

CURRICULUM VITAE: JOHN EWART ADAMS

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Education:

Undergraduate:

Bachelor of Science in Chemistry (Summa Cum Laude), 1974, University of Missouri–Rolla (now Missouri University of Science and Technology); elected to Phi Kappa Phi, Phi Eta Sigma; AIC Student Medal
National Science Foundation Undergraduate Research Program:
University of Kansas, 1973 (with R. Christoffersen); University of Missouri–Columbia, 1972 (with H. Kim)

Graduate:

Ph.D. in Chemistry, 1979, University of California, Berkeley (with W. H. Miller)
Dissertation: "Topics in Bound-State and Dynamical Processes: Semiclassical Eigenvalues, Reactive Scattering Kernels and Gas-Surface Scattering Models"
National Science Foundation Graduate Fellow, 1974–1977

Professional History:

Postdoctoral Fellow, Los Alamos National Laboratory, 1979–1981 (with J. D. Doll)
Assistant Professor of Chemistry, University of Missouri-Columbia, 1981–1987
Associate Professor of Chemistry, University of Missouri-Columbia, 1987–2003
Collaborator, Los Alamos National Laboratory, 1981–1988
Visiting Associate Professor of Chemistry, Brown University, 1989–1990
Director of Undergraduate Studies, Department of Chemistry, University of Missouri-Columbia, 1988–2012
Associate Chair for Undergraduate Studies, Department of Chemistry, University of Missouri-Columbia, 1996–2012
Professor of Chemistry, University of Missouri-Columbia, 2003–2009
Curators' Teaching Professor of Chemistry, University of Missouri-Columbia, 2009–2015
Curators' Teaching Professor Emeritus, University of Missouri-Columbia, 2015–present

Membership in Professional Societies:

American Chemical Society
University of Missouri Local Section; Division of Physical Chemistry, Division of the History of Chemistry, Division of Chemical Education, Division of Computers in Chemistry, Subdivision of Theoretical Chemistry
American Physical Society
Division of Chemical Physics
Sigma Xi
Alpha Chi Sigma, Professional Fraternity in Chemistry
Phi Lambda Upsilon Honorary Chemical Society

The Honor Society of Phi Kappa Phi

Awards and Recognitions:

AMOCO Foundation Undergraduate Teaching Award (1987)
 Columbia campus nominee, Burlington Northern Foundation Faculty Achievement Award (1993)
 William T. Kemper Fellow for Excellence in Teaching (1993)
 Division of Student Affairs Excellence in Education Award (1999)
 Outstanding Faculty Member Award, Greek Week 2000 Steering Committee
 Outstanding Teacher Award, Men of Engineering Learning Community (2000)
 “Blue Chalk” Advising Award, A&S Student Government (2003, 2009)
 Marj Leavene Outstanding Learning Community Partner Award (2003)
 Columbia campus nominee, President’s Award for Outstanding Teaching, University of Missouri System (2003)
 Most Inspiring Professor Award, Student-Athlete Advisory Council (2004)
 Excellence in Advising Award, Advisors Forum & Office of the Provost (2005)
 Outstanding Faculty Academic Advisor, Missouri Academic Advising Association (2005)
 Lambda Chi Alpha (Gamma Kappa Zeta Chapter) Professor of the Year (2005-2006)
 Honorary tap, Mortar Board National College Senior Honor Society (2007)
 E. Ann Nalley Midwest Region Award for Volunteer Service to the American Chemical Society (2008)
 President’s Award for Outstanding Teaching, University of Missouri System (2009)
 Fellow, American Chemical Society (2009)
 Curators’ Teaching Professorship (2009)
 Governor’s Award for Excellence in Teaching (2009)
 University of Missouri-Columbia nominee, U.S. Professor of the Year (2010)
 Honorary Professional Degree, Missouri University of Science and Technology (2011)
 Golden Key (2014)

Teaching Activities (Formal Courses—N.B.: both old, i.e. prior to Fall 2004, and new course numbers [noted in square brackets] are referenced here; the semester designation “Winter” was changed to “Spring” in 2008):

Chem 1* (Introductory Chemistry) — Winter 1983
 Chem 5* (Chemistry for Engineers) — Fall 1991; Winter 1992
 Chem 11* (General Chemistry) — lab/recitation section for chemistry majors, Fall 1986
 Chem 32 [CHEM 1320] (General Chemistry 2) — Fall 1993; Fall 1994; Fall 1995; Fall 1996; Fall 1997; Fall 1999; Winter 2000; Fall 2001; Fall 2003; Winter 2004 (honors lab instructor); Fall 2005; Fall 2008; Fall 2009; Fall 2014; Honors lecture section [1320H]: Fall 2010; Fall 2011; Fall 2013; Fall 2015
 Chem 33 [CHEM 1330] (General Chemistry 3) — Winter 2001; Winter 2002; Winter 2005; Winter 2006; Honors lecture section [1330H]: Spring 2012; Spring 2014; Spring 2016
 CHEM 1500H (Honors Intensive General Chemistry)—Fall 2004
 Chem 195 (Service Learning in Chemistry) — Fall, 1997; Winter, 1998; Fall, 1998; Fall, 1999; Winter, 2001; Winter, 2002
 Chem 233 [CHEM 3330] (Physical Chemistry II) — Fall 1981; Fall 1982; Winter 1984; Winter 1987; Winter 1988; Winter 1989; Winter 1993; Winter 1997; Winter 2007; Spring 2008; Spring 2009; Spring 2011; Spring 2013; Spring 2015
 Chem 234 [CHEM 3340] (Physical Chemistry Laboratory) — Winter 1985 (with R. Harris); Winter 1986 (with R. Harris); Winter 1987 (with R. Harris); Winter 1988 (with R. Harris)

- Chem 270 [CHEM 3700] (Undergraduate Seminar in Chemistry; writing intensive format) — Winter 1995; Winter 1996; Winter 1999; Winter 2004
- Chem 301* (Intermediate Physical Chemistry; this course was renumbered 333) — Winter 1989
- Chem 301 (Chemistry of the Origin of Life; also 215GH) — Winter 1994 (with F. Schmidt and R. Ethington); this course was also taught as 200GH in Winter 1992 (with F. Schmidt)
- Chem 330* (Intermediate Physical Chemistry) — Fall 1982 (with R. Harris); Fall 1985 (with T. Wong)
- Chem 331* (Intermediate Physical Chemistry) — Winter 1982; Winter 1985 (with H. Kim)
- Chem 333* (Introductory Quantum Chemistry; this course is now numbered 8310) — Winter 1983; Winter 1984
- Chem 333 (Intermediate Physical Chemistry II) — Winter 1993; Winter 1997
- Chem 401 (Topics: Surface Chemistry) — Fall 1992; course was also taught Fall 1989 at Brown University (the Brown U. course number is 272)
- Chem 410 [CHEM 8087] (Seminar in Chemistry; Physical/Inorganic) — Fall 1982; Winter 1983; Fall 2006; Fall 2007
- Chem 430 (Advanced Physical Chemistry: Statistical Mechanics) — Fall 1985 (with R. Harris)
- Chem 431 [CHEM 8310] (Quantum Chemistry) — Winter 1986; Winter 1991; Winter 1999 (with J. Kauffman); Winter 2001 (with J. Kauffman); Winter 2003; Winter 2005; Fall 2006
- Chem 432 [CHEM 8320] (Chemical Kinetics) — Winter 1982; Fall 1984; Fall 1987; Fall 1990; Fall 1993; Fall 1998; Fall 2000; Fall 2002; Fall 2007; Spring 2010
- Chem 433 [CHEM 8330] (Atomic and Molecular Structure; the present title is Computational Chemistry) — Winter 1989 (with P. Plummer)
- 161GH [GN HON 2461H] (Honors College Science Sequence) — Fall 1997 (with F. Schmidt, C. Deakyne, J. Jones); Fall 1998 (with F. Schmidt); Fall 1999 (with F. Schmidt); Fall 2000 (with F. Schmidt and J. Weaver)
- 162GH [GN HON 2462H] (Honors College Science Sequence) — Winter 1998 (with F. Schmidt, C. Deakyne, R. Ethington); Winter 1999 (with F. Schmidt, R. Ethington); Winter 2000 (with F. Schmidt, R. Ethington); Winter 2001 (with F. Schmidt, R. Ethington, J. Weaver); guest lectures in Winter 2002; Winter 2003, Winter 2004; Winter 2005; Winter 2006; Winter 2007; Spring 2008; Spring 2009; Spring 2010; Spring 2011
- CHEM 7087 (Seminar in Chemistry for Beginning Graduate Students—experimental course on professional writing) — Winter 2007; Spring 2008; Spring 2011 (with C. Deakyne)
- (* Courses which no longer are offered or in which the content has been altered significantly)

