

James P. Hamilton

University of Wisconsin-Platteville, Department of Chemistry
hamiltoj@uwplatt.edu, 608.342.1670

EDUCATION

Ph.D., Physical and Analytical Chemistry, University of Wisconsin-Madison January 1994
B.A., Chemistry, University of Maine-Orono May 1984

EXPERIENCE AND MAJOR ACCOMPLISHMENTS

- Director, Nanotechnology Center for Collaborative R&D, Sept 2008-Present
- Wisconsin "We're All In" COVID Innovation Product Award-Manufacturing, 2020
- Wisconsin New Product Innovation Award Winner 2018
- Appointed Wisconsin Distinguished Professor by UW-System, August 2008-2014
- \$875k NASA SBIR Phase I & Phase II Award Winner Space Telescope Contamination Control
- Senior Member and Lifetime Member, SPIE, The International Society for Optical Engineering
- Senior Member and Lifetime Member American Institute of Astronautics and Aeronautics, AIAA
- Senior Member and Lifetime Member American Physical Society, APS
- SPIE O&P Conference Program Committee Optics & Photonics 2020, Session Chair, 2018, 2017
- Appointed to the State of Wisconsin Legislative Special Committee on Nanotechnology, 2010
- Appointed Member of ANSI ISO/TC 229 Nanotechnologies Metrology and ES&H
- Founder, Photonic Cleaning Technologies LLC, Platteville, Wisconsin. Sales in 75 countries. 2004
- National Finalist 2010 Cleantech Open Business Competition, San Jose, CA
- Grand Prize Winner in 2008 Governor's Business Plan Competition, \$50k in prizes for start-up.
- Founded Graphene Solutions LLC. Platteville, Wisconsin. Based on technology developed in our labs, 2008. Renamed Xolve, Inc. Sold to Reliance, Mumbai, India, 2016
- Elected Chairman of Wisconsin Section of the American Chemical Society, 2010-2012
- Featured in Scientific American Magazine, "Grinding Out Graphene", March 1, 2009
- First demonstration of cleaning and improving electrostatic ultrasensitive CMOS CCD camera sensors using unique polymer technology, Publication with Fermilab 2007-2008
- First method of solubilizing pure CNTs, Graphene, nanocellulose, MoS₂ and WS₂ – 2007
- Mentor of Intel International Science Fair Winner - 2007 Worldwide Overall Winner
- First practical method for cleaning and protecting large astronomical mirrors W.M. Keck Telescope in Hawaii, 2004 -Present
- Chinese Academy of Science Sponsored Visit to work On LAMOST Telescope in China, 2014
- Invited by NASA to repeatedly speak as expert in contamination control, e.g. STAIF 2007, 2008
- Governor's New Product Development Award for Wisconsin, Honorable Mention, 2006
- Special invitation by Smithsonian to apply our polymer technology to Hope Diamond, 2005
- Over \$4 million in equipment grants obtained from the U.S. Department of Energy, ERLE Grants
- 2006 Governor's New Product Award Winner
- Over \$1500k in Research Funds obtained over last 10 years

PROFESSIONAL POSITIONS

2005 - Present

Professor, Physical & Analytical Chemistry, University of Wisconsin-Platteville

2001 - Present

Founder and CEO, Photonic Cleaning Technologies, LLC, www.photoniccleaning.com

Launched and was involved in every business and technical aspect of a start-up company that develops products for photonic and aerospace surface cleaning and protection. Sales in over 75 countries, marketing, shipping and web based business for First Contact Polymer.

2008 - 2016

Founder and CTO, Xolve, Inc, www.xolve.com

new start-up based on our WISYS/WARF based technology. We developed process to purify carbon nanotubes, other nanomaterials and manufacture Graphene. Overall Grand Prize Winner in 2008 Wisconsin Governor's Business Plan Competition of 265 entries. \$4.3 million in venture capital obtained. Sold March 2016 to Reliance, Mumbai, India

1999 - 2009

Faculty Appointment, Argonne National Laboratory, Advanced Photon Source, Argonne, IL

