

## Curriculum Vitae of RONALD JAMES BIENIEK

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### ACADEMIC AND ADMINISTRATIVE COMPETENCIES

Broad-based experience and expertise in diverse facets of higher education – and atomic/molecular collision theory. Proactive and effective in systematic program development and growth, collaborative initiatives, program evaluation, and high program performance. Recognized for developing and implementing campus-wide solutions to key issues in student achievement, student leadership, student-faculty retention, and faculty development. A creative and motivated scholar-educator-administrator with a proven track record of success.

### EDUCATION

Ph.D. in Physics, Harvard University (6/12/1975), thesis supervisor: A. Dalgarno, Center for Astrophysics  
M.A. in History of Science, Harvard University (6/14/1973)  
Graduate study in physics at Massachusetts Institute of Technology (9/1970-6/1971, no degree)  
B.S. in Physics, University of California – Riverside (6/16/1970)

### POSITIONS

*Professor, College of Information Technology and Engineering, Marshall University (2013-present)*  
*Dean of the Honors College, Marshall University (2013-2014)*  
*Director of Learning Enhancement Across Disciplines Program and New Faculty Programs, University of Missouri-Rolla / Missouri University of Science and Technology S&T (2001-2013)*  
*Professor of Physics (Assistant to Full), University of Missouri-Rolla / Missouri S&T (1981-2013)*  
*Acting Associate Dean of Arts and Sciences, University of Missouri-St. Louis (Jan-Jun 2011)*  
*Assistant Professor of Physical Science (1975-1981) and also of Astronomy (1976-1981) and of Humanities, (summer 1978 and spring 1979), University of Illinois at Urbana-Champaign*  
*NSF Energy-Related Postdoctoral Fellow, Joint Institute for Laboratory Astrophysics (summer 1975), Univ. California-Berkeley (summer 1976), Univ. Illinois at Urbana-Champaign (summer 1977)*  
*Teaching Fellow, Harvard University (1972-1975)*  
*Research Assistant, Harvard-Smithsonian Center for Astrophysics (1971-1975)*  
*Teaching Assistant, Massachusetts Institute of Technology (1970-1971)*  
*Physicist, Naval Undersea Research and Development Center (summer 1970).*  
*Engineering Trainee, Autonetics, a Division of Rockwell International (summers: 1966-1969)*

### SUMMER AND LONGER-TERM SUPPORTED VISITING APPOINTMENTS AT OTHER INSTITUTIONS

*Visiting Professor, Physics Department and Visiting Fellow, Center for Mathematics and Science Education, University of Nevada, Las Vegas (2005-2006)*  
*Visiting Scientist, Dipartimento di Fisica, Università di Firenze (spring 1999)*  
*Guest Researcher, Max Planck Institut für Quantenoptik (fall 1998 - winter 1999)*  
*Visiting Scientist, Laboratoire Aimé Cotton (summer 1998)*  
*NASA Visiting Scholar, Stanford University-NASA Ames Research Center (summers: 1995 and 1996)*  
*AFOSR Summer Faculty Fellow, US Air Force Research Laboratory (summers: 1991, 1994, 2004)*  
*Visiting Fellow, Oxford University (summer 1992)*  
*Professor, Missouri-London Program, Imperial College (winter-spring 1992)*  
*Visiting Scholar and Teaching Fellow, Harvard College (fall 1991)*  
*Visiting Associate Professor, Université de Paris-Sud (winter-spring 1989)*  
*Senior Fulbright Professor for West Germany (fall 1988 - summer 1989)*  
*Visiting Scientist, Universität Kaiserslautern (summers: 1987, 1988, 1990)*  
*NASA Summer Faculty Fellow, NASA Langley Research Center (summer 1986)*  
*Visiting Scientist, Observatoire de Paris-Meudon (summer 1985)*

## AWARDS AND HONORS

Student-voted “Emmy” Award for Best Professor in a Dramatic Role, Missouri S&T: 2013  
Freshman Engineering “We Love Your Class Award”, Missouri S&T: 2007 (inaugural year), 2012, 2013  
H Murray Clark Memorial Lectureship, San Jose State University: 2008  
Dean’s Teaching Scholar, UMR College of Arts and Sciences: 2006-2009 (fixed three-year appointment)  
Arts & Sciences Teaching Excellence Award: 2002 (inaugural year), 2003, 2004, 2005 (final eligible year)  
Corporate Development Council (UMR) Faculty Award: 2002 (inaugural year)  
University of Missouri President's Leadership Development Program: 2001-2002  
Faculty Member of the Year (UMR), Residence Hall Assoc. & National Residence Hall Honorary: 2001  
Outstanding Teacher Award, University of Missouri-Rolla: 1995, 1998, 2005  
Rufus and Sofie Paine Lecturer in Religion, University of Missouri-Columbia: 1995  
Senior Fulbright Fellowship for West Germany: 1988  
National Aeronautics and Space Administration Faculty Fellow: 1986  
National Science Foundation Energy-Related Post-Doctoral Fellowship: 1975-1977  
National Science Foundation Pre-Doctoral Fellowship: 1970-1973  
Graduation with Highest Honors (University of California): 1970  
Watkins Award for Service and Scholarship, University of California-Riverside: 1970  
Phi Beta Kappa Honor Society: 1970  
Regent's Scholarship (University of California): 1966-1970  
National Merit Scholar: 1966-1970

