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TRAINING

Massachusetts Institute of Technology

Emory University

The University of Texas at Austin

The University of Arkansas at Little Rock

The University of Arkansas at Little Rock

Postdoctoral Research Fellow 1992–1993 Postdoctoral Research Fellow 1991–1992 Ph.D. (Chemical Physics) May, 1991 M.A. (Chemistry) May, 1985 B.S. (Chemistry) May, 1982

EMPLOYMENT

Delta State University	Professor of Chemistry
	$2001-{ m present}$
Delta State University	Associate Professor of Chemistry
	1998-2001
Delta State University	Assistant Professor of Chemistry
	1993-1998
The University of Texas at Austin	Teaching/Research Assistant
	1985-1991
The University of Arkansas at Little Rock	Lecturer/Laboratory Manager
	1983 - 1985

TEACHING HISTORY

The University of Arkansas at Little Rock

CHE 1300	Preparation for General Chemistry, Lecture
CHE 1402	General Chemistry I, Laboratory
CHE 1403	General Chemistry I, Laboratory

The University of Texas at Austin

CH 154K	Physical Chemistry II, Laboratory
CH 353	Physical Chemistry I, Lecture - Teaching Assistant
CH 682	Advanced Quantum Chemistry, Lecture - Teaching Assistant

Delta State University

CHE 101	General Chemistry I, Lecture
CHE 103	General Chemistry I, Laboratory
CHE 104	General Chemistry II, Laboratory
CHE 351	Physical Chemistry for the Life Sciences, Lecture and Laboratory
CHE 363	Problems in Chemistry
CHE 371	Physical Chemistry I, Lecture and Laboratory
CHE 372	Physical Chemistry II, Lecture and Laboratory
CHE 404/504	Advanced Inorganic Chemistry (Group Theory)
CHE 481/581	Independent Research in Chemistry
CHE 475/575	Theoretical Chemistry
CHE 492/592	Special Topics in Chemistry
CHE 674	Chemical and Physical Thermodynamics
CHE 680	Topics in Physical Chemistry
CHE 689	Chemical Research
CHE 690	Thesis

RESEARCH PUBLICATIONS

- [1] J. A. Bentley, J.–P. Brunet, R. E. Wyatt, R. A. Friesner, and C. Leforestier, "Quantum mechanical study of the $\tilde{A}^{1}A'' \to \tilde{X}^{1}\Sigma^{+}$ SEP spectrum for HCN," *Chem. Phys. Lett.* **161**, 393 (1989).
- [2] J. A. Bentley, "Quantum Mechanical Study of Large Amplitude Motion in Small Polyatomic Molecules: Applications to HCN and HCCH," Ph.D. Dissertation, Department of Chemistry, The University of Texas at Austin, May 1991.
- [3] J. A. Bentley, R. E. Wyatt, M. Menou, and C. Leforestier, "A finite basis-discrete variable representation calculation of vibrational levels of planar acetylene," J. Chem. Phys. 97, 4255 (1992).
- [4] J. A. Bentley, J. M. Bowman, B. Gazdy, T. J. Lee, and C. E. Dateo, "A global ab initio potential for HCN/HNC, exact vibrational energies, and comparison to experiment," Chem. Phys. Lett. 198, 563 (1992).
- [5] J. A. Bentley, C.–M. Huang and R. E. Wyatt, "Highly vibrationally excited HCN/ HNC: Eigenvalues, Wavefunctions and SEP Spectra," J. Chem. Phys. 98, 5207 (1993).
- [6] J. M. Bowman, B. Gazdy, J. A. Bentley, T. J. Lee, and C. E. Dateo, "Ab initio calculation of a global potential, vibrational energies and wave functions for HCN/ HNC, and a simulation of the A — X emission spectrum," J. Chem. Phys. 99, 308 (1993).
- [7] R. A. Friesner, J. A. Bentley, M. Menou, and C. Leforestier, "Adiabatic pseudospectral methods for multidimensional vibrational potentials," J. Chem. Phys. 99, 324 (1993).

RESEARCH PRESENTATIONS

- "Quantum Mechanical Study of Large Amplitude Motion in HCN and HCCH," Special Theoretical Chemistry Seminar, The University of Texas at Austin, Friday, March 8, 1991.
- [2] "Quantum Mechanical Study of Large Amplitude Motion in HCN and HCCH," Molecular Physics Group Seminar, Lawrence Livermore National Laboratory, Monday, March 18, 1991.
- [3] "Large Amplitude Motion in HCN and HCCH," Seminar, The University of Notre Dame, Friday, May 10, 1991.
- [4] "Quantum Studies of Floppy Molecules: HCN and HCCH," Physical Chemistry Journal Club Seminar, Emory University, Monday, Oct. 28, 1991.
- [5] D. Chapman, J. A. Bentley, B. Gazdy, and J. M. Bowman, "Wavepacket Relaxation and Complete Absorption Spectrum of HO₂," Poster, XXth Informal Conference on Photochemistry, Monday, April 27, 1992.
- [6] P. Schafer, J. M. Bowman, and J. A. Bentley, "Numerical Truncation/ Recoupling Calculations of the High Energy Vibrational Spectrum of Hydrogen Peroxide," Poster, XXth Informal Conference on Photochemistry, Wednesday, April 29, 1992.
- [7] P. Schafer, J. A. Bentley, and J. M. Bowman, "Numerical Truncation/ Recoupling Calculations of the High Energy Vibrational Spectrum of Hydrogen Peroxide," Poster, Twenty-first Southeastern Theoretical Chemistry Association Conference, Friday, May 29, 1992.
- [8] "A New Global HCN/HNC Potential Energy Surface Based on Ab Initio Data," Seminar, Twenty-first Southeastern Theoretical Chemistry Association Conference, Saturday, May 30, 1992.
- [9] "A Progress Report on Comparisons of Theory and Experiment for Highly Excited HCO, HCN, and HO₂," Joint Seminar with J. M. Bowman, Telluride Academy Workshop on Experimental and Theoretical Studies of Vibration-Rotation Spectra of Highly Excited Molecules, July 7, 1992.
- [10] "Floppy Molecules," Seminar, Mississippi State University, May 10, 1993.
- [11] "Acetylene Superpolyad Quantum Dynamics," Seminar, 47th Southeast/51st Southwest American Chemical Society Joint Regional Meeting, Friday, Dec. 1, 1995.
- [12] "Floppy Molecules," Seminar, Mississippi College, April 1, 1997.

