Robert John Hamers
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University of Wisconsin-Madison
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Post-graduate Experience:

Steenbock Professor of Physical Science, 2014-present
Wisconsin Distinguished Professor, 2007-present
Chemistry Department Chair, 2007-2010
Chemistry Department Associate Chair, 2006-2007
Arthur Adamson Professor of Chemistry, 2008-2013
Irving Shain Chair, 2004-2009
Evan P. Helfaer Chair, 1996-2001
Professor of Chemistry, 1994-present
Associate Professor 1990-1994

Co-Founder and Chief Science Officer, Silatronix, Inc., Start-up company commercializing organosilicon electrolytes for safer lithium ion batteries (~20 employees), 2007-present.

Visiting Scholar, University of Oxford, Dept. of Materials, Oxford, England, 2000-2001

Research Staff Member, "Nanophysics" group, Physical Sciences Division, IBM T.J. Watson Research Center, Yorktown Heights, NY, 1986-1990

Visiting Scientist, IBM T.J. Watson Research Center, Yorktown Heights, NY, 1985-1986

Research Areas:

Chemistry, photochemistry, electronic properties, and atomic-level structure of semiconductor surfaces and interfaces. Chemical transformations and environmental impact of nanomaterials. Development and implementation of novel analytical probes and characterization tools for in situ chemical analysis at surfaces and interfaces. Electrochemical energy storage.

Education:

Ph. D. 1986, M.S. 1982, Cornell University
Major Field: Physical Chemistry; Minor Fields: Applied Physics, Theoretical Chemistry
Thesis Topic: State-to-state energy transfer in molecule-surface collisions: NO/Ir(111)
Research Advisors: Paul L. Houston and Robert P. Merrill

B.S. with Honors and Distinction, Chemistry Course, University of Wisconsin-Madison, 1980.

Selected Honors and Awards:

Fellow of the American Chemical Society, Elected 2016
Langmuir Lecturer Award, American Chemical Society, 2016
Giddings Lecturer, University of Utah, 2015
Steenbock Professor of Physical Science, UW-Madison, 2014-present (10-year renewable term)
Wisconsin Distinguished Professor (UW-System), 2007-2012, 2014-present
Ronald T. Pflaum Colloquium, Inaugural Lecturer, Univ. of Iowa Dept. of Chemistry, October 2014
Frontiers in Chemical Research Distinguished Lecturer Series, Texas A&M University, 2013
Class of 1960 Fellow, Williams College, 2012
American Chemical Society National Award in Colloid and Surface Chemistry, 2012

H.H. King Lecturer, Kansas State University, September 2010
Medard Welch Award, AVS Science and Technology Society, 2009
International Nanostructures, Surfaces and Interfaces Prize (12th International Conference on Formation of Semiconductor Interfaces, Weimar, Germany), 2009
Wisconsin Alumni Research Foundation Named (Arthur Adamson) Professor, 2008-13
Fellow of the American Association for the Advancement of Science (AAAS), elected 2004
American Chemical Society, Arthur Adamson Award for Distinguished Service in the Advancement of Surface Chemistry, 2005.
Irving Shain Chair, University of Wisconsin-Madison Dept. of Chemistry, 2004-2008
Recognition as "Highly-Cited Researcher", principal field of Materials Science, Institute for Scientific Information (Web of Science)
IBM Faculty Award, 2002 and 2003
NSF "Special Creativity" Awards, 2000-2002 and 2002-2004
John Simon Guggenheim Memorial Foundation Fellowship, 2000-2001
Kellett Mid-Career Award, University of Wisconsin-Madison, 2000
S.C. Johnson Co. Distinguished Fellow, 2000-2003
Vilas Associates Award, 1998
Evan P. Helfaer Chair in Chemistry, University of Wisconsin-Madison, 1996-2001
Innovation Recognition Program, Union Carbide Corporation, 1996 and 1997
Fellow of the American Vacuum Society (now AVS Science and Technology Society), elected 1994
Peter Mark Memorial Award, American Vacuum Society, 1993 (Outstanding Scientist or Engineer under 35 years of age)
National Science Foundation Presidential Faculty Fellowship, 1992-1997
Camille and Henry Dreyfus New Faculty Award, 1990-1995
IBM Research Division Award for STM Studies of Surface Reactions on Semiconductors, 1989
IBM Corporation Outstanding Innovation Award for Scientific Accomplishments with Scanning Tunneling Spectroscopy, 1987
Wentink Outstanding Graduate Student Award, Cornell University Dept. of Chemistry, 1985
National Science Foundation Graduate Fellowship, 1980-83

Professional Affiliations:

American Association for the Advancement of Science (Fellow)
American Chemical Society (Fellow)
American Vacuum Society (Fellow)
Materials Research Society
Phi Beta Kappa
PROFS (Public Representation Organization of the Faculty Senate)
Sustainable Nanotechnology Organization
Wisconsin Alumni Association (lifetime member)

Selected Professional and National Service:

Academic Leader/Trainer, ACS-Cottrell Scholars Academic Leadership Training Workshop, Washington DC, January 2017 and January 2018.
Site Review Team, U. of Penn. NSF Science & Technology Center, Engineering Mechanobiology, Oct. 2017
Co-chair, NSF Workshop on Midscale Instrumentation for the Chemical Sciences, 2016
DOE-BES Committee of Visitors, EFRC/Energy Hubs, Nov. 15-17, 2016.
Member, External Review Committee, Indiana University Dept. of Chemistry, 2017
Pacific Northwest National Laboratory Science Theme Advisory Panel, 2017
NSF Review Panel, Carbon Materials, 2017

External Advisory Board, University of Minnesota MRSEC, 2017-present
Director, NSF Center for Sustainable Nanotechnology (Phase 1: 2012-2015, Phase 2: 2015-present)
Senior Editor, Accounts of Chemical Research (American Chemical Society), 2015-present
EAGLE School Board of Directors (school for talented and gifted children), 2015-present
Editorial Advisory Board, Accounts of Chemical Research (American Chemical Society), 2014-2015
Editorial Advisory Board, Environmental Science: Nano (Royal Society of Chemistry), 2013-2016
American Chemical Society, Chair of the Colloid and Surface Chemistry Division (3-year elected sequence of Chair-elect, Chair, Past Chair), 2013-2015
American Chemical Society, National Awards Selection Committee, 2012-2014
Member, American Chemical Society Graduate Profile Advisory Board, 2013
Member, External Review Committee, Univ. of Iowa Dept. of Chemistry, September 2012
National Nanotechnology Infrastructure Network review and reverse site visit, June & August 2013
ARPA-E RANGE Program Review Panel, July 2013
American Chemical Society, co-organizer, symposium on Nanomaterials and the Environment, Spring 2012 National Meeting, March 2012
Co-Chair, Workshop on Nanomaterials and the Environment (sponsored by NSF), June 28-30, 2011
Chair, U.S. Naval Research Laboratory External Review Committee for Chemistry/Materials, 2011
Member, State of Wisconsin Legislative Council Special Committee on Nanotechnology, 2010-2011 (more information at http://www.legis.state.wi.us/lc/committees/study/2010/NANO/index.htm)
International Organizing Committee (4-person primary organizing committee), European Conference on Diamond and Diamond-like Materials, 2007-present.
Chair, US. Naval Research Laboratory External Review Committee for Chemistry/Materials, June 2008
Science Foundation Ireland (SFI), Proposal Reviewer, 2012
Austrian Science Foundation (FWF) Proposal Reviewer, 2012
Dept. of Energy, Energy Frontier Research Centers Review Team, 2012
Dept. of Energy, Early CAREER Reviewer, 2011, 2012, 2013
National Science Foundation Centers for Chemical Innovation Site Visit team, Irvine, CA, 2011
National Science Foundation SBIR Phase I Review Panel, 2010 and 2011
National Science Foundation Science and Technology Center Review Panel, 2011
National Science Foundation CAREER Review Panel, 2009 and 2010
National Science Foundation MRSEC Review Panel, 2008
Co-chair, Workshop on “Materials Education” Workshop (sponsored by NSF), 2007-2008
National Program Committee Co-chair (member of 4-person primary organizing committee) Materials Research Society, Spring 2008 National Meeting, San Francisco, CA
Visiting Committee Member, Cornell Center for Materials Research, 2007
Chair, External Review Committee, U.S. Naval Research Laboratory, Chemistry/Materials Areas, 2005
National Science Foundation External Review Panel, Penn State University MRSEC, 2006
National Science Foundation Review Panel, Chemical Bonding Centers, 2005
National Science Foundation Review Panel, Small Business Innovative Research (SBIR) Review Panel, 2005
National Research Council of Canada, Peer Review Site Visit Team, Steacie Institute for Molecular Sciences, Ottawa, Canada, (2-day review + written report), 2004
Chair, 65th Annual Physical Electronics Conference, Madison, WI, June, 2005
National Nanotechnology Initiative Research Directions II Workshop, National Academy of Sciences, Washington, DC (Discussion leader and lead report-writer on “Energy and the Environment”), September, 2004
Symposium Organizer, Materials Research Society National Spring Meeting, "Biological –Inorganic Hybrid Materials" (50 talks in 7 sessions). 2004

Moderator, 2003 Gordon Research Conference on Chemistry of Electronic Materials, Connecticut College

Invited Lecturer/Instructor, ACS-PRF Summer School on Physical Chemistry on the Nanometer Scale, Washington State University (4 lectures), July-Aug., 2003

NSF Review Panel, SBIRs and Nanotechnology, 2003

NSF Site Review Team, Ohio State Environmental Molecular Sciences Institute, Columbus, OH, May, 2003.