## Highlights of Professional Experience and Achievements

### Promoting and organizing learning assistance for student success and retention

- Established (Fall, 2001) and developed UMR/S&T’s *Learning Enhancement Across Disciplines* (LEAD) Program (<http://lead.mst.edu>) of learning assistance for a wide range courses. When I left S&T, LEAD provided drop-in peer-tutoring for **29** courses and faculty-run student-oriented cooperative guided-learning centers in **50+** courses with **60+** volunteer faculty from introductory Russian to quantum chemistry. I employed 30+ undergraduate peer learning assistants to help in this endeavor, and trained them in pedagogy, leadership, and motivation techniques. About 700 students per week continue to use this cost-efficient program to master material, validate understanding, and improve performance. See brief video at [http://lead.mst.edu/media/studentssupport/lead/documents/LEAD\\_LCs.mp4](http://lead.mst.edu/media/studentssupport/lead/documents/LEAD_LCs.mp4) for learning center operations.
- Chaired the Student Success Committee of the campus Curriculum Task Force.
- Featured in *Missouri S&T Alumni Magazine* special issue on “Teachers Who Made a Difference”, including student impact ([http://magazine.mst.edu/2009/09/ron\\_bieniek\\_professor\\_of\\_physi](http://magazine.mst.edu/2009/09/ron_bieniek_professor_of_physi)).
- Promotion and assessment of live online tutoring at Univ Missouri-St. Louis in a wide range of subjects.
- Physics Content Consultant, *Expert TA* (online learning assistance, 2012, [www.theexpertta.com](http://www.theexpertta.com))
- Intensely involved in organization of several Honors College events at Marshall University, including Honors Convocation, Yeager Leadership Institute, and DaVinci Lecture.

### Experience with planning, implementing, and reforming undergraduate education

- Taught 12,000+ students and developed courses from physics/astronomy for non-majors and introductory physics for engineers to graduate quantum mechanics and history of science, philosophy, and religion.
- Author of educational materials, manuals, websites, online course (e.g., *Freshman Faculty Manual* at <http://newfaculty.mst.edu/media/campussupport/newfaculty/documents/FreshFacManual.pdf>).
- Created extensive online teaching resources for university faculty (<http://lead.mst.edu/teachingresources>) and for middle- and secondary-school teachers (<http://seq1.mst.edu> & <http://lead.mst.edu/mathscicon>).
- Recruited by Pearson Publishing to co-write a very innovative introductory physics text with Eric Mazur.
- Developed science courses for non-science majors using a personalized system of instruction (PSI).
- Co-developed and taught an interdisciplinary course entitled *Astronomy and Poetry*.
- Developed online physics course for University of Missouri Center for Distance and Independent Study.

### **Record of facilitating organizational improvement and program assessment**

- Established (Fall, 2001) New Faculty Programs at Missouri S&T (<http://newfaculty.mst.edu>). These provide new faculty, during their first few years on campus, a variety of programs and resources to support their transition to the campus, achievement of academic goals, increase professional success, while enhancing the campus culture of teaching and leadership. Program elements include Orientation Day, faculty manual, monthly Freshman Faculty Forum, New Faculty Teaching Scholars, developmental workshops, special seminars, networking and community building.
- Selected as inaugural (2002) and continuing team member (and often team leader) in the UM-system's multi-campus Comprehensive Program Assessment program to foster efficacious processes in academic units (from English to an Honors College) for continuous enhancement of academic units and programs.
- Graduate of the Academic Leadership Program of the University of Missouri System.
- Co-organizer for diversity symposium at UMSL: *Women in the Academy – Leveling the Playing Field*.
- Member of campus Employee Development Advisory Committee, composed of campus leaders to increase abilities and career success of university employees at all levels.
- Developed assessment criteria for physics degree program at University of Nevada, Las Vegas (2006)
- Resourceful consensus builder within faculty/staff groups and implementer of decided policies.
- Worked with Marshall University stakeholders to establish position of Coordinator of Yeager Society Outreach in the Honors College, associated with the university's largest endowment.
- Developed Honors College budget under new system, while growing students, staff, and donations.
- Worked closely with Marshall Foundation on donor relations and gift development.