Teaching Activities (Informal Courses and Development of Materials):

- Annual (and occasionally more frequent) seminars in the Chemistry Department; two Condensed Matter seminars in the Physics Department; one Applied Mathematics seminar
- Development of an electronic structure experiment for Chem 234 and preparation of an extensive handout pertaining to that experiment
- Informal course in FORTRAN programming — Summer 1983; Winter 1991
- Department presentation on World Wide Web authoring — Winter 1996 (similar presentations for FIG students in Fall 1997 and Fall 1998); presentation on lecture presentation software — Fall 1996 (with S. Keller); presentation on WebCT — Fall 1999 (with E. Kaiser)
- MU Program for Excellence in Teaching, Teaching Renewal conference presentations (self-paced student assessment software product—Winter 1997; use of videotaped lectures in

large courses—Winter 2005)
University of Missouri WebCT Workshop, presentation on WebCT in large chemistry courses and the use of publishers' materials — May 2000 (with S. Keller)
Department of Chemistry TA training — 1997–2001
162GH model experiment report, consultation on the chemistry content of other such reports — 2002
Presentations in the “Conversations on Science Teaching” series—NSSE (2003), Lecture Videos in Large Classes (2004)
Contributed section on teaching in laboratory classes to the University of Missouri-Columbia on-line teaching manual (teachandlearn.missouri.edu/guide/chapters/labs.htm)—2004
Revised test bank materials for R. Chang, *Chemistry*, 8th Ed. (McGraw-Hill)—2003-2004; 9th Ed.—2005-2006
Piloted use of Tegrity® lecture-capture software on the MU campus

Service to the Department of Chemistry:

Director of Undergraduate Studies (1988–2012)
Undergraduate Program Committee (1981–2015; Chair, 1985-2012)
Department Honors Director (1990–1992, 1994–2012)
Director of a major revision of the undergraduate chemistry curriculum (1991–1993)
Department Advisory Committee (1992–1993, *ex officio* 1996–2012)
Development Committee (1992–2012)
Building Committee (1993–1998)
Undergraduate curriculum task force (sole member; 1983–1984)
Colloquium organizer (1982–1984; program was inactive prior to that time)
Various graduate student recruiting visits to other campuses
Department computer representative (1984–1988)
Research Incentive Committee (1985–1986)
Coordinator for undergraduate newsletter (1985–1986)
Undergraduate recruiting visits to high schools (1986–1988)
Director of the senior assessment program (1987–2011)
Department Planning Committee (1988–1989)
Meetings with prospective chemistry majors and their parents (1988–present)
Advisory committee on the renovation of Schlundt Hall (1990–1991)
Promotion/tenure faculty review committee (for C. M. Greenlief, S. S. Jurisson, T. Sewell, J. Cooley)
Organizer of First Annual L. B. Thomas Chemistry Scholars Lecture (1994); speaker selection committee (1994–present)
Computer Committee (1994–1996; Chair)
Safety Committee (1994–1998)
Department representative to A&S Commencement
Administrator and author, Chemistry Department World Wide Web site from inception till 2000; developed on-line advising materials, including graduation plan forms (adapted in 1999 by the Dept. of Mathematics)
Committee to plan dedication of new teaching laboratories (1997–1998; Chair)
Teaching mentor for junior faculty (for S. Keller, 1995–1999; for J. Perry, participant in the Preparing Future Faculty program as a postdoctoral fellow, 2014-2015)
Organizer, retirement symposium for E. Kaiser (2001)

Service to the College of Arts and Science:

Committee on Curriculum, Instruction, and Advising (1993–2012; Chair, 2008-2012)
 Committee on Nominations and Elections (1996–1997; Chair, 1997)
 General advisor during registration on numerous occasions
 A&S Summer Welcome orientation program (1983)
 Participant in the Donnelly Hall advising pilot project (1993)
 Participant, “Meet Your Advisor” programs (1994, 1995)
 Special Task Force on the AB degree in Computer Science (1995)
 Undergraduate Scholarship Committee (1997, 2003)

Service to the University and the Columbia campus:

Panel participant, Summer Welcome (1982, 1985, 1987)
 MU Graduate School Committee on Fellowships, Scholarships, and Assistantships (1984–1987)
 Speaker, campus-wide Teaching Assistant training program (1987)
 Committee on the Freshman Year Experience (1987–1988)
Ad hoc reviewer, Weldon Spring awards (1987–1988)
 Selection committee, Chancellor’s Award for Research in the Physical and Mathematical Sciences (1988)
 Chemistry Department presentation for the Mizzou Summer Enrichment Program (1988)
 Judge, GPC Research and Creative Activities Forum (1988)
 Provost’s Committee on Faculty Awards (1989)
 MU Research Council (1990–1993)
 Participant, Physical Therapy Program accreditation on-site visit (1991)
Ad hoc Committee for Science Education (1992)
 MU Pre-med Advising Committee (1991–2010)
 Reviewer, UM Research Board (1994–present)
 Participant, Workshop on Large Class Teaching; presentation on coordination between lectures and laboratories (1994)
 MU Academic Computing Council (1994)
 Campus Writing Board (1995–1998; NAS subcommittee chair, 1997–1998)
 Campus Writing Program Faculty Workshop (participant, 1988; presenter, 1997)
 Honors Council (1995–1998; Chair, 1997–1998; Chair of self-study subcommittee and author of the self-study report, 1997)
 Task Force on Education in Science, Math, Engineering and Technology (1997)
 Freshman Interest Group faculty co-facilitator (1997–2014)
 Panel member, College of Engineering programs for visiting high school students and teachers on numerous occasions
 Presentations to Missouri Scholars Academy classes
 Residential Colleges Executive Committee (1998–1999); Natural Sciences and Mathematics Residential College Design Team (Chair, 1998–1999)
 Natural Sciences and Mathematics Residential College faculty (1999–2003)
 Carver Community stakeholder (2004–2015)
 Carnegie Teaching Academy group (1999–2002)
 Provost’s Task Force on Dual Credit programs (2000)
 Vice Chancellor for Student Affairs search committee (2002)
 Colleague Circles (new faculty mentoring program), faculty facilitator (2002-2003, 2003-2004, 2007-2009); faculty advisor to an extension of this program to new graduate students (2005-2007)

Panel member, Provost's program for new faculty (2005, 2009)
Director of Residential Academic Programs search committee (2007-2008)
Advisory committee on the Graduate Teaching Minor (2006-2014)
Task Force on Digital Media Lecture Capture Software (2008-2009)
Participant in the evaluation of Tegrity® lecture capture software (2008-2009)
Task Force on General Education (Chair, 2009–2010)
Selection committee, MU nominee for the President's Award for Outstanding Teaching (2010)
Selection committee, Governor's Award for Excellence in Teaching (2010)
Selection committee, MU nominee for U.S. Professor of the Year (2011)
Technology Evaluation Subcommittee (2010-2014)

Professional Service:

American Chemical Society
District V Director (2013-1015)
Ex officio Councilor (2013-2015)
Board Standing Committee on Professional and Member Relations: Member (2013-2014);
National Meetings Financial Targets Task Force, Chair (2014); Task Force on
Implementing National Meetings and Expositions Financial Targets Recommendations
(2015)
Board Standing Committee on Public Affairs and Public Relations: Member (2013-2015),
Chair (2015); PSA Working Group, Chair (2014)
Board Standing Committee on Grants and Awards: Member (2015)
Board Standing Committee on Audits: Member (2013-2015)
Society Program Portfolio Management: Oversight Committee (2013-2014); Program
Review Team: Goals & Metrics and Valuation, Chair (2013-2014)
University of Missouri Local Section: Councilor (1993–2002), Chair (1988–1989),
Chair-Elect (1988), Secretary-Treasurer (1984–1985); member of the organizing
committee for the 75th Anniversary Symposium
Division of Physical Chemistry: Councilor and member of the Executive Committee
(2003–2012)
Subdivision of Theoretical Chemistry: Webmaster (2001–2013)
Council Committee on Membership Affairs: Member (1995–2000), Vice-Chair (1998–
2000), Secretary (1995, 2001), Webmaster (1998–2000), Committee Associate (1994,
2001)
Council Committee on Constitution and Bylaws: Member (2002), Committee Associate
(2003–2010)
Society Committee on Budget and Finance: Member (2003-2010), Committee Associate
(2002), Vice-Chair (2007), Chair (2010), Consultant (2014-2015); Communications
Subcommittee (2002-2009); *Ad Hoc* Subcommittee on Program Prioritization, Chair
(2009); Advisory Subcommittee (2007, 2009-2010, 2014); Program Review
Subcommittee (2014-2015), Chair (2014)
Board Committee on Executive Compensation (2010)
Fellows Oversight Committee, Chair (2010-2013)
Board Committee on Planning (2010)
Council Policy Committee: Nonvoting member (2010), Voting member (2011-2012)
Board-Presidential Task Force on Society Services and Associated Dues Pricing Models
(2010)

- Task Force on Committee Financial Issues (2004-2007)
Program Review Advisory Group (2006-2009; Chair, 2009)
Board of Trustees, Group Insurance Plans for ACS Members (1997-2000; 2011-2016);
Vice-Chair (2014-2015); Committee on Investments and Finance (1997-2000; 2011-
2014), Chair (2013-2015)
Task force on the publication of regional meeting information in *C&EN* (1998)
28th Midwest Regional Meeting: Program Chair (1993)
38th Midwest Regional Meeting: General Chair (2003)
Midwest Region High School Teacher Award, Selection Committee Chair (2004)
Midwest Region Board Webmaster (2005-present)
Midwest Region Board Historian (2011-2016)
Advisor, ACS Student Affiliates (1983-1993)
Candidate, District V Director, 2006, 2015
- Alpha Chi Sigma Professional Chemistry Fraternity
Chapter Advisor of Delta Chapter (1990-2015)
Central District Counselor (representative of the national organization to five
collegiate chapters and one professional chapter in Missouri and Kansas; 1993-1998)
District Counselors Committee (1997-1998; Chair)
Grand Professional Alchemist (national 2nd vice president, 1998-2000; 1st vice
president, 2000-2002)
Grand Master Alchemist (national president, 2002-2004)
Grand Vizier (immediate past president) and Chair of the General Advisory Committee
(2004-2006)
Grand Parliamentarian (2009-2016)
Member, Central District Committee (2004-2015)
- Alpha Chi Sigma Educational Foundation (Trustee, 1998-2016; Foundation Member,
1999-2019; Assistant Secretary, 1998-2000, 2006-2008; Vice President, 2000-2002,
2008-2009; President, 2002-2003; Assistant Treasurer, 2004-2006; Secretary-Treasurer,
2009-2016)
- Phi Lambda Upsilon Honorary Chemical Society
Councilor of Beta Iota Chapter
- Sigma Xi
University of Missouri Chapter Graduate Student Award Committee (1987-1988; Chair)
University of Missouri Chapter Research Award Committee (1984-1986)
University of Missouri Chapter Nominating Committee (1986-1987, Chair)
University of Missouri Chapter Faculty Mentoring Award Committee (2000, 2001)
- The Honor Society of Phi Kappa Phi
University of Missouri Chapter: President (2009-2010), Past-president (2010-2012),
Treasurer (2010-2015)
- MASUA Theoretical Physics Symposium: Member of the organizing committee (1985-1986)
Missouri Conference on Physical Chemistry: Organizer (1991)
- National Science Foundation
Chemistry Division Small Business Innovation Research Phase I review panel (1991)
Division of Undergraduate Education, Instrumentation and Laboratory Improvement
Review Panel (1997)
- 27th Midwest Theoretical Chemistry Conference: Co-organizer (with P. L. M. Plummer,
(1994)
- 37th Midwest Theoretical Chemistry Conference: Organizer (2005)

External reviewer for promotion candidates: Department of Chemistry, Wichita State University (1994); Department of Chemistry, University of Nebraska (1987); Department of Chemistry, Oklahoma State University (2003, 2012); Department of Chemical Engineering, University of Pittsburgh (2005); Department of Chemistry, University of Maine (2013); Department of Electrical and Computer Engineering, Missouri University of Science and Technology (2014)

Manuscript referee

Journal of Chemical Physics, Journal of Physical Chemistry, Journal of Chemical Education, Surface Science, Journal of the American Chemical Society, Chemical Physics, Letters in Organic Chemistry

several general, physical, and surface science textbooks

Proposal reviewer (external to the University)

National Science Foundation (including SBIR and ILI panel participation)
Petroleum Research Fund (administered by the American Chemical Society)
PSC-CUNY Research Award Program
Air Force Office of Scientific Research
Missouri Department of Higher Education, ITQG Cycle-7

Other:

Wakonse Foundation

Participant (1996), Staff Member (1999-2015), Wakonse Conference on College Teaching; Allerton Teaching Renewal Conference (1997, 1999, 2001, 2002, 2003, 2004)
Convener, MU Wakonse 1999 and 2000 Fellows (1999–2001); MU Wakonse Council

Co-author (with S. Keller) of an essay on faculty mentoring for the Wakonse program

General Chemistry laboratory computerization project featured in article in *Chemical & Engineering News* (vol. 75, May 26, 1997, pp. 33-34)

Invited speaker (only most recent invitations listed): Department of Chemistry, Kansas State University; Department of Chemistry, Texas Christian University; Department of Chemistry, University of North Texas; Department of Chemistry, University of Missouri-Rolla; Department of Chemistry, Virginia Polytechnic Institute and State University; Department of Chemistry, Austin Peay State University; Department of Chemistry, University of Northern Iowa; Department of Chemistry and Physics, Northwest Missouri State University; Department of Chemistry, Colorado School of Mines; Department of Chemistry, Truman State University; Department of Chemistry, University of Dayton; Department of Chemistry, University of Nebraska-Kearney; Department of Chemistry, Saint Louis University

Funding History:

University of Missouri-Columbia Research Council Summer Fellowship—1982, 1985
American Chemical Society-Petroleum Research Fund, Type G Grant—1982–1984, \$10,000

University of Missouri-Columbia Faculty Development Grant—1982

University of Missouri Weldon Spring Fund (with L. B. Thomas)—1983–1984, \$10,800
Research Corporation—1983–1985, \$8330

IBM Corporation—1986–1987, \$115,000, “Surface Interaction of Gases and Solids at the Atomic Level”

University of Missouri-Columbia, Integrating Computing into the Curriculum—1986–1987, \$6042, “Enhancement of Upper-level Chemistry Laboratories through the Introduction of Microcomputers”