American Vacuum Society, Trustees of the Scholarships and Awards Committee (National elected position) 2001-2004

Editorial Advisory Board, "Surface Science" (Elsevier Press), 2001-2007

Editorial Advisory Board, "Surface Science Reports (Elsevier), 2006- 2009

Program Chair, 10th NSF Workshop on Materials Chemistry, Tempe, AZ, 2003

External Advisory Board, NSF Environmental Molecular Sciences Institute on Oxidative Catalysis, Northwestern University

Organizing Committee, 9th NSF Workshop on Materials Chemistry, Newark, DE, 2002

Chair, Local Arrangements, 8th NSF Workshop on Materials Chemistry, Madison, WI, 2001

American Vacuum Society NSTD Division, National Program Committee Chair, 1999

Invited Lecturer/Instructor, Enrico Fermi International School of Physics, Varenna, Italy (3 lectures), July, 2000

American Vacuum Society Nanometer Science and Technology Division, Vice-chair (1997) and Chair, 1998

NSF Site Visit Committee for Environmental Molecular Sciences Institutes: Columbia University, Princeton University, Northwestern University, 1999

International Review Committee, Osaka University "Center of Excellence", Osaka, Japan, Jan. 1998

Defense Science Study Group, Institute for Defense Analyses/DARPA, 1996-1997

Materials Research Society, focused session co-Organizer, 1996

American Physical Society, Co-Organizer, 2 sessions, 1996 National March Meeting, Cincinnati

8th International Conference on Scanning Tunneling Microscopy, Program Committee Chairman, Snowmass, CO, 1995

American Vacuum Society: National Program Committee Member, 1994

American Vacuum Society: Executive Board Member, Nanometer Science and Technology Division, 1992

American Physical Society: co-organizer, focused session on Atomistic Processes of Epitaxial Growth on Si

National Science Foundation, site review team for Environmental Molecular Sciences Institutes, 1998

NSF Review Panel Environmental Molecular Sciences Institutes (EMSI), January, 1998

NSF Review Panel for Materials Synthesis and Processing Initiative, 1994

NSF Review Panel for Chemistry Instrumentation Grant Program, 1997

Materials Research Society, developed and taught first short course on "Scanned Probe Microscopies", 1987-1989

Reviewer for Applied Physics, Applied Physics Letters, Journal of Applied Physics, DOE, International Science Foundation, Journal of Chemical Physics, Journal of Physical Chemistry, Journal of Vacuum Science and Technology, Langmuir, Nature, NSF, Nature, Petroleum Research Fund, Physical Review, Review of Scientific Instruments, Science, Surface Science

Selected University Service/Administration

Director, Center for Sustainable Nanotechnology (multi-institutional interdisciplinary research grant, centered at UW-Madison), Phase I (2012-2015) and Phase II (2015-2020, renewable to 2025)

Science Coalition Presentation to US Congressional staff, Washington DC, scheduled Oct. 25, 2017.
Member, Provost's Ad Hoc Committee on Family Leave, 2016-present
Chair, UW-Madison Commission on Faculty Salary and Economic Benefits, 2013-2016
Public Access to Research Working Group (VCGRE committee to make recommendations on how UW should accommodate OSTP mandate re. public access to scientific research results), 2016-2017
Search and Screen Committee, Vice Provost for Faculty and Staff, 2014
Search and Screen Committee, Dean of the College of Letters and Science, 2013
Co-founder, Associate Director and member of the Executive Committee, UW-Madison Nanoscale Science and Engineering Center (NSEC); 2002-2014. Thrust 4 co-leader 2008-2014
Co-PI, REU (Research Experience for Undergraduates) Site on Chemistry of Materials for Renewable Energy, 2013-present. (Joint program between Chemistry and Chemical & Biol. Engineering)
Working Group on Undergraduate Research, via Vice Provost for Teaching & Learning, 2012-2015
Materials Science Program/Materials Engineering Reorganization Committee Member, 2013-2014
Institutional Nominations and Internal Competitions (INIC), Graduate School, 2014-2015.
Executive Committee, UW-Madison Materials Research Science and Engineering Center (MRSEC), 2005-2013; Interdisciplinary Research Group Co-leader, 2005-13,
Search committee, Johnson Controls/ UW-Madison Endowed Chaired Professor in Energy Storage, 2011
College of Letters and Science Honors Program Advisory Committee 2007-2010
Internal Selection Committee, UW-Madison NSF NIRT Grants, 2005
University Committee on Conflict of Interest, 2003-2005
Workshop on Leadership Development. Developed workshop on leadership skills for graduate students as part of CoE Teaching Improvement Program, Jan. 2005 and Jan. 2006
Selection Committee, Packard Award Nominees, 2002
Chair, Grad School Ad Hoc Strategic Plan Committee, UW-Madison Materials Science Program, 1998-1999
Physical Sciences Representative, workshop for junior faculty on "Mentoring Graduate Students", Jan. 1999.
Ad Hoc Review Committee for Dept. Of Geology and Geophysics, 1997
Ad Hoc Committee on Office of Sponsored Programs Mission and Visions, 1997
Campus Committee on Microscopy and Image Analysis, 1994-1998
Graduate School Research Committee, 1992-1995
Materials Science Program Advisory Committee, 1990-present

Chemistry Department Service (selected, partial list):

Diversity Committee, 2015-present
Materials Chemistry Ph.D. Program Founder (2002) and Program Chair, 2002-2007, 2011-2012
Ad Hoc Committee on Ethics (3-member committee charged with investigating possible ethics violations by a chemistry faculty member), 2015
CHOPS (Chemistry Opportunities, for first-generation college, under-represented groups), 2012-2014
Finance/Rooms Committee (primary dept. decision-making body) 1997-1999, 2004-2006, 2011-2015
Department Chair Search & Screen Committee, 1998, 2001, 2004, 2013, 2014
Chemistry Department Chair, 2007-2010
Chemistry Department Associate Chair 2006-2007
Post-tenure Review Committee, 2006-2007, 2015-present
Fundraising/Development Committee, 2006-2008, 2011-2013
Analytical Sciences Division Chair, 1997-1999, 2004-2006, 2011-2012
Department Web Committee, Chair 1996-1998, 2004-2007; Member 2010-present
Chair, Faculty Search Committee, 2001-2002, 2002-2003, 2003-2004

Chair, Materials Chemistry Graduate Recruiting, 2002-2006
Chair, Chemistry Department Shops Committee, 1991-1997
Chemistry Department Undergraduate Curriculum Committee, 1993-1997
Chemistry Department Computing Committee, 1991-2003, 2008-present

Selected K-12 and Public Outreach Activities:

