Curriculum Vitae of Rex Douglas Ramsier

February 22, 2013

Educational Background

1983 – 1987: The University of Akron, B.Sc.: Physics minor: Mathematics Summa Cum Laude
1987 – 1989: The University of Akron, M.Sc.: Physics
1989 – 1994: University of Pittsburgh, Ph.D.: Physics

Employment Experience

1994 - 1996: Westinghouse Electric Corporation
Bettis Atomic Power Laboratory
Senior Scientist
Areas: Stress Corrosion Cracking; Advanced Energy Conversion

1996 - 2002: The University of Akron
Assistant Professor of Physics
Joint Appointment in Chemistry: 1997
Joint Appointment in Chemical Engineering: 2001

2002 - 2004: The University of Akron
Associate Professor (with tenure) of Physics, Chemistry, and Chemical Engineering

2005 - present The University of Akron
Professor of Physics and Chemistry

2006 - 2007 The University of Akron
Director of the Institute for Teaching and Learning

2007 - 2010 The University of Akron
Associate Provost for Academic Policies, Procedures and Reviews
North Central Association Higher Learning Commission Liaison

2010 - 2012 The University of Akron
Vice Provost for Academic Operations
North Central Association Higher Learning Commission Liaison

2012 - present The University of Akron
Vice Provost for Academic Programs and Operations
North Central Association Higher Learning Commission Liaison

Associate and Vice Provost Related Responsibilities and Activities:

Accreditation:

NCA Focus Visit Coordination (2008)
NCA Change Request Visit Coordination (2008)
NCA Progress Report and Substantive Change Request Coordination (2010 - 2012)

Self-Study Coordination for Spring 2013 NCA Comprehensive Visit (2010 -)
Specialized Programmatic Accreditation Documents; internal peer review, site visitor meetings
HLC Peer Corp Advisory Team (2010 -); workshop facilitator, trainer, guideline developer
HLC Peer Review Corp (2008 -); comprehensive and additional location confirmation visits, change panels

Personnel:

Academic Appeals Committee
Dean and Chair/Director Reviews
Professional Development Leaves
Faculty Bonuses for Prestigious Awards and Grants
Faculty, Staff and Student Issue Resolution
Search Plans and Academic Hiring
Personnel Action Forms and New Hires
Retention, Tenure and Promotion Guidelines and Actions
Faculty Merit Guidelines
Search Committee Member for University Public Relations Personnel
Search Committee for Choose Ohio First Program Coordinator/Prestigious Scholarship Director
Search Committee for Director of EOHS
Chair, Search Committee for Vice Provost for Academic Planning
Chair, Search Committee for Asst. Vice President for Academic Affairs

Governance:

Council of Deans
Department Chairs/School Directors Liaison
Co-Chair, University Council Exploratory Committee
Chair, Academic Policies Committee
Chair, Curriculum Review Committee
Academic Representative on UA-AAUP Contract Negotiating Team
AAUP Contract Adherence and Grievance Matters

Budgetary:

Stoller Fund Allocations
House Bill Fund Allocations
Technology Fund Distributions
Budget scenario support
Enrollment and scholarship distribution support
Undergraduate student academic success (Pathways) implementation

Programmatic:

Women's Studies Program
ROTC Program
Academic Program Review Committee Member
Institutional Research
Institute for Teaching and Learning
Classroom Scheduling and Faculty Workload

Other Supporting Roles:

Undergraduate Bulletin
Institutional Effectiveness
Statewide Student Success Planning Effort; Session Chair at Annual Meetings

Voluntary System of Accountability
NEO Commission
Academic Alignment - University System of Ohio
Economic Growth Challenge/Innovation Incentive Program
Choose Ohio First Scholarship Proposals
Centers of Excellence
Team Member for BioInnovation Institute Center for Biomaterials and Medicine

Ohio Senate Appointee (representing academia): Co-Op/Internship Program Advisory Committee

Thesis/Dissertation Committee Member: Physics, Chemistry, Chem. Eng., Biology, Polymer Science

Research Related Professional Activity

Active Member:

American Chemical Society (ACS)
American Physical Society (APS)
American Vacuum Society (AVS): Vendor Liaison, Ohio Chapter (1997 – 2006)
Chairman, Ohio Chapter (2005 - 2006)

Manuscript Reviewer for:

Langmuir, J. Appl. Phys., Trans. ASME J. Heat Transfer, J. Adhes. Sci. Technol., Corrosion Sci., Talanta, J. Vac. Sci. Technol. A and B, J. Electrochem. Soc., Macromol. Rapid Commun., J. Alloy. Comp., Solar Energy Mater. Solar Cells, Appl. Surf. Sci, J. Phys. Chem., Surf. Coat. Technol., Nanotechnol. Environ. Sci. Technol., J. Phys. D: Appl. Phys., Acta Biomaterialia; J. Phys. Chem.; J. Plastic Film Sheet.

Proposal Reviewer for:

Research Corporation, NSF, NRL/ASEE, ACS-PRF, NKU Center for Integrated Science and Mathematics, State of Kentucky EPSCoR Program, ACS-PRF Panel, Oak Ridge Associated Universities

Co-organizer of:

Ohio AVS Annual Northcoast Symposium (June 1997 and June 1998)
Joint Fall Meeting of Ohio AVS, APS and Materials Network (October 1998)
Joint Spring Meeting of Ohio AVS, ACS and SAS (Brecksville, OH, January 2005)
Joint Spring Meeting of Ohio AVS and SAS (Cleveland, OH, May 2005 and May 2006)

Research Related Honors and Awards

Akron Council Eng. and Science Scholarship: October 1985
E.B. Yeager Scholarship of ACS: May 1987
Naval Research Lab Travel Grant: July 1987
AVS Student Travel Award (Ohio Chapter): November 1987
AVS Graduate Student Award: October 1988
Ohio Board of Regents Fellow: June 1987 - May 1989
Summer Fellow, Wright Patterson Air Force Base: June - August 1989
Andrew Mellon Predoctoral Fellow, Univ. of Pittsburgh: September 1992 - April 1993
AVS Russell and Sigurd Varian Fellow: November 1992 - October 1993
Received Buchtel College Chairs' Citation for Notable Achievement in Early Career: April 1999
North Central Regional Sigma Xi Young Investigator: 2000 and 2002 (Only Six Regions in U.S.)

The University of Akron Outstanding Researcher Award: May 2005
Mentor of the Year Award: November 2005 (student selected)

Patent Efforts at The University of Akron

The University of Akron-470
L. Khatri, G.G. Chase, **R.D. Ramsier** and P. Katta
"Size Controlled Fibers, Tubes, and Channels Synthesized by Heterogeneous Deposition Via Sol-Gel Processing"
Status: U.S. 7,482,297, Jan. 27, 2009

The University of Akron-445
R.D. Ramsier and D. Lundy
"Solid State Gas Sensors Based on Tunnel Junction Geometry"
Status: U.S. 7,677,082, March 16, 2010; CA 2,526,087, September 2011

The University of Akron-444
(Co-Inventor with other faculty)
"Nanofibers with Modified Optical Properties"
Status: U.S. 2005/0287042

The University of Akron-650/677
(Co-Inventor with other faculty)
"Metal Oxide Fibers and Nanofibers, Method for Making Same and Uses Thereof"
Combined with: "Alumina Nanofibers for Li Batteries"
Status: U.S. 2010/0009267

Teaching Related Professional Activity

Courses Taught:

Descriptive Astronomy – freshmen non-science majors
Physics for Life Sciences I, II – sophomore biology/pre-med majors
Elementary Classical Physics I, II – sophomore engineering majors
Elementary Modern Physics – junior engineering/science majors
Thermal Physics – junior engineering/science majors
Introduction to Solid State Physics – senior/graduate science/engineering majors
Advanced Laboratory II – senior/graduate science/engineering majors
Techniques of Physics Instruction – graduate physics majors
Quantum Physics I, II – senior/graduate science/engineering majors

New Courses Developed and Implemented:

