penta methyl cyclopentadiene." Fedor Rudakov and P. M. Weber.

Gordon Conference "Vibrational Spectroscopy: Probing Structure and Dynamics," University of New England in Biddeford, Maine, July 2006, "*Vibronic Coupling in Rydberg-excited Trimethylamine*", J. D. Cardoza, M. P. Minitti and P. M. Weber.

61th annual Ohio St. University International Symposium on Molecular Spectroscopy, The Ohio State University June 19-23 2006 "*Curve crossing dynamics in Rydberg excited trimethyl amine*," J. D. Cardoza, M. P. Minitti and P. M. Weber.

21st Austin Symposium on Molecular Structure, March 05, 2006 "*Sub-picosecond Megavolt Electron Diffraction*," Fedor Rudakov, Job Cardoza, J. Hastings, D. Dowell, J. Schmerge, P. M. Weber.

PacifiChem 2005, Honululu, Hawaii, December 15 - 20 2005: "*Ultrafast Dynamics Of Excited N,N-Dimethyl-Isopropyl Amine*," J.L. Gosselin, M.P. Minitti, and P.M. Weber.

Femtochemistry VII, Washington D.C. July 17-22 2005 "*Ultrafast Dynamics in Rydberg States of Tertiary Amines"* M.P. Minitti, J.L. Gosselin, T.I. Solling and P.M. Weber.

60th annual Ohio St. University International Symposium on Molecular Spectroscopy, The Ohio State University June 20-24 2005 "*Ultrafast Dynamics in Rydberg States of Aliphatic Amines"* J.L Gosselin, M.P. Minitti, T.I. Solling and P.M. Weber.

2004 Focused Interest Group, Materials Research in an Aberration Free Environment, Pre-Congress Meeting, July 31 and August 1, 2004, Savannah, Georgia: "Toward Ultrafast Electron Microscopy" Wayne E. King, G. H. Campbell, Alan Frank, Bryan Reed, John Schmerge, Brad Siwick, Brent Stuart, and Peter Weber; Talk held by Wayne E. King.

227th ACS National Meeting, Anaheim, CA, March 28-April 1, 2004: "Intermediate state spectroscopy and dynamics of 1,3-cyclohexadiene" Narayanan Kuthirummal and Peter M. Weber.

227th ACS National Meeting, Anaheim, CA, March 28-April 1, 2004: "Ultrafast ionization-induced charge transfer in 2-phenylethyl-N,N-dimethylamine." Wei Cheng, Narayanan Kuthirummal, Jaimie Gosselin, Weiyan Nie and Peter M. Weber.

20th Austin Symposium on Molecular Structure, Austin, March 7, 2004: "Spectroscopic and diffraction studies of the excited state of 1,2,4,5-tetrafluorobenzene." Job Cardoza and Peter M. Weber.

Femtochemistry VI, Paris, France, July 8 2003: "Probing Reaction Dynamics with Rydberg States: The Ring Opening Reaction of 1, 3-Cyclohexadiene," Narayanan Kuthirummal and Peter M. Weber.

New England Regional Meeting of the American Chemical Society, June 25, 2001, Durham, New Hampshire: "The possibility of experimental observation of vibrational

signatures on electron diffraction." Seol Ryu, Peter M. Weber and Richard M. Stratt. (Talk held by Seol Ryu.)

Gordon Research Conference 'Photoions, Photoionization and Photodetachment', July 2001: "Probing the electrocyclic ring opening reaction of 1,3-cyclohexadiene." Poster. Peter M. Weber, Narayanan Kuthirummal, Ray Dudek, Wei Cheng, and Conor Evans.

Conference of the American Chemical Society, San Diego, April 2001: "Two-photon ionization photoelectron spectroscopy of 1,3-cyclohexadiene via the ultrashort-lived $^1B_2$ state." Poster. Wei Cheng, Conor Evans, Jaimie Gosselin and Peter M. Weber.

Conference of the American Chemical Society, Washington, August 2000: "Monitoring the photochemical ring-opening reaction of 1,3-cyclohexadiene using ultrafast electron diffraction" Ray C. Dudek and P. M. Weber.

18th Austin Symposium on Molecular Structure, Austin, TX, March 2000: "Examining molecular excited states using ultrafast pump-probe electron diffraction." R. Dudek, S. Ryu and P. M. Weber.

Conference of the American Chemical Society, Anaheim, March 1999: "Femtosecond Multi-Photon Ionization of Phenol." Carolyn P. Schick and P. M. Weber.