Susnano blog site: This is the major K-12 outreach activity associated with the Center for Sustainable Nanotechnology. http://sustainable-nano.com, Spanish language version http://nano-sostenible.com.
Nelson Institute "Earth Day" speaker, Monona Terrace Convention Center, Madison, WI, 2018
Congressional briefings to US Senate and US House of Representatives, sponsored by the Science Coalition, 2017 (https://www.youtube.com/watch?v=C1JBE2tOfPg&feature=youtu.be)
Founders' Day Speaker, UW-Alumni Association of Racine/Kenosha, 2017
Founders' Day Speaker, UW-Alumni Association of Cincinnati, OH 2016
Founders' Day Speaker, UW-Madison, 2015
Intel Science Talent Search: Mentored Madison Memorial High School student on research project 2010-2012; semifinalist in national completion Jan. 2013
Siemens Math, Science, and Technology Competition: Mentored Madison Memorial High School student Sohil Shah on research project 2010-2012; regional finalist
Wisconsin State Legislature: Testified at Informational Hearing of the Wisconsin State Assembly Committee on Public Health on "Applications and Environmental Impact of Nanoscale Materials", Oct. 2009
PEOPLE (Pre-College Enrichment Opportunity Program for Learning Excellence) Program: Workshop on Scanning Electron Microscopy (workshops performed by grad students), 2004-present annually
Engineering EXPO: participated in EXPO displays, 2009, 2011, 2013
Wisconsin Rural Leadership Program: Presentation and extensive laboratory tour to statewide group of community leaders primarily drawn from rural communities
EAGLE School Science Olympiad Team. Assisted team, worked extensively with students and traveled to state middle-school state competition in Oshkosh, 2011
EAGLE School Science Mentor Program: Mentoring of 8th grade students working on ~8-week science projects; 1-2 students each year, 2002-present
Madison Metropolitan School District: Summer Science Intern Program: Mentoring of high school students conducting full-time summer research; 1-2 students each year, 2003-present
Edgewood High School Science Mentor Program: Mentored high school student conducting full-time research at UW, summer 2006
Radio Program: Taped radio interview on "Nanotechnology and Energy", broadcast on WORT, 2008
Television Program: "In Wisconsin" on Nanotechnology, taped ~7-minute segment, broadcast 3 times across Wisconsin, 2006
Radio Program: Live 30-minute radio interview on "Nanotechnology", broadcast on WORT radio, 2006
Citizen's Consensus Conference on Nanotechnology (2005): served as expert panelist
Reporter's Workshop on Nanotechnology. Presentation and hands-on activities for reporters from across the U.S., 2005
Legislator's Workshop on Nanotechnology. Presentation and hands-on activities for legislators and policymakers, principally from Wisconsin, 2006
Conversations in Science: Program for high school and middle school teachers, televised and re-broadcast, 2005
Women of Science Day. Hands-on workshop and tours with operation of scanning electron microscope, 2005.

Radio Project: Worked with middle school students to construct > 100 functioning AM radios (2002-2003)

"Nano Cafe" on Nanotechnology and the Environment (public outreach event), Speaker and participant, 2007

"The Atom", part of the "World of Chemistry" series hosted by Nobel prize winner Roald Hoffman 1986

Invited Talks, 1990-present

2018 (some to be delivered)

TBD	Purdue University Chemical Department
TBD	Oregon State University
November	NanoSafe Conference, Grenoble, France
September	29th International Conference on Diamond and Carbon Materials, Dubrovnik, Croatia
August	American Chemical Society National Meeting, Boston, MA
July	Telluride Conference on Chemical Reactions at Surfaces, Telluride, CO
May	European Materials Research Society, Strasbourg, France
April	American Chemical Society National Meeting, New Orleans, LA
April	Madison Earth Day Symposium, Madison, WI
March	OneChemistry Symposium, Johns Hopkins University, Baltime, MD
February	University of Puerto Rico Rio-Piedras, San Juan, PR
January	Academic Leadership Training Workshop (mentor), Cottrell Scholars Program, Washington DC

2017

October	University of Illinois Materials Chemistry Seminar
September	European MRS (E-MRS), Warsaw, Poland (2 invited talks)
June	European Center for Computational Chemistry (CECAM) Workshop
April	American Chemical Society National Meeting, San Francisco, CA (2 talks)
March	Pittcon, Chicago, IL
February	Columbia University, MRSEC seminar.
February	UT-Austin Center for Electrochemistry Annual Meeting, Austin, TX

2016

December	University of Maryland – Baltimore County
November	AVS National Meeting, Nashville, TN
August	Langmuir Lecturer Award Address, ACS National Meeting, Philadelphia, PA
June	8th International Nanotoxicology Congress
June	ACS Colloids and Surface Science Symposium
May	Air Force Molecular Dynamics Program, Invited Speaker, Washington DC
May	New Diamond Nano-Carbon (NDNC), Xi'an, China (cancelled, medical emergency)
April	Founder's Day Lecturer, Wisconsin Alumni Club of Cincinnati, OH
March	ACS National Meeting, San Diego, CA
January	Academic Leadership Training Workshop, Washington, DC

2015

December	Brown University, EPA Superfund Talk, Providence, RI
November	Tufts University Chemistry Department Seminar, Boston
November	Sustainable Nanotechnology Organization (Keynote speaker), Portland, OR

September University of Utah, Giddings Lecturer (2-3 talks) , Salt Lake City, UT
June Nanostructures: Theory Meets Experiment, London, England
June Gordon Research Conference on Environmental Nanotechnology, Stowe, VT
February Gordon Research Conference on Energy Materials (discussion leader), Ventura, CA

2014

December Materials Research Society National Meeting, Boston, MA
October Ronald T. Pflaum Colloquium Lecture, University of Iowa
July Faraday Discussions, Royal Society of London, Sheffield, UK
May University of Minnesota Women's Faculty Retreat on Leadership, Keynote speaker
May 8th International New Diamond and Nano-Carbon Conference, Chicago, IL
March Pittsburgh Conference on Analytical Chemistry, Chicago, IL
March American Chemical Society National Meeting, Dallas, TX
March Materials Research Society National Meeting, San Francisco, CA
February Dow Chemical Company, Interfacial Sciences Group
February 19th Hasselt Diamond Workshop, Hasselt, Belgium
February University of Florida Dept. Seminar

2013

November 17th International Conference on Atomically Controlled Surfaces Interfaces and Nanostructures, Tsukuba, Japan (2 invited talks)
October British Petroleum International Surface Science Workshop (2 invited talks), Naperville, IL
September Sci-X National Meeting, Milwaukee, WI
September National Meeting of the American Chemical Society, Indianapolis
September Georgia Tech, Chemistry Dept. Colloquium
September University of North Carolina-Chapel Hill Seminar
May 7th International Conference on New Diamond and Nano-Carbon, Singapore
April Gordon Conference on Chemical Reactions at Surfaces (Switzerland) Discussion Leader
March National Meeting of the American Chemical Society
February Univ. of Iowa Chemistry Colloquium
February Frontiers in Chemistry Distinguished Lecturer (series of 3 lectures), Texas A&M University

2012

November National Meeting of the AVS Science and Technology Society, Tampa, FL
October University of Minnesota 8th Annual Nano Workshop
October University of Michigan Materials Chemistry Seminar
October Class of 1960 Lecture, Williams College
September University of Delaware Inorganic Chemistry Seminar
March National Meeting of the American Chemical Society, San Diego, CA (Colloid and Surface Chemistry Award Address)
March National Meeting of the American Chemical Society, San Diego, CA (Barb Karn Symposium)
March International Workshop on Nanostructures and Nanoelectronics, Tohoku University, Sendai, Japan (presented by R. Ruther due to timing conflict)

2011

October Regional Meeting of the American Chemical Society, St. Louis, MO
October Michigan State University, Chemistry Departmental Colloquium
April National Meeting of the Materials Research Society, San Francisco, CA
May Evonik/Degussa Corporation, Dresden, Germany

April Center for Computational Materials Science, University of Bremen, Germany
April University of Waginengen, The Netherlands, Chemistry Seminar
April University of Delft, Netherlands, Chemistry Seminar

2010

December National Meeting of the Materials Research Society, Boston, MA
October UW-Eau Claire Chemistry Dept. Seminar
September Kansas State University, H.H. King Lecture
July Telluride Conference on Semiconductor Surface Chemistry, Telluride, CO
May Joint Sino-German Workshop on Chemical and Biological Sensing, Suzhou, China
May 4th International Conference on New Diamond and Nano-Carbon (NDNC-2010), Suzhou, China
March National Meeting of the American Chemical Society, San Francisco, CA
March 3M Corporation, Minneapolis, MN
March 27th International Battery Seminar and Exhibit, Ft. Lauderdale, FL
January 37th Conf. on the Physics and Chemistry of Surfaces and Interfaces (PCSI-37), Santa Fe, NM

2009

November National Conference of the Materials Research Society, Boston, MA
October National Conference of the AVS Science and Technology Society
July 12th Intl. Conference on the Formation of Semiconductor Interfaces, Weimar, Germany (plenary talk)
June 3rd International Conf. on New Diamond and Nano-Carbon (NDNC-2007), Traverse City, MI
April University of Illinois Urbana-Champaign
April Northwestern University
March 26th International Battery Seminar and Exhibit, Ft. Lauderdale, FL
February Gordon Research Conference on Chemical Reactions at Surfaces, Ventura, CA

2008

December 8th International Workshop on Electrochemical Double-Layer Capacitors and Related Technologies, Deerfield Beach Florida
November 5th International Symposium on Surface Science and Nanotechnology (ISSS-5), Sendai, Japan
May 2nd International Conference on New Diamond and Nano Carbon (NDNC-2008), Taipei, Taiwan
May Center for Nanoscale Materials, Argonne National Labs
April National Meeting of the American Chemical Society, New Orleans, LA
March University of California – San Diego
February Notre Dame University
January Korean Electric Power Research Institute (KEPRI), Daeojon, South Korea
January Chemistry Dept. Colloquium, University of Virginia, Charlottesville, VA.