### **Ability to inspire instructional innovation and communicate value of best practices in teaching**

- Recognized for substantial educational impact by both faculty (e.g., Dean's Teaching Scholar appointment) and by students (e.g., numerous teaching awards, Corporate Development Council's first Faculty Award).
- Emphasize importance of innovative teaching and SoTL at workshops on writing successful NSF CAREER proposals at S&T, UMSL, UNLV, and Virginia Tech ([newfaculty.mst.edu/CAREERworkshops.html](http://newfaculty.mst.edu/CAREERworkshops.html))
- Co-directed middle-school science/math teacher development program (<http://seql.mst.edu>) (2004-2013).
- Good professional and personal rapport with department chairs, diverse staff, and campus/system administrators over programmatic and faculty development issues.
- Effective program advocate and spokesperson (e.g., leading to LEAD-like learning centers at UC-Berkeley <http://astro.berkeley.edu/resources/campbell/talc/> and at UNLV [www.physics.unlv.edu/plc/schedule](http://www.physics.unlv.edu/plc/schedule)).
- Personally designed, installed & implemented various innovative high-tech teaching/learning equipment through external funding (e.g., a networked Physics Computer Learning Center).

### **Familiarity with national standards for student academic achievement, advising and development**

- Graduate of On Course workshop for advising students on how to succeed, particularly under-achievers
- Attendee at National Effective Teaching Institute and National Institute for New Faculty Developers
- Member of the national Committee on Education of the American Physical Society (1999-2000)
- Member & Chair of SAT Physics Test Development Committee, Educational Testing Service (2007-2014)
- Marshall University point person/adviser/organizer for national/international scholarships/fellowships, e.g., Rhodes, Fulbright, Goldwater, Udall, [British] Marshall

### **Experience with international education**

- Visiting scientist/professor at many institutions in France, South Africa, England and Italy, including a Senior Fulbright to Germany, to collaborate with faculty and students about science, culture, and education.
- Teacher in the Missouri London Program, which organizing included cultural excursions
- Member of Missouri S&T Global Studies Advisory Committee
- Interactions and promotion of study abroad programs at Marshall University, Missouri S&T, and several foreign institutions (e.g, University of Oxford and Universiteit Leiden)

## TEACHING

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**Students taught since 1981:** 12,000+

### TEACHING AWARDS, HONORS, AND RECOGNITIONS

Outstanding Teacher Award, University of Missouri-Rolla: **1995, 1998, 2005**

Campus professor cited most often in surveys of graduates as having positive impact: **1999 & 2000**

Faculty Member of the Year, Residence Hall Assoc. & National Residence Hall Honorary: **2001**

Corporate Development Council (UMR) Faculty Award: **2002** (inaugural year)

Arts & Science Teaching Excellence Award: **2002** (inaugural year), **2003, 2004, 2005** (final eligible year)

Dean's Teaching Scholar, UMR/Missouri S&T College of Arts and Sciences: **2006-2009**

Freshman Engineering "We Love Your Class Award": **2007** (inaugural year), **2012, 2013**

Selected for *Missouri S&T Alumni Magazine* special issue on "Teachers Who Made a Difference" **2009**

([http://magazine.mst.edu/2009/09/ron\\_bieniek\\_professor\\_of\\_physi](http://magazine.mst.edu/2009/09/ron_bieniek_professor_of_physi)).

### COURSES TAUGHT

#### Harvard University (as a Teaching Fellow and Visiting Scientist)

*The Astronomical Perspective* (Nat Sci 9) – intro astronomy, with an historical emphasis.

*Laboratory Course in Astronomical Techniques* (Astro 111) – junior/senior laboratory.

#### University of Illinois at Urbana-Champaign

*Thought and Structure in Physical Science* (LAS 140) – the nature of scientific inquiry as revealed the evolution of specific ideas and concepts in physics and astronomy.

*The Physical Universe* (LAS 141) – modern physics and astrophysics for non-science majors.

*Astronomy and Poetry* (Hum 295 B) – examination of the use of astronomical imagery, allusions, and themes in poetry, and what this reveals about the impact of science on culture.

#### University of Missouri-Rolla / Missouri University of Science & Technology

*Engineering Physics I* (Phys 23) – introductory calculus-based mechanics & thermodynamics.

*Engineering Physics II* (Phys 24) – introductory calculus-based electromagnetism and optics.

*Introduction to Astronomy* (Phys 9) – one-semester treatment.

*Modern Physics I* (Phys 207) – intro to relativity, and quantum, atomic and nuclear physics.

*Astrophysics* (Phys 305) – advanced undergraduate level.

*Quantum Electronics* (Phys 371) – advanced undergraduate laser physics.