Conference of the American Chemical Society, Boston, August 1998: "Femtosecond Multi-Photon Ionization of Phenol." Carolyn P. Schick, Scott D. Carpenter and P. M. Weber.

Gordon Research Conference on Multiphoton Processes, June 1998: "Femtosecond Multi-Photon Ionization of Phenol." Carolyn P. Schick, Scott D. Carpenter and Peter M. Weber.

Ultrafast Phenomena XI, Garmisch-Partenkirchen, July 1998: "Feedback Quantum Control of Population Transfer Using Shaped Femtosecond Pulses." C. J. Bardeen, V. Yakovlev, K. R. Wilson, S. D. Carpenter, P. M. Weber and W. S. Warren.

Wheaton Workshop: "What works: Alternatives to Lecture-Based Learning in Math and Science," June 4, 1998. R. Dudek, C. P. Schick and P. M. Weber.

17th Austin Symposium on Molecular Structure, Austin, March 1998: "Theoretical and Experimental Developments in Pump-Probe Electron Diffraction" R. Dudek, J. Geiser and P. M. Weber.

CLEO/IQEC, 1998: "New Tricks in Quantum Control." K. R. Wilson, C. J. Bardeen, G. J. Brakenhoff, A. Buist, J. Cao, S. Carpenter, P. M. Weber J. Che, J. Squier, W. Warren and V. Yakovlev.

OSA topical meeting, "Application of High Field & Short Wavelength Sources Topical Meeting", Santa Fe, March 1997: "Measurement of Ultrafast Dynamics in GaAs Crystals using Time-Resolved X-Ray Diffraction." C. Rose-Petruck, T. Guo, F. Raksi, J. Squier, B. Walker, P. M. Weber, K. R. Wilson and C. P. J. Barty.

Ultrafast Phenomena, May 1994; "Ultrafast dynamics as reflected in MPI photoelectron spectra: Aniline, Azulene, Phenanthrene and Carbon Disulfide."

Molecular Energy Transfer Gordon Conference, June 1993; "Controlling the Nature of the intermediate Resonance of 2-photon Ionization."

MPI Gordon Conference, June 1992; "Photoionization via Transient States: a coherent Probe of molecular Eigenstates."

ACS Conference, New York, August 1991; "Photoionization via Transient States: The Photophysics of Azulene."

Service

Brown University:

Present:

Dean of the Graduate School, Brown University, 2010 -

Past:

Advisory board, Institute for Molecular and Nanoscale Innovations, 2008 – 2010
Human Resource Advisory Board, 2008; Vice Chair: 2009 - 2010
Laser safety committee, 2008 – 2009
International Affairs Advisory Board 2009 - 2010
Chair, Department of Chemistry, 2005 - 2010
Chemical Physics Concentration Advisor, 2000 - 2009.
Faculty Committee for the Campaign 2006 - 2008
Graduate School Working Group, 2007-2008
Chair, Faculty Affairs Committee, 2004 – 2005, and Spring 2006
Chair: Nominating Committee for the Faculty Executive Committee, 2004/05.
Sophomore Advisor, 1999 - 2005.
Chemistry Department Machine Shop Committee
Graduate Admission Committee, 1998 - 2005; Chair 2000 - 2005.
Brown University Laser Safety Committee, chair, 1995 - 2000.
Graduate Council, Brown University, 1998 - 2001.
Curriculum Committee, Department of Chemistry, Brown University, 1999.
Organization of the Physical Chemistry Seminar series; 1989 - 1998.
Chair, Faculty Search Committee; 1996 - 1997.

Broader Community:

Testified at the September 12, 2012, joint subcommittee hearing "Expanding the Power of Big Labor: The NLRB's Growing Intrusion into Higher Education" of the U.S. House of Representatives Committee on Education and the Workforce.

Government Relations Advisory Committee, Council of Graduate Schools, 2011 -

Review of Dartmouth College's Graduate Programs, November 14 – 15, 2011.

Scientific Community:

Boards:

Universität Hamburg, Germany, Scientific Advisory Board for the UHH Centre for Ultrafast Imaging (2013 -)

Reviews:

Funding agencies: National Science Foundation, Army Research Office, Petroleum Research Fund, NationsBank, NSERC (Canada), RI DEPSCOR

Journals: Journal of Chemical Physics, Journal of Phys. Chemistry, Applied Spectroscopy, Optics Letters, Chemical Physics Letters, Nucl. Instr. & Methods in Physics Research, Journal of Appl. Physics, Nature

Publishers: Simon & Schuster, Wiley, Saunders College Publishing, Prentice Hall

Panels: National Science Foundation, Washington, DC, June 17 – 18, 2004.