2007

November 9th International Conference on Atomically Controlled Surface and Interfaces (ACSI-9), Japan
June International Conference on Nanoscience and Nanotechnology for Biological/Biomedical/Chemical Sensing, Hong Kong (plenary talk)
June Oak Ridge National Laboratory
May Argonne National Laboratory Center for Nanoscale Materials
April Oak Ridge National Laboratory Center for Nanoscale Materials
April National Meeting of the American Chemical Society
March National Meeting of the Materials Research Society, San Francisco, CA

February Notre Dame University
January Gordon Conference on Electrochemistry, Ventura, CA
January Howard University, Washington, DC

2006

December National Meeting of the Materials Research Society, Boston, MA
October Tenth International Symposium on Nanoscience at Surfaces, Tokyo, Japan
October Department Colloquium, University of Minnesota
September Argonne National Laboratory Workshop on In-Situ Characterization of Surface and Interface Structures and Processes
September 17th European Conference on Diamond, Estoril, Portugal (Plenary speaker)
July Telluride Workshop on Semiconductor Surface Chemistry, Telluride, CO
July International Workshop on Nanoscale Analysis, Zurich, Switzerland (Keynote lecturer)
May International Conference on Diamond Science and Technology, North Carolina
May Argonne National Laboratory Center for Nanoscale Materials
April Department Colloquium, Columbia University
March International Symposium on Bio-electronics, Tohoku University, Sendai, Japan.
March National Meeting of the American Chemical Society, Atlanta, GA
January International Workshop on Nano-Crystal / Nano-Particle Diamond, Tokyo, Japan.

2005

December Pacifichem 2005, Honolulu, Hawaii.
November National Meeting of the Materials Research Society, Boston, MA
July Gordon Conference on Dynamics at Surfaces, MA
October Department Colloquium, University of Minnesota
September Argonne National Laboratory Workshop on In-Situ Characterization of Surface and Interface Structures and Processes
May NATO Advanced Research Workshop on Nanocomposite Materials, Santorini, Greece
May Argonne National Laboratory Center for Nanoscale Materials
April Department Colloquium, Columbia University
March National Meeting of the American Chemical Society (Adamson Award presentation), Anaheim, CA
March National Meeting of the Materials Research Society, San Francisco, CA
March Symposium on Surfaces & Interfaces in Nano Bioelectronics, Okazaki Japan (Plenary)
February Nanotechnology Symposium, Walter Schottky Institute, Munich, Germany, Plenary speaker
February Pittsburgh Conference on Analytical Chemistry ("Pittcon"), Orlando, FL

2004

November Inter-Pacific Workshop on Nanoscience and Nanotechnology, Hong Kong
October FACSS (Federation of Analytical Chemistry and Spectroscopy Societies), Portland, OR
September Plenary Speaker, 15th European Conference on Diamond, Riva Del Garda, Italy
July Beckman Scholars Symposium, Irvine, CA
June Plenary Speaker, Northwest/Rocky Mountain Regional ACS Meeting, Salt Lake City
March National Meeting of the American Chemical Society (2 invited talks), Anaheim, CA.
November Department Colloquium, University of Chicago
October Smiths Detection, Inc. (seminar on biological detection technologies)
July UC-Irvine Physical Chemistry Seminar
June DuPont Corp, "Discovery" Seminar, Wilmington, DE
May University of California-Santa Barbara

May Rutgers University Physical Chemistry Seminar
April Cornell University, "Frontiers of Physical Chemistry" colloquium
February Center for Fundamental Materials Research, Michigan State University
January Purdue University Analytical Chemistry Seminar
January Center for Nanoscale Science and Technology, University of Illinois Urbana-Champaign

2003

November National Meeting of the American Vacuum Society
October Regional Meeting of the ACS, Pittsburgh PA
October Harvard University Physical Chemistry Seminar
September Purdue University Physical Chemistry Seminar
September University of Illinois Champaign-Urbana, Materials Science Seminar
July Argonne National labs Workshop on Nanoscience
July NSF/PRF Summer School on "Physical Chemistry at the Nanoscale", (3 lectures) Pullman, WA
May Plenary Speaker, NSF/EPA Grand Challenge Workshop on Nanotechnology and the Environment, Arlington, VA
May 8th International Symposium on Diamond Materials, Paris, France
April Argonne National Labs
March National ("March") Meeting of the American Physical Society, Austin, TX (Cancelled due to snowstorm)
February Gordon Research Conference on Chemical Reactions at Surfaces, Ventura, CA
February IBM-Yorktown Heights Physical Sciences Seminar
February Sensir Technologies, Inc.

2002

Dec. National Meeting of the Materials Research Society, Boston, MA
October Regional Joint Meeting of the American Vacuum Society and the Electrochemical Society, Chicago
October 50th Midwest Solid-State Conference, Urbana, IL
August Telluride Workshop on Chemistry at Silicon Surfaces (presented by M. Schwartz)
July American Association for Crystal Growth (AACG), Lake Tahoe, CA.
March National Meeting of the American Chemical Society, Orlando, FL
January PCSI-29 (Physics and Chemistry of Semiconductor Interfaces), Santa Fe, NM
October Ohio State University Analytical/Physical Seminar
May University of California – San Diego, Physical Chemistry Seminar
March Johns Hopkins University, Physical/Analytical Chemistry Seminar
January Pacific Northwest Laboratories, Hanford, WA
January Washington State University, WA., Physical chemistry seminar

2001

October Chips to Hits Conference, San Diego, California
June Gordon Conference on Analytical Chemistry, Rhode Island
May UCLA Chemistry Dept. Seminar
May Grinnell College Chemistry Dept. Colloquium
May IBM-Yorktown Heights Physical Sciences Seminar
April Peking University Chemistry Department Seminar, Beijing, China.
April Chinese Academy of Sciences Seminar, Beijing, China
April University Institute of Physical Chemistry Seminar, Beijing, China
Feb. Oxford University "Nanoscale Materials" seminar, Dept. of Materials

2000

December	Pacifichem 2000 Honolulu, Hawaii
October	University of Michigan, Physical/Analytical Seminar
October	Michigan State University, Chemistry Departmental Colloquium
October	Univ. of Missouri Chemistry Dept. Colloquium
June-July	Enrico Fermi International School of Physics, "Nanostructures" (invited lecturer)
March	National Meeting of the American Physical Society, Minneapolis, MN
March	National Meeting of the American Chemical Society
February	University of Oregon physical chemistry seminar , Eugene, OR
January	Utah State University, physics colloquium, Logan, UT
January	University of Utah physical chemistry seminar, Salt Lake City, Utah

1999

December	3rd International Symposium on Surface Science for Nanodevice Fabrication, Tokyo, Japan
November	Stanford University physical chemistry seminar
November	National Meeting of the Materials Research Society, Boston, MA
September	9th International Conference on Precision Science and Technology for Perfect Surfaces, Japan Society for Precision Engineering, Osaka, Japan
September	Dartmouth University physics dept. colloquium
July	U.S. Naval Research Laboratories, Washington, DC
July	Gordon Research Conference on Electronic Materials, Henniker, NH
March	Gordon Research Conference on Chemical Reactions at Surfaces, Ventura, CA

1998

December	6th International Congress on Scanning Tunneling Microscopy, Tokyo, Japan
December	National Meeting of the Materials Research Society (MRS), Boston, MA
December	University of Tokyo Chemistry Dept. Seminar, Tokyo, Japan
October	Iowa State University Dept. of Chemistry
August	National Meeting of the American Chemical Society, Boston, MA
July	Telluride Workshop on "Chemistry at Silicon Surfaces"
May	Indiana University Dept. of Physics Seminar
March	6th International Symposium on Surfaces and Thin Films, Taipei, Taiwan
February	Vanderbilt University Departmental Chemistry Seminar
February	University of Pennsylvania Physical Chemistry Seminar
January	Symposium on Scanning Tunneling Microscopy, Osaka University, Japan **(plenary talk)**