*Graduate Seminar* (Physics 410) – seminar series connected to Frontiers in Physics colloquia

*Quantum Mechanics I* (Phys 461) and *Quantum Mechanics II* (Phys 463) – graduate level

*Atomic and Molecular Structure* (Phys 471) – graduate level

*Atomic Collisions* (Phys 473) – graduate level

#### Missouri-London Program (Imperial College)

*Cosmic Evolution* – introduction to astrophysical processes and the evolution of the universe.

*The Development of Physical Thought* – history of the basic ideas of mechanics and cosmology, from Pythagoras to Einstein.

#### University of Nevada, Las Vegas

*Physics for Scientists and Engineers I* (Phys 180) – introductory calculus-based mechanics

*General Physics I* (Phys 151) – introductory algebra-based mechanics and thermodynamics

*Development of Science* (Hon 280) – honors course on history of astronomy and physics and its interaction with religion and philosophy.

#### Marshall University

*Historical Development of Cosmological Thought* (Hon 480)



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## SERVICE

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### PROFESSIONAL SERVICE

Member of American Physical Society and American Association of Physics Teachers  
NSF Review Panel for the Instructional Scientific Equipment Program (1978,1981)  
NSF Review Panel for the College Science Instrumentation Program (1985)  
NSF Review Panel for the Minority Graduate Fellowship Program (1991,1994,1995)  
Proposal reviewer for National Science Foundation and National Endowment for the Humanities  
Textbook consultant for several publishing firms  
Judge for undergraduate research competitions of the Missouri Academy of Science  
Continuing referee of research manuscripts for various professional scientific journals  
Program Committee, Am Phys Soc Div of Atomic, Molecular, and Optical Physics (1984-85)  
National Committee on Education, American Physical Society (1999, 2000)  
NSF CAREER proposal writing workshops, Missouri University of Science & Technology (2005-2009),  
University of Nevada, Las Vegas (2006), Virginia Tech (2010), University of Missouri-St. Louis (2011)  
Scholastic Aptitude Test (SAT) Physics Committee, Educational Testing Service (2007-09, Chair 2010-14)  
Scholastic Aptitude Test (SAT) Science Subject Test Content Review Committee, College Board (2012)

### UNIVERSITY OF MISSOURI SYSTEM SERVICE (since 1995)

Committee on Continuous Improvement (1995-1996)  
Co-Director of New Faculty Teaching Scholars Program (2001- 2009)  
Team member/leader of Comprehensive Program Assessment of academic units (2002-2009)  
Faculty Committee on Tenure (2011-2013)    Citizenship Award Committee (Chair, 2013)

### UM-ROLLA/MISSOURI S&T SERVICE (since 1995)

Curriculum Task Force (1994-1996)    Doctoral/Graduate Faculty (1990-present)  
Student Success Committee (1994-Chair, 1995-Chair, 1996-Chair)  
Committee on Faculty Conduct (1995-97)                                      Admissions & Academic Standards (2001-2002)  
Counseling & Career Development Center Advisory Board (1996, 1999)  
Center for Instructional Technology Advisory Committee (1997-1998, Chair)  
Academic Council Representative (1997-2000)                                      International Affairs Search Committee (2000)  
Admissions and Standards Committee (2000)                                      Student Awards & Financial Aid (2002)  
Freshmen Leadership & Success Program Mentor (2000)                                      Retention Committee (2000-2005)  
Academic Assistance Committee (2000-2001, Chair)                                      Public Occasions Committee (AY 2008, 2009)  
Employee Development Committee (2009- )                                      Global Studies Advisory Committee (2011- )

#### Faculty Senate Committees

Tenure Committee (2010-2013)    Facilities Planning (2011-2013 )  
Faculty Grievance Oversight Committee (2010-2013)                                      Committee on Effective Teaching (2010-2013 )

### COLLEGE OF ARTS & SCIENCES SERVICE (since 1995)

Agenda and Nominating Committee (1995-Chair, 2002)                                      Academic Integrity Committee (2011)  
Planning Committee (AY 1998-2000, 2002)                                      Student Academic Affairs Committee (AY 2001)

### PHYSICS DEPARTMENT SERVICE (since 1995)

Editor/producer of annual physics newsletter (1993-2001)  
Colloquia Organizer (1993-1995)    Physics Phonathon Organizer (1995)  
Graduate Recruitment Committee (1992-93)                                      Physics Building Renovation Committee (1995)  
Public Information Coordinator/Promoter (1994-1995)                                      Special Events Committee (1997, 1998, 2000)  
Classroom Technology Committee (1997-1998, Chair)                                      Physics Program Review Committee (2003)

### COMMUNITY SERVICE AND OUTREACH (since 1995)

Physics/astronomy speaker to K-12 classes and student groups, recurring student-selected "victim" and game show "contestant" at fund-raising events and outreach events (e.g., Blues Brothers "singer" Joliet Jake in Engineers Without Borders "Talent Show" fund-raiser: [www.youtube.com/watch?v=MOIRANq3Sjc](http://www.youtube.com/watch?v=MOIRANq3Sjc).)