- University of Missouri Weldon Spring Fund (with H. H. Harris, UMSL)—1987–1988, \$26,900; “Intramolecular Energy Transfer in Small Systems”
- University of Missouri-Columbia Research Council—1987–1988, \$3500, “Interaction of H₂O and OH with a Silicon Surface”
- Research leave, 1989-1990, at Brown University, Department of Chemistry
- American Chemical Society-Petroleum Research Fund, Type AC Grant—1989–1991, \$40,000; supplementary allocation, 1991, \$4500, “Models of Heterogeneous Catalysis: Dynamics of Reactions with Small Metal Clusters”
- University of Missouri Research Board—1994–1995, \$24,000, “Models of Solvatochromism in Supercritical Fluids”
- MU General Education Program course development grant—with F. Schmidt, “Honors Science for Nonscience Majors”, 1997-1998, \$39,000
- National Science Foundation—1996–1997, \$69,178 (co-PI; with C. Klein, PI; other co-PI’s: G. Schupp, P. Saab, E. J. Charlson), “Vertical Integration of Engineering Core Curriculum through Concurrent Course Offerings”
- National Science Foundation—1997–1998, \$76,419 (co-PI; with C. Klein, PI; other co-PI’s: G. Schupp, P. Saab, E. J. Charlson), “Vertical Integration of Engineering Core Curriculum through Concurrent Course Offerings”
- National Science Foundation, Division of Undergraduate Education, Instrumentation and Laboratory Improvement Program—1996-1998, \$99,761 (plus institutional matching funds), “Introduction of Computers for Data Acquisition/Analysis and Molecular Visualization into Large General Chemistry Courses”
- Department of Defense (Army) MURI Grant, “Gas-Condensed Phase Interactions: Flame-Surface Heat Exchange”—2002–2007, \$487,776 total [subcontract from Oklahoma State University for project “Energetic Materials Design for Improved Performance/Low Life Cycle Cost”, D. L. Thompson, PI; \$5,000,000 for 2002-2007]; the gas-surface energy transfer studies carried out by Prof. Adams’s group will provide the necessary input for the development of detailed molecular models predicting the steady-state surface temperature of a burning energetic material. The first funding period also includes funds for a computing cluster. *N.B.*: due to the way in which the DoD funds MURI projects, the funding periods for the MU project will be 6/1/02-12/31/02, \$46,108; 1/1/03-12/31/03, \$100,000; 1/1/04-12/31/04, \$100,000; 1/1/05-5/31/05, \$41,667; 6/1/05-12/31/05, \$58,333; 1/1/06-12/31/06, \$100,000; 1/1/07-5/31/07, \$41,667.
- National Science Foundation—2003–2004, \$75,000 (co-PI; with F. J. Schmidt, PI; other co-PI’s: S. K. Abell, J. Weaver), “Converting Cookbook Laboratories into Inquiry”
- National Science Foundation—9/1/06–8/31/10, \$450,000 (co-PI; with F. J. Schmidt, PI; other co-PI’s: J. Weaver, S. K. Abell), “Connecting Undergraduates to the Enterprise of Science”
- National Science Foundation—9/1/08–8/31/11, \$498,020 (co-PI; with T. Sadler, PI; other co-PI’s: P. Friedrichsen, O. Chavez, and A. Whittington), “MU Noyce Scholars Program for Science and Mathematics Teachers”
- National Science Foundation—6/1/09-5/31/14, \$891,728 (co-Pi; with P. J. Friedrichsen, PI; other co-PI’s: A. G. Whittington, M. Siegel, and M. J. Volkmann), “Top Notch Teachers with Dual Degrees at the University of Missouri T2D2@MU”

PUBLICATIONS

1. "The infrared spectra of anhydrous trichloroacetic acid and oxalic acid," J. E. Adams and H. Kim, *Spectrochim. Acta* **29A**, 675-677 (1973).
2. "Semiclassical eigenvalues for potential functions defined on a finite interval," J. E. Adams and W. H. Miller, *J. Chem. Phys.* **67**, 5775-5778 (1977).
3. "Expansion of exchange kernels for reactive scattering," J. E. Adams and W. H. Miller, *J. Phys. Chem.* **83**, 1505-1508 (1979).
4. "A unified model for diffractive and inelastic scattering of a light atom from a solid surface," J. E. Adams and W. H. Miller, *Surf. Sci.* **85**, 77-93 (1979).
5. "Topics in bound-state and dynamical processes: Semiclassical eigenvalues, reactive scattering kernels and gas-surface scattering models," J. E. Adams, University of California, Berkeley, Ph.D. dissertation.
6. "Reaction path Hamiltonian for polyatomic molecules," W. H. Miller, N. C. Handy, and J. E. Adams, *J. Chem. Phys.* **72**, 99-112 (1980).
7. "Diatom-surface scattering in the impulsive collision limit," J. E. Adams, *Surf. Sci.* **97**, 43-52 (1980).
8. "Dynamics of ion channeling at low energies: Preliminary trajectory studies," J. E. Adams and J. D. Doll, *J. Chem. Phys.* **73**, 2137-2144 (1980).
9. "Desorption from solid surfaces via generalized Slater theory," J. E. Adams and J. D. Doll, *J. Chem. Phys.* **74**, 1467-1471 (1981).
10. "Dynamical corrections to transition state theory adsorption rates: Effect of a precursor state," J. E. Adams and J. D. Doll, *Surf. Sci.* **103**, 472-481 (1981).
11. "Dynamics of ion channeling at low energies: Non-normal incidence," J. E. Adams and J. D. Doll, *J. Chem. Phys.* **74**, 2075-2076 (1981).
12. "A Monte Carlo evaluation of thermal desorption rates," J. E. Adams and J. D. Doll, *J. Chem. Phys.* **74**, 5332-5333 (1981).
13. "Dynamical aspects of precursor state kinetics," J. E. Adams and J. D. Doll, *Surf. Sci.* **111**, 492-502 (1981).
14. "Thermal desorption of argon and neon from solid xenon. I. Transition state theory rate constants," J. E. Adams and J. D. Doll, *J. Chem. Phys.* **77**, 2964-2967 (1982).
15. "Vibrational predissociation of Ar·BCl₃: A Monte Carlo-RRKM study," J. E. Adams, *J. Chem. Phys.* **78**, 1275-1280 (1983).

16. "The thermal analog of state-selected unimolecular reactions," R. M. Stratt and J. E. Adams, *J. Chem. Phys.* **78**, 2368-2373 (1983).
17. "Thermal desorption of argon and neon from solid xenon. II. Sticking probabilities," J. E. Adams and J. D. Doll, *J. Chem. Phys.* **80**, 1681-1686 (1984).
18. "Rotational state dependence of CO/Pt(111) sticking probabilities," J. E. Adams, *Chem. Phys. Lett.* **110**, 155-157 (1984).
19. "Coverage dependence of gas-surface energy transfer," D. Zhao and J. E. Adams, *Langmuir* **1**, 557-564 (1985).
20. "Semiclassical vibration-rotation spectra of gaseous and physisorbed molecules," J. E. Adams, *J. Chem. Phys.* **84**, 3589-3597 (1986).
21. "Adsorbate-mediated gas-surface energy transfer: Collision geometry and surface temperature influences," D. Zhao and J. E. Adams, *Surf. Sci.* **171**, 208-218 (1986).
22. "Internal state dependence of HCl/Ar(111) desorption rates," J. E. Adams, *J. Chem. Phys.* **85**, 4073-4078 (1986).
23. "Temperature effects on the vibration-rotation spectrum of a physisorbed diatomic," J. E. Adams, *J. Chem. Phys.* **87**, 4249-4255 (1987).
24. "Dynamics of a Langmuir-Hinshelwood-type recombination reaction," E. D. Fleischmann and J. E. Adams, *Surf. Sci.* **193**, 593-615 (1988).
25. "Dynamics of a physisorbed dimer," J. E. Adams, *J. Chem. Phys.* **89**, 522-528 (1988).
26. "The 5-hydroxy 1,2,3-oxadiazolinium ion: Neighboring group interaction between N-nitroso and aldehyde carbonyl," R. N. Loeppky, E. D. Fleischmann, J. E. Adams, W. Tomasik, E. O. Schlemper, and T. C. Wong, *J. Am. Chem. Soc.* **110**, 5946-5951 (1988).
27. "Dynamics of CO chemisorption on a metal cluster," J. E. Adams, *J. Chem. Phys.* **92**, 1849-1859 (1990).
28. "Correlation function diagnosis of chaotic vibrations in HCN," Y. J. Cho, P. R. Winter, H. H. Harris, E. D. Fleischmann, and J. E. Adams, *J. Phys. Chem.* **94**, 1847-1850 (1990).
29. "Instantaneous normal mode analysis as a probe of cluster dynamics," J. E. Adams and R. M. Stratt, *J. Chem. Phys.* **93**, 1332-1345 (1990).
30. "New insight into experimental probes of cluster melting," J. E. Adams and R. M. Stratt, *J. Chem. Phys.* **93**, 1358-1368 (1990).
31. "Extensions to the instantaneous normal mode analysis of cluster dynamics: Diffusion constants and the role of rotations in clusters," J. E. Adams and R. M. Stratt, *J. Chem. Phys.* **93**, 1632-1640 (1990).