Elementary Classical Physics I, II - Honors – sophomore engineering majors
Laboratory for Elementary Classical Physics II – sophomore engineering majors
Light – freshmen non-science majors
Music, Sound, and Physics – freshmen non-science majors
Everyday Physics – undergraduate/graduate middle-level education majors
Energy, the Environment, and the Economy: 'Facts' vs. 'Myths'
- Natural Science Honors Colloquium

Textbook Reviewer for: Prentice Hall, Addison Wesley, John Wiley, Brooks/Cole, Saunders College Publishing

Organized:

Energy Day Presentations at Local Middle Schools
Hands-on Physics Days at UA
Numerous Physics Experiences for 4th Grade, 8th Grade and High School Students
TIMS/Sigma Xi Meetings on Undergraduate Education

Outreach:

Shadowed by Claymont High School Students
Regional Middle School Science Fair Judge
Tour Guide for Local AAPT Meeting
Carnegie Teaching Academy Ambassador
University of Akron Representative to NEO Council's Cleveland Technical Society
Akron Public Schools Textbook Selection Committee
Elementary School Science Fair Judge

Presenter for:

Center for Collaboration and Inquiry Open Class Week
ITL Celebrating Excellence in Teaching and Learning Symposia
OSCI Workshop, Gahanna High School, Columbus, OH
NEOCEX Workshop, Kent State University
Honors Natural Science Colloquia

Reviewer for:

Proceedings of the American Society of Engineering Education
Proceedings of Frontiers in Education
Society for Teaching and Learning in Higher Education

Lesson Plan Developer for:

NEOCEx Lesson Plan Development Team: 2004 - 2005
OSCI Sixth Grade Module Development Team: 2004 – 2005
Partnering for Success Science Teams grades 6-8 and 9-10: 2006

Teaching Related Honors and Awards

Invited to Attend NSF-Sponsored Advanced Lab Workshop: April 1999
Phi Eta Sigma Keynote Speaker: 2000
Inducted into Phi Eta Sigma: April 2000
Inducted into Omicron Delta Kappa: May 2000
Honored by the U.S. Navy Aboard the U.S.S. Nebraska for Project-Based Physics Course: June 2000
Honors Physics Project Display at National Inventor's Hall of Fame: August 2000
Honored by the Univ. of Akron Board of Trustees for Project-Based Physics Course: August 2000
Inducted into National Society of Collegiate Scholars: October 2000
Received Omicron Delta Kappa Favorite Faculty Award: November 2000
Received Alpha Delta Pi Faculty Recognition Award: November 2000
Honors Physics Project Exhibition at Spring Commencement: May 2000 and May 2001
University of Akron Outstanding Teacher: 2001
Awarded PKAL Faculty of the 21st Century Fellowship: 2001
Undergraduate Research Article Highlighted in CUR Quarterly 22, 109 (2002).

Featured in Akron Life and Leisure Magazine: April 2003
ODK Favorite Faculty Invitee: 2003
Teaching Excellence Award from Honors Program: 2004 (student selected)
NSCS Distinguished Member: 2006

Master's and Doctoral Graduate Advisees

Seth Ankrah (MS-Physics)
Ed Bender (MS-Physics)
Kathlyn Bender (MS-Physics)
Jim Ehrman (MS-Physics)
Natalia Farkas (MS-Physics, PhD-Chemistry)
Yong-Cheol Kang (PhD-Chemistry)
Mike Milovancev (MS-Physics)
Mike Ralich (MS-Physics)
Pooja Sharma (MS-Physics)
Nenad Stojilovic (MS-Physics, PhD-Chemistry)
Randy Teye-Mensah (MS-Physics)
Justin Tokash (MS-Physics)
Vivek Tomer (MS-Physics)
Ricky Tuttle (MS-Physics)
Justin Walker (MS-Physics)

Undergraduate Student Co-authors Mentored

Bill Adkins (Engineering)
Lindsey Bloe (Physics)
Brad Buczynski (Biology)
Doug Clauss (Physics)
Jeff Comer (Physics)
Kevin Donnelly (Engineering)
Aly Eggleston (Engineering)
Jim Ehrman (Physics)
Rachel Foster (High School Student)
Melanie Garvin (Education)
Tracie Kittinger (Education)
Matt Lange (Physics)
Jay McNatt (Physics)
Jess Morgan (Physics)
Mike Ralich (Physics)
Matt Shepard (Physics)
Thad Thompson (Engineering)
Tiffany Warren (Education)
Dave Weber (Engineering)
Coral Wheeler (Physics)
Nick Zito (Physics)

Service to The University of Akron Before Entering the Provost's Office

University Delegate to: Sigma Xi, ACESS and OMNOVA meetings

UA Graduate Council Representative:

Chair of Graduate Faculty Status Committee (2001 - 2003)
Vice Chair of Council (2002 – 2003)
Chair of Ad Hoc Program Review Committee (2003)

Thesis/Dissertation Committee Member: Physics, Chemistry, Elect. Eng., Biomed. Eng., Chem. Eng., Polymer Science, Polymer Engineering, Biology, Theoretical & Applied Math

Interviewer for: BSMD program, Regents Fellowships, Industrial Assistantships

Former Chair of:

Physics Graduate, Safety and Security, and 200-Level Course Committees
Physics Staff Search Committee (2000)
Physics Faculty Search Committee (2002)
Research Subcommittee for Provost's Balanced Scorecard Institutional Indicators Workgroup (2005)

Other Activities:

UA Radiation Safety Committee Member (1998 – 2002)
Member of the Task Force for Forming the Center for Collaboration and Inquiry
Served on Distinctive Competencies Task Force for UA Strategic Steering Committee
Buchtel College Council Representative (1998 – 2002)
Alumni Award Selection Committee (2002)
Associate VP for Student Life Search Committee (2002 – 2003)
National Sigma Xi ISEF Special Awards Head Judge (2003)
Greek Awards Judge (2003)
National Society of Collegiate Scholars Faculty Advisor (2000 – 2006)
ODK Province IX (22 Circles) Director (2004-2006) and National Clay Grant Committee Member
Buchtel College of Arts & Sciences Dean Search Committee (2004-2005)
Search Committee Member for Science Education Faculty (2006)
Scholarly Misconduct Inquiry Committee Member (2006)
Committee for Conference on Undergraduate and Graduate Student Research (2004 - 2007)
First Year Experience Task Force Steering Committee (2005 - 2007)
Academic Leadership Forum Participant [as a student] (2006 - 2007)
Learning Commons Core Planning Team (2006 - 2007)
Higher Learning Commission Assessment Academy UA Point Contact (2006 - 2007)
CASTL Undergraduate Research Initiative UA Point Contact (2006 - 2007)
Interviewer and Panel Presenter for Scholarship Fridays/Saturdays (2006 - 2007)
ODK Faculty Secretary (2003 - 2008)
ODK Voting Faculty Member (2000 -)
Physics Honors Preceptor (2000 -)

Supporting Roles for:

Student Success and Retention, and General Education Advisory Committees
Student Assessment Task Force
Provost's Faculty Fellows
Economic Growth Challenge/Innovation Incentive Program

Research Related Publications (current ISI h-index = 17)

1. "An IETS Study of Surface Reactions Applicable to Adhesion", P.N. Henriksen, A.N. Gent, **R.D. Ramsier** and J.D. Alexander, Surf. Interface Anal. 11, 283 (1988).

2. "A Comparison of Two Vibrational Spectroscopies Applied to Hydration Inhibition of Alumina", **R.D. Ramsier** and P.N. Henriksen in Interfaces in Polymer, Ceramic and Metal Matrix Composites, H. Ishida, Ed. (Elsevier Science, New York, 1988) p. 295.

3. "Adsorption of Phosphorus Acids on Alumina", **R.D. Ramsier**, P.N. Henriksen and A.N. Gent, Surf. Sci. 203, 72 (1988).

4. "Alkoxysilane Adsorption on Metal Oxide Substrates", **R.D. Ramsier**, G.R. Zhuang and P.N. Henriksen, J. Vac. Sci. Technol. A 7, 1724 (1989).

5. "Investigation of Thermally Grown Copper Oxides with Inelastic Electron Tunneling Spectroscopy", **R.D. Ramsier**, R.R. Mallik and P.N. Henriksen, J. Appl. Phys. 66, 4539 (1989).