1997

December	Harvard University Physical Chemistry Seminar
September	17th European Conference on Surface Science (ECOSS17), Twente, The Netherlands (Plenary talk)
September	IUVSTA (International Union of Vacuum Science and Technology Associations) Workshop on Surface Chemistry at the Nanoscopic Scale, Ost Polgeest, The Netherlands
July	First International Symposium on Scanning Tunneling Spectroscopy, Poznan, Poland
June	Union Carbide Corp, Charleston, W.V. Innovation Recognition Seminar
June	Goldschmidt Conference on Geochemistry, Tucson, AZ
May	Scanning Microscopy International, Chicago, IL
April	University of Minnesota Physical Chemistry Seminar
March,	International Conference on Microscopy of Semiconductor Materials, Oxford, England

March Princeton University Physical Chemistry Seminar
March Northwestern University Physical/Analytical Seminar
March University of Pittsburgh Physical Chemistry Seminar
February University of Colorado-Boulder Physical Chemistry Seminar

1996

May American Vacuum Society, Regional Mtg., Milwaukee, WI
March National Meeting of the American Chemical Society, New Orleans, LA
January International Symposium on Structure and Dynamics at Surfaces, Weizmann Institute of Science, Rehovot, Israel.
January Hebrew University, Jerusalem, Israel

1995

December International Symposium on Scanning Tunneling Microscopy, Kanazawa Institute of Technology, Kanazawa, Japan
December Atom Technology Symposium, JRCAT Atom Technology Program, Tsukuba Science Center, Tsukuba, Japan
October National Meeting of the American Vacuum Society, New Orleans, LA
October FACSS (Federation of Analytical Chemistry and Spectroscopy Societies), St. Louis, MO. (Presented by student, S. Higgins)
September Columbia University, Chemistry Departmental Seminar
August International Workshop on Semiconductor Interfaces, Germany.
May Joint US-Japan Binational Workshop on Atomic Scale Mechanisms of Epitaxial Growth, Honolulu, Hawaii.
April National Meeting of the American Chemical Society, Anaheim, CA
January Gordon Research Conference on Chemical Reactions at Surfaces, Ventura, CA

1994

November National Meeting of the American Institute of Chem. Engineers (AICHE), San Francisco.
August National Meeting of the American Chemical Society, Washington, DC
April Wisconsin Undergraduate Research Symposium, Ripon, WI (plenary talk)
March March National Meeting of the American Physical Society, Pittsburgh, PA
March National Meeting of the American Chemical Society, San Diego, CA
January International Society for Optical Engineering, Los Angeles, CA
April College of Wooster (Wooster, Ohio) Chemistry Department Seminar
March Wisconsin Undergraduate Research Symposium (plenary talk), Ripon, WI
January Northwestern University Physical/Analytical Seminar

1993

November American Vacuum Society National Meeting, Orlando, FL
October Optical Society of America/9th Interdisciplinary Laser Science Conference, Toronto, Canada
October Ohio State University, Chemistry Department Colloquium
August Microscopy Society of America National Meeting, Seattle, WA
April University of Wisconsin-Stevens Point, Chemistry Department Seminar
March Gordon Research Conference on "Frontiers of STM", Ventura, California
January Ohio State University, Nanometer Materials Colloquium

1992

November University of Illinois, Materials Science Colloquium, Urbana, IL,
September Oak Ridge National Laboratory, Chemistry Colloquium, Oak Ridge, Tennessee,
July Gordon Research Conference on Physical Electrochemistry, New Hampshire
June First International Workshop on Photons and Scanned-Probe Microscopies, Konstanz, Germany
June NSF Workshop on Atomic Resolution Microscopy, MD
May Scanning Microscopy International Conference, Chicago, IL
April University of Wisconsin-Eau Claire, Chemistry Department Seminar
April National Meeting of the American Chemical Society, San Francisco
March March National Meeting of the American Physical Society, Indianapolis, IN
March U.S. Naval Research Laboratory, Chemistry Colloquium, Washington DC

1991

August Experimental Program to Stimulate Competitive Research (EPSCOR), plenary lecture.
August 4th Chemical Congress of North America/ National ACS Meeting, New York, NY (2 talks)
October University of Chicago, James Franck Institute Lecture
August University of Houston, Physics-Astronomy Seminar
July West Virginia University, Chemistry/Physics Departmental Seminar
June National Institute for Standards and Technology (NIST), Interface Science Seminar, Washington, DC
April Northwestern University Materials Science and Engineering Colloquium
February Regional Meeting, American Vacuum Society, Minneapolis, MN

1990

December American Chemical Society Regional Meeting, New Orleans, LA
December University of Wisconsin-Milwaukee, Physics Department Colloquium
November State University of New York at Stony Brook, Physics Colloquium
November Materials Research Society National Meeting, Boston, MA
November American Vacuum Society Regional Meeting, Minneapolis, MN
October American Vacuum Society Regional Meeting, Batavia, IL
August 12th International Congress for Electron Microscopy, Seattle, WA
July 4th International Conference on Scanning Tunneling Microscopy (late discovery), Baltimore, MD

Talks/Presentations before 1990 are not available (records lost).

Research Supervision: Current and Former Students and Postdocs

Current postdoctoral research associates:

Zhifei Li

Current Ph.D. Students (most senior students listed first)

Sarah Guillot
Kelly Zhang
Shuo Li
Austin Henke
Elizabeth Laudadio
Benjamin Bachman

Jaya Borgatta
Zachary Jones
Curtis Green
Paige Kinsley

Current Undergraduate Students, research supervision:

Elizabeth Haberland-Ervin (UW L&S Welton Summer Research Apprentice)
Tomoki Kato
Riley Whitehead
Tianlei Yan

Postdoctoral research associates completed training:

18) **Chanyu Wang** (Ph.D. 2014, Binghampton University)
Current position: Research Associate, Sandia National Laboratories

17) Arun Pandiakumar

16) **Juan Tuberquia** (Ph.D. 2011, Vanderbilt)
Current position: Staff Scientist, Dow Chemical, Freeport TX

15) **Jixin Chen** (Ph.D. 2010, Texas A&M)
Current position: Assistant Professor, Ohio University

14) **Lee Bishop** (Ph.D. 2010, UC-Berkeley)
Current position: Lawrence Hall of Science, Berkeley, CA

13) **Monica Usrey** (Ph.D. 2008, Univ. of Illinois)
Current Position: R&D Program Manager, Silatronix, Inc., Madison, WI

12) **Lingzhi Zhang** (co-advised with Bob West)
Current Position: Assistant Professor, China.

11) **Kevin Metz** (Ph.D. 2007, Chemistry, University of Wisconsin-Madison)
Current Position: Professor, Albion College, Albion, MI

10) **Paula Colavita** (Ph.D. 2005, Univ. of South Carolina)
Current Position: Lecturer, Trinity College, Dublin, Ireland

9) **Joseph Beck**; 2003-2006.
Current position: Privately employed

8) **Masanori Shinohara** (Nagasaki University); 12/04 – 9/05.

7) **Matt Marcus** (Ph.D. 2004, Physics, Univ. of Wisconsin-Madison)
Current position: Honeywell Research, Minneapolis, MN

6) **Chang Soo Lee** (Ph.D. 2003, Kyushu University, Japan), 2003-2004
Current Position: Research, Samsung Corporation, Korea.

5) **Zhang ("Jenny") Lin** (Ph.D. Peking University, postdoc 2000-2002)

4) **Mark Ellison** (Ph.D. Stanford, 1997, R.N. Zare; postdoc 1997-1999).
Current Position: Professor, Ursinus University

3) **Phil Bond** (Ph.D. 1998) Co-advised with Jillian Banfield, Dept. of Geology & Geophysics
Current Position: Professor, Dept. of Microbiology, Univ. of East Anglia, UK

2) **Michael Bronikowski** (Ph.D. Stanford 1992, R.N. Zare; postdoc RJH 1992-1993)
Current Positions: Research Staff, Lawrence Berkeley Labs

1) **Gad Haase** (Ph.D. Hebrew University, 1991, M. Asscher; postdoc with RJH 1991-1992)

Current Position: Texas Instruments Corp.

