

## Curriculum Vitae of Rex Douglas Ramsier

May 29, 2020

### Educational Background

1983 - 1987: The University of Akron, B.S.: Physics; Minor: Mathematics; Summa Cum Laude  
1987 - 1989: The University of Akron, M.S.: 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

2002 - 2005 Associate Professor of Physics (with tenure)

2005 - Professor of Physics (with tenure)

Joint Appointment in Chemistry: 1997 - 2015  
Joint Appointment in Chemical Engineering: 2001 - 2005

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

2007 - Higher Learning Commission (HLC) Liaison

2007 - 2010 Associate Provost for Academic Policies, Procedures and Reviews

2010 - 2012 Vice Provost for Academic Operations

2012 - 6/2015 Vice Provost for Academic Programs and Operations

1/2014 - 2/2015 Interim Dean, College of Applied Science and Technology

10/2014 - 6/2015 Interim Dean, Graduate School

7/2015 - 10/2016 Senior Vice Provost

1/2016 - 10/2016 Interim Senior Vice President and Provost

10/2016 - 4/2019 Senior Vice President and Provost (title discontinued 4/2019)

12/2017 - 5/2020 Executive Vice President/Chief Administrative Officer

5/2020 - Vice Provost and Director of Academic Administrative Services

Brief Summary of EVP Roles and Responsibilities (some varied with time)

Oversee enrollment management including registrar, financial aid and student support services

Supervise human resources and labor relations, including negotiation, implementation and compliance of contracts

Ensure accreditation compliance and reporting for disciplinary accreditations as well as liaison with the Higher Learning Commission

Manage the administrative portion of action planning, budget development and implementation

Review, investigate and respond as appropriate to various complaints, grievances, appeals, etc. from within or outside the University

Ensure compliance with University rules and policies, with current emphasis on employee conflict of interest/conflict of commitment disclosures and faculty workload policies

Exercise authority and responsibility to execute contracts on behalf of the University such as partnership agreements and contracts involving the expenditure of money within the limits set by the Board of Trustees

Oversee externally funded programs such as Army ROTC, Choose Ohio First, Academic Achievement, Confucius Institute and NCERCAMP

Supervise the EXL Center and the International Center including study abroad and ELI

Support the President and serve on Cabinet

Liaison with assigned Board of Trustees committees

### Highlights of Sr. Vice Provost/Provost Activities

Assumed duties of the Office of the President for almost six weeks while Interim President was selected

Formed and worked with the tiger team involving major governance groups to move the institution forward at a critical time in our history

Enlisted the aid of Ernst & Young (pro-bono) to facilitate campus change management

Participated in the formal approval of the University Council, and continued as an active member of the body

Led our HLC comprehensive self-study process involving many campus groups, in only four months, with the best result for UA in many years (i.e. no focus visits, only interim reports, all of which were accepted without monitoring)

Encouraged Graduate Council to take the role of Executive Committee of the Graduate Faculty seriously, leading to an unprecedented recommendation to restructure our graduate assistant funding model - Implemented the new policy once approved by the Faculty Senate, leading to millions of dollars in general fund savings

Worked with Akron-AAUP and Faculty Senate leadership to develop the Transition After Retirement Program for faculty, to aid in succession planning and enhance program stability by maintaining institutional knowledge of our senior faculty

Enlisted the assistance of numerous faculty to develop and launch a comprehensive and robust program review process to enable the campus to develop a strategic plan and to ensure high quality and competitiveness of our offerings - Resource reallocations and new investments in strategic areas will result. Eighty degrees and degree tracks had admissions suspended effective August 15, 2018, and 31 faculty hires in areas of strength and opportunity were announced.