1993 - 2005

Assistant and Associate Professor, University of Wisconsin-Platteville

SELECTED PUBLICATIONS

1. "First Contact Cleaning of the CFHT M1," Tom Benedict, Andreea O. Petric, Laurie Rousseau-Nepton, Stephen Gwyn, Gregory A. Barrick, Kevin K. Y. Ho, Marc R. Baril, Andrew I. Sheinis, Kanoa Withington, David A. Giesen, James P. Hamilton, *Astronomical Telescopes and Instrumentation*, SPIE, December 2020.
2. US Patent 10,526,487 *Method and apparatus for identifying and characterizing material solvents and composite matrices and methods of using same*. James P. Hamilton and Philip V. Streich, Washington, DC: U.S. Patent and Trademark Office. Granted 01-07-2020.
3. US Patent 10,112,15 *Thermodynamic solutions of metal chalcogenides and mixed metal oxides and chalcogenides*. James P. Hamilton and Lester F. Lampert, Washington, DC: U.S. Patent and Trademark Office. 2018
4. David A. Giesen, James P. Hamilton, and Sherri Sherman "Photonic Cleaning Technologies: First Contact Polymer and World-Class Telescopes", Proc. SPIE AS20EX, SPIE Exhibition Product Demonstrations, AS20EX0C, 2020, <https://doi.org/10.1117/12.2588661>
5. James P. Hamilton, Austin K. Rickertsen, Daniel P. Hamilton, and David A. Giesen "Elimination of Mirror Recoating and Realignment: Optical Contamination Control Using First Contact Polymers on GTC, Keck, LIGO and Starshade Telescopes (Conference Presentation)", Proc. SPIE 10706, *Advances in Optical and Mechanical Technologies for Telescopes and Instrumentation III*, 107061V, 2018, <https://doi.org/10.1117/12.2314736>
6. "Crystallinity and Mechanical Properties of Polypropylene-based Graphene Nanocomposites Studied with Atomic Force Microscopy and Raman Spectroscopy," Kjerstin Gronski, Robinson Flaig, Jorge Camacho, Yan Wu & James P. Hamilton, *MRS Online Proceedings Library* 1557, 511 (2013). <https://doi.org/10.1557/opl.2013.1107>
7. "Crystallinity and mechanical properties of polypropylene-based graphene nanocomposites studied with atomic force microscopy and raman spectroscopy", Gronski K, Flaig R, Camacho J, Wu Y, Hamilton JP, *Materials Research Society Symposium Proceedings*. 1557, 2013. DOI: 10.1557/opl.2013.1107
8. "Nanomechanical characterization of graphene platelets in polypropylene-based graphene nanocomposites using atomic force microscopy", Camacho J, Gronski K, Flaig R, Wu Y, Hamilton JP., *Proceedings of the IEEE Conference On Nanotechnology*. 808-812, 2013, DOI: 10.1109/NANO.2013.6721007
9. "Nonlinear deviations from ideality in surface tension: A practical PChem experiment," Hamilton, J. P., Flaig, R. and Day, A. and Lampert, L. F, *Abstracts of Papers of the American Chemical Society*, 2013
10. "Strip Coating Metrology on Large Scale Telescope Optics: Scalable Cost Saving Preventative Maintenance with First Contact Polymer," *Advanced Maui Optical and Space Surveillance Technologies (AMOS) Conference Proceedings*, 2012, James Hamilton (University of Wisconsin-Platteville)
11. "Using solution thermodynamics to describe the dispersion of rod-like solutes: application to dispersions of carbon nanotubes in organic solvents," J Marguerite Hughes, Damian Aherne, Shane D Bergin, Arlene O'Neill, Philip V Streich, James P Hamilton, Jonathan N Coleman.