Ph.D. Students Completing Degree:

54) Jason Bandy, Ph.D. 2018, Materials Science and Engineering
Ph.D. Thesis: Photoemission from Diamond Thin Films for Extreme Photoelectrochemistry
Current Position: Engineer, Plasma Materials Inc., Phoenix AZ

53) Melinda Shearer, Ph.D. 2018, Materials Chemistry
Ph.D. Thesis: Correlating Spatial Heterogeneity with Optical Properties of Transition Metal Dichalcogenides
Current Position: Research Staff, PPG Industries, Pittsburgh, PA

52) Arielle Mensch, Ph.D. 2017, Materials Chemistry
Ph.D. Thesis: Characterizing Nanoparticle Interactions at the Cellular Membrane
Current Position: Postdoc, Pacific Northwest National Laboratory

51) Mimi Hang, Ph.D. 2017, Materials Chemistry
Ph.D. Thesis: Investigating and Controlling Technologically Relevant Complex Metal Oxide Nanomaterials to Mitigate Environmental Impact
Current Position: Intel Corp., Portland OR

50) Laura Slaymaker, Ph.D. 2017, Analytical Chemistry
Ph.D. Thesis, "Characterization and Modulation of Electrochemical Processes at the Cathode-Electrolyte Interface in Lithium-Ion Batteries
Current Position: Lecturer, Colorado Mesa University

49) Margaret Robinson, Ph.D. 2017, Analytical Chemistry
Ph.D. Thesis: "Background-free Imaging of Nanoparticles in Complex Environments"
Current Position: Thermo-Fisher Corp., Verona, WI

48) Shuyu Fang, Ph.D. 2016, Physical Chemistry
Ph.D. Thesis: Characterization and Modulation of Electrochemical Processes at the Cathode-Electrolyte Interface in Lithium-Ion Batteries
Current Position: PPG Corporation, Pittsburgh, PA

47) Jamie Wheeler, Ph.D. 2015, Materials Chemistry
Ph.D. Thesis: Understanding the environmental chemistry and biological impacts of nanomaterials
Current position: Researcher, 3M Corporation, Minneapolis, MN

46) Marco Torelli, Ph.D. 2015, Chemical Biology
Ph.D. Thesis: Tools for studying the nano-bio interface
Current position: Postdoc, Adamas Nanotechnologies

45) Linghong Zhang, Ph.D. 2015, Materials Chemistry
Ph.D. Thesis: Photo and electrochemical reduction of CO_2 at diamond surfaces
Current position: Postdoc, Argonne National Laboratory

44) Di Zhu, Ph.D. 2014, Materials Chemistry
Ph.D. Thesis: Photoelectron emission from diamond
Current Position: Power Environmental Energy Research Institute (PIRRE)

43) Rebecca Putans, Ph.D. 2014, Materials Chemistry

Ph.D. Thesis: Functionalization of Nanomaterial Surfaces for Light-harvesting and Nanotoxicology Applications

Current Position: Researcher, 3M Corporate Research Labs, Minneapolis, MN

42) Caroline English, Ph.D. 2014, Materials Chemistry

Current Position: Senior Process Engineer, Intel Corp.

41) Yizheng Tan, Ph.D. 2013, Materials Chemistry

Ph.D. Thesis: Optical and Electronic Studies of Photostability and Charge Dynamics

Current Position: Postdoc, Lawrence Berkeley Labs

40) Michelle Benson, Ph.D. 2013, Materials Chemistry

Ph.D. Thesis: Assembly of charge-transferring heterojunctions using "click" chemistry

Current Position: Research Integrity Specialist, Columbia University

39) Joseph Yeager, Ph.D. 2013, Physical Chemistry

Ph.D. Thesis: Interaction of Organosilicon Electrolytes with Silicon Anodes

Current Position: Laboratory Instructor, Smith College

38) Kacie Louis, Ph.D. 2012, Physical Chemistry

Ph.D. Thesis: Surface functionalization of titanium dioxide nanoparticles: Photo-stability and reactive oxygen species (ROS) generation

Current Position: Research Scientist, Akzo Nobel Co., Brewster, NY

37) Xin Chen, Ph.D. 2011, Physical Chemistry

Ph.D. Thesis: Chemistry at the Organosilicon-based Electrolyte/electrode Interface in Lithium-ion Batteries

Current Position, Research Scientist, Saudi Arabian Basic Industries Corporation (SABIC), Exton, PA

36) Rose Ruther, Ph.D. 2012, Materials Chemistry

Ph.D. Thesis: Molecular Interfaces to Electronic Materials

Current Position: Oak Ridge National Laboratory

35) Ryan Franking, Ph.D. 2011, Materials Science Program

Ph.D. Thesis: Development of the titanium dioxide-organic interface and mechanistic studies of photochemical grafting on titanium dioxide

Current Position: 3M Corporate Research Labs, Minneapolis, MN

34) Stephanie Hogendoorn, Ph.D. 2011, Physical Chemistry

Ph.D. Thesis: Functionalization and electrocatalysis on carbon nanofibers

Current Position, Research Chemist, Akzo Nobel Co., Brewster, NY

33) Xiaoyu Wang , Ph.D. 2010, Materials Chemistry

Ph.D. Thesis: Mechanistic Study of Photochemical Functionalization on Group IV Semiconductors

Current Position: Research Scientist, Akzo Nobel Co., Brewster, NY

32) Elizabeth Landis, Ph.D. 2010, Materials Chemistry

Ph.D. Thesis: Molecular Monolayers for Attaching Electroactive Molecules to Vertically Aligned Carbon Nanofibers

Current Position: Assistant Professor, Holy Cross College, Worcester, MA

31) Divya Goel, Ph.D. 2009, Materials Chemistry

Ph.D. Thesis: Growth and Assembly of Functionalized Nanomaterials: Using Organic-Inorganic Polymer Hybrid Systems
Current Position: Intel Corp., Dallas, Texas.

30) Andrew Mangham, Ph.D. 2009, Materials Chemistry

Ph.D. Thesis: Ligand Effects on Semiconductor Nanoparticles in Two Contexts: Self-Assembly and Environmental Stability
Current Position: Graduate Student, UW-Madison

29) Bo Li, Ph.D. 2008, Analytical Chemistry

Ph.D. Thesis: Nanowire-Based Chemical / Biological Sensor Fuses
Current Position: 3M Corporation, Singapore.

28) Jeremy Streifer, Ph.D. 2008, Physical Chemistry

Ph.D. Thesis: Photochemical Functionalization of Hydrogen Terminated Silicon Surfaces with Functional Organic Alkenes
Current Position: Intel Corporation, Oregon.

27) Heesuk Kim, Ph.D. 2008, Materials Chemistry

Ph.D. Thesis: Chemical Grafting of Molecular and Biomolecular Layers to Compound Semiconductor Surfaces
Current Position: Korean Institute for Science and Technology (KIST), Seoul, Korea

26) Bin Sun, Ph.D. 2007, Materials Chemistry

Ph.D. Thesis: Integration of Carbon-based Materials with Microelectronic & Electromechanical Devices For Biosensing Applications
Current Position: Intellectual Property Associate, Foley & Lardner, Washington, DC

25) Lu Shang Ph.D. 2007, Analytical Chemistry

Ph.D. Thesis: Assemble Nanowires into Novel Biosensor Configurations Using Dielectrophoresis
Current Position: Vice President, Guangxi Architecture Design and Research Institute.

24) Kiu-Yuen Tse, Ph.D. 2007, Materials Chemistry

Ph.D. Thesis: Electrical Properties of Nano-Structured Carbons in Aqueous and Non-Aqueous Electrolytes
Current Position: Senior Research Chemistry, 3M Corporate Research Labs, Minneapolis, MN

23) Kevin Metz, Ph.D. 2007, Materials Chemistry

Ph.D. Thesis: Synthesis and Applications of Hybrid Nanowires
Current Position: Associate Professor, Albion College, Albion, MI

22) Sarah Baker, Ph.D. 2006, Materials Chemistry

Ph.D. Thesis: Synthesis and Functionalization of Carbon Nanotubes and Nanofibers
Current Position: Staff Scientist, Lawrence Berkeley Labs

21) Beth Nichols, Ph.D. 2006, Analytical Chemistry

Ph.D. Thesis: Photochemical Functionalization of Diamond
Current Position: Dow Chemical, Midland, MI

20) Tami Lasseter Clare, Ph.D. 2005, Materials Chemistry

Ph.D. Thesis: Functional Monolayers for Direct Electrical Biosensing
Current Position: Assistant Professor, Portland State University

19) Kevin Weidkamp, Ph.D. 2005, Physical Chemistry

Ph.D. Thesis: Surface chemistry of pentacene on clean and chemically modified Si(001)
Current Position: Epic Computer Systems, Madison, WI

18) Wensha Yang, Ph.D. 2005, Materials Chemistry

Ph.D. Thesis: Biologically modified diamond thin films for biosensing applications
Current Position: Research Scientist, Cedars-Sinai Medical Center, Los Angeles, CA

17) Liang Fang, Ph.D. 2003, Materials Chemistry

Ph.D. Thesis: Attachment of Pi-conjugated Molecules on Si(001) Surfaces and application in Molecular and Organic Electronics
Current Position: Arkema Chemical, King of Prussia, PA

16) Wei Cai, Ph.D. 2003, Analytical Chemistry

Ph.D. Thesis: Chemical and Biochemical Modification of Silicon Surfaces
Current Position: General Electric Corporate Research and Development Center, Shanghai, China

15) Michael Schwartz, Ph.D. 2003, Materials Chemistry

Ph.D. Thesis: The Role of Dimer Structure in Controlling Organic Reactions on Group IV Surfaces
Current Postion: Staff Scientist, University of Wisconsin-Madison Medical School.