6. "Vibrational Spectroscopy of Phthalimides Adsorbed on Alumina: Models for Polyimide Adhesion", **R.D. Ramsier** and P.N. Henriksen, Appl. Spectro. 44, 37 (1990).

7. "Atomically Resolved AFM Images of Bi on Mica", A.L. Weisenhorn, P.N. Henriksen, H.T. Chu, **R.D. Ramsier** and D.H. Reneker, J. Vac. Sci. Technol. B 9, 1333 (1991).

8. "Inelastic Electron Tunneling Spectroscopy of Alkoxy-Silanes Adsorbed on Alumina", P.N. Henriksen, R.R. Mallik and **R.D. Ramsier**, J. Adhesion Sci. Technol. A 5, 321 (1991).

9. "Photon- versus Electron-Induced Decomposition of $Fe(CO)_5$ Adsorbed on Ag(111): Iron Film Deposition", M.A. Henderson, **R.D. Ramsier** and J.T. Yates, Jr., J. Vac. Sci. Technol. A 9, 1563 (1991).

10. "Electron Stimulated Desorption: Principles and Applications", **R.D. Ramsier** and J.T. Yates, Jr., Surf. Sci. Rep. 12, 243-378 (1991).

11. "Electron Stimulated Desorption and its Application to Chemical Systems", **R.D. Ramsier** and J.T. Yates, Jr., invited to appear in Dynamics of Gas-Surface Interactions, eds. C. Rettner and M.N.R. Ashfold (Royal Society, London, 1991) pp. 257-328.

12. "Electron-Induced Decomposition of $Ni(CO)_4$ Adsorbed on Ag(111)", **R.D. Ramsier**, M.A. Henderson and J.T. Yates, Jr., Surf. Sci., 257, 9 (1991).

13. "Minimizing Ultra-High Vacuum Wall Reactions of $Fe(CO)_5$ by Chemical Pretreatment of the Dosing System", M.A. Henderson, **R.D. Ramsier** and J.T. Yates, Jr., J. Vac. Sci. Technol. A 9, 2785 (1991).

14. "Low-Energy Electron Induced Decomposition of $Fe(CO)_5$ Adsorbed on Ag(111)", M.A. Henderson, **R.D. Ramsier** and J.T. Yates, Jr., Surf. Sci. 259, 173 (1991).

15. "Photochemical Activity of Iron Pentacarbonyl on Ag(111): Photofragmentation, Quenching and Wavelength-dependent Effects", M.A. Henderson, **R.D. Ramsier** and J.T. Yates, Jr., Surf. Sci. 275, 297 (1992).

16. "Direct Observation of Chemical Bond Dynamics on Surfaces", J.T. Yates, Jr., M.D. Alvey, M.J. Dresser, M.A. Henderson, M. Kiskinova, **R.D. Ramsier** and A. Szabo, Science 255, 1397 (1992).

17. "Electron-Induced Decomposition of Metal Carbonyls on Ag(111)", **R.D. Ramsier**, M.A. Henderson and J.T. Yates, Jr., in Desorption Induced by Electronic Transitions, A.R. Burns, E.B. Stechel and D.R. Jennison, Eds., (Springer-Verlag, Heidelberg, 1993) p. 189.

18. "Thermal and Electron-Induced Behavior of d_6-Benzene-Chromium-Tricarbonyl Adsorbed on Ag(111)", **R.D. Ramsier** and J.T. Yates, Jr., Surf. Sci. 289, 39 (1993).

19. "Electronic Excitation of Metal Carbonyls on Ag(111): The Role of Surface-Mediated Quenching", **R.D. Ramsier** and J.T. Yates, Jr., J. Vac. Sci. Technol. A 11, 1936 (1993).

20. "Unusual Adsorption Site Occupation Sequence - NO Adsorption on Stepped Pd(112)", Q. Gao, **R.D. Ramsier**, H. Neergaard Waltenburg and J.T. Yates, Jr., J. Amer. Chem. Soc. 116, 3901 (1994).

21. "Ge Deposition on Pd(111): Adsorption and Decomposition of Ge_2H_6", **R.D. Ramsier**, Q. Gao, H. Neergaard Waltenburg and J.T. Yates, Jr., Surf. Sci. 312, 271 (1994).

22. "NO Adsorption and Thermal Behavior on Pd Surfaces : A Detailed Comparative Study", **R.D. Ramsier**, Q. Gao, H. Neergaard Waltenburg, K.-W. Lee, O.W. Nooij, L. Lefferts and J.T. Yates, Jr., Surf. Sci. 320, 209 (1994).

23. "Thermal Dissociation of NO on Pd Surfaces : The Influence of Step Sites", **R.D. Ramsier**, Q. Gao, H. Neergaard Waltenburg and J.T. Yates, Jr., J. Chem. Phys. 100, 6837 (1994).

24. "Reaction of Chemisorbed NO with Dissolved D/Pd(111)-Production of D_2O", H. Neergaard Waltenburg, Q. Gao, **R.D. Ramsier** and J.T. Yates, Jr., J. Phys. Chem. 98, 12075 (1994).

25. "NO Adsorption and Thermal Behavior on Pd(112): The Effect of Surface Modification by O and Ge", **R.D. Ramsier**, K.-W. Lee and J.T. Yates, Jr., Langmuir 11, 169 (1995).

26. "A Sensitive Method for Measuring Adsorbed Carbon on Palladium Surfaces: Titration by NO", **R.D. Ramsier**, K.-W. Lee and J.T. Yates, Jr., J. Vac. Sci. Technol. A 13, 188 (1995).

27. "CO Adsorption on Stepped Pd(112): Studies by Thermal and Electron Stimulated Desorption", **R.D. Ramsier**, K.-W. Lee and J.T. Yates, Jr., Surf. Sci. 322, 243 (1995).

28. "Dynamics and Structure of Chemisorbed CO on Cu(110): An Electron Stimulated Desorption Ion Angular Distribution Study", J. Ahner, D. Mocuta, **R.D. Ramsier** and J.T. Yates, Jr., J. Vac. Sci. Technol. A 14, 1583 (1996).

29. "Adsorbate-Adsorbate Repulsions - The Coverage Dependence of the Adsorption Structure of CO on Cu(110) as Studied by ESDIAD", J. Ahner, D. Mocuta, **R.D. Ramsier** and J.T. Yates, Jr., J. Chem. Phys. 105, 6553 (1996).

30. "Anisotropy in the Lateral Momentum of CO Chemisorbed on Cu(110) Studied by Time-of-Flight ESDIAD", J. Ahner, D. Mocuta, **R.D. Ramsier** and J.T. Yates, Jr., J. Vac. Sci. Technol. A 15, 1548 (1997).

31. "Dynamical Studies of Surface Species - Observing Librational Motions of Adsorbates", J.T. Yates, Jr., J. Ahner, D. Mocuta and **R.D. Ramsier**, Surf. Sci. 386, 1 (1997).

32. "Measurement of Anisotropy in the Lateral Momentum of a Vibrating Adsorbed Molecule - CO/Cu(110)", J. Ahner, D. Mocuta, **R.D. Ramsier** and J.T. Yates, Jr., Phys. Rev. Lett. 79, 1889 (1997).

33. Erratum: "Anisotropy in the Lateral Momentum of CO Chemisorbed on Cu(110) Studied by Time-of-Flight ESDIAD", J. Ahner, D. Mocuta, **R.D. Ramsier** and J.T. Yates, Jr., J. Vac. Sci. Technol. A 15, 2824 (1997). (Not Peer Reviewed, Editorial Corrections Only)

34. "Ultra-High Vacuum Investigation of the Surface Chemistry of Zirconium", Y.C. Kang, M.M. Milovancev, D.A. Clauss, M.A. Lange and **R.D. Ramsier**, J. Nucl. Mater. 281, 57 (2000).

35. "Scanning Probe Microscopy Tip-Sample Interactions in Primary Alcohols of Varying Chain Length", R.M. Ralich, Y. Wu, **R.D. Ramsier** and P.N. Henriksen,, J. Vac. Sci. Technol. A 18, 1345 (2000).