- Nanotechnology 2012, 23(26), 265604. <https://doi.org/10.1088/0957-4484/23/26/265604>
12. "Electroplate and Lift Lithography for Patterned Micro/Nanowires Using Ultrananocrystalline Diamond (UNCD) as a Reusable Template," Seley DB, Dissing DA, Sumant AV, et al., ACS APPLIED MATERIALS & INTERFACES, 3(4), 925-930, 2011
 13. "New Solvents for Nanotubes: Approaching the Dispersibility of Surfactants," Bergin SD, Sun ZY, Streich P, et al., JOURNAL OF PHYSICAL CHEMISTRY C, 114(1), 231-237, 2010
 14. "Multicomponent Solubility Parameters for Single-Walled Carbon Nanotube-Solvent Mixtures," Bergin SD, Sun ZY, Rickard D, et al., ACS NANO, 3(8), 2340-2350, 2009
 15. "Towards solutions of single-walled carbon nanotubes in common solvents," Bergin SD, Nicolosi V, Streich PV, et al., Advanced Materials, 20(10), 1876, 2008
 16. "Surface cleaning of CCD imagers using an electrostatic dissipative nanotube doped formulation of First Contact", G.Derylo, J.Estrada, B.Flaugher, J.Hamilton, D.Kubik, K.Kuk, V.Sparpine, Proc. SPIE 7018, 701858 (2008); doi:10.1117/12.789654 Fermilab/Lawrence Berkeley Lab/University of Wisconsin- Platteville Collaboration
 17. "Long-Term Operation of an Alkaline Fuel Cell with Air," H.-J. Kohnke, S. Schudt, G. Sauer, James P. Hamilton, E. Coyle, D. Kennedy, H. Schmidt-Walter", *Proceedings 2nd Int'l Conference of Renewable Energy in Maritime Island Climates (REMIC 2)*, Dublin, 26-28 April 2006, 273-278
 18. "Increased Laser Damage Threshold by Protecting and Cleaning Optics Using First Contact Polymer Stripcoatings", E. Bailey, V. Lutzke, N.Confer, D. Drochner, K. Vircks and J. Hamilton, *Proc. of the 2008 Boulder Laser Damage Conference, Laser-Induced Damage in Optical Material, Proc. of SPIE Vol 7132, 71321M · doi: 10.1117/12.804018.*
 19. "Experiments using First Contact polymer as a final cleaning step for aluminizing", Greg Barrick, Marc Barila, Tom Benedict, Philip Jackson, James Hamilton, March 2008 , *SPIE Astronomical Telescopes and Instrumentation Proceedings*. Canada-France Hawaiian Telescope-Industrial-University of Wisconsin - Platteville Collaboration
 20. "Towards Solutions of Single Walled Carbon Nanotubes in Common Sovents," Shane D. Bergin, Valeria, Nicolosi, Philip V.Streich, Silvia Giordani, Zhenyu Sun, Alan H. Windle, Peter Ryan, Peter P. Niraj, Zhi-Tao T.Wang, Leslie Carpenter, Werner J.Blau, John J. Boland, James P. Hamilton and Jonathan N. Coleman, *Advanced Materials*, 20, 10.1002/adma.200702451 (2008)
 21. "Cleaning and Protecting Large Mirrors Using a Polymer Solution," Philip Jackson, James Hamilton; and Steven Elieson, April 2008, *Defense Tech Briefs*, p 46
 22. "Long-Term Operation of an Alkaline Fuel Cell with Air," H.-J. Kohnke, S. Schudt, G. Sauer, James P. Hamilton, E. Coyle, D. Kennedy, H. Schmidt-Walter", *Proc. 2nd Int'l Conference of Renewable Energy in Maritime Island Climates (REMIC 2)*, Dublin, 26-28 April 2006, 273-278
 23. "Comparisons between 2D doubly vibrationally enhanced four wave mixing and site selective spectroscopy," *Journal of Luminescence*, 87-89, 90-95 (2000)
 24. "Experimental Studies for a New Family of Infrared Four Wave Mixing Spectroscopies," J.C. Wright, J.P. Hamilton, A. Zilian, P.C. Chen, M.L. LaBuda, *Applied Spectroscopy*, 52: 380(1998)
 25. "Observation of Vibrational Enhancement using Pre-Resonant IR Four Wave Mixing", James P. Hamilton, Mitchell. L. Labuda, John C. Wright, *Chemical Physics Letters*, 277:175-182(1997)
 26. "New Selective Nonlinear Vibrational Spectroscopies," J. C. Wright, M. J. LaBuda, A. Zilian, P. C. Chen, and J. P. Hamilton, *Journal of Luminescence* 72-74:799 (1997)
 27. "Theoretical Foundations for a New Family of Infrared Four Wave Mixing Spectroscopies," J.C. Wright, P. C. Chen, J. P. Hamilton, A. Zilian, M.L. LaBuda, *Applied Spectroscopy*, 51, 949(1997)
 28. "IR Four Wave Mixing Interferometry", A. Zilian, M.L. LaBuda, J.P. Hamilton, P.C. Chen and John C. Wright, *Journal of Luminescence*, 58:410 (1994)
 29. "A New Four Wave Mixing Process: Vibrationally Enhanced IR Spectroscopy", A. Zilian, M.L. LaBuda, J.P. Hamilton, P.C. Chen and John C. Wright, *Journal of Luminescence*, 174:38(1994)