14) Christina Hacker, 2003, Analytical Chemistry

Ph.D. Thesis: Optical Characterization of Anisotropic Organic Layers on Si(001) Surfaces
Current Position: Research Staff, National Institute for Standards and Technology (NIST).

13) Bo Hu, Ph.D. 2002, Analytical Chemistry

Ph.D. Thesis: Chemical and Structural Study at the Interface between Metal Sulfides and Acids
Current Position: General Electric Research and Development, Shanghai, China

12) Xiaoping Cao, Ph.D. 2002, Analytical Chemistry

Ph.D. Thesis: Intefacial Structure and Bonding of -Containing Molecules with Silicon Surfaces
Current Position: Pharmacia Upjohn Research Center

11) Sarah Coulter, Ph.D. 2001, Analytical Chemistry

Ph.D. Thesis: Reactions of substituted aromatic Molecules on the Si(001) Surface
Current Position: Research, Clorox Corp.

10) Molly McGuire, Ph.D. 2001, Analytical Chemistry

Ph.D. Thesis: Elemental Sulfur on Oxidized Sulfide Mineral Surfaces
Current position: Associate Professor, Bucknell University

9) Jennifer Hovis, Ph.D. 1999, Physical Chemistry

Ph.D. Thesis: Cycloaddition Chemistry on 2x1 Reconstructed Surfaces
Current position: 496 Analytics

8) Hongbing Liu, Ph.D. 1998, Analytical Chemistry

Ph.D. Thesis: Surface Chemistry of Unsaturated Organic Molecules on Si(001) Surfaces
Current Position: Elf Atochem Corporation, King of Prussia, PA

7) Jun Shan, Ph.D. 1997, Physical Chemistry

Ph.D. Thesis: A Surface Infrared Spectroscopy Study of Reaction Chemistry during Silicon Chemical Vapor Deposition Processes
Current Position: Research Staff, Informix Corp, UW-Madison

6) Ernest Frank, Ph.D. 1997, Analytical Chemistry

Ph.D. Thesis: Nanoscale Surface Restructuring of Silver Thin Films by Scanning Tunneling Microscopy
Current Position: Group Leader, Heterogenous Catalysis, Dow Chemical/ Union Carbide Corp.

5) Xiangxiong Xhen, PhD. 1996, Analytical Chemistry
Ph.D. Thesis: Direct Imaging of Small Molecules via Cryogenic Scanning Tunneling Microscopy
Current Position: Applications Development, Thermo Corporation

4) Yajun Wang, Aug. 1996, Analytical Chemistry
Ph.D. Thesis Atomic Scale Surface Structural and Chemical Characterization using STM: Application to Silicon CVD and Doping Processes
Current Position: Manager, AT&T Lucent Technologies, Chicago, IL

3) Steven Higgins, Ph.D. August 1996, Analytical Chemistry
Ph.D. Thesis: Microscopic Investigations of the Chemical and Electrochemical Reactions at the Galena (PbS)/Water Interface
Current Position: Professor, Wright State University

2) Marc McEllistrem, Ph.D. 1993, Analytical Chemistry
Ph.D. Thesis: Photovoltaic Effects at Semiconductor Surfaces Probed with STM
Current position: Professor, UW-Eau Claire

1) Chen Dong, Ph.D. 1992, Physics (spent last 1.5 years of Ph.D. program in my group**)**
Research Topic: Surface Chemistry of Disilane on Si(001) Probed with STM
Current position:IBM Corporation

M.S. Students Completing Degree:

Kirsten Louthan (2018)
Tim Saunders (2018)
Kayla Lloyd (2018)
Miao Yang (2016)
Elvin Morales (2014)
Courtney Stavis (2012)
Xueying He (2012)
Michael McCoy, (2010, passed away while in Ph.D. Program, posthumous M.S. degree)
Patrick Warf, 2008
Jermal Chandler, 2006
Amanda Hennip, 2004
Arianne Baker, 2004
Jason Otis, 2003.
Shenqi Xie, 2001.
Rebecca Oliphant, 2000.
Seth Lindberg, Dec. 1996
Alan McIntyre, May 1996
Curt Waltman, 1995
Yaling Wang, M.S. 1994
Brian Cousins, M.S. 1992

Undergraduate Research Students Completing Research: (partial list; does not include Chem 116 students)

Junmian Zhu (REU student from Grinnell College) 2018

Atomic Force Microscopy (AFM) nanomechanical mapping of solid-electrolyte interphase (SEI) Layer formation in lithium ion batteries

Kari Weiss, 2018

Photoemission form diamond-metal composites

Adarsh Suresh (Hilldale Award Recipient) 2018

Nanophotonic Ag-diamond composites

Takunda Masike (REU Student from U. Washington) 2018

Development of a microwave antenna for nanoparticle detection by optically detected magnetic resonance (ODMR)

Larissa Davis (REU Student from Lawrence Univ.) 2018

Synthesis of ligands for functionalization of diamond

Micaela Homer (REU Student from Harvey Mudd) 2018

Morphology control during synthesis of CuO nanoparticles

Rachel Blundell (REU student from University of Puerto-Rico – Rio Piedras)

Solution-phase and gas-phase amino termination of diamond

Zulmari Pedraza (REU Student from University of Puerto Rico – Cayey) 2018

Synthesis of complex metal oxide nanomaterials

Alice Hornrein (2018)

Synthesis of Nano-ruby as a nanoscale optical probe

Adarsh Suresh (Hilldale Award Recipient) (2015-2018)

Silver –diamond nanocomposite materials

Kasey Rivera (REU student from Univ. Florida) 2017

Synthesis of metal phosphate nanomaterials

Nafisa Ibrahim (REU student, Univ. of Minnesota), 2017

Synthesis of complex oxide nanomaterials

Megan Taylor (REU Student, Tuskegee University), 2017

Radical-initiated functionalization of nanodiamond for environmental studies

Madeleine Meyer 2013-2017

Synthesis of TiO2 nanoparticles

Lilly Klaper 2015-2016

Functionalization of AFM tips for selective chemical recognition

Hunter Wayland (REU Student) 2014

Synthesis of nanoscale LiNiMnCo ("NMC") Cathode Materials via flux growth

Edward (Ted) McClain (REU student), 2014

Construction of an automated system for atomic layer deposition.

Stephanie Sanders (REU student from Albion College) 2013

Design of a prototype surface calorimeter

James Rosenberger 2010-2013

Connor Firth 2012-2013

Electrocatalytic reduction of CO_2.

Ailin Mao 2012-2013

Characterization of next-generation battery materials.

Kajsa Jackson 2012-2013

Synthesis of novel ligands for nanoparticles

Brian Ferrer 2013

Synthesis of nanoparticles

Vong Lor 2013-2014

Interaction of natural organic material with nanoparticles

Richard Barltrop (visiting student from Bristol University, UK) 2012-2013

Lithiated Silicon Anodes for Next-Generation Lithium Ion Batteries

Phillipa Armitage-Mattin (visiting student from Bristol University, UK), 2013-2013
Synthesis of novel ligands for nanoparticle studies

Yujue Wang (visiting student from Nanjing University),2012-2013
Fabrication and Testing of Next-generation lithium-ion batteries

Shaoyang Wang, 2011-2012
Click chemistry on metal oxide surfaces

Yan Lao, 2011-2012
Lithiated silicon for lithium ion batteries

Jesse Ponkamo, 2011-2012
Novel surface ligands for stable nanoparticles

Nigel Becknell, 2010-2012
Photocatalytic reduction of CO_2 on diamond (Currently graduate student at UC-Berkeley)

Jesse Pankamo, 2011-2012
Synthesis of Novel Surface-binding Ligands

Allison Cardiel, 2011 summer (REU student from Carleton College). Completed Ph.D. at UW. Madison with Kyoung-Shin Choi
"Click" chemistry for nanoparticle heterojunctions

Shaoyang Wang (2012)
Click chemistry on metal oxide nanoparticles

Maximilian Turner, 2011-2012
Novel high-temperature batteries using carbon monofluoride cathode.