36. "The Behavior of Zirconium Surfaces in the Presence of Oxygen, Nitrogen, and Hydrogen Containing Adsorbates", Y.C. Kang, D.A. Clauss and **R.D. Ramsier**, J. Vac. Sci. Technol. A 19, 1996 (2001).

37. "Nanolithography of Silicon: An Approach for Investigating Tip-Surface Interactions During Writing", **R.D Ramsier**, R.M. Ralich and S.F. Lyuksyutov, Appl. Phys. Lett. 79, 2820 (2001).

38. "The Adsorption of Ammonia on Zirconium Surfaces: Effect of Adsorption Temperature on the Thermal Desorption of Water", Y.C. Kang and **R.D. Ramsier**, Vacuum 64, 113 (2002).

39. "Measuring and Modeling Thermal Fluctuations at Nanometer Length Scales", R.M. Ralich, **R.D. Ramsier**, D.D. Quinn, C.B. Clemons, and G.W. Young, Phys. Rev. E 65, 057601 (2002).

40. "Solid State Gas Sensors Based on Tunnel Junction Geometry", K.M. Donnelly, A.G. Eggleston, W.R. Adkins, D.A. Clauss and **R.D. Ramsier**, Meas. Sci. Technol. 13, N57 (2002).

41. "Optical and Structural Studies of Films Grown Thermally on Zirconium Surfaces", J.M. Morgan, J.S. McNatt, M.J. Shepard, N. Farkas and **R.D. Ramsier**, J. Appl. Phys. 91, 9375 (2002).

42. "Investigation of Nitric Oxide Adsorption on Zr(0001)", Y.C. Kang and **R.D. Ramsier**, J. Nucl. Mater. 303, 125 (2002).

43. "The Influence of Subsurface Species on Desorption Kinetics: $^{18}O_2$/Zr(0001)", Y.C. Kang and **R.D. Ramsier**, Appl. Surf. Sci. 195, 196 (2002).

44. "Non-destructive Characterization of Films Grown on Zircaloy-2 by Annealing in Air", J.S. McNatt, M.J. Shepard, N. Farkas, J.M. Morgan and **R.D. Ramsier**, J. Phys. D: Appl. Phys. 35, 1855 (2002).

45. "Kinetic Effects of Subsurface Species on Zr(0001) Surface Chemistry", Y.C. Kang and **R.D. Ramsier**, Surf. Sci. 519, 229 (2002).

46. "Ammonia Adsorption on Zr(0001): The Effect of Electron Bombardment on Hydrogen Production", N. Stojilovic, Y.C. Kang and **R.D. Ramsier**, Surf. Interface. Anal. 33, 945 (2002).

47. "Sonication Assisted Growth of Fluoro-Phosphate Films on Alumina Surfaces", J.S. McNatt, J.M. Morgan, N. Farkas, **R.D. Ramsier**, T.L. Young, J. Rapp-Cross, M.P. Espe, T.R. Robinson and L.Y. Nelson, Langmuir 19, 1148 (2003).

48. "Electron Bombardment of Water Adsorbed on Zr(0001) Surfaces", S. Ankrah, Y.C. Kang and **R.D. Ramsier**, J. Phys. C: Cond. Mater. 15, 1899 (2003).

49. "Bacterial Adhesion to Zirconium Surfaces", B.W. Buczynski, M.M. Kory, R.P. Steiner, T.A. Kittinger and **R.D. Ramsier**, Colloids and Surfaces B: Biointerfaces 30, 167 (2003).

50. "Nanoscale Oxidation of Zirconium Surfaces: Kinetics and Mechanisms", N. Farkas, G. Zhang, E.A. Evans, **R.D. Ramsier** and J.A. Dagata, J. Vac. Sci. Technol. A 21, 1188 (2003).

51. "High Temperature Fiber Matrices: Electrospinning and Rare-Earth Modification", W. Kataphinan, R. Teye-Mensah, E.A. Evans, **R.D. Ramsier**, D.H. Reneker and D.J. Smith, J. Vac. Sci. Technol. A 21, 1574 (2003).

52. "Interaction of Methanol with Zr(0001)", N. Stojilovic, D.W. Weber and **R.D. Ramsier**, Appl. Surf. Sci. 218, 188 (2003).

53. "A Wobble-Plate Dynamic Test Device", A.N. Gent, T.T. Thompson and **R.D. Ramsier**, Rubber Chemistry and Technology 76, 779 (2003).

54. "The Role of Subsurface Oxygen in the Local Oxidation of Zirconium and Zirconium Nitride Thin Films", N. Farkas, G. Zhang, K.M. Donnelly, E.A. Evans, **R.D. Ramsier** and J.A. Dagata, Thin Solid Films 447-448, 468 (2004).

55. "Auger Electron Spectroscopy Investigation of SO_2/Zr(0001)", N. Stojilovic, J.C. Tokash and **R.D. Ramsier**, Surf. Sci. 553, 23 (2004).

56. "High Temperature Desorption of Benzene from Zirconium Surfaces", N. Stojilovic and **R.D. Ramsier**, Solid State Commun. 130, 623 (2004).

57. "Organic Molecules on Zirconium Surfaces", N. Stojilovic and **R.D. Ramsier**, J. Vac. Sci. Technol. A 22, 1631 (2004).

58. "Local Oxidation of Metal and Metal Nitride Films", N. Farkas, J.C. Tokash, G. Zhang, E.A. Evans, **R.D. Ramsier** and J.A. Dagata, J. Vac. Sci. Technol. A 22, 1879 (2004).

59. "Organophosphate Adsorption on Metal Oxide Surfaces", M.J. Shepard, J.R. Comer, J.S. McNatt, **R.D. Ramsier**, T.L. Young, J. Rapp-Cross, M.P. Espe, T.R. Robinson and L.Y. Nelson, Peer-Reviewed Proceedings of the 4th Intern. Symp. On Silanes and Other Coupling Agents, vol. 3, K.L. Mittal, Ed., pp. 225-239 (2004).

60. "Behavior of Benzene on Zr(0001): Effect of Electron Bombardment on Benzene Desorption Profiles", N. Stojilovic, J.C. Tokash and **R.D. Ramsier**, Surf. Sci. 565, 243 (2004).

61. "Erbia-Modified Electrospun Titania Nanofibers for Selective Infrared Emitters", R. Teye-Mensah, V. Tomer, W. Kataphinan, J.C. Tokash, N. Stojilovic, G.G. Chase, E.A. Evans, **R.D. Ramsier**, D.J. Smith and D.H. Reneker, J. Phys. Cond. Mater. 16, 7557 (2004).

62. "Continuous Electrospinning of Aligned Polymer Nanofibers onto a Wire Drum Collector", P. Katta, M. Alessandro, **R.D. Ramsier** and G.G. Chase, Nanoletters 4, 2215 (2004).

63. "Effects of Electron Bombardment on the Thermal Desorption of Cyclic Hydrocarbons from Zirconium Surfaces", N. Stojilovic and **R.D. Ramsier**, Chem. Phys. Lett. 399, 53 (2004).

64. "Parallel Writing on Zirconium Nitride Thin Films by Local Oxidation Nanolithography", N. Farkas, J. R. Comer, G. Zhang, E. A. Evans, **R. D. Ramsier**, S. Wight, and J. A. Dagata Appl. Phys. Lett. 85, 5691 (2004).

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51. "Solid-State NMR Characterization of Alkylphosphate/phosphonate Thin Films on Alumina", T.L. Young, **R.D. Ramsier**, T.R. Robinson, L.Y. Nelson and M.P. Espe, (Experimental NMR Conference, Pacific Grove, CA, April 2002).

52. "The Influence of Subsurface Species on Zr(0001) Surface Chemistry", **R.D. Ramsier**, (Invited: Annual Meeting of the Society of Applied Spectroscopy, Cleveland, OH, May 2002).

53. "Non-Destructive Determination of Film Growth Kinetics on Zirconium Surfaces", J. S. McNatt, J.M. Morgan, M.J. Shepard, N. Farkas, and **R.D. Ramsier**, (9th National Meeting of the CUR, New London, CT, June 2002).

54. "Ammonia Adsorption on Zr(0001): Influence of Electron Bombardment", N. Stojilovic, Y.C. Kang, and **R. D. Ramsier**, (ICMSC Meeting on Applied Surface Modeling: Experiment, Theory and Simulations, Cleveland, OH, Aug. 2002).