R&D AND BUSINESS DEVELOPMENT FUNDED

\$100k	WEDC SBIR Advance
\$875k	NASA SBIR Phase I & II Corporate Investment, 6/17-5/20
\$4.3MM	Xolve, Inc. Venture Capital Startup Corporate Investment, 12/10
\$6k	WISYS Prototype Development Fund Microwave Digestion for Activated Carbon R&D, 5/12
\$76k	WISCAP R&D Grant with MicroIonics for Activated Carbon R&D, 4/12
\$80k	WISCAP R&D Grant with Xolve for Lithium Ion Battery R&D, 6/11
\$30k	WISCAP R&D Grant with Interfacial Solutions, Graphene Composite Materials, 11/10
\$450k	NSF MRI Atomic Force Microscope, with Yan Wu et al., 6/10
\$200k	NSF Nanotech Undergraduate Engineering Education Grant 2011-2012
\$50k	Applied Research Grant (With K. Kilian) Hybrid TiO ₂ Nanowire Li-Ion Batteries
\$10k	UW Nanoparticle Environmental Solid Waste Grant with Student Josh Bohnert, 2009 & 2010
\$260k	UW Hamilton R&D Program Support Funds, 2008-2010
\$30k	National Finalist, Cleantech Open Business Competition, San Jose, CA 11/10
\$40k	WISYS 2008/2009 Post-Doctoral Position Funding, \$40k, renewable for 2009/2010
\$85k	Annual Funds for Wisconsin Distinguished Professorship, Yearly, 2008-2013
\$50k	Overall Grand Prize Winner Wisconsin Governors Business Plan Competition 2008
\$15.9k	UWP Opportunity Fund Grant for Raman Microprobe XP upgrade – 2007
\$350k	Equivalent Cost, Dept. of Energy Equipment Grant, JY Raman Microprobe, HR64000-2004
\$250k	Equivalent Cost, Department of Energy Equipment Grant, AMRAY SEM with EDAX - 2003
\$389k	UW System WiTAG Grant for 2007- 2011
\$89k	UW System WiTAG Preproposal Bridge Funding for 2007- 2008, Dec. 2006,
\$15k	Awarded in Opportunity Fund Grants for 2006 for Fuel Cells and Nanotechnology
\$14.2k	Awarded 2006 Opportunity Fund Grant for Nanocharacterization tools EDAX upgrade.
\$4.7k	Awarded 2006 Opportunity Fund Grant for Alkaline Fuel Cell test bed development.
\$25k	USDA Business Development Grant 2006
\$500k	Approximate Equivalent amount granted in instrumentation. SEM, AFM, ns lasers with OPO and spectrometers cameras and electronics. US DOE ERLE Equipment Program, For example DOE Grant # DE-FG26-03NT41687.
\$46k	Awarded State of WI Applied Research Grant, <i>“Polymer Cleaning of Precision Optics and Surfaces”</i> , 2002-3
\$70k	Anro Engineering, Lexington, MA, 1999-2000, Program Manager and Programmer on consulting initiative using UWP faculty to encode Anro’s Radar Sidelobes simulations for federal clients.
\$47k	Awarded, Wisconsin Applied Research Grant, July 2005- June 2006
\$32k	Industrial Contract R&D and Consulting Contracts awarded since 1997. Barnstead International and 3M, LCC, Inc, for examples.
\$12k	Scholarly Activity Improvement Fund (SAIF) Grant Recipient 1996, 1999, 2005
\$4.8k	Awarded Opportunity Fund Grant for construction of multiple time resolved fluorescence spectrometers to study diamond luminescence on Gems from the Smithsonian’s National Gem Collection working with Curator Jeffery Post.

AWARDS, FUNDED PROPOSALS, FEATURE ARTICLES AND CONSULTING

- Featured in “Small Science, Big Picture-Nanotechnology in Wisconsin,” Wisconsin Academy of Arts and Letters Magazine, March 1, 2009
- “Chemists grapple with lack of diversity displayed in ‘dude walls’ of honor,” Chemical & Engineering News, 97(37) 2019 Provided Images for article from UWP Chemistry wall of retired faculty.
- “Can SWNT’s Swim Apart?,” Science, Vol 320 , 9 May 2008, our paper, Advanced Materials, 20(10), 1876, 2008, was featured as an Editor’s Choice in Science Magazine.
- “How to Dissolve your Carbon Nanotubes,” Our paper, Advanced Materials, 20(10), 1876, 2008 was

featured in Science and Technology Concentrates Section of Chemical & Engineering News, 5/2008