Conferences:

Organizer of the symposium on 'Molecular Photoelectron Spectroscopy', at the 221st ACS National Meeting in April, 2001, in San Diego.

Organizer of the symposium 'Ultrafast dynamics', at the New England Meeting of the ACS, June 2001.

Session Chair, Gordon Research Conference on 'Photoions, Photoionization and Photodetachment', July 2001.

Session Chair, 20th Austin Symposium on Molecular Structure, Austin, TX, 2004, 2006, 2008, 2010.

Member, Advisory committee, 20th Austin Symposium on Molecular Structure, Austin, TX, March 2004.

Discussion leader, 1st National Laboratory and University Alliance Workshop on Ultrafast Electron Microscopies, Pleasanton, CA, April 16 2004.

Session Chair, 88th Canadian Chemistry Conference, Saskatoon, CA, May 29, 2005:

Session Chair, Gordon Research Conference on 'Photoions, Photoionization and Photodetachment', February 2006, Santa Ynez Valley, CA.

Site visits

Review of the Atomic, Molecular and Optical Sciences program, Chemical Sciences Divisions, Lawrence Berkeley National Lab, Berkeley California. May 11 - 14, 2008; Review for the Department of Energy.

Review of the Ultrafast x-ray science laboratory (UXSL) Chemical Sciences Divisions, Lawrence Berkeley National Lab, Berkeley California. May 11 - 14, 2008; Review for the Department of Energy.

Workshops:

'Ultraslow processes', workshop by the Army Research Office, August 2000; Duke University.

External Reader:

External reader of the thesis by Bradley Siwick, University of Toronto, Canada; December 2003.

Collaboration with Industry:

Consulting Editor, Educational Edge, a Florida distance leaning company.

Laser ablation of polymer surfaces. With Anocoil Corp., Rockville, CT. 1999-2004.

Development of microchannel plate detectors suitable for low energy electron detection; with Galileo Electro-Optics, Sturbridge, MA. 1989 - 1990.

Application of wide range turbomolecular pumps in molecular beam applications; with Balzers, Liechtenstein (now: Pfeiffer Vacuum). 1989 - 1990.

Stabilization of femtosecond pulsed laser beams using LCD's and nonlinear optical devices; with Cambridge Research International, Cambridge, MA. 1994.

Magnetically levitated turbomolecular pumps as substitutes for ion pumps in ultrahigh vacuum apparatus; with Balzers, Liechtenstein (now: Pfeiffer Vacuum). 1995.

High repetition rate amplifiers for femtosecond Titanium Sapphire lasers; with Spectra-Physics (Mountain View, CA) and Positive Light (Los Gatos, CA). 1995

Cavity dumping of femtosecond mode-locked Titanium Sapphire lasers; with Spectra-Physics. 1996.

Graduate students

Current Graduate Students:

Christine Bühler, since June 2009

Xinxin Cheng, since January 2010

Yao Zhang, since January 2011

Yan Gao, since January 2011

James Budarz, since January 2011

Past Graduate Students:

Sanghamitra Deb, December 2006 – May 2011: Ph.D. May 2012: "Ultrafast structural dynamics of flexible, Rydberg excited molecular systems."

Jie Bao, December 2007 – September 2010: Ph.D. May 2011: "Ultrafast Photoelectron Spectroscopy and Mass Spectrometry as Probes for Structural Dynamics of Highly Excited Large Molecular Systems".

Joseph Bush, January 2004 – January 2010: Ph.D. May 2010: "Rydberg Fingerprint Spectroscopy on Biomolecular Model Systems".

Fedor Rudakov, January 2004 – October 2008; Ph.D. May 2009: "Electron Probes of Molecular Structure and Ultrafast Molecular Dynamics."

Job Cardoza, January 2001 – May 2007; Ph.D. May 2007: "Rydberg states as sensitive probes of molecular structure and dynamics."

Mike Minitti, January 2004 – June 2006; Ph.D. May 2007: "Structural dispersion in hot molecules: applications of Rydberg fingerprint spectroscopy."

Jaimie Gosselin: January 2001 – December 2005; Ph.D. May 2006: "Probing Structure & Dynamics via Rydberg Fingerprint Spectroscopy".