32. "Solvation by nonpolar solvents: Shifts of solute electronic spectra," R. M. Stratton and J. E. Adams, *J. Chem. Phys.* **99**, 775-788 (1993).
33. "Optical properties of a chromophore embedded in a rare-gas cluster: Cluster size dependence and the approach to bulk properties," J. E. Adams and R. M. Stratton, *J. Chem. Phys.* **99**, 789-799 (1993).
34. "Solvent-induced electronic spectral shifts: Benzene·Ar_n revisited," J. E. Adams and R. M. Stratton, *Z. Phys. D* **26**, S323-S325 (1993).
35. "Solvation and melting in large benzene·(Ar)_n clusters: Electronic spectral shifts and linewidths," J. E. Adams and R. M. Stratton, *J. Chem. Phys.* **105**, 1743-1753 (1996).
36. "Solvatochromism in a near-critical solution: A direct correlation with local solution structure," J. E. Adams, *J. Phys. Chem. B* **102**, 7455-7461 (1998).
37. "Size-dependence of the electronic spectra of benzene·(N₂)_n clusters," J. E. Adams, *J. Chem. Phys.* **109**, 6296-6302 (1998).
38. "Rotational relaxation in a nondipolar supercritical fluid: Toluene in CO₂," A. Siavosh-Haghighi and J. E. Adams, *J. Phys. Chem. A* **105**, 2680-2686 (2001).
39. "Rotational dynamics of supercritical CO₂," J. E. Adams and A. Siavosh-Haghighi, *J. Phys. Chem. B* **106**, 7973-7980 (2002).
40. J. E. Adams, *Instructor's Testing and Resource CD-ROM (Test Bank)*, accompaniment to *Chemistry*, by R. Chang, 8th Ed. (McGraw-Hill, New York, 2005).
41. "Small solute rotational dynamics as a probe of local solution structure in a mixed-solvent system." J. E. Adams, A. Siavosh-Haghighi, and S. Deshmukh, *Prepr. Pap.-Am. Chem. Soc., Div. Fuel Chem.* (2005).
42. "Energy transfer at a gas-liquid interface: Kinematics in a prototypical system," T. Szabo, A. Siavosh-Haghighi, and J. E. Adams, *J. Phys. Chem B* **110**, 1319-1325 (2006). (*web publication date 12/31/05*)
43. J. E. Adams, *Instructor's Testing and Resource CD-ROM (Test Bank)*, accompaniment to *Chemistry*, by R. Chang, 9th Ed. (McGraw-Hill, New York, 2007).
44. "Molecular dynamics of host-guest complexes of small gas molecules with calix[4]arenes," J. E. Adams, J. R. Cox, A. J. Christiano, and C. A. Deakyne, *J. Phys. Chem. A* **112**, 6829-6839 (2008).
45. "Exploring the limits of encapsulation within hexameric pyrogallol[4]arene nano-capsules," S. J. Dalgarno, T. Szabo, A. Siavosh-Haghighi, C. Deakyne, J. E. Adams, and J. L. Atwood *Chem. Comm.* 1339-1341 (2009).
46. "Achievable inquiry in the college laboratory: The mini-journal." S. B. Witzig, N. Zhao, S.

- K. Abell, J. C. Weaver, J. E. Adams, and F. J. Schmidt, *J. Coll. Sci. Teaching* **39**(6), 14-23 (2010).
47. "Energetics of intercavity diffusion in a simple model of a low-density *p-tert*-butylcalix[4]arene crystal," M. D. Breite, J. R. Cox, and J. E. Adams, *J. Am. Chem. Soc.* **132**, 10996-10997 (2010).
48. "Transformative professional development: Inquiry-based college science teaching institutes," N. Zhao, S. B. Witzig, J. C. Weaver, J. E. Adams, and F. J. Schmidt, *J. Coll. Sci. Teaching* **41**, 18-25 (2012).
49. "Multiligand zinc(II) hydroxide complexes: $Zn(OH)_2X_2Y$ and $Zn(OH)_2X_{1.2}Y_2$; $X = H_2O$, CH_3OH and $Y = NH_3$, C_5H_5N ," C. M. Mayhan, T. J. Szabo, J. E. Adams, and C. A. Deakyne, *Comput. Theor. Chem.* **984**, 19-35 (2012).
50. "Pyrogallol[4]arenes as frustrated organic solids," H. Kumari, L. Erra, A. C. Webb, P. Phatt, C. L. Barnes, C. A. Deakyne, J. E. Adams, L. J. Barbour, and J. L. Atwood, *J. Am. Chem. Soc.* **135**, 16963-16967 (2013).
51. "Mononuclear and polynuclear 5-coordinate zinc(II) complexes: a quantum chemical calibration study of their structure and energy," C. M. Mayhan, T. J. Szabo, J. E. Adams, and C. A. Deakyne, *Struct. Chem.* **24**, 2089-2099 (2013).
52. "Screening for tethering ligands: zinc(II) model complexes", C. M. Mayhan, A. M. Drachnik, A. V. Mossine, H. Kumari, J. E. Adams, and C. A. Deakyne, *submitted to Chem. – Eur. J.*
53. "Rotational dynamics of substituted benzenes in a non-dipolar supercritical fluid" A. Siavosh-Haghighi, J. B. Sacha, A. Myers, and J. E. Adams, *J. Phys. Chem. B* (manuscript in preparation).
54. "Electrostatic contributions to rotational relaxation in a non-dipolar supercritical fluid," A. Siavosh-Haghighi, S. Uppalapati, A. Myers, and J. E. Adams (manuscript in preparation).
56. "Rotational dynamics in a mixed fluid," A. Siavosh-Haghighi, S. K. Deshmukh, and J. E. Adams (manuscript in preparation).
56. "Energy transfer at a liquid nitromethane surface," T. Szabo, R. Castleberry, and J. E. Adams, *J. Phys. Chem. C* (manuscript in preparation).