Engaged with the Deans in a new transparent model for critical and strategic faculty hiring requests, and for allocating graduate assistant funding - These decisions were made months earlier than ever before at UA, to enable us to be competitive in hiring the best faculty and attracting quality graduate students

Managed and in some cases eliminated position vacancies in the colleges resulting in several millions of dollars in savings

Upon the advice of the University Council Communication Committee, launched a Provost's Update series to keep lines of communication open between all faculty and academic administrators

Continued to work with others to develop critical dashboards in order to make data-informed decisions, track our progress, and use predictive analytics

Assumed overall responsibility for undergraduate student enrollment management, admissions, and financial aid, developing a new model for making the admissions process an academic endeavor and engaging the colleges more directly in recruiting and retention efforts

Served as an active participant of the Inter-University Council Provosts' Committee, including proactive engagement on several important committees

Continue an active role with HLC as team chair, IAC member, and new peer reviewer training facilitator

Maintain Graduate Faculty II Status and a low level of scholarly productivity, primarily due to on-going collaborations with other more productive faculty

Assumed responsibility for the International Center, including Study Abroad and the English Language Institute.

Associate and Vice Provost Related Responsibilities and Activities (some varied over time, some still continue):

Accreditation:

HLC Focused Visit and Change Request Coordination (2007 - 2008)  
HLC Progress Report and Change Request Coordination (2010 - 2012)  
HLC Comprehensive Visit Coordination (2010 - 2013); (2016-2017)  
HLC Focused Visit Coordination (2014 - 2015)  
HLC Peer Corp Advisory Team (2010 - 2013); workshop facilitator, trainer, guideline developer  
HLC Peer Review Corp (2008 - ); comprehensive, change, advisory, fact-finding, and additional location visits;  
change and non-financial indicator panels; panel leader; team chair; new reviewer training facilitator  
HLC advanced certificate in peer review (2015)  
HLC Institutional Actions Council member; recorder (9/2015 - )  
HLC Peer Review Corp Evaluation Rubric Development Team (2016 - )  
Specialized Programmatic Accreditation; document review/editing, site visitor meetings, institutional responses  
(ABET, AACSB, ACBSP, NASD, NASM, NCATE/CAEP, APA, CACREP, CAATE, ABA, etc.)

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 (Faculty, Chairs/Directors, Deans, Staff)  
Personnel Action Forms and New Hires  
Retention, Tenure and Promotion Guidelines and Actions  
Faculty Merit Guidelines  
Search Committee Member: University Public Relations Personnel; Choose Ohio First Program  
Coordinator/Prestigious Scholarship Director; Director of EOHS; Vice Provost and Exec. Dean CAST; Vice Provost  
and Dean Honors College  
Search Committee Chair: Vice Provost for Academic Planning; Asst. Vice President for Academic Affairs  
Oversight of College of Education until Interim Dean hired (Sept. 2012 – June 2013)  
Oversight of College of Health Professions until Inaugural Dean hired (July – Nov. 2014)  
Oversight of College of Engineering until Interim Dean hired (June – Sept. 2015)

Governance:

Council of Deans  
Department Chairs/School Directors Liaison  
Co-Chair, University Council Exploratory Committee  
Chair, Academic Policies Committee of Faculty Senate  
Chair, Curriculum Review Committee of Faculty Senate  
Academic Representative on UA-AAUP Contract Negotiating Team  
AAUP Contract Adherence and Grievance Matters  
Dean Representative on University Council Communications Committee (while Interim Dean)

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

Member (approx. 30 years, lapsing in 2017):

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)

### Patents 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

### 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

Reviewer for: Prentice Hall, Addison Wesley, John Wiley, Brooks/Cole, Saunders College Publishing, The Physics Teacher, European Journal of Physics

Organized:

Energy Day Presentations at Local Middle Schools  
Hands-on Physics Days at UA  
Numerous Physics Experiences for 4<sup>th</sup> Grade, 8<sup>th</sup> 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  
Honorary Phi Alpha Sigma Member: 2013

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 - ca. 2006)

Physics Honors Preceptor (2000 - ca. 2006)

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

### Materials Science Related Publications

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)<sub>5</sub> 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)<sub>4</sub> 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)<sub>5</sub> 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)<sub>5</sub> 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:  $^{18}\text{O}_2/\text{Zr}(0001)$ ", 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).