- WiSys Innovation Scholar Award, May 2008 (Co-award with student, Philip Streich)
- Mentor, Intel International Science Fair Overall Winner 2007, Albuquerque, NM – Philip Streich
- 3 Masters Thesis Completions as Co-Supervisor, “*Novel Hydrogen Alkaline Fuel Cells*” and “*Fuel Cell Design for Gas Hydrates Exploration and Research*”, Dublin Institute of Technology, Dublin Ireland, Electrical & Controls Engineering, Students Michael Mueller, Steffen Schudt and Gerhard Sauer, 2003-2006. Multiple trips to Ireland and Germany via an Irish Government Grant.
- Research Proposal Reviewer, Review of Scientific Instruments, December 2006
- National Chemistry Week, Wisconsin Coordinator, American Chemical Society, 2000- Present
- Working Weekend at University of Iowa Chemistry, Nov, 2003, 2005, 2006. Brought 18 Chemistry students for a weekend on Nanotechnology and Analytical Instrumentation.
- Awarded \$25k USDA Rural Business Development Grant – September 2005.
- 2006 Abughalous Award for Excellence in Scholarly Research, UW – Platteville.
- Governors New Product Development Award for Wisconsin, June 2006, Honorable Mention, Small Business category.
- PhD Thesis Committee Member, U. Stavanger, Stavanger, Norway, PhD Defense: July 8th, 2005
- W.M. Keck & ESO’s Gemini Observatories, Mauna Kea, Hawaii, April 2005, Telescope sponsored consulting trip atop Mauna Kea to develop methods to clean and protect optics and reduce environmental contamination in an ecologically sensitive zone at 14,000ft. December 2004, March 2005, January 2006.
- Masters Thesis Co-Supervisor, “*Novel Hydrogen Alkaline Fuel Cells*” and “*Air Operation of an Alkaline Eloflux Fuel Cell*”, Dublin Institute of Technology, Dublin Ireland, Electrical & Controls Engineering, Students Steffen Schudt and Gerhard Sauer, October 2003-2007. Multiple trips to Ireland and Germany sponsored by an Irish Government Grant.
- 2003 Teaching Excellence Award, *Tau Beta Pi*, selected by students the Engineering Honor Society for one of two annual awards at UWP, December 2003.
- “*Biological Phosphorous Uptake by Bacteria in Sludge Monitored by Acetic Acid Levels in Sludge, A Chromatographic Study*”, Spring & Summer 1997, worked on Research Grant, with M. Anderson, Environmental Engineering.
- Participating Faculty Collaborator, \$150 million Argonne Nanotechnology Proposal, September 2000, this resulted in the formation of the Argonne Center for Nanophase Materials.
- Industrial Contract R&D and Consulting Contracts Awarded, \$32k since 1997
 - “*Failure Mode of Instrument Coatings*”, *Barnstead Int’l*, 2006
 - “*High Intensity Blackbody Lamp Spectral Shift Determination*”, *Barnstead Int’l*, 2003
 - “*Failure Mechanisms of Ribbon/Mica Heaters using XRF-SEM*”, *Barnstead Int’l*, 2003
 - “*Characterization of Quantech Fluorimeters as LC Detector*”, *Barnstead Int’l*, 2002
 - “*Online Process IR & Ultrasonic Monitoring of Phenolic Curing and*”, *LCC Industries*, 1999
 - “*Development of SOP’s and Application Notes for Fluorimeters*”, *Barnstead Int’l*, 1999
 - “*IR Reflectance Standards and IR Gold Mirrors*”, *Epner Technology, Brooklyn, NY* 1998
- Research proposal reviewer, U.S. Civilian Research and Development Foundation, Aug 2004
- Research proposal reviewer, Advance Photon Source, Argonne National Lab, 2000- Present
- Warbird Airshows, Dayton, Ohio, Scientific and Technical Consultant, 1996-2001
- NSF Chautauqua & Case Studies Institute Awardee, July 2000, SUNY Buffalo, June 1998
- Wisconsin Teaching Fellow, 1999-2000
- UW System Fellow of Women in Science 1995-1996
- CLEO ‘93 Post Deadline Presentation: “*Vibrationally Enhanced IRFWM*”, Baltimore. 1993
- NSF International Travel Award Recipient, Erice Sicily, 1991

PRESENTATIONS AND CONFERENCES

- OASIS 7, Tel Aviv Israel 2019

- Thalys Aerospace, Cannes France, Feb 2019
- Thalys SESO SAS Optics, Aix-en-Provence, France, Feb 2020
- Lectures on Nanotech and Contamination Control During Sabbatical Year in Germany 2015-2016
 - Invited Research Presentations: “Nanomaterials & Protecting and Cleaning Aerospace Coatings”
 - Darmstadt University of Applied Sciences
 - Barcelona ALBA Synchrotron, Jan 27th,
 - Center Astrofisica, University of Barcelona, Jan 28th
 - Centro Astrofisica, La Palma, Canary Islands, Spain, 2/3
 - Centro Astrofisica, Tenerife, Canary Islands, 2/5
 - Applied Physics, Chalmers University, Goteborg, Sweden, 2/18
 - Riga Polymer Institute, University of Riga, Riga, Latvia, 3/30
 - Applied Physics, University of Vilnius, Vilnius, Lithuania, 4/1
 - Chalmers University, Goteborg Sweden, Applied Physics, 2/18
 - Polymer and Plastics Engineering, Montanat Universitat, Leoben, Austria, 2/9
 - ESRF, Grenoble Synchrotron, France, 2/12
 - Observatoire de Lyon, Lyon, France, 2/11
 - Laser Institute, University of Marseilles, Marseilles, France, 4/20
 - L3 Laser Institute, France, 4/21
 - Centri Astrofisico, University of Grenada, Grenada, Spain, 4/26
 - Oak Ridge National Lab, Stable Isotope lab and Transuranic Element Lab, Chemistry, May 2
 - NASA Jet Propulsion Lab, Pasadena, CA, 10/5
- "Diamonds, Volcanic Dust and Dark Matter..." MATC Mathematics Club, Madison Area Technical College
Madison, Wisconsin, February 5, 2010
- NTT, Tokyo Japan, 2009
- SCUN, Wuhan China, 2009
- Ballenger Eminent Persons Lecturer, Nov 5-6 2009, Mott College, Flint, Michigan
- Invited Lectures: “*Cleaning, Protecting & Replicating Optical and Nano Surfaces*”
 - MIT/LIGO, Cambridge, MA, May 2008
 - University of Dayton Electro-optics and Physics, Wright Patterson AFB, April 2008
 - UW-Whitewater Chemistry, March 2008
 - Trinity College Dublin, Physics, Dublin Ireland, March 2008
 - White Sands Army Missile Base Research Labs, March 2008
 - AFRL, Kirtland Airforce Base and Starfire Optical range, Albuquerque, NM, March 2008
 - Caltech, TMT, Pasadena California, March 2008
 - Stanford University, Cryogenic Dark Matter Search group, Applied Physics, Feb 2007
 - UW-Lacrosse Physics Department Colloquium, November 2007
 - Jet Propulsion Lab/Caltech , Pasadena, CA, August 2007
 - Fermilab. Research Techniques, June 2007
 - European Southern Observatories Headquarters, Garching bei Munich, Germany October 2007
 - NASA Goddard Space Flight Center, Greenbelt, MD, August 2006
 - European Southern Observatory Headquarters, Garching bei Munich, Germany, June 2006
 - Mohs Lectures at the College of Engineering at UW-Madison Rheology Research Center, 2005
 - University of Nebraska-Lincoln, Analytical Chemistry Lecture, April 2005
 - Gesellschaft für Schwerionenforschung, PHELIX Petawatt Laser Program, Germany, Jan 2005
 - W.M. Keck Headquarters and University of Hawaii, Waimea and Hilo Hawaii, December 2004
 - Royal Dutch Embassy, Washington, D.C., by Paul van de Brouw
 - University of Wisconsin-LaCrosse, Chemistry Seminar, November, 2004
 - Institute for Science and Mathematics, University of Stavanger , Stavanger, Norway, Oct 2003
 - Trinity College Dublin, Physics, Dublin Ireland, October 2003
 - FOCUS, Dublin Institute of Technology, Dublin, Ireland, Oct. 2003
 - Lawrence University, Chemistry Colloquium, October 2003
 - Faculty of Optical Engineering, Univ. of Applied Sciences, Darmstadt, Germany, June 2002
 - Faculty of Chemical Technologies, Univ. of Applied Sciences, Darmstadt, Germany, June 2002
 - University of Wisconsin-Milwaukee, Chemistry Graduate Colloquium, October 2001