55. "Experimental Investigation of the Biocompatibility of Zirconium Alloys", T.A. Kittinger, B. Buczynski, **R.D. Ramsier** and M.M. Kory, (ICMSC Meeting on Applied Surface Modeling: Experiment, Theory and Simulations, Cleveland, OH, Aug. 2002).

56. "Isotopic Water Adsorption on Zr(0001) and Electron Bombardment Effects", S. Ankrah, Y.C. Kang and **R.D. Ramsier**, (ICMSC Meeting on Applied Surface Modeling: Experiment, Theory and Simulations, Cleveland, OH, Aug. 2002).

57. "Dispersion of Dopants in Electrospun Nanofiber Matrices: Experimental Investigations", W. Kataphinan, R. Teye-Mensah, R. Wang, **R.D. Ramsier**, E.A. Evans, and D.H. Reneker, (ICMSC Meeting on Applied Surface Modeling: Experiment, Theory and Simulations, Cleveland, OH, Aug. 2002).

58. "Scanning Probe Nanolithography of Zirconium Surfaces", N. Farkas, G. Zhang, K. Donnelly, S.F. Lyuksyutov, E.A. Evans, **R.D. Ramsier** and J.A. Dagata, (ICMSC Meeting on Applied Surface Modeling: Experiment, Theory and Simulations, Cleveland, OH, Aug. 2002).

59. "Adsorption of Organo-Phosphorus Species on Aluminum and Zirconium Surfaces", M.J. Shepard, J.R. Comer, J.S. McNatt, M.P. Espe, **R.D. Ramsier**, T.R. Robinson and L.Y. Nelson, (ICMSC Meeting on Applied Surface Modeling: Experiment, Theory and Simulations, Cleveland, OH, Aug. 2002).

60. "Non-destructive Characterization of Films Grown on Zircaloy-2 by Annealing in Air", J.S. McNatt, M.J. Shepard, N. Farkas, J.M. Morgan and **R.D. Ramsier**, (ICMSC Meeting on Applied Surface Modeling: Experiment, Theory and Simulations, Cleveland, OH, Aug. 2002).

61. "Thermal and Electromagnetic Effects on Cantilevers at Nanometer Length Scales: Effects on AFM Assisted Nanolithography", R.M. Ralich, **R.D. Ramsier**, C.B. Clemons and G.W. Young, (NATO Institute on Scanning Probe Microscopy: Characterization, Nanofabrication and Device Application of Functional Materials, Algarve, Portugal, Oct. 2002).

62. "Investigation of Erbium Dispersion in Electrospun Nanofiber Matrices", W. Kataphinan, **R.D. Ramsier**, E.A. Evans and D.H. Reneker, (Fall Meeting of the AVS, Denver, CO, Nov. 2002).

63. "Atomic Force Microscope Assisted Oxidation of Zirconium Surfaces", N. Farkas, G. Zhang, S.F. Lyuksyutov, E.A. Evans, **R.D. Ramsier** and J.A. Dagata, (Annual Meeting of the AVS, Denver, CO, Nov. 2002).

64. "Nanoscale Oxidation of Zirconium Surfaces: Kinetics and Mechanisms", **R.D. Ramsier** (invited), (SPM Nanolithography Workshop, NIST, Nov. 2002).

65. "High Temperature Electrospun Fibers and Rare-Earth Modification", W. Kataphinan, R. Teye-Mensah, E.A. Evans, **R.D. Ramsier**, D.J. Smith and D.H. Reneker, (225th ACS National Meeting, New Orleans, LA, March 2003).

66. "Zirconium: An Engineering Material for the Biologist, Chemist and Physicist in All of Us", (invited), (Wittenberg University Undergraduate Research Symposium, Springfield, OH, April 2003).

67. "Oxidation of Zirconium and Zirconium Nitride Thin Films: Comparison of Thermal, Electron Bombardment, and Local Oxidation Processes", N. Farkas, G. Zhang, E.A. Evans, **R.D. Ramsier** and J.A. Dagata, (ICMCTF 2003, San Diego, CA, April 2003).

68. "The Role of Subsurface Oxygen in AFM Oxidation of Zr and ZrN Thin Films", N. Farkas, G. Zhang, K.M. Donnelly, E.A. Evans, **R.D. Ramsier** and J.A. Dagata (invited), (Annual Meeting of the Society of Applied Spectroscopy, Cleveland, OH, May 2003).

69. "Adsorption of Organo-Phosphorus Species on Oxidized Metal Surfaces**", R.D. Ramsier** (invited), (4th Intern. Symp. Silanes and Other Coupling Agents, Orlando, FL, June 2003).

70. "Synthesis Materials for High Temperature Nanofibers", P. Katta, L. Khatri, **R.D. Ramsier** and G.G. Chase, (16th Annual AFS Technical Conference, Reno, NV, June 2003).

71. "Electrospinning Titania Alkoxide Precursor with Rare Earth Compounds", W. Kataphinan, R. Teye-Mensah, E.A. Evans, **R.D. Ramsier**, D.J. Smith and D.H. Reneker, (ACS National Symposium, New York, NY, Sept. 2003).

72. "Zeolite Nanofibers for Diesel Engine Filters", L. Khatri, **R.D. Ramsier** and G.G. Chase, (AFS Topical Conference, Ann Arbor, MI, Sept. 2003).

73. "Titania Nanofibers for High Temperature Filtration", P. Katta, L. Khatri, **R.D. Ramsier** and G.G. Chase, (AFS Topical Conference, Ann Arbor, MI, Sept. 2003).

74. "Low Temperature Infrared Emission from Rare-Earth-Oxide Doped Electrospun Titania Nanofibers", R. Teye-Mensah, V. Tomer, W. Kataphinan, E.A. Evans, D.H. Reneker, D.J. Smith and **R.D. Ramsier**, (post-deadline) (30th Annual FACSS meeting, Fort Lauderdale, FL, Oct. 2003).

75. "Alignment of Electrospun Nanofibers", L. Khatri, E.A. Evans, **R.D. Ramsier** and G.G. Chase, (AIChe Annual Meeting, San Francisco, CA, Nov. 2003).

76. "High Temperature Resistant Oxide Nanofibers", L. Khatri, **R.D. Ramsier** and G.G. Chase, (AIChe Annual Meeting, San Francisco, CA, Nov. 2003).

77. "Influence of Stoichiometry and Structure on the Local Oxidation of Metal Films", N. Farkas, G. Zhang, K.M. Donnelly, E.A. Evans, **R.D. Ramsier** and J.A. Dagata, (Annual Meeting of the AVS, Baltimore, MD, Nov. 2003).

78. "The Adsorption of Benzene on Zr(0001)", N. Stojilovic and **R.D. Ramsier**, (Annual Meeting of the AVS, Baltimore, MD, Nov. 2003).

79. "Local Oxidation of Reactive Metal and Metal Nitride Films", N. Farkas, J. C. Tokash, G. Zhang, A. Orians, J. McHood, S. Djurkovic, S. I. Hariharan, E. A. Evans, G. W. Young, C. Clemons, D. Golovaty, and **R. D. Ramsier**, (The Northeast Ohio Nanoscience and Nanotechnology Research Symposium, Cleveland, OH, Feb. 2004).

80. "Erbia-Containing Electrospun Titania Nanofibers as Selective Emitters for Low Temperature Thermophotovoltaic Energy Conversion", R. Teye-Mensah, V. Tomer, W. Kataphinan, J.C. Tokash, N. Stojilovic, G.G. Chase, E.A. Evans, **R.D. Ramsier**, D.J. Smith and D.H. Reneker, (March Meeting of the APS, Montreal, CA, March 2004).

81. "High Temperature Nanofibers for Advanced Filtration Concepts", P. Katta, L. Khatri, **R.D. Ramsier** and G.G. Chase, (9th World Filtration Congress, New Orleans, LA, April 2004).

82. "Desorption from Zirconium Surfaces: The Role of Carbon and Sulfur", N. Stojilovic, J.C. Tokash, D.W. Weber and **R.D. Ramsier**, (Annual Meeting of the Society of Applied Spectroscopy, Cleveland, OH, May 2004).