**SCHOLARSHIP IN PHYSICS &  
SCHOLARSHIP IN TEACHING AND LEARNING (SoTL)**

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**SUMMARY**

Books: 2

Web course: 1

Referred Scientific Publications: 27

Invited Conference Presentations: 4

Competitively Selected/Reviewed Conference Presentations: 11

Other Papers/Conference Presentations: 41

Technical Reports: 1

Major online publications (in SoTL): 4

Invited Colloquia: 60+

**BOOKS**

*Study Guide for Parker's Concepts of the Cosmos: An Introduction to Astronomy*, Ronald J. Bieniek, 215 pages (Harcourt Brace Jovanovich, 1984)

*Principles and **Practice** of Physics*, Eric Mazur with "additional contributions from Ronald J. Bieniek" on title page, 436 pages (Pearson, 2015)

**WEB COURSE**

*General Physics I* (introductory calculus-based physics), Center for Distance and Independent Study, University of Missouri (2001-2014)

**REFEREED SCIENTIFIC PUBLICATIONS/PROCEEDINGS**

R.J. Bieniek, "Semiclassical uniform approximation in Penning ionization", *J. Phys. B* **7**, L266 (1974).

R.J. Bieniek, "Stationary phase analysis of inelastic atomic collisions: Penning ionization", *Chem. Phys. Lett.* **40**, 72 (1976).

R.J. Bieniek and M. Zeilik II, "Follow-up study of a PSI astronomy course", *Am. J. Phys.* **44**, 695 (1976).

R.J. Bieniek "Uniform semiclassical methods of analyzing undulations in far-wing spectra", *Phys. Rev. A* **15**, 1513 (1977).

R.J. Bieniek, "Complex potential and electron spectrum in atomic collisions involving fast electronic transitions: Penning and associative ionization", *Phys. Rev. A* **18**, 392 (1978).

R.J. Bieniek and A. Dalgarno, "Associative detachment in collisions of H and H<sup>-</sup>", *Astrophys. J.* **228**, 635 (1979).

R.J. Bieniek, "Uniform JWKB amplitudes and phases for turning-point problems", *J. Chem. Phys.* **72**, 1225 (1980); and "Erratum:.....", **73**, 4712 (1980).

W.D. Watson, M. Elitzur, and R.J. Bieniek, "An analysis of collisional vibrational excitations and the astrophysical SiO maser phenomenon", *Astrophys. J.* **240**, 547 (1980).

R.J. Bieniek, "An improved and extended examination of the adiabatic distorted-wave infinite-order sudden approximation (ADWIOSA)", *J. Chem. Phys.* **73**, 851 (1980).

R.J. Bieniek, "A source of errors in cross sections of curve-crossing processes", *J. Phys. B* **13**, 4405 (1980); and "Corrigendum...", **14**, 1707 (1981).

- R.J. Bieniek, "Evolution of the Two-Cultures controversy", *Am. J. Phys.* **49**, 417 (1981).
- R.J. Bieniek, "Accuracy of analytic semiclassical T-matrix elements", *Phys. Rev. A* **23**, 2826 (1981).
- R.J. Bieniek and S. Green, "Electron-gas He-SiO potential hypersurface for vibrational-rotational excitations through collisions", *Chem. Phys. Lett.* **84**, 380 (1981).
- R.J. Bieniek and S. Green, "Collisional rates for vibrational-rotational transitions in circumstellar SiO masers", *Astrophys. J. Lett.* **265**, L29; and "Erratum...", **270**, L101 (1983).
- R.J. Bieniek, *Chem. Phys.* **79**, 3738 (1983).
- R.J. Bieniek and T.J. Streever, "Universal stationary-phase treatment of far-wing and excimer spectral line-shapes", *Phys. Rev. A* **28**, 3328 (1983).
- R.J. Bieniek, "Normalized line shapes for far-wing continuum spectra: the Rb-Xe band", *Phys. Rev. A* **32**, 3150 (1985).
- R.J. Bieniek, "Test of quasiclassical theories of redistribution in atomic collisions", *Phys. Rev. A* **35**, 3633 (1987).
- R.J. Bieniek, "Spectral satellite interference undulations in Na + K vapor mixtures", *Spectral Line Shapes*, ed. R.J. Exton (A. Deepak, Hampton VA) **4**, 267 (1987).
- H. Schmoranzer, T. Noll, E. Roueff, H. Abgrall, and R.J. Bieniek, "Rotational effects in the VUV continuum of H<sub>2</sub>", *Physica Scripta* **41**, 857 (1990).
- R.J. Bieniek, M.W. Müller and M. Movre, "Uniform stationary-phase methods for energy spectra resulting from collisions in a complex potential: Penning and associative ionization of He(2<sup>3</sup>S)\* + He(2<sup>3</sup>S)\*", *J. Phys. B* **23**, 4521 (1990); and "Corrigendum...", **24**, 2247 (1991).
- H. Schmoranzer, T. Noll, E. Roueff, H. Abgrall, and R.J. Bieniek, "Rotational effects in the continuous VUV fluorescence spectrum of H<sub>2</sub> associated with spontaneous dissociation", *Phys. Rev. A* **42**, 1835 (1990).
- R.J. Bieniek, P.S. Julienne and F. Reberntrost, "Collisional redistribution of polarized radiation for Sr + Ar(He) systems: a numerical comparison of semiclassical models to exact results", *J. Phys. B* **24**, 5103 (1991).
- R.J. Bieniek, "A dynamical JWKB density matrix for obtaining spectral profiles in ultra-cold collisions", *Spectral Line Shapes*, ed. R. Stamm and B. Talin (Nova Science Pub, Commack, NY) **7**, 323 (1993).
- R.J. Bieniek and I.M. Bell, "Semiclassical coherences in collisional redistribution", *Spectral Line Shapes*, ed. A.D. May (AIP Press, NY) **8**, 347 (1995).
- R.J. Bieniek and S.J. Lipson, "Semi-quantal modeling of thermal vibrational relaxation of diatomic molecules", *Chem. Phys. Lett.* **263**, 276 (1996).