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M.M. Milovancev, Y.C. Kang, D.A. Clauss, M.A. Lange and **R.D. Ramsier** (Fall Meeting of the Ohio  
Sections of the APS, AVS and MatNet, Akron, OH, Oct. 1998).
27. "Temperature Programmed Desorption Study of Zirconium Surfaces", Y.C. Kang, M.M. Milovancev,  
D.A. Clauss, M.A. Lange and **R.D. Ramsier** (Fall Meeting of the Ohio Sections of the APS,  
AVS and MatNet, Akron, OH, Oct. 1998).
28. "Temperature Programmed Desorption Studies of Deuterium Oxide Adsorbed on Zirconium  
Surfaces", M.M. Milovancev, Y.C. Kang, D.A. Clauss, M.A. Lange and **R.D. Ramsier**  
(March Meeting of the APS, Atlanta, GA, March 1999).
29. "SPM Tip-Sample Interactions in Primary Alcohols of Varying Chain Length", R.M. Ralich, Y. Wu,  
**R.D. Ramsier** and P.N. Henriksen, (Fall Meeting of the AVS, Seattle, WA, Oct. 1999).
30. "Experimental Investigations of the Surface Chemistry of Zirconium", M.M. Milovancev, Y.C. Kang,  
D.A. Clauss, M.A. Lange and **R.D. Ramsier**,  
(Annual Meeting of Sigma Xi, Minneapolis, MN, Nov. 1999).

31. "Stability of Aluminum Nitride Films in Oxidizing Environments", **R.D. Ramsier**, D.K. Kalyanasundaram, M. Graham, A. Salifu and E.A. Evans, (ICMCTF 2000, San Diego, CA, April 2000).
32. "Thermal Behavior of Water and Ammonia on Zr(0001) Surfaces", Y.C. Kang and **R.D. Ramsier**, (Symposium in Honor of Prof. J.T. Yates, Jr., Pittsburgh, PA, Aug. 2000).
33. "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**, (Fall Meeting of the AVS and NANO-6, Boston, Mass, Oct. 2000).
34. "Plasma Processing of Aluminum Nitride", D.K. Kalyanasundaram, A. Salifu, M. Graham, **R.D. Ramsier** and E.A. Evans, (Fall Meeting of AIChE, Los Angeles, CA, Nov. 2000).
35. "The Surface Science of Zirconium: Improving the Safety of Chemical and Nuclear Applications", **R.D. Ramsier**, (Northern Kentucky University Sigma Xi Series, Highland Hts., KY, Oct. 2000).
36. "New Approaches to Silicon Nanolithography", R.M. Ralich, S.F. Lyuksyutov and **R.D. Ramsier**, (NanoSpace 2001, Galveston, TX, March 2001).
37. "Novel Approach for Silicon Nanolithography", R.M. Ralich, S.F. Lyuksyutov and **R.D. Ramsier**, (March Meeting of the APS, Seattle, WA, March 2001).
38. "The Growth of Environmentally Passive Films on Zirconium Surfaces", J.M. Morgan, J.S. McNatt and **R.D. Ramsier**, (Spring Meeting of the Ohio Section of the APS, Kent, OH, April 2001).
39. "The Reactivity of Nitrogen-Containing Adsorbates on Zr(0001)", Y.C. Kang and **R.D. Ramsier**, (Spring Meeting of the Ohio Section of the APS, Kent, OH, April 2001).
40. "Fundamental Approach to Understanding AFM-assisted Nanolithography of Silicon", **R.D. Ramsier**, R.M. Ralich and S.F. Lyuksyutov, (Spring Meeting of the Ohio Section of the APS, Kent, OH, April 2001).
41. "The Influence of Subsurface Species on Desorption Kinetics: Oxygen/Zr(0001)", Y.C. Kang and **R.D. Ramsier**, (March Meeting of the APS, Indianapolis, IN, March 2002).
42. "Dissociation of Ammonia on Zr(0001) Induced by Thermal and Electronic Excitation", N. Stojilovic, S. Ankrah, Y.C. Kang and **R.D. Ramsier**, (March Meeting of the APS, Indianapolis, IN, March 2002).
43. "Optical and Structural Studies of Films Grown Thermally on Zirconium Surfaces", N. Farkas, J.M. Morgan, J.S. McNatt, M.J. Shepard and **R.D. Ramsier**, (March Meeting of the APS, Indianapolis, IN, March 2002).
44. "Anomalous Current in Scanning Probe Nanolithography", R.M. Ralich, S.F. Lyuksyutov, P. Paramonov and **R.D. Ramsier**, (March Meeting of the APS, Indianapolis, IN, March 2002).
45. "Thermal Chemistry of Nitric Oxide on Zirconium Surfaces", Y.C. Kang and **R.D. Ramsier**, (Spring Meeting of the Ohio Section of the APS, Youngstown, OH, April 2002).
46. "Characterization of Environmentally Passive Films Grown on Zirconium Surfaces", N. Farkas, J.M. Morgan, M.J. Shepard, J.S. McNatt and **R.D. Ramsier**, (Spring Meeting of the Ohio Section of the APS, Youngstown, OH, April 2002).