MEETING PRESENTATIONS

- 17th Midwest Regional Meeting, American Chemical Society, Columbia, MO, November, 1981.
J. E. Adams and D. S. Bomse, "Vibrational Predissociation Lifetime of Ar-BCl₃"
- 184th National Meeting, American Chemical Society, Kansas City, MO, September 12–17, 1982.
J. E. Adams, "Vibrational Predissociation of Ar-BCl₃: A Monte Carlo-RRKM Study"
- 16th Midwest Theoretical Chemistry Conference, Northwestern University, May 19–21, 1983.
J. E. Adams, "Coverage Dependence of Gas-Surface Sticking Probabilities"
- 187th National Meeting, American Chemical Society, St. Louis, MO, April 8–13, 1984.
J. E. Adams, "State-Dependent Molecular Sticking Probabilities"
- 19th Midwest Regional Meeting, American Chemical Society, Springfield, MO, October 31–November 2, 1984.
J. E. Adams, "Infrared Spectroscopy of Adsorbed Species"
D. Zhao and J. E. Adams, "Coverage Dependence of Energy Transfer"
J. E. Adams and E. D. Fleischmann, "Recombination Dynamics of Carbon and Oxygen on Pt(111)"
- Fifth American Conference on Theoretical Chemistry, Jackson, WY, June 15–20, 1984.
D. Zhao and J. E. Adams, "Coverage Dependence of Gas-Surface Energy Transfer"
J. E. Adams, "Semiclassical Infrared Spectrum of CO Adsorbed on Pt(111)"
- Conference on the Dynamics of Molecular Collisions, Snowbird, UT, July 14–19, 1985.
E. D. Fleischmann and J. E. Adams, "Recombination of Carbon and Oxygen on a Catalyst Surface"
- Gordon Research Conference on the Dynamics of Gas-Surface Interactions, New London, NH, July 29–August 2, 1985.
J. E. Adams, "Semiclassical Vibration-Rotation Spectra of Adsorbed Species"
- MASUA Theoretical Physics Symposium, Columbia, MO, November 22–23, 1985.
J. E. Adams, "Rotational Enhancement of Desorption in the HCl/Ar(111) System"
- 19th Midwest Theoretical Chemistry Conference, Indiana University, May 15–17, 1986.
J. E. Adams, "Rotational Enhancement of Desorption"
- 192nd National Meeting, American Chemical Society, Anaheim, CA, September 7–12, 1986.
E. D. Fleischmann and J. E. Adams, "Recombination Dynamics of Carbon and Oxygen on Pt(111)"
J. E. Adams, "Phonon Effects on the Vibration-Rotation Spectrum of a Physisorbed Diatomic"
- 21st Midwest Regional Meeting, American Chemical Society, Kansas City, MO, November 5–8,

1986.

E. D. Fleischmann, J. E. Adams, and R. N. Loepky, "A Theoretical Study of β -Oxidized Nitrosamines"

J. E. Adams, "Dynamics of Molecules in Inert Matrices: A Model Study"

Gordon Research Conference on the Dynamics of Gas-Surface Interactions, Andover, NH, August 10–14, 1987.

J. E. Adams, "Dynamics of Small Adsorbed Clusters (A Preliminary Study)"

21st Midwest Theoretical Chemistry Conference, Argonne National Laboratory, May 12–14, 1988.

J. E. Adams, "Dynamics of a Physisorbed Cluster"

23rd Midwest Regional Meeting, American Chemical Society, University of Iowa, November 16–18, 1988.

J. E. Adams, "Rotational Predissociation of the HCl Dimer"

Y. J. Cho, H. H. Harris, E. D. Fleischmann, and J. E. Adams, "Normal, Local, and Chaotic Vibrational Dynamics of HCN Characterized by Cross-Correlation Functions"

22nd Midwest Theoretical Chemistry Conference, Indianapolis, IN, May 11–13, 1989.

J. E. Adams, "Dynamics of Molecule-Metal Cluster Collisions"

Conference on the Dynamics of Molecular Collisions, Asilomar, CA, July 16–21, 1989.

J. E. Adams, "Dynamics of Molecule-Metal Cluster Collisions"

24th Midwest Regional Meeting, American Chemical Society, St. Louis, MO, November 1–3, 1989.

Y. J. Cho, H. H. Harris, F. G. Haibach, and J. E. Adams, "Correlation Function Diagnosis for the Onset of Classical Chaos in HCN and HCCH"

199th National Meeting, American Chemical Society, Boston, MA, April 22–27, 1990.

J. E. Adams and R. M. Stratt, "New Insight into Experimental Probes of Cluster Melting"

J. E. Adams and M. S. Richman, "Structural Fluctuations of Small Metal Clusters"

23rd Midwest Theoretical Chemistry Conference, Madison, WI, May 17–19, 1990.

J. E. Adams, "Structure and Dynamics of Benzene- Ar_n Clusters"

7th American Conference on Theoretical Chemistry, San Diego, CA, July 29–August 3, 1990.

J. E. Adams and R. M. Stratt, "Cluster Self-Diffusion Constants from an Instantaneous Normal Mode Analysis"

200th National Meeting, American Chemical Society, Washington, DC, August 26–31, 1990.

J. E. Adams, M. S. Richman, and R. M. Stratt, "Dynamics of Atomic Clusters that Exhibit Directional Bonding"

25th Midwest Regional Meeting, American Chemical Society, Manhattan, KS, November 7–9, 1990.

J. E. Adams, "An Assessment of Quantum Effects on Cluster Melting"

201st National Meeting, American Chemical Society, Atlanta, GA, April 14–19, 1991.

J. E. Adams and M. J. Reil, "Surface Diffusion Constants via an Instantaneous Normal Mode Analysis"

J. E. Adams and G. Goodyear, "Cluster 'Melting in Cu_nZn_m Brasses"

Gordon Research Conference on Metals and Semiconductor Clusters, Wolfeboro, NH, August 4–9, 1991.

J. E. Adams and G. Goodyear, "Structural Fluctuations in Heteronuclear Clusters"

26th Midwest Regional Meeting, American Chemical Society, Omaha, NE, November 6–8, 1991.

M. J. Reil and J. E. Adams, "Calculations of Surface Diffusion Constants"

203rd National Meeting, American Chemical Society, San Francisco, CA, April 5–10, 1992.

J. E. Adams and M. J. Reil, "A Novel Method for Calculating Adsorbate Diffusion Constants"

25th Midwest Theoretical Chemistry Conference, East Lansing, MI, June 4–6, 1992.

J. E. Adams and R. M. Stratt, "Solvent-Induced Electronic Spectral Shifts: Benzene- Ar_n Revisited"

M. J. Reil and J. E. Adams, "A Novel Method for Calculating Adsorbate Diffusion Constants"

204th National Meeting, American Chemical Society, Washington, DC, August 23–28, 1992.

R. M. Stratt and J. E. Adams, "The Short-Time Dynamics of Clusters"

6th International Symposium on Small Particles and Inorganic Clusters, Chicago, IL, September 15–22, 1992.

J. E. Adams and R. M. Stratt, "Solvent-Induced Electronic Spectral Shifts: Benzene- Ar_n Revisited"

27th Midwest Regional Meeting, American Chemical Society, Lawrence, KS, November 4–6, 1992.

J. E. Adams and R. M. Stratt, "Solvent-Induced Electronic Spectral Shifts: Benzene- Ar_n Revisited"

Kansas College Chemistry Teachers Conference, Emporia, KS, March 19–20, 1993.

J. E. Adams, "Random Thoughts about Monte Carlo Methods"

205th National Meeting, American Chemical Society, Denver, CO, March 28–April 2, 1993.

J. E. Adams and R. M. Stratt, "Influence of Collective Solvent Polarization Modes on Solute Absorption Spectra: The Evolution of Cluster Properties"

26th Midwest Theoretical Chemistry Conference, Carbondale, IL, May 20–22, 1993.

J. E. Adams and R. M. Stratt, "Origins of the Solvatochromic Shift in Clusters, Liquids, and Solids"

8th American Conference on Theoretical Chemistry, Rochester, NY, June 28–July 2, 1993.

J. E. Adams and R. M. Stratt, "A Microscopic Model of the Solvatochromic Shift"

207th National Meeting, American Chemical Society, San Diego, CA, March 13–18, 1994.

J. E. Adams and R. M. Stratt, "Size-Dependent Cluster Spectral Properties: Interpretation of Recent Benzene·Ar_n Experiments"

208th National Meeting, American Chemical Society, Washington, DC, August 21–25, 1994.

J. E. Adams, "Microscopic Model of Solvatochromism in a Supercritical Fluid"

29th Midwest Regional Meeting, American Chemical Society, Kansas City, MO, November 2–5, 1994.

J. E. Adams, "Modeling the Spectrum of a Chromophore Dissolved in a Supercritical Fluid"

209th National Meeting, American Chemical Society, Anaheim, CA, April 2–6, 1995.