#### INVITED CONFERENCE PRESENTATIONS

- R.J. Bieniek, "Johannes Kepler: Witness to the Cosmic Harmony" (invited talk), *Am. Assoc. Phys. Teach. Announcer* **16**(3), 66 (1986).
- J.E. Groccia, R.J. Bieniek, M.W. Cohen, L.D. Kaptain, S.W. Graham, "New Faculty Teaching Scholars: Intersecting at the University System Level" (with M.W. Cohen, L.D. Kaptain, J.E. Groccia, S.W. Graham) 26<sup>th</sup> Annual Professional and Organization Development Network Conference (St. Louis, Missouri, 10-14 Oct 2001) [www.uky.edu/~burke/podprogram.html](http://www.uky.edu/~burke/podprogram.html)
- M.W. Cohen, L. Kaptain, and R.J. Bieniek, "The Role and Nature of Faculty Development and Support at Carnegie Doctoral/Research Intensive Schools", at Mission, Values and Identity: A National Conference for Carnegie Doctoral/Research Intensive Institutions (Normal, Illinois, 13-15 July 2002).

R.J. Bieniek, "Assessing Success of Student-Oriented Faculty-Run Learning Centers", at Great Plains Professional and Organization Development (POD) Conference (Kansas City, Missouri, 1-2 June 2007) <http://www.umkc.edu/provost/initiatives/FaCET/FacultyResourceDocuments/PODConferencePresentations/POD-RonBieniekPpt.pdf>.

#### **COMPETITIVELY SELECTED/REVIEWED CONFERENCE PRESENTATIONS**

R.J. Bieniek, "Getting Students Actively Involved: What Works in Rolla", 11<sup>th</sup> Annual Teaching Renewal Conference (Columbia, Missouri, 14-16 Feb 2001).

R.J. Bieniek, O.A. Pringle, and N.E. Hubing, "Focused Problem-Based Collaborative Learning in Technical Courses" (with O.A. Pringle and N.E. Hubing), 12<sup>th</sup> Ann. Teach. Renewal Conf. (Columbia, Missouri, 14-16 Feb 2002).

T. Pratt and R.J. Bieniek, "Implementing the Seven Principles for Good Practice in Undergraduate Education", 22<sup>nd</sup> Annual Conference on the First-Year Experience (Atlanta, GA) 21-25 Feb 2003, [http://www.sc.edu/fye/events/archive/pdf/2003\\_Annual\\_Summaries.pdf](http://www.sc.edu/fye/events/archive/pdf/2003_Annual_Summaries.pdf).

R.J. Bieniek and J.S. Zepernick, "Cooperative Student-Oriented Faculty-Based Learning Centers Across Disciplines", 15<sup>th</sup> Annual Lilly Conference on College & University Teaching–West (Kellogg Ranch, Pomona, CA, 14-15 Mar 2003), [www.iats.com/conferences/programs/LillyWest2003Program.pdf](http://www.iats.com/conferences/programs/LillyWest2003Program.pdf)

W.G. Fahrenholtz, R.J. Bieniek, S.W. Graham, "Multi-Campus New Faculty Development to Improve the Culture of Teaching", ASEE Annual Conference (Nashville, TN), 22-25 June 2003, [www.asee.org/acPapers/code/getPaper.cfm?paperID=6481&pdf=2003-1362\\_Final.pdf](http://www.asee.org/acPapers/code/getPaper.cfm?paperID=6481&pdf=2003-1362_Final.pdf).