Northern Illinois University, Chemistry Graduate Colloquium, April 2001

University of Dayton, Electro-Optics/Physics Colloquium, July 2000

NASA Glenn Space Center Microgravity Institute, Cleveland, Ohio, July 2000

The Analytical Sciences Corporation, Chantilly, VA, August 2000

Cleveland Crystals Corp, Cleveland, OH, June 2000, Zygo Optics Inc., Middlefield, CT, 2000

- “Phase Matching in the Presence of Absorption in IR Four Wave Mixing”, International Symposium on Materials and Devices for Nonlinear Optics, Dingle, Co. Kerry, Ireland, June 2006
- Chair: Nanotechnology Session at American Chemical Society Meeting, GLRC, June 2003
- Conference: “*Phosphorous Mitigation and Runoff Monitoring*,” UW Farm Research Symposium, Spring 2005.
- *Invited talk “Nano Surface Cleaning and Contamination Control”*, NASA Contamination and Coatings Workshop, Columbia MD, July 2007
- Invited Panel Member & Presenter: “*Peer Editing Term Papers*”, Focusing on Teaching and Learning: Marking 20 Years of the Wisconsin Teaching Fellows/Scholars Program, April 2005, UWP Fall 2006 Brown Bag Lunch Series
- Invited Lecture: “*Commercialization of Chemical Technology*”, 36th Great Lakes Meeting, Peoria, IL, Oct. 2004
- Conference Presentation, American Physical Society Meeting, Seattle, WA 2001
- Invited Lecture: “Phase Matching in IR Four Wave Mixing”, 4th National Symposium on Mathematical Modeling in the Ugrad. Curriculum, UW-LaCrosse, WI
- Program Chair & Presider, Chemistry & Engineering Programs, 11th Annual Symposium for Undergraduates in Science, Math & Engineering, November 2000
- Conference on Lasers and Electro-Optics (CLEO), Baltimore, MD, May, 1995, 1996, 1997
- Lecture: "Vibrationally Enhanced Infrared FWM", Chemical and Laser Sciences Div, LANL, 1994
- Lecture: “Non-Linear Optics and Lasers”, UWP Physics Colloquium, November 1994
- Invited Lecture: "Site and Component Selective IR and Visibly Resonant Four-Wave Mixing" Department of Physics, Universitaire Instelling Antwerpen, Antwerp, Belgium, July 1991
- Lecture: "Infrared Four-Wave Mixing and Double Resonance Fluorescence" NATO ASI-International School of Atomic and Molecular Spectroscopy, Erice, Italy, June 1991

PROFESSIONAL AND UNIVERSITY SERVICE

- Chemistry Program Director, UW-Platteville, Sept 2001 - 2004
- Chair, Academic Information Technology Commission, 1997 - 2000
- Vice-Chair, Academic Information Technology Commission, Spring 1997
- Chair, University Strategic Plan Information Technology Subcommittee, 1995
- Chair, EMS Strategic Plan Committee, 1998 -1999
- College Industrial Advisory Board Departmental Representative, 1998-2005
- Chair, Tenure Track Search Committee, 2 positions, October 1996 - March 1997
- Chancellors Multicultural Student Mentoring Program Volunteer, 1999 - 2004
- Wisconsin Chemistry Week Coordinator, American Chemical Society, 2000 - 2015
- UWP CO₂ Cutting laser Working Group Member, 1998-2010
- Tenure Track Search Committee, 3 Chemistry Positions, October 2001 - March 2001
- Engineering Physics Search Committee, Spring 1997
- UWP Hazardous Materials Committee, Member, 2000 - Present
- UWP Bylaws Committee Member, 2000 - 2007