Wei Cheng: 2000 – 2005; Ph.D. May 2005: "Rydberg fingerprint spectroscopy and its application to biologically relevant molecules."

Ray C. Dudek: 1995 - 2001; Ph.D. May 2001: "Pump-probe diffraction experiments of molecules in transient states."

Carolyn P. Schick: 1993 - 2000; MS thesis: May 1996: "Two-Photon Photoelectron Spectroscopy of Carbon Disulfide." Ph.D., May 2000: "Femtosecond time resolved photoelectron spectroscopy of phenol."

Scott Carpenter: 1992 to 1998; Ph.D.: "Experimental adaptive optimization with genetic algorithms: Solving problems in mass spectrometry, optics, photoelectron spectrometry, and quantum control."

John Thompson: 1992 to 1997; Ph.D.: "Pump-probe low energy electron diffraction."

Joseph D. Geiser: 1991 to 1997; Ph.D.: "Pump-probe gas-phase electron diffraction."

Tamas Lucza: Spring and fall 1994; Exchange student from Hungary; Measurement of ultrashort electron pulse durations.

Tamas Rozgonyi: 10/1992 to 1/1993: Exchange student from Hungary; Characterization of electron pulses.

Byungjoo Kim: 1990 to 1994; Ph.D.: "The spectroscopy and photophysics of aniline, 2-aminopyridine and 3-aminopyridine."

Napoleon Thantu: 1989 to 1993; Ph. D.: "Selectivity in Optically Prepared States and Coherent Control of Statistical Limit Molecules."

John Stanks: 1989 to 1991; MS thesis: "Characterization and Optimization of a Molecular Beam Machine."

Post-Docs:

Dr. Narayanan Kuthirummal (February 2001 – June 2004)

Xinli Yang (January 2006 – July 2007)

Mike Minitti (August 2007 - 2011)

Undergraduate Students:

Vale Cober-Shabica, 2011 – 2012

Sonia Vignale, 2010 – 2011, B.S. 2011 Senior Thesis: "Studies in Rydberg Fingerprint Spectroscopy: Energy Flow and Quantum Beats in N-Methylmorpholine and Related Molecules".

James Budarz, University of Connecticut, Summer 2009.

Brian Bayes: Summer 2007 – 2009; Sc.B. 2009: "Studies in Rydberg Fingerprint Spectroscopy: Detector Design and Symmetric Amines".

Michael Levy: UTRA student 2008.

Robert Schaeffer, summer 2004.

Gabriela Schlau-Cohen, UTRA* student, summer 2002; B.S. 2003. Senior thesis: 'Rydberg series fingerprinting of fluorophenols via resonant photoelectron spectroscopy.'

Carl Hanson, UTRA* student, summer 2002.

Sasha Kweskin, B.S. 2002. Senior thesis: 'Femtosecond multi-photon ionization photoelectron spectroscopy of superexcited states in toluene.'

Adam Greenwood: UTRA* student, 2000.

Conor L. Evans: UTRA* student, 1999. Royce Fellowship student, 2000; Barry Goldwater Fellowship, 2000. B.S. 2002. Senior thesis: 'Exploring the ultrafast dynamics of 1,3-cyclohexadiene: photoelectron and fluorescence studies.'

Raju Goyal: UTRA* student, 1998; senior thesis: 'Liquid beams;' graduation: May 2000. Graduate studies at Stanford University.

Gyanprakash Ketwaroo: UTRA* student, 1998.

Xenia Amashukeli: BS thesis (Honors), 1997.

Michelle Silva: UTRA* summer student, 1995; BS thesis, 1996.

Kevin Kubarych: Summer student, 1995; BS thesis, 1996.

David Panofsky: NSF summer student, 1995.

Salim Esedoglu: UTRA* student, fall 1994.

Neil Fromer: UTRA* summer student, 1994.

Jakob More: NSF summer student, 1994.

Brad Prutzman: UTRA* summer student, 1993.

Stephen White: summer 1993; Brown's Summer Research Early Identification Program.

Abdul Khan: UTRA* summer student, 1992.

Guy Seebohm: 1991 to 1992; UTRA* summer student. (Graduate studies at Cornell University).

Paul Browning: 1990 to 1991; BS thesis (Honors): "Formation and Characterization of Picosecond Electron Pulses." (Ph.D., U. Chicago).

* UTRA: Brown University Teaching and Research Assistantship