T. Pratt and R.J. Bieniek, "Implementing the Seven Principles for Good Practice in Undergraduate Education – Revisiting a Process", 23<sup>rd</sup> Annual Conference on the First-Year Experience (Dallas, TX) 20-24 Feb 2004, [www.sc.edu/fye/events/archive/pdf/2004\\_annual.pdf](http://www.sc.edu/fye/events/archive/pdf/2004_annual.pdf) (105-I).

M.W. Cohen and R.J. Bieniek, "Towards a Culture of Teaching: The University of Missouri System-Wide Program for Early Career Faculty", at Mission, Values and Identity 2004: A National Conference for Carnegie Doctoral/Research Intensive Institutions (Normal, Illinois, 10-12 July 2004)

T. Thiel, S. Peterman, M. Brown, and R.J. Bieniek, "Student-Oriented Learning Centers", Fifth Annual Focus on Teaching & Technology Conference (St. Louis, Missouri, 2-3 Nov 2006) [http://www.umsl.edu/services/ctl/fac\\_programs/teach\\_with\\_tech/2006\\_ftc\\_program.html](http://www.umsl.edu/services/ctl/fac_programs/teach_with_tech/2006_ftc_program.html)

R.J. Bieniek, "Faculty Academic Balance: The NSF CAREER Award as a Model", 17<sup>th</sup> Annual Teaching Renewal Conference (Columbia, Missouri, 22-23 Feb 2007) <http://etapps.missouri.edu/trc/viewschedule.php?skip=10>

R.J. Bieniek, V.Y. Bieniek, and J.F. Farley, "Insuring Success of Collaborative Course-Based Learning Centers for Student Empowerment and Faculty Involvement", 38<sup>th</sup> Annual Conference of the International Society for Exploring Teaching and Learning (Las Vegas, Nevada, 23-25 Oct 2008).

#### **REVIEWED PAPERS FOR SELECTIVE OR BY-INVITATION WORKSHOPS**

R.J. Bieniek, "Looks are deceiving: a pseudoclassical density matrix for cold atom collisions in a laser field", Workshop on Formation of Cold Molecules (Centre de Physique des Houches, France), 1-5 March 1999.

R.J. Bieniek, "Isotope effects in collisional relaxation of molecular hydrogen", *Proceedings of the 2006 NASA Laboratory Astrophysics Workshop* (NASA/CP-2006-214549), pp 299-302 (2006) [www.physics.unlv.edu/labastro/nasalaw2006proceedings.pdf](http://www.physics.unlv.edu/labastro/nasalaw2006proceedings.pdf)



## OTHER PAPERS

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- R.J. Bieniek, "Analytic Methods for Predicting Significant Multi-Quanta Effects in Collisional Molecular Energy Transfer", NASA Document ID 19970010148 N (97N15365), Oct 1996.

#### **SUBSTANTIAL PROFESSIONAL WEB AUTHORINGS**

- Director of Content Development, Expert TA LLC (2011, forefront online STEM learning assistance)
- Missouri S&T Freshman Faculty Manual* (54 pages, initial authorship 2002, updated yearly) (<http://newfaculty.mst.edu/documents/FreshFacManual.pdf>) Information, references, and sample syllabuses, and resources to assist newest faculty to campus.
- Faculty Teaching Resource Center* (**extensive** website, initial authorship 2001, updated continuously) (<http://lead.mst.edu/teachingresources>) Online educational resources for university faculty with an emphasis on STEM disciplines (science, technology, engineering, and mathematics).
- Math and Science Teacher Consortium* (**extensive** website, initial authorship 2004, updated continuously) (<http://lead.mst.edu/mathscicon>) Part of the Science Education and Quantitative Literacy project (<http://seql.mst.edu>) of K-12 teacher development at Missouri S&T, funded by the Missouri Department of Higher Education. Online resources for middle/secondary school science and math teachers to excite interest in STEM disciplines and to increase student performance in the Missouri Assessment Program (MAP) tests. Links to Grade Level Expectations, MAP tests, Lesson Plans, Science for Kids and Teens, How Stuff Works, Tutorials for Microsoft Office and webpage production, etc.
- LEAD Training and Resource Manual*, co-authored with T. Pratt (98 pages, updated yearly by Bieniek) (<http://lead.mst.edu/documents/LEADmanual.pdf>) Pre-professional and pedagogical training and resource material for undergraduate Peer Learning Assistants hired by the Learning Enhancement Across Disciplines Program to provide learning assistance for many courses across campus.