47. "The Effect of Electron Bombardment on Isotopic Water Adsorbed on Zr(0001) Surfaces", S. Ankrah, Y.C. Kang and **R.D. Ramsier**, (Spring Meeting of the Ohio Section of the APS, Youngstown, OH, April 2002).
48. "Production of Water as a Result of Ammonia Adsorption on Zr(0001) and the Influence of Electron Bombardment", N. Stojilovic, Y.C. Kang and **R.D. Ramsier**, (Spring Meeting of the Ohio Section of the APS, Youngstown, OH, April 2002).
49. "Thermal and Electromagnetic Effects on Cantilevers at Nanometer Length Scales", R.M. Ralich, D.D. Quinn, **R.D. Ramsier**, C.B. Clemons and G.W. Young, (Spring Meeting of the Ohio Section of the APS, Youngstown, OH, April 2002).
50. "Nanolithography on Zirconium Surfaces", N. Farkas, S.F. Lyuksyutov, and **R.D. Ramsier**, (Spring Meeting of the Ohio Section of the APS, Youngstown, OH, April 2002).
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**, (9<sup>th</sup> 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, (225<sup>th</sup> 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), (4<sup>th</sup> 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, (16<sup>th</sup> 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) (30<sup>th</sup> 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, (9<sup>th</sup> 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. Kovacic 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. Kovacic, 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, (47<sup>th</sup> 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. Kovacic, 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. Kovacic 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 Erbium 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<sup>®</sup> Treatment Reduces NFκB Levels of Synovial Fibroblasts Following Metal Particulate Exposure", M.W. Kovacic, 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).

### Education Related Presentations at Professional Meetings (1997 – 2007)

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 21<sup>st</sup> 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**, (9<sup>th</sup> 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).

### Materials Science 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

NIST-MEL  
“Post-Doctoral Research Fellowship”  
Status: Funded October 2013; Total Value 98,000

U.S. Army Construction Engineering Research Laboratory  
“National Center for Education and Research on Corrosion and Materials Performance:  
Enhancing and Sustaining Technical Support for the Office of Corrosion Policy and Oversight”  
Status: Substituted as PI; Total Value 15.2 M; Close-out June 2016

U.S. Army Construction Engineering Research Laboratory  
“National Center for Education and Research on Corrosion and Materials Performance:  
Technical Efforts to Support the Office of Corrosion Policy and Oversight”  
Status: Substituted as PI; Total Value 16.7 M; Close-out May 2017

Ohio Department of Higher Education  
“SPD Process Development and Approval Project”  
Status: Substituted as PI; Total Value 4.0 M; Close-out December 2017

U.S. Air Force  
“Technical Efforts to Support the Office of Corrosion Policy and Oversight”  
Status: Substituted as PI; Total Value 16.7 M; Close-out September 2018

### Education 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