- Advisor, Alchemists, American Chemical Society Student Affiliate Group, 1994-1998
- Participating Faculty Member, Society of Physics Students, 1993- 2010
- EMS/BILSA Intercollege Internal Advisory Committee, 1996- 1998
- College of Engineering, Mathematics and Science Computer Committee, 1994 -1995
- Volunteer Scientist, Science-By-Mail Program, Museum of Science, Minneapolis, 1993 -1995
- Campus Beautification Committee, 1994 - 1999
- Member, Friends of International Students, 1994 - Present
- Coordinator UWP French Discussion Table, 1999 – 2005

PUBLIC AND COMMUNITY SERVICE

- Optimist International Member, 1998 - 2016
- Platteville Chamber of Commerce, Member 2006, 2016-Present
- O.E.Gray Science Fair, May 6th and 7th, 1997 - 1998. Brought over 20 students from UWP
- Board of Trustees, “Preserving Historic Platteville”, Non-Profit, 1997 - 2001
- Founder, UWP Campus Chapter of Habitat for Humanity, 2000
- Volunteer, Habitat for Humanity, September 1998 - 2003
- Boy Scout Merit Badge Counselor, Tri State Region, 1998-Present
- Friends of Rountree Branch Creek, Fall 1997- Present
- Guest Speaker, Benton Middle and High School Science classes, May 1997, October 1998
- Guest Speaker, Platteville High School Chemistry Class, 1997, 1999, 2001, 2012-2015, 2017
- Guest Speaker, Mineral Point High School Chemistry & Physics Classes, 1997, 1999
- Guest Speaker, Casseville Career Day, December 1998
- Platteville Old House Enthusiasts Member, 1993-2008
- Chair of Eagle Heights Community Services and Childcare Committee, 1987-1990
- Elected Representative to the Eagle Heights Assembly, Madison WI, 1986-1990
- Member, UW-Madison Dean of Students Advisory Board, 1987-1989
- Platteville Youth Soccer Head Coach, Summer 1994, 1995
- Platteville Youth Hockey Co-Coach, Winter 1997
- Co-Chair O.E. Elementary Science Fair, May 1995

PROFESSIONAL AFFILIATIONS

American Chemical Society, American Physical Society, Sigma Xi (Honorary Research Society), Sigma Pi Sigma (Honorary Physics Society), AIAA (American Institute of Aeronautics and Astronautics) and SPIE- The International Society for Optical Engineering.

High Impact Practices: Partial List of Student Researchers of James Hamilton at UWP				
Project Title	First Name	Last Name	From	To
Construction of Adhesion Tester & Testing	Katie	Laymeyer	2018	Pres
Thermogravimetric Analysis of Polymers	Noah	Milder	2019	2019
Tensile Strength Testing on Polymer Films	Adam	Wildman	2018	2019
SOP's and Specialty Optics for NSA's Starshade Program	Alana	Wakefield	2019	2019
NASA Starshade Telescope Coatings	Madison	Mueth	2018	2019
ROSES Etching	Will	Browning	2018	2019
NASA Starshade telescope Coatings	Katie	Lameyer	2018	2019
NASA Starshade telescope Coatings	Ley	Kler	2018	2019
ROSES Etching, Starshade Telescope Coatings	Brandon	Robinson	2017	2019