#### **COMPUTATIONAL AND WEB-AUTHORING EXPERIENCE**

- Written large-scale computer codes (in FORTRAN and C/C++) to test various theoretical formulations of physical processes and to develop instructional technology. Created all the websites for the university programs for which I am Director (HTML, Dreamweaver, Documentum, Terminal 4).

#### **PARTICIPATION IN PROFESSIONAL PROGRAMS FOR FACULTY DEVELOPMENT**

- National Institute for New Faculty Developers (Indianapolis, IN, June 2003)
- National Effective Teaching Institute (Portland, OR, June 2005)
- Excellence in Civil Engineering Education Faculty Workshop (Rolla, MO, Oct 2004)
- On Course Faculty Workshop (Rolla, MO, Aug 2004)

## INVITED COLLOQUIA AND PUBLIC LECTURES

70+ talks at other institutions (e.g., Harvard University, Imperial College, Observatoire de Paris, Oxford University, Ecole Normale Supérieure, Università di Firenze, Max-Planck-Institut für Quantenoptik, Laboratoire Aimé Cotton, National Institute of Standards and Technology, Thomas Jefferson National Laboratory, Pennsylvania State University, University of Cape Town)

### 1984

Service de Physique des Atomes et des Surfaces, C.E.N. (Saclay, France)  
National Bureau of Standards (Gaithersburg, MD)  
Oak Ridge National Laboratory (Oak Ridge, TN)  
Haverford College (Haverford, PA)

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Oberlin College (Oberlin, OH)  
Southwest Missouri State University (Springfield, MO)  
Observatoire de Paris (Meudon, France)  
Ecole Normale Supérieure (Paris, France)

### 1986

NASA Langley Research Center (Hampton, VA)  
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Universität Kaiserslautern (Kaiserslautern, Germany)  
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### 1989-1990

University of Iowa (Iowa City, IA)  
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### 1991-1992

Harvard-Smithsonian Center for Astrophysics (Cambridge, MA)  
Phillips Laboratory, Hanscom Air Force Base (Bedford, MA)

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Imperial College (London, England)  
University of Swansea (Swansea, England)  
Oxford University (Oxford, England)  
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**1994-1995**

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Harvard University (Cambridge, MA)  
US Air Force Geophysics Laboratory (Bedford, MA)  
University of Missouri-Columbia (Columbia, MO)

**1996**

NASA Asilomar Conference (Monterey, CA)  
NASA Ames Research Center (Mountain View, CA)

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University of Nevada at Las Vegas (Las Vegas, NV)  
Nichols Research Corporation (Arlington, VA)  
Truman State University (Warrensburg, MO)

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Observatoire de Paris (Meudon, France)

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Albert-Ludwigs-Universität Freiburg (Freiburg, Germany)  
Max-Planck-Institut für Quantenoptik (Garching bei München, Germany)  
Università di Firenze (Florence, Italy)  
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**2000**

University of Arkansas-Fayetteville (Fayetteville, AR)

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University of Nevada at Las Vegas (Las Vegas, NV) 09/12/2002  
National Institute of Standards and Technology (Gaithersburg, MD) 11/1/2002

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University of Missouri-Columbia (Columbia, MO) 02/17/2003  
University of Missouri-St. Louis (St. Louis, MO) 02/21/2003  
University of Missouri-Columbia (Columbia, MO) 09/07/2003  
University of Missouri-Columbia (Columbia, MO) 09/22/2003

**2004**

Harvard University (Cambridge, MA) 06/29/2004  
US Air Force Phillips Laboratory (Hanscom AFB, MA) 07/01/2004

**2006**

University of Nevada, Las Vegas (Las Vegas, NV) 04/07/2006

**2008**

Missouri State University (Springfield, MO) 07/10/2008  
University of Nevada, Las Vegas (Las Vegas, NV) 09/12/2008  
San Jose State University (San Jose, CA) 09/30/2008

**2010**

Pennsylvania State University (State College, PA) 01/28/2010  
US Air Force Academy (Colorado Springs, CO) 02/16/2010  
Virginia Polytechnic Institute and State University (Blacksburg, VA) 06/03/2010



**2011**

Northern Kentucky University (Highland Heights, KY) 1/31/2011

Old Dominion University (Norfolk, VA) 3/15/2011

Thomas Jefferson National Accelerator Facility (Newport News, VA) 3/16/2011

St. Cloud State University (St. Cloud, MN) 5/2/2011

**2012**

Pennsylvania State University, Wilkes-Barre (Lehman, PA) 1/25/2012

Pennsylvania State University, New Kensington (New Kensington, PA) 1/27/2012

Bridgewater State University (Bridgewater, MA) 2/3/2012

University of the Western Cape (Bellville, South Africa) 3/19-4/4/2012

University of Cape Town (Cape Town, South Africa) 4/5/2012

Truman State University (Kirksville, MO) 10/31/2012

**2013**

Marshall University (Huntington, WV) 3/11/2013