Christine Ferng, 2010-2011
Chemical functionalization of diamond to resist protein binding

Prashanth Prabakaran, 2019-2010
Synthesis of Eu:YVO_4 nanoparticles for nano-imaging applications

Zack Gerbec, 2008-2009
Grafting of molecules to metal oxide surfaces

Anthony Nguyen, 2006-2008
Synthesis of Nanocrystalline Titania

Jake Henrichs, 2005-2007
Nanoparticle interactions with biological cells

Shawn Andrews, 2004-2006
Photocatalysis at nanocrystalline diamond

Libby Smith, 2003-2004
Electrochemical Modification of Silicon Surfaces

Fatlume Berisha, 2003-2004
Synthesis of Molecules for Surface Photoligation Processes

Matt Kim, 2002-present
Surface Reactions of Metal Sulfide Minerals

Guobin Zhang, 2002
Chemical Modification of Carbon Nanotubes

Jessie Birrenkott, B. S. 1997
Dissolution of Pyrite Minerals

Paul Kirsch, B.S. 1995, Hilldale Fellow, 1993
STM studies of TiO_2 in Electrochemical Solutions

Joseph Sweeney, B.S. 1994
Decomposition of Nickel Carbonyl for fabrication of STM Tips

Jason Young, B.S. 1993
Novel Methods of Fabricating Sub-micron Insulating Tips for Electrochemical Scanning Tunneling Microscopy"

Lisa Buller, B.S. 1992, Hilldale Fellow, 1992
B.S. Thesis, "STM Studies of the Oxidation of the Si(001) Surface"
Completed Ph.D. degree with Hector Abruna at Cornell University.

Steven Brown, B.S. 1993
Electrochemical Scanning Tunneling Microscope

David Reeder, B.S. Chem. Eng. 1993
Software for scanning tunneling microscopy
Completed Ph.D. in Chemical Engineering at University of Minnesota

Ernest Darkoh-Ampem, B.S. 1993
Senior Project, "Electrochemical STM"

K-12 research supervision (Madison School District Summer Science Internship Program full-time summer research by high-school students)

Kari Weiss (2017): Anion effects on hydroxyl radical formation in aqueous media. (currently undergrad at UW-Madison)

Kate Scholz (2014, 2015): Electrochemistry of lithium ion battery electrodes

Newton Wolfe (2013, 2014): Field emission into liquids (completed B.S. at UW-Madison)

Sohil Shah (2011, 2012): Chemically Directed Assembly of Nanoparticle Heterojunctions

Nicholas Pasternack (2011), electrochemistry of the Zn/O_2 Interface

Pratyusha Kalluri (2010): Density functional calculations of molecular adsorbates on metal oxides. (MIT Class President 2012, B.S. 2016, now Ph.D. candidate)

Alex Huhn (2009): Growth of ZnO Nanorods

Bennett Mortenson (2008): Photocatalytic Reduction of CO_2.

Brian Ji (2007), CdSe Nanoparticles

Aaron Burr (2006): Growth of metal nanotubes

Eric Meyer (2005 and 2006): Growth of CdSe Nanocrystals (B.S. Chemistry Yale 2011, now Business Analyst at McKinsey & Co., San Francisco CA)

Jesse Benck (2004): Photochemical Modification of Nanocrystalline Diamond (subsequently completed Ph.D. in chemical engineering, UW-Madison)

Paresh Agarwal (2003): Growth of hybrid metal-semiconductor nanowires. (completed BS. MIT, Ph.D. degree in chemistry at UC-Berkeley, now at Google Analytics)

Kate Skog (2002): Metal Sulfide Minerals (later completed Ph.D. degree in chemistry at UW-Madison)

EAGLE School Science Mentor Program: (for 8th grade students; ~6-week commitment partnering with a graduate student to do a small project)

Predeep Tiwari (2017)
Anna Compas (2013)
James Tautges (2012)
Shivani Kumar (2011)
Michael Stoneman (2009)
Jordan DuBeau (2008)
Riley Larget (2007)

Bennet Mortenson (2006)
Adam Schneider (2005)
Rich Pang (2004)
Ilari Shafer (2003)

Recent Classroom Teaching:

Semester	Class
Fall 1997	621 – Instrumental Analysis
Spring 1998	628 – Electronics and Instrumentation
Fall 1998	621 – Instrumental Analysis
Fall 1999	621 – Instrumental Analysis
Spring 2000	630 – Chemistry of Materials
Fall 2001	630 – Chemistry of Materials
Spring 2002	329 – Quantitative Analysis
Spring 2003	329 – Quantitative Analysis
Fall 2003	329 – Quantitative Analysis
Spring 2004	630 – Chemistry of Materials
Fall 2005	628 – Electronics and Instrumentation
Spring 2006	Leave (retention)
Fall 2006	630 – Inorganic Materials
Spring 2007	628 – Electronics and Instrumentation
Fall 2007-Spring 2010	Chem 901 (intro to graduate school), Team-teaching courses, reduced load as department chair
2011-2012	Sabbatical
Spring 2012	524 –Instrumental Analysis
Fall 2012	630 –Chemistry of Materials
Spring 2013	628 - Electronics and Instrumentation
Fall 2013	329 - Quantitative Analysis
Spring 2014	630 - Chemistry of Materials
Fall 2014	329 - Quantitative Analysis
Spring 2015	329 – Quantitative Analysis
Spring 2016	329 – Quantitative Analysis
Fall 2016	329 – Quantitative Analysis
Spring 2017	329 – Quantitative Analysis
Fall 2017	652: Chemistry of Inorganic Materials
Spring 2018	329 - Quantitative Analysis

Robert J. Hamers
Publications and Patents

Published and/or Accepted Publications:

[365] Melinda J. Shearer., Ming-Yang Li, Lain-Jong Li, Song Jin, and Robert J. Hamers. Nanoscale Surface Photovoltage Mapping of 2D Materials and Heterostructures by Illuminated Kelvin Probe Force Microscopy. *The Journal of Physical Chemistry C* **2018**, *122*, 13564–13571.

[364] Shuyu Fang, David Jackson, Mark L. Dreibelbis, Thomas F. Kuech, and Robert J. Hamers. Anode-originated SEI migration contributes to formation of cathode-electrolyte interphase layer. *Journal of Power Sources* **2018**, *373*, 184–192.

[363] Gustavo A. Dominguez., Marco D. Torelli, Joseph T. Buchman, Christy L. Haynes, Robert J. Hamers, and Rebecca D. Klaper. Size dependent oxidative stress response of the gut of Daphnia magna to functionalized nanodiamond particles. *Environmental research* **2018**, *167*, 267–275.

[362] Liang Cai, Melinda J. Shearer, Yuzhou Zhao, Zhili Hu, Fan Wang, Yi Zhang, Kevin W. Eliceiri, Robert J. Hamers, Wensheng Yan, Shiqiang Wei, and others. Chemically Derived Kirigami of WSe_2. *Journal of the American Chemical Society* **2018**,

[361] Elizabeth D. Laudadio, Joseph Bennett, Curtis Green, Sara E. Mason, and Robert J. Hamers. Impact of Phosphate Adsorption on Complex Cobalt Oxide Nanoparticle Dispersibility in Aqueous Media. *Environmental Science & Technology* **2018**, accepted.

[360] Shuo Li, Shuo, Jason Bandy, and Robert J. Hamers. Tunable coloration of diamond films by encapsulation of plasmonic Ag nanoparticles. *Diamond and Related Materials* **2018**, accepted.

[359] Mensch, Arielle C., Joseph T. Buchman, Christy L. Haynes, Joel A. Pedersen, and Robert J. Hamers. Quaternary Amine-Terminated Quantum Dots Induce Structural Changes to Supported Lipid Bilayers. *Langmuir* **2018**, Accepted, DOI 10.1021/acs.langmuir.8b02047

[358] Dongyue Liang, Jiewei Hong, Dong Fang, Joseph W. Bennett, Sara E. Mason, Robert J. Hamers, and Qiang Cui. Analysis of the conformational properties of amine ligands at the gold/water interface with QM, MM and QM/MM simulations. *Physical Chemistry Chemical Physics* **2018**, 20, 3349–3362.

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Patent Applications Submitted/In Process:

1) U.S. Patent Application, “Plasmonic diamond films”, submitted August 2018.

2) U.S. Provisional Patent Application, “Compositionally and morphologically controlled nanoparticles for delivery of micronutrients and suppression of disease in agriculture”, (WARF P180378:). Submitted August 2018.