Adhesion and Metal Coatings, ROSES Etching	Austin	Rickertsen	2017	2019
Electrical Properties of Graphene Based Polymer Composites	Jose	Rosas	2013	2013
Li Ion Battery Electrodes	Megan	Divall	2012	2013
Activated Carbon Synthesis and Characterization	Eric	Sullivan	2012	2013
TiO ₂ Nanoparticle Synthesis and Characterization	Robinson	Flaig	2012	2014
Activated Carbon Synthesis and Characterization	Goyko	Rajak	2012	2013
TGA & DSC on Graphene Nanocomposites	Christina	Peth (H-Da)	2012	2012
Optical Goniometer	Evan	Wilson	2011	2012
Terahertz Raman of Nano Metal Oxides and Chalcogenides	Ethan	Becker	2011	2012
Raman Spectroscopy of Amino Acid	Firas	Jadaan	2012	2012
Ultracapacitor Fabrication and Analysis: A Baseline	Tim	Pozzi	2012	2012
Precision Surface Tension of Nonideal Solutions	Alex	Day	2012	2012
Sedimentation Device & a Tensile Tester	Austin	Schultz	2012	2012
Graphene and CNT Particle Sizing with DLS	Eric	Rowe	2011	2011
Battery Anodes, Cathods Coatings	Fred	Ratel(scientist)	2011	2011
Circulating Sonicator and Integrating Sphere	Tyler	Krisko	2010	2010
SEM E-beam lithography and etc.	Lester	Lampert	2010	2010
Thermodynamic Stability of Nanoparticle Solutions	Nathan	Tollefson	2010	2011
Stability& Synthesis of Nanowires & Solutions	Rebecca	Stangl	2010	2011
Raman and Solution Phase Processing of WS ₂	Tanner	Beebe	2010	2010
AFM of Nanocellulose Cast Films	Abbigail	Chadwick	2013	2013
Raman and Solution Phase Processing of HBN	Kutay	Muslu	2010	2010
Nanocellulose Solutions	Jasmine	Erbs	2009	2010
Microwave Digestion/Fiber Quantification of Scotchbrite Pads	Brian	Koth	2009	2010
TiO ₂ Thermodynamically Stable Solutions	Lester	Lampert	2009	2009
Battery Anodes, Cathode Coatings	Joseph	Karls	2009	2009
Nanotubes and Humic Acids Mobility-UW System Solid Waste Grant	Joshua	Bohnert	2009	2010
Adhesion Testing & Photoemission Monitoring	Hatem	Zaky	2009	2009
Cuboid Nanocrystalline Nanomaterials Synthesis	Willson	Arifin	2009	2011
Battery Anodes, Cathode Coatings	Blake	Steiner	2008	2008
Automated Laser Induced Damage testing System	Eric	Bailey	2008	2008
Hyperchem Simulation of Polyaromatic Dyes	Vanessa	Davis	2008	2009
Determination of the Second Virial Coefficient Using Light Scattering	Marc	Reichardt	2008	2008
Nanotube Polymer Conductivity	Joseph	Karls	2008	2010
Adhesion Strength of Novel Polymers to Metals, Glasses & Ceramics	Joshua	Bohnert	2007	2007
Research SAS 3M	Brian	Koth	2007	2007
INDS 4020 Advanced Metallurgy and Casting Processes INDS 3310 Welding and Metallurgy Wootz Research	Dean	Robke(Metzloff)	2006	2006
Analytical studies of some nitrogen containing drugs	Neveen	Ibrahim	2009	2009
SEM/EDS of Heavy Metals & Uranium Surfaces	Galen	Dsby	2003	2004
Fluorescence Detection for LCMS	John	Persons	2002	2003
Evaluation of the Quantech Fluorometer as a Liquid Chromatographic Detector	John	Persons	2002	2002
Spectrophotometric determination of some drugs in pure form and in different pharmaceutical preparations	Marwa H. G.	Soliman	2009	2009

Microwave Digestion	Andrew	Sawall	2001	2001
MMRT1 Project	John	Persons	2001	2001
Cu(I) Quinoline Oxidative Carboxylation	Todd	Wingers	2000	2000
Laser dye Chromone	Scott	Lipke	1999	2000
Dye Laser Controller	Jim	Gartner	1999	1999
Dye Laser Controller	David	Rentmeister	1999	1999
Molecular Modeling of Laser Dyes	Ryan	Wilkinson	1999	1999
Sphere Packing	Jamie	Ranherger	1999	1999
LCC Phenolic Curing Project, Laser Dye Project	Scott	Lipke	1998	1999
Logarithmic Amplifier for Chemistry Department	Sean	Lynch	1998	1998
Fingerprint Analysis Using Laser Technology	Tara	Scribbins	1998	1998
Histamine Analysis by Fluorometry	John	Persons	1998	1998
SEM/EDX of Mineral Samples	Lloyd	Curkeet	1998	2001
Synthesis of 7-Hydroxy-2-Methylchromone Derivatives For Use as Laser Dyes	Tristan	Lambert	1997	1997
Sonoluminescence	Jeremy	Klysen	1997	1997
The Comparison of a Chromone to the Laser Dye Coumarin-4	Amber	Kistler	1996	1996
Latex Research	Thomas	Hoeft	1996	1996
Tire Buffering	Lawrence	Ducharme	1996	1996
Instrumenting & rebuilding an SEM	Joel	Frank	1996	1997
Diamond coated Protected mirrors by AFM	Randall	Berger	1996	1996
Diamond Chemical Vapor Deposition and Modifications to Our System	Ryan	McGuire	1995	1995
AFM of Gold Surface Layer	Richard	Simon	1994	1994
Laser Power Supply	Randy	Casper	1993	1993
Raman of Nanomaterials	Neilanjan	Battaracharya	2009	2009
High Fidelity Fingerprints from Difficult Surfaces	Tara	Fahey	1998	2000
High Fidelity Fingerprints from Difficult Surfaces	Kyle	Vircks	1999	1999
Modeling of Supramolecular Molecules	Vanessa	Lutzke	1996	1997
Polymer Solution Cloud Point Precipitation Determination SOP	Vanessa	Lutzke	1996	1997
UWP Heating Plant Hardness Monitor	Randy	Kwallek	1995	1995