83. "Surface Analysis of Prosthetic Wear Particulates", J.C. Tokash, N. Stojilovic, **R.D. Ramsier**, M.W. Kovacik and R.A. Mostardi, (Surface Analysis '04, Richland, WA, June 2004).

84. "Influence of Surface Properties on Biological Adhesion to Zirconium Alloys", T.A. Kittinger, E.A. Yamokoski, L.M. Bloe, M.M. Kory, R.P. Steiner and **R.D. Ramsier**, (Accepted for ASTM Symposium on Titanium, Niobium, Zirconium, and Tantalum for Medical and Surgical Applications, Washington, DC, Nov. 2004). This paper was not presented in person due to a medical emergency.

85. "Electronic and Ionic Processes in Local Oxidation of Titanium Nitride Thin Films", N. Farkas, J.R. Comer, G. Zhang, E.A. Evans, **R.D. Ramsier** and J.A. Dagata, (Annual Meeting of the AVS, Anaheim, CA, Nov. 2004).

86. "TPD Study of Cyclohexane on Zr(0001)", N. Stojilovic, J.C. Tokash and **R.D. Ramsier**, (Annual Meeting of the AVS, Anaheim, CA, Nov. 2004).

87. "Synthesis and Characterization of Titania Nanofibers", P. Katta, L. Khatri, **R.D. Ramsier** and G.G. Chase, (AIChe Annual Meeting, Austin, TX, Nov. 2004).

88. "Dispersive Kinetics in Atomic Force Microscope Assisted Oxidation of Zirconium Nitride", J.R. Comer, N. Farkas, G. Zhang, **R.D. Ramsier**, E.A. Evans and J.A. Dagata, (MRS Annual Meeting, Boston, MA, Nov. 2004).

89. "SPM Oxidation and Parallel Writing on Zirconium Nitride Thin Films", N. Farkas, J.R. Comer, G. Zhang, E.A. Evans, **R.D. Ramsier** and J.A. Dagata, (Joint AVS, ACS, SAS Ohio Spring Meeting, Cleveland, OH, Jan. 2005).

90. "Sulfur Segregation and Oxidation of Zircaloy-4 Surfaces", N. Stojilovic, E.T. Bender and **R.D. Ramsier,** (Joint AVS, ACS, SAS Ohio Spring Meeting, Cleveland, OH, Jan. 2005).

91. "Phosphate Deposition on Aluminum Oxide Nanofibers", J. Cross, W. Kataphinan, D.H. Reneker, **R.D. Ramsier** and M.P. Espe, (Joint AVS, ACS, SAS Ohio Spring Meeting, Cleveland, OH, Jan. 2005).

92. "Bacterial Adhesion to Zr Surfaces: Biocompatibility of Zr Alloys", E.A. Yamokoski, **R.D. Ramsier** and M.M. Kory, (Joint AVS, ACS, SAS Ohio Spring Meeting, Cleveland, OH, Jan. 2005).

93. "Nano-Micro-Macro: Bridging the Gaps with Novel Materials", **R.D. Ramsier**, (invited) (Joint AVS, ACS, SAS Ohio Spring Meeting, Cleveland, OH, Jan. 2005).

94. "X-ray Photoelectron Spectroscopy to Monitor Prosthetic Wear in Synovial Fluid", M.W. Kovacik, I.A. Gradisar, J.C. Tokash, N. Stojilovic and **R.D. Ramsier**, (ORS Annual Meeting, Washington, DC, Feb. 2005).

95. "Ceramic Electrospun Nanofibers as Selective Emitters for Thermophotovoltaic Energy Conversion", W. Kataphinan, V. Tomer, G.G. Chase, E.A. Evans, **R.D. Ramsier**, D.J. Smith and D.H. Reneker, (APS March Meeting, Los Angeles, CA, March 2005).

96. "High-voltage Oxidation of Sputter-deposited Zirconium Nitride Thin Films", N. Farkas, J.R. Comer, G. Zhang, E.A. Evans, **R.D. Ramsier** and J.A. Dagata (Microscopy Society of Northeastern Ohio, Cleveland, OH, April 2005).

97. "Interaction of Water and Isotopic Oxygen with Zircaloy-4 Surfaces", N. Stojilovic, E.T. Bender and **R.D. Ramsier**, (Annual Meeting of the Society of Applied Spectroscopy, Cleveland, OH, May 2005).

98. "Solid-State NMR Characterization of Aluminum Oxide Nanofibers", J.L. Cross, R.W. Tuttle, **R.D. Ramsier** and M.P. Espe, (47th Rocky Mountain Conference on Analytical Chemistry, Denver, CO, July 2005).

99. "High Electric Field Nanoimprint Lithography of Metal Thin Films", N. Farkas, P. Meduri, E.A. Evans, **R.D. Ramsier** and J.A. Dagata, (Annual Meeting of the AVS, Boston, MA, Nov. 2005).

100. "Adsorption of Sulfur Dioxide on Zircaloy-4", N. Stojilovic and **R.D. Ramsier**, (Annual Meeting of the AVS, Boston, MA, Nov. 2005).

101. "Patterned Iron Thin Film and Microfluidic Phantoms for Quantitative Magnetic Resonance Imaging", N. Farkas, R. Aryal, E.A. Evans, **R.D. Ramsier**, L.V. Ileva, S.T. Fricke and J.A. Dagata, (Society for Experimental Biology and Medicine, Alexandria, VA, March 2006).

102. "Nano-Stamped Structures for Bio-Template and MRI Applications", N. Farkas, R. Aryal, E.A. Evans, **R.D. Ramsier**, L.V. Ileva, S.T. Fricke and J.A. Dagata, (Annual Meeting of Society for Biomaterials, Pittsburgh, PA, April 2006).

103. "Identifying In-Vivo Prosthetic Wear Debris Using Spectroscopic Techniques", M.W. Kovacik, J.D. Ehrman, E.T. Bender, N. Stojilovic and **R.D. Ramsier**, (Annual Meeting of Society for Biomaterials, Pittsburgh, PA, April 2006).

104. "Adhesion of Microbes to Zirconium Alloy Surfaces: Surface Spectroscopic Identification", E.T. Bender, T. Sullivan, J.D. Ehrman, N. Stojilovic, B.W. Buczynski, M.M. Kory, R.P. Steiner and **R.D. Ramsier**, (Annual Meeting of Society for Biomaterials, Pittsburgh, PA, April 2006).

105. "The Interaction of Human Cells with Orthopedic Prosthetic Metal Alloys: Current and Novel Materials", (invited) M.W. Kovacik and **R.D. Ramsier**, (Microscopy Society of NEO, Akron, OH, April 2006).

106. "Spectroscopic Characterization of Electrospun Metal Oxide Nanofibers", E.T. Bender, A. Lotus, P. Katta, S.J. Park, G.G. Chase and **R.D. Ramsier**, (Annual Meeting of the Society of Applied Spectroscopy, Cleveland, OH, May 2006).

107. "Fabrication of Patterned Iron Thin Film and Microfluidic Phantoms for Quantitative Assessments in MRI", N. Farkas, R. Aryal, E. A. Evans, **R.D. Ramsier**, L.V. Ileva, S.T. Fricke and J.A. Dagata (Annual Meeting of the Society of Applied Spectroscopy, Cleveland, OH, May 2006).

108. "Synthesis and Characterization of Erbia Doped Metal Oxide Nanofibers for Applications in Thermophotovoltaics", E.T. Bender, R. Wang, M.T. Aljarrah, E.A. Evans and **R.D. Ramsier** (Annual Meeting of the AVS, San Francisco, CA, Nov. 2006).

109. "SPM Nanolithography of ZrN Thin Films: Nitrogen-Enhanced Growth and Hollow Oxide Feature Formation", N. Farkas, E.A. Evans, **R.D. Ramsier** and J.A. Dagata (Annual Meeting of the AVS, San Francisco, CA, Nov. 2006).

110. "Nanofiber Based Er(III) Metal Pyrochlore Oxides : Synthesis and Characterization", R. Wang, E.T. Bender, T.M. Aljarrah, E.A. Evans and **R.D. Ramsier**, (MRS Annual Spring Meeting, San Francisco, CA, April 2007).