J. E. Adams, "Microscopic Structure of a Simple Supercritical Fluid: Correlation with Spectra"

30th Midwest Regional Meeting, American Chemical Society, Joplin, MO, November 1–3, 1995.

J. E. Adams, "Solvation in Small Atomic and Molecular Clusters"

211th National Meeting, American Chemical Society, New Orleans, LA, March 24–28, 1996.

S. Lubinga and J. E. Adams, "Characterization of Small Benzene·(N₂)_n and Benzene·(CO₂)_n Clusters"

29th Midwest Theoretical Chemistry Conference, Indianapolis, IN, May 30–June 1, 1996.

J. E. Adams and S. Lubinga, "Solvatochromism in Benzene·X_n Clusters, X=N₂, CO₂"

1996 American Conference on Theoretical Chemistry, Park City, UT, July 21–25, 1996.

J. E. Adams, "Electronic Spectrum of a Chromophore Dissolved in a Simple Supercritical Fluid"

31st Midwest Regional Meeting, American Chemical Society, Sioux Falls, SD, November 6–8, 1996.

S. Lubinga and J. E. Adams, "Solvatochromism in Benzene·(CO₂)_n Clusters"

J. E. Adams, "Solvation in Small Clusters and Bulk Fluids: Benzene Dissolved in N₂"

1997 March Meeting, American Physical Society, Kansas City, MO, March 17–21, 1997.

J. E. Adams, "Solvation in Small Clusters: Benzene Dissolved in N₂"

30th Midwest Theoretical Chemistry Conference, Urbana-Champaign, IL, May 22–24, 1997.

J. E. Adams, "Spectroscopy of a Chromophore Dissolved in a Supercritical Fluid"

32nd Midwest Regional Meeting, American Chemical Society, Osage Beach, MO, October 29–November 1, 1997.

J. E. Adams, "Solvent Clustering in a Supercritical Fluid: A Direct Correlation with Spectroscopy"

J. E. Adams, "Computer-Aided Data Collection and Analysis in the General Chemistry Laboratory"

J. W. Crocker and J. E. Adams, "Ionization Potentials of Benzene-Argon Clusters: Structural Correlations"

215th National Meeting, American Chemical Society, Dallas, TX, March 29–April 2, 1998.

J. E. Adams, "Solute-Solvent Clustering in a Supercritical Fluid: A Direct Correlation with Spectroscopy"

J. W. Crocker and J. E. Adams, "Ionization Potentials of Benzene-Argon Clusters: Structural Correlations"

33rd Midwest Regional Meeting, American Chemical Society, Wichita, KS, November 4–6, 1998.

J. E. Adams, "A Spectroscopic Probe of Solution Structure in a Near-Critical Fluid: What Theory Can Contribute"

217th National Meeting, American Chemical Society, Anaheim, CA, March 21–25, 1999.

J. E. Adams, "Molecular Modeling in General Chemistry: Beyond Styrofoam Balls and Toothpicks"

34th Midwest Regional Meeting, American Chemical Society, Quincy, IL, October 27–29, 1999.

J. E. Adams and F. J. Schmidt, "Chemistry in an Inquiry-Based General Science Sequence"

220th National Meeting, American Chemical Society, Washington, DC, August 20–24, 2000.

J. E. Adams and A. Siavosh-Haghighi, "Rotational Dynamics of Toluene in Supercritical Carbon Dioxide"

2000 International Chemical Congress of Pacific Basin Societies (Pacifichem 2000), Honolulu, HI, December 14–19, 2000.

J. E. Adams and A. Siavosh-Haghighi, "Rotational Dynamics of Substituted Benzenes in Supercritical Carbon Dioxide"

Chemical Dynamics Symposium, Berkeley, CA, March 28-31, 2001.

J. E. Adams, "Dynamics in Supercritical Fluids: Rotational Relaxation of Substituted Benzenes in CO₂"

34th Midwest Theoretical Chemistry Conference, Minneapolis, MN, October 5-6, 2001.

A. Siavosh-Haghighi, J. Sacha, and J. E. Adams, "Rotational Relaxation of Substituted Benzenes in Supercritical CO₂"

36th Midwest Regional Meeting, American Chemical Society, Lincoln, NE, October 10-13, 2001.

J. E. Adams, A. Siavosh-Haghighi, and J. B. Sacha, "The Structure of Supercritical Fluid Solutions: Rotational Relaxation of Substituted Benzenes in Carbon Dioxide"

223rd National Meeting, American Chemical Society, Orlando, FL, April 7-11, 2002.

G. D. Anderson, J. E. Adams, M. S. Sheldon, Jr., and J. R. Becker III, "Early Inductees into the Alpha Chi Sigma Hall of Fame"

J. E. Adams, G. D. Anderson, M. S. Sheldon, Jr., and J. R. Becker III, "Recent Inductees into the Alpha Chi Sigma Hall of Fame"

- 2002 American Conference on Theoretical Chemistry, Champion, PA, July 13-18, 2002
A. Siavosh-Haghighi and J. E. Adams, "Rotational Dynamics of Substituted Benzenes in Supercritical Carbon Dioxide and Mixed Solvent Systems"
- 224th National Meeting, American Chemical Society, Boston, MA, August 18-22, 2002.
J. E. Adams, "ACS Award in Pure Chemistry: Recognizing Young Talent for Seven Decades"
- 225th National Meeting, American Chemical Society, New Orleans, LA, March 23-27, 2003.
J. E. Adams, "Seven(?) Metals Known to the Ancients"
- 35th Midwest Theoretical Chemistry Conference, Ames, IA, June 12-14, 2003.
A. Siavosh-Haghighi, S. K. Deshmukh, and J. E. Adams, "Solute Rotational Dynamics in a Non-dipolar Supercritical Fluid"
- 226th National Meeting, American Chemical Society, New York, NY, September 7-11, 2003.
J. E. Adams, "Alpha Chi Sigma: Promoting Professionalism in Chemistry for 100 Years"
- 38th Midwest Regional Meeting, American Chemical Society, Columbia, MO, November 5-7, 2003.
A. Siavosh-Haghighi, S. K. Deshmukh, and J. E. Adams, "Local Structure in a Supercritical Fluid: Solute Rotational Dynamics"
T. Szabo, A. Siavosh-Haghighi, and J. E. Adams, "Energy Transfer at a Gas-Liquid Interface"
- CONFCHEM, January, 2004.
F. J. Schmidt and J. E. Adams, "Teaching Chemistry to Non-science Majors by Modeling Research Activity"
- 227th National Meeting, American Chemical Society, Anaheim, CA, March 28-April 1, 2004.
A. Siavosh-Haghighi, T. Szabo, and J. E. Adams, "Energy Transfer at a Gas-Surface Interface in a Lennard-Jones System"
T. Szabo, A. Siavosh-Haghighi, and J. E. Adams, "Energy Transfer at a Liquid Nitromethane Interface: A Molecular Dynamics Study"
- Course, Curriculum & Laboratory Improvement Conference (Invention and Impact: Building Excellence in Undergraduate STEM Education), Crystal City, VA, April, 2004.
F. Schmidt, S. Abell, J. Adams, J. Carrel, and J. Weaver, "Converting Cookbook Laboratories into Inquiry"
- Teaching Renewal Conference, University of Missouri-Columbia, Columbia, MO, February, 2004.
F. Schmidt, S. Abell, J. Weaver, and J. Adams, "The Warm Little Pond and Planet: Science for the Second Tier"
- National Association for Research in Science Teaching, Vancouver, BC, April, 2004.
S. Abell, P. Brown, A. Demir, F. Schmidt, J. Weaver, and J. Adams, "College Science Teachers' Views of Inquiry-based Laboratories"
- 228th National Meeting, American Chemical Society, Philadelphia, PA, August 22-26, 2004.

J. E. Adams, T. Szabo, and A. Siavosh-Haghighi, "Gas-Liquid Surface Energy Transfer in Energetic Materials"

39th Midwest Regional Meeting, American Chemical Society, Manhattan, KS, October 20-22, 2004.

