

# Lon A. Porter, Jr., Ph.D.

Assistant Professor of Chemistry  
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## Objective:

Strive to successfully meet the multifaceted challenges of a fulfilling faculty career, with emphasis on facilitating learning in the undergraduate chemistry curriculum, both in the classroom and in the research laboratory. Cardinal goals include the development of an unambiguous learning environment, an aggressive undergraduate research program, new courses (*i.e. Chemical Nanotechnology, Industrial Inorganic Chemistry, Materials Chemistry, Forensic Chemistry, and Chemistry, Business, and Public Policy*), and evolving established classes to keep pace with the rapidly expanding scope of chemistry, with emphasis on the wider, significant interaction of chemistry with other realms of science, technology, business, and public policy.

## Education:

### *Purdue University (1999-2003)*

- Research advisor: Jillian M. Buriak, Associate professor of chemistry  
- presently Professor & Senior Research Officer (NINT), University of Alberta, Canada
- Support provided by a National Science Foundation Graduate Research Fellowship
- Graduated in August 2003 with a Ph. D. in inorganic chemistry, as related to inorganic chemistry in the synthesis of exotic new materials and utilization of cutting edge fabrication/characterization methods
- Doctoral thesis: ***Intrinsic and Compound Semiconductor Surface Chemistry: Intelligent Interfacial Design Facilitated through Novel Functionalization and Deposition Strategies***
- Cumulative graduate GPA: 3.86

### *University of Houston (1995-1999)*

- Research advisor: T. Randall Lee, Associate professor of chemistry
- Graduated (Summa Cum Laude) in May 1999 with a B.S. in chemistry, university honors, and honors in chemistry
- Minor: Philosophy
- Membership in the Honors College
- Senior honors thesis: ***Metal Nanoparticles Functionalized by the Adsorption of Thiols and Disulfides***
- Cumulative undergraduate GPA: 3.86 (Cumulative chemistry GPA: 3.89)

## Research Experience:

**Undergraduate Research Advisor:** Department of Chemistry, Wabash College (Summer 2003-present); Mentor to 11 summer students (~4/summer) and 20 independent study students (~3.5/semester)

- Development of microwave radiation mediated silicon surface functionalization methods
- Comparative studies of porous silicon functionalization reactions
- Degradation studies of functionalized porous silicon in simulated physiological environments (blood plasma, gastric, and intestinal)
- Development of “catalytic silicon chips” for use in synthetic applications

**Graduate Research:** Jillian M. Buriak Research Group (Jburiak@ualberta.ca), Department of Chemistry, Purdue University (Summer 1999-2003)

- Preparation and characterization of precious metal nanostructured materials on semiconductor and base metal surfaces; Techniques included VLSI fabrication protocols, spin-coating (Speedline P6708), goniometry (Rame-Hart 100), ellipsometry (Gaertner L116S), optical microscopy (Olympus BX51), scanning electron microscopy (JEOL JSM-35, JEOL JSM-6400), transmission electron microscopy (JEOL 2000FX), and atomic force microscopy (Digital Instruments Nanoscope IIIa)
- Development of novel micro/nanopatterned metal structures on semiconductor substrates; Techniques included VLSI fabrication protocols, thermal evaporation metallization (Fullam EFFA Turbo), spin-coating (Speedline P6708), goniometry (Rame-Hart 100), ellipsometry (Gaertner L116S), optical microscopy (Olympus BX51), e-beam lithography employing scanning electron microscopy (JEOL JSM-35, JEOL JSM-6400), transmission electron microscopy (JEOL 2000FX), dynamic plowing nanolithography, and dip-pen nanolithography utilizing atomic force microscopy (Digital Instruments Nanoscope IIIa)
- Synthesis, characterization, and functionalization of organometallic transition metal catalysts bound to silicon surfaces; Techniques included the use of air and moisture sensitive synthetic techniques, FTIR (Nicolette Nexus 670), GC (Varian CP-3800), and NMR (Varian Gemini-200, INOVA-300)

**Undergraduate Research:** T. Randall Lee Research Group (Trlee@uh.edu), Department of Chemistry, University of Houston (Summer 1995 - 1999)

- Synthesis, isolation, and characterization of gold and silver nanoparticles functionalized by the adsorption of dialkyl disulfides and partially fluorinated alkanethiols and dialkyl disulfides; Techniques included the use of FTIR (Nicolette MAGNA-IR 860), NMR (GE QE-300), and UV/vis (PE Lambda 3) spectroscopy
- Synthesis, purification, and characterization of soluble "Buckybarbells" (Buckyball dimer molecules); Techniques included the use of NMR spectroscopy (GE QE-300) and the execution of air and moisture sensitive synthetic procedures utilizing dry box and Schlenk line methods

- Production, isolation, and characterization of endohedral metallofullerene species; Techniques included the use and maintenance of a Hitachi HPLC system, a vertical feedthrough fullerene arc reactor, and air and moisture sensitive handling techniques utilizing a dry box
- Design, construction, and testing of a modified, high-temperature fullerene arc reactor

**High School Research, Welch Scholar Program:** Robert W. Shaw Research Group, Department of Chemistry and Biochemistry, Texas Technological University (Summer 1994)

- Utilized UV/vis spectroscopy (Perkins-Elmer Lambda 3 spectrophotometer) in the study of steady-state kinetics of Metallo- $\beta$ -Lactamase of *Bacillus cereus* 5/B/6 on various  $\beta$ -Lactam ring-based substrates such as penicillins and cephalosporins

### Teaching Experience:

- Instructor, CHE 441: *Advanced Inorganic Chemistry*, Wabash College – F'03 - present
- Instructor, CHE 231: *Quantitative Chemistry*, Wabash College – S'04 - present
- Instructor, CHE 241: *Descriptive Chemistry*, Wabash College – S'04 - present
- Instructor, COL 401: *Important Books (Sr. Coll.)*, Wabash College – F'04 - present
- Instructor, C&T 202: *Cultures & Traditions*, Wabash College – S'07
- Instructor, CHE 111: *General Chemistry*, Wabash College – F'03 & F'05
- Instructor, CHE 101: *Survey of Chemistry