111. "Catalytic Filter Media Made of Palladium Particles Supported on Alumina Nanofibers", S. Bhargava, S.J. Park, E.T. Bender, G.G. Chase, **R.D. Ramsier** and J. Finley, (Ohio Nanotechnology Summit, Akron, OH, April 2007).

112. "Fabrication, Characterization, and Electrical Properties of Ceramic Nanofiber Yarns by Electrospinning", A.F. Lotus, E.A. Evans, **R.D. Ramsier**, D.H. Reneker and G.G. Chase, (AIChE Annual Meeting, Salt Lake City, UT, Nov. 2007).

113. "Apatone® Treatment Reduces NFκB Levels of Synovial Fibroblasts Following Metal Particulate Exposure", M.W. Kovacik, R.A. Mostardi, D.R. Neal, P.N. Shah, J.M.A. Jamison, J.I. Walker and **R.D. Ramsier**, (in review, Orthopaedic Research Society, Las Vegas, NV, Feb. 2009).

Teaching Related Presentations at Professional Meetings

1. "Cold Fusion: Past, Present and Future?", **R.D. Ramsier**, (Akron Physics Club, Akron, OH, Jan. 1997).

2. "Laser Imaging of Graded Index Media", J.M. Modin, J. Grebing, **R.D. Ramsier**, P.N. Henriksen, R.M. Batalha, N. Ida and S.I. Hariharan, (Fall Meeting of the Ohio Sections of the APS, AVS and MatNet, Akron, OH, Oct. 1998).

3. "New Strategies in the Introductory Physics Classroom", **R.D. Ramsier**, (Annual Meeting of Sigma Xi, Minneapolis, MN, Nov. 1999).

4. "Hysteresis in a Light Bulb: Bridging the Gap Between Electricity and Thermodynamics via Experimentation and Simulation", D.A. Clauss, R.M. Ralich and **R.D. Ramsier**, (Summer AAPT Meeting, Ontario, Canada, July 2000).

5. "Squeezed Light: Two Simple Models Illustrating the Creation and Interaction of Squeezed Photons", R.M. Ralich and **R.D. Ramsier**, (Summer AAPT Meeting, Ontario, Canada, July 2000).

6. "Science as a Business", **R.D. Ramsier**, (University of Pittsburgh Careers in Science Seminar Series, Pittsburgh, PA, Aug. 2000).

7. "Hybrid Learning Strategies in University Physics: Recent Attempts and Lessons Learned", **R.D. Ramsier**, (Northern Kentucky University CINSAM Series, Highland Hts., KY, Oct. 2000).

8. "Propane-Fueled Jet Engine", D.A. Farwell, A.J. Svenson and **R.D. Ramsier**, (Spring Meeting of the Ohio Section of the APS, Kent, OH, April 2001).

9. "Interdisciplinary Approaches for Improving Undergraduate Education", C. Monroe, K. Owens, **R. D. Ramsier** and J. Savery, (Summer PKAL Institute, Snowbird, UT, July 2001).

10. "Experiential Learning in Introductory Physics: A Mechanism for Instilling Research into the Undergraduate Curriculum Across Disciplines", M.R. Garvin, A.S. Varian, J.M. Morgan and **R.D. Ramsier**, (PKAL Faculty for the 21st Century National Meeting, Madison, WI, Oct. 2001).

11. "Introducing Undergraduates to Research via Experiential Learning Courses", M.R. Garvin, J.M. Morgan, A.S. Varian and **R.D. Ramsier**, (9th National Meeting of the CUR, New London, CT, June 2002).

12. "University Physics: A Hybrid Approach", **R.D. Ramsier**, F.S. Broadway, H.M. Cheung, E.A. Evans and H.K. Qammar, (National ASEE Meeting, Nashville, TN, June 2003).

13. "Focusing on Teamwork Versus Technical Skills in the Evaluation of an Integrated Design Project", H.K. Qammar, H.M. Cheung, E.A. Evans, F.S. Broadway and **R.D. Ramsier**, (National ASEE Meeting, Nashville, TN, June 2003).

14. "Assessment of Student Learning During an Engineering Design Project", F.S. Broadway, H.K. Qammar, H.M. Cheung, E.A. Evans and **R.D. Ramsier**, (National ASEE Meeting, Nashville, TN, June 2003).

15. "Assessment Tools for Developing Teamwork Skills", H.M. Cheung, E.A. Evans, H.K. Qammar, **R.D. Ramsier**, and F.S. Broadway (AIChe Annual Meeting, San Francisco, CA, November 2003).

16. "Optics and Indirect Measurements", **R.D. Ramsier** (invited), (Ohio Board of Regents Teaching Fellows Conference, Columbus, OH, April 2004).

17. "Highlighting Innovative Pedagogy in the College Physics Classroom", **R.D. Ramsier** (invited), (Northeast Ohio Centers of Excellence for Mathematics and Science Education Conference, Kent, OH, April 2004).

18. "Impact of Vertically Integrated Design Projects on First Year Engineering Students", H.K. Qammar, H.M. Cheung, E.A. Evans, S. Prettyman Spickard, F.S. Broadway and **R.D. Ramsier**, (National ASEE Meeting, Salt Lake City, UT, June 2004).

19. "Promoting Self-Development via a Vertically Integrated Project", S. Prettyman Spickard, H.K. Qammar, F.S. Broadway, **R.D. Ramsier**, E.A. Evans and H.M. Cheung, (National ASEE Meeting, Salt Lake City, UT, June 2004).

20. "Vertically Integrated Multidisciplinary Teaming: An Instructional Framework Adapted to a Non-Engineering Course", J. Comito, T.A. Kittinger, **R.D. Ramsier**, F.S. Broadway, H.M. Cheung, E.A. Evans and H.K. Qammar, (Frontiers in Education Conference, Savannah, GA, Oct. 2004).

21. "The Impact of Vertical Integration of Design Teams on the Chemical Engineering Program", H.K. Qammar, H.M. Cheung, E.A. Evans, F.S. Broadway, **R.D. Ramsier** and S. Spickard-Prettyman, (Frontiers in Education Conference, Savannah, GA, Oct. 2004).

22. "Journaling and Teaming Activities in Student-Centered Science Courses: Lessons Learned", **R.D. Ramsier**, (Lilly Conference on College Teaching, Athens, OH, Nov. 2004).

23. "Listening to Future Teachers Reflect on Learning and Teaching Science Through Inquiry", K. Bender and **R.D. Ramsier**, (Joint symposium sponsored by Ohio Centers of Excellence for Math & Science Education, ODE, and OBOR, Columbus, OH, April 2007).

Research Related Funding

University of Akron Buchtel College of Arts and Sciences "Start-up Funds" Status: Provided August 1996	Total Value	50,000
University of Akron Faculty Research Grant "A Novel Approach for the Detection of Sulphur Dioxide" Status: Funded November 1996	Total Value	3,200
Proctor and Gamble Equipment Grant (Co-PI with Henriksen) Status: Funded December 1996	Total Value	163,200 est.
Fermenthaus Canada, Inc. Grant "A Novel Approach for the Detection of Sulphur Dioxide Based on Surface Catalysis" Status: Funded July 1997	Total Value	6,000
University of Akron Faculty Summer Fellowship "Fundamental Studies of Zirconium Surfaces for Improving the Safety and Reliability of Nuclear Reactors" Status: Funded May 1998	Total Value	8,000
University of Akron Carnegie Research Challenge Program "Funds for Enabling Proposals for Federal Funding" Status: Funded January 1999	Total Value	25,000
Allen Miller Laboratory Inc. Equipment Grant "Equipment Donation for Electronic and Mechanical Fabrication" Status: Funded February 1999	Total Value	13,700 est.
University of Akron Faculty Summer Fellowship "Attractive Forces Between Molecules at the Atomic Scale: A Fundamental Approach to Understanding the Properties of Surfaces" Status: Funded January 2000	Total Value	8,000
Goodyear Tire & Rubber Company "Equipment Grant for Materials Processing in Inert and Vacuum Environments" Status: Funded April 2000	Total Value	11,250 est.
Research Corporation Grant "The Influence of Nitrogen on the Surface Chemistry of Zirconium: Interactions with Oxygen and Hydrogen" Status: Funded May 2000	Total Value	48,000
Korry Electronics Grant "Spectroscopic and Structural Investigations of Surface/Adsorbate Systems" Status: Funded January 2001	Total Value	6,000