T. Szabo, A. Siavosh-Haghighi, and J. E. Adams, "Energy Transfer at a Gas-Liquid Interface"

B. D. Huesgen and J. E. Adams, "General Chemistry 'Late Show': Lecture Videos in Large-Enrollment Courses"

Teaching Renewal Conference, University of Missouri-Columbia, Columbia, MO, February 24-26, 2005

J. Adams, B. Huesgen, and S. Keller, "You Could Be the Star of Your Own 'Late Show'"

229th National Meeting, American Chemical Society, San Diego, CA, March 13-17, 2005.

J. E. Adams, A. Siavosh-Haghighi, and S. Deshmukh, "Small Solute Rotational Dynamics as a Probe of Local Solution Structure in a Mixed-solvent System"

Department of Chemistry, Austin Peay State University, Clarksville, TN, April 1, 2005.

J. E. Adams, "What We Can Learn from Models about Structure and Dynamics: Supercritical Fluids and Gas-Liquid Energy Transfer"

37th Midwest Conference on Theoretical Chemistry, Columbia, MO, June 16-18, 2005.

T. Szabo, A. Siavosh-Haghighi, and J. E. Adams, "Energy Transfer at a Gas-Liquid Interface"

American Conference on Theoretical Chemistry, Los Angeles, CA, July 16-21, 2005.

T. Szabo, A. Siavosh-Haghighi, and J. E. Adams, "Energy Transfer at a Gas-Liquid Interface"

40th Midwest Regional Meeting, American Chemical Society, Joplin, MO, October 26-28, 2005

J. E. Adams, T. Szabo, and R. Castleberry, "Energy Transfer from a Hot Gas to a Molecular Liquid"

41st Midwest Regional Meeting, American Chemical Society, Quincy, IL, October 25-27, 2006

J. E. Adams and T. Szabo, "Collisional Energy Disposition at the Interface between a Gas and a Molecular Liquid"

39th Midwest Conference on Theoretical Chemistry, Bloomington, IN, June 28-30, 2007

J. E. Adams and J. R. Cox, "Permeability of Organic Solids: Using Gas-Phase Dynamics to Elucidate Solid-State Behavior"

42nd Midwest Regional Meeting, American Chemical Society, Kansas City, MO, November 7-10, 2007

J. E. Adams, J. R. Cox, and A. J. Christiano, "Dynamics of Host-Guest Complexes: Solid-State Porosity and Differential Sorption"

235th National Meeting, American Chemical Society, New Orleans, LA, April 6-10, 2008

J. R. Cox, A. J. Christiano, C. A. Deakyne, and J. E. Adams, "Dynamics of Small Molecules Complexed with Calixarenes: Toward an Understanding of Organic Solid State Porosity"

Advances in Molecular Dynamics Workshop, Santa Fe, NM, August 13-15, 2008

J. E. Adams, J. R. Cox, A. J. Schmitz, A. J. Christiano, and C. A. Deakyne, "Simple Models of Gas Sorption by a Non-porous Organic Crystal"

43rd Midwest Regional Meeting, American Chemical Society, Kearney, NE, October 8-11, 2008

J. R. Cox, A. J. Schmitz, D. J. Shaughnessy, C. A. Deakyne, and J. E. Adams, "Sequestration of Hydrogen-Bonded Guests by a Calixarene"

D. J. Shaughnessy, T. J. Szabo, M. Valliere, and J. E. Adams, "Energy Transfer at a Gas-Liquid Interface: Rotational Excitation of CO₂"

237th National Meeting, American Chemical Society, Salt Lake City, UT, March 22-26, 2009

A. J. Schmitz, J. R. Cox, M. D. Breite, D. J. Shaughnessy, C. A. Deakyne, and J. E. Adams, "Small-Molecule Sequestration and Transport in a Nonporous Crystal"

44th Midwest Regional Meeting, American Chemical Society, Iowa City, IA, October 21-24, 2009

J. E. Adams, M. D. Breite, A. C. Webb, N. E. Brammeier, A. J. Schmitz, D. J. Shaughnessy, C. M. Mayhan, and C. A. Deakyne, "Dynamics of Calixarene and Pyrogallolarene Host-Guest Complexes: Sequestration of Hydrogen-Bonded Guests"

239th National Meeting, American Chemical Society, San Francisco, CA, March 21-25, 2010

N. E. Brammeier, A. C. Webb, D. J. Shaughnessy, C. M. Mayhan, C. A. Deakyne, and J. E. Adams, "Dynamics of Small Molecules Sequestered by Pyrogallolarene or Metal-Seamed Pyrogallolarene Capsules"

M. D. Breite and J. E. Adams, "Hydrogen-Bonded Guest Sequestration in a Non-Porous Organic Crystal"

J. R. Cox and J. E. Adams, "Gas Sequestration by a *t*-Butylcalix[4]arene Crystal: Comparison of Crystal Models"

D. J. Shaughnessy and J. E. Adams, "Excitation of Internal Degrees of Freedom of Carbon Dioxide Due to Collisions with a Simple Liquid Surface"

45th Midwest Regional Meeting, American Chemical Society, Wichita, KS, October 27-30, 2010

M. D. Breite, J. R. Cox, and J. E. Adams, "Using Molecular Dynamics to Complete and Extend the Experimental Characterization of Gas Diffusion in an Organic Crystal"

46th Midwest Regional Meeting, American Chemical Society, St. Louis, MO, October 19-22, 2011

M. D. Breite and J. E. Adams, "Calixarene and Pyrogallolarene 'Suction Cups' for the Tethering of Peptides"

A. C. Webb and J. E. Adams, "Dynamic Stability of Hydrogen-Bonded Pyrogallolarene Capsules in the Gas Phase and in Solution"

K. E. Brewer, D. J. Shaughnessy, and J. E. Adams, "Dynamics of Zinc-Seamed Pyrogallolarene Capsules: MD and QM/MM Studies"

243rd National Meeting, American Chemical Society, San Diego, CA, March 25-29, 2012

K. E. Brewer, D. J. Shaughnessy, and J. E. Adams, "QM/MM Studies of the Dynamics of Metal-Seamed Pyrogallolarene Capsules"

A. C. Webb and J. E. Adams, "Mechanism of the Formation of Metal-Seamed Pyrogallolarene capsules: Precursor Dynamics with and without Guests"

M. D. Breite and J. E. Adams, "Calix[4]arene and Pyrogallol[4]arene 'Suction Cups' for

Tethering Peptides”

Y. Li, C. A. Deakyne, J. E. Adams, S. S. Jurisson, and M. R. Lewis, “Modeling Rhenium(V)-Cyclized Octreotide Analogs using Computational Methods”

244th National Meeting, American Chemical Society, Philadelphia, PA, August 19-23, 2012

D. W. Demoin, S. S. Jurisson, J. E. Adams, and C. A. Deakyne, “Supramolecular Targeted Cancer Therapy: A Computational Approach”

47th Midwest Regional Meeting, American Chemical Society, Omaha, NE, October 24-27, 2012

L. T. Ellis, R. C. Clark, D. J. Brick, and J. E. Adams, “Nanocapsule Precursor Dynamics: Interconversion of Pyrogallolarene Conformers”

245th National Meeting, American Chemical Society, New Orleans, LA, April 7-11, 2013

R. C. Clark, C. A. Deakyne, and J. E. Adams, “Precursors of Potential Nanocapsules with Large Interior Volumes: Structure and Dynamics of Pyrogallol[n]arene (n = 5,6) Macrocycles”

49th Midwest Regional Meeting, American Chemical Society, Columbia, MO, November 12-15, 2014

K. N. Youmans and J. E. Adams, “Resorcinarene Conformer Interconversions that Facilitate Capsule Formation”

H. Kumari, C. M. Mayhan, J. L. Atwood, J. E. Adams, and C. A. Deakyne, “Host-Guest Interactions in Zinc-Seamed Pyrogallol[4]arene Nanocapsules”