RESEARCH PRESENTATIONS

- [13] "Good Vibrations: Theory and Methods for QM Calculations on Water," Seminar, Louisiana Tech University, Wed. March 11, 1998.
- [14] "High Vibrational Energies of Water," Poster, G. M. Balam, and J. A. Bentley, Gordon Conference, Mon.-Tues. June 29-30, 1998.
- [15] "Floppy Molecules: Theory and Methods for the Calculation of Vibrational States and Spectra," Seminar, University of Southern Mississippi, Fri. Oct. 9, 1998.
- [16] "High Vibrational Energies of Water," Poster, G. M. Balam, and J. A. Bentley, Seventh Annual Conference on Current Trends in Computational Chemistry, Fri. Nov. 6, 1998.
- [17] "Spectroscopic Constants, Anharmonic Forcefields, and Bound States of HOCl," Poster, J. A. Bentley and B. Ramachandran, Dynamics of Molecular Collisions Conference, Tues. July 20, 1999.
- [18] "Bound States of HOCl and DOCl," Poster, J. A. Bentley and B. Ramachandran, Sixty-Fourth Annual Meeting of the Mississippi Academy of Sciences, Thurs. Feb. 24, 2000.
- [19] "Floppy Molecules: Theory and Methods for the Calculation of Vibrational States and Spectra," Seminar, The University of Texas at Tyler, Wed. Mar.22, 2000.
- [20] "The Accurate Calculation of Ro-Vibrational Eigenenergies of H¹²C¹⁴N," Poster, J. A. Bentley and J. L. Curry, Thirteenth Annual Conference on Current Trends in Computational Chemistry, Fri. Nov. 12, 2004.
- [21] "The Accurate Calculation of Ro-Vibrational Eigenenergies of Triatomic Molecules," Seminar, University of Southern Mississippi, Fri. Dec. 3, 2004.
- [22] "The Accurate Calculation of Ro-Vibrational Eigenenergies of Hydrogen Cyanide," Seminar, Sixty-Ninth Annual Meeting of the Mississippi Academy of Sciences, Fri. Feb. 18, 2005.

STUDENT RESEARCH PRESENTATIONS

- "Classical Oscillator Dynamics," Poster, B. Branch, M. Lollar and J. A. Bentley, 59th Annual Meeting of the Mississippi Academy of Sciences, Thursday, February 9, 1995.
- [2] "Classical Dynamics of 1D and 2D Harmonic and Anharmonic Oscillators," B. Branch, M. Lollar, and J. A. Bentley. Poster. 60th Annual Meeting of the Mississippi Academy of Sciences, February 22, 1996.
- [3] "Quantum Dynamics of 1D and 2D Asymmetric Double-Well Oscillators," Poster, M. K. Zaremba, and J. A. Bentley, Sixty-First Annual Meeting of the Mississippi Academy of Sciences, Thursday, February 20, 1997.
- [4] "Quantum Dynamics of 1D and 2D Asymmetric Double-Well Oscillators," Poster, M. K. Zaremba, and J. A. Bentley, NASA Space Grant Conference, University of Southern Mississippi, Hattiesburg, MS. February 28, 1997.
- [5] "Wave Packet Dynamics of Local Mode Water," Poster, J. K. Tonos, M. K. Zaremba, and J. A. Bentley, Sixty-Second Annual Meeting of the Mississippi Academy of Sciences, February 28, 1998.
- [6] "High Vibrational Energies of Water," Poster, G. M. Balam, and J. A. Bentley, Sixty-Second Annual Meeting of the Mississippi Academy of Sciences, Thursday, February 28, 1998.
- [7] "The Calculation of Ro-Vibrational Energies of HOCl," Poster, Amy Creel and J. A. Bentley, Sixty-Fifth Annual Meeting of the Mississippi Academy of Sciences, Fri. Feb. 9, 2001.
- [8] "Highly Excited Ro-Vibrational Eigenstates of HOCl," Poster, Amy Creel and J. A. Bentley, Sixty-Sixth Annual Meeting of the Mississippi Academy of Sciences, Fri. Feb. 22, 2002.
- [9] "The Accurate Calculation of Ro-Vibrational Eigenenergies of H¹⁶OD," Poster, Jennifer L. Curry and J. A. Bentley, Twelfth Annual Conference on Current Trends in Computational Chemistry, Fri. Oct. 31, 2003.
- [10] "The Accurate Calculation of Ro-Vibrational Eigenenergies of H¹⁶OD," Poster, Jennifer L. Curry and J. A. Bentley, Sixty-Eighth Annual Meeting of the Mississippi Academy of Sciences, Fri. Feb. 20, 2004.

MASTER'S STUDENTS

Amy Katherine Creel, MSNS 2002, Thesis: The Quantum Mechanical Calculation of Ro-Vibrational Energies of HOCl.

Jennifer Lee Curry, MSNS 2004, Thesis: On the Accurate Calculation of Ro-Vibrational Eigenenergies of H¹⁶OD.