University of Akron Faculty Research Grant "Adhesively Bonded Aluminum: A Surface Science Approach" Status: Funded March 2001	Total Value	3,500
NASA Glenn Equipment Grant "Nanotechnology Equipment for Student Training and Research" Status: Funded August 2001	Total Value	36,750 est.
Alcoa Equipment Grant (Co-PI with Evans) "Complete Physical Vapor Deposition System with Four Point Probe Measurement Capability" Status: Funded December 2001	Total Value	25,400 est.
Korry Electronics Grant (Co-PI with Espe) "The Surface Chemistry of Organo-phosphonates" Status: Funded January 2002	Total Value	6,000
ACS-PRF "Hyperthermal Growth of Oxide and Nitride Films on Zirconium Surfaces" Status: Funded June 2002	Total Value	60,000
DOE (Lead PI with four other faculty) "High Temperature Nanofiber Research for Advanced Electric Power Technologies" Status: Funded January 2004	Total Value	56,000
NIH-NIBIB (Lead PI with two other faculty and external collaborators) "Biocompatibility of Zirconium Alloys" Status: Funded April 2004	Total Value	244,500
NIST-SURF (to support an undergraduate student at NIST for Summer 04) "Scanned Probe Oxidation of Thin Metallic Films" Status: Funded, May 2004	Total Value	6,620
NIST-MEL (to support a graduate student at NIST for Summer 04) "Scanning Probe Oxidation of Zirconium- and Titanium-Nitride Thin Films " Status: Funded, June 2004	Total Value	5,000
NSF-NIRT Program (Co-PI with other faculty and collaborators) (OBR Funding Associated with this Proposal also) "Nanofiber Manufacturing for Energy Conversion and Utilization" Status: Funded August 2004	Total Value	1,542,000

Omnova Equipment Grant (Co-PI with Dhinojwala) "Donation and Support of Surface Characterization Instrumentation" Status: Approved August 2004	Total Value	140,000 est.
DOE – extension of open contract (Lead PI with four other faculty) "High Temperature Nanofiber Research for Advanced Electric Power Technologies" Status: Funded September 2004	Total Value	13,500
NIST-MEL (to support a graduate student at NIST for Summer 05) "Scanning Probe Oxidation and Nano-Pattern Stamping of Metal and Metal Nitride Thin Films" Status: Funded June 2005	Total Value	6,000
DOE-NETL (Lead PI with four other faculty) "High-Temperature Nanofiber Research for Hydrogen Storage and Ammonia Control" Status: Funded August 2005	Total Value	56,250
Jing Wang Consulting Experimental Technical Agreement Status: Contract Ratified April 2006	Total Value	2,000 est.
Portage Electric Products Experimental Technical Agreement Status: Contract Ratified April 2006	Total Value	2,000 est.
NIST-MEL (to support a graduate student at NIST for Summer 06) "Nano-imprint Lithography and SPM for Test Structures for MRI Standardization" Status: Funded June 2006	Total Value	6,000
The Timken Company Experimental Technical Agreement Status: Contract Ratified October 2006	Total Value	2,000 est.
Gentex Corporation (Co-PI with Espe) "Alumina Nanofibers for Phosphate Decomposition" Status: Funded November 2006	Total Value	4,000
NIST-MEL "Post-Doctoral Research Fellowship" Status: Funded August 2006	Total Value	29,700
NIST-MEL "Post-Doctoral Research Fellowship" Status: Funded February 2007	Total Value	28,300

NIST-MEL “Post-Doctoral Research Fellowship” Status: Funded October 2007	Total Value	65,000
NIST-MEL “Post-Doctoral Research Fellowship” Status: Funded June 2008	Total Value	79,000
NIST-MEL “Post-Doctoral Research Fellowship” Status: Funded September 2009	Total Value	79,000
NIST-MEL “Post-Doctoral Research Fellowship” Status: Funded September 2010	Total Value	81,000
NIST-MEL “Post-Doctoral Research Fellowship” Status: Funded September 2011	Total Value	78,000
NIST-MEL “Post-Doctoral Research Fellowship” Status: Funded September 2012	Total Value	88,000

Teaching Related Funding

Ohio House Bill 748/General Education Fund (Co-PI with several other physics faculty) "Inter-Disciplinary Training of Physics Students" Status: Funded December 1996	Total Value	49,200
Ohio House Bill 748/General Education Fund (Co-PI with several other physics faculty) "Multimedia and Demonstration Equipment" Status: Funded March 1997	Total Value	20,100
Conductus Corporation Equipment Grant (Co-PI with Henriksen) "Superconducting Quantum Interference Device (SQUID)" Status: Funded March 1998	Total Value	4,600
Ohio House Bill 850 Fund "Computer-Interfaced Laboratory Equipment" Status: Funded May 1999	Total Value	28,000
University of Akron 1999 Summer Teaching Grant "Inquiry-Based Computer-Interfaced Laboratory Development" Status: Funded May 1999	Total Value	4,800
Sigma Xi/NSF Travel Grant for PKAL 2000 Summer Institute (Co-PI with Qammar, Owens, Wheland and Foos) "Cross-Disciplinary Team for Undergraduate Education Reform" Status: Funded May 2000	Total Value	3,000
University of Akron Stoller Fund "Developing Students' Transferable Skills in the Context of Introductory Physics" Status: Funded October 2000	Total Value	6,800
Ohio House Bill 640 Fund "Equipment for Introductory Physics Labs" Status: Funded February 2001	Total Value	71,550
Lockheed Martin Inc. "Support for Project-Based Physics Course" Status: Funded February 2001	Total Value	800
Sigma Xi/NSF (Co-PI with Qammar, Owens, Wheland and Foos) "Education Reform Team Support" Status: Funded March 2001	Total Value	600
Sigma Xi/NSF Travel Grant for PKAL 2001 Summer Institute (Co-PI with Monroe, Owens, and Savery) "Cross-College Team for Undergraduate Education Reform" Status: Funded June 2001	Total Value	1,500

University of Akron Stoller Fund
"Incorporating Student Centered Learning in Undergraduate
Physics Courses and Assessing the Outcomes with ABET Criteria"
Status: Funded October 2001 Total Value 6,000

NSF-BEE Program
(Co-PI with Engineering and Education Faculty)
"Planning Grant to Establish the Center for Engineering Learning"
Status: Funded August 2002 Total Value 138,000

Ohio House Bill 675 Fund
(Part of Departmental Proposal)
"Equipment for Non-Science Major Physics Labs"
Status: Funded May 2003 Total Value 42,000

University of Akron Stoller Fund
"New Course Development for Addressing Specific Student
Needs and Extending Faculty Collaboratives"
Status: Funded May 2003 Total Value 10,000

University of Akron FYE CPI Project
(PI with Engineering and Education Faculty)
"Team Based Learning for General Education Courses"
Status: Funded August 2003 Total Value 5,500

University of Akron FYE CPI Project
(Co-PI with Engineering and Education Faculty)
"Team Design Impact on Engineering Freshmen
Performance, Motivation, and Retention"
Status: Funded August 2003 Total Value 6,000

Choose Ohio First Scholarship Program
Collaboration: UA, SSCT, LCCC, B-W (proposal coordinator and writer for lead institution)
"STEM Undergraduate Engagement in an Engineering Environment"
Status: Funded March 2008 Total Value 6,500,000*

WIA Earmark Proposal
Lead Organization: Greater Akron Chamber (coordinator for UA)
"Regional Economic Strength Through Student
Professional Apprenticeship Program"
Status: Awarded July 2009 Total Value 290,000

Ohio Means Internships and Co-ops Program
Collaboration: multiple industrial partners (internal coordinator role only)
"Replicating a Proven Model to Provide Experiential
Opportunities for Student Success"
Status: Funded Spring 2013 Total Value 930,000*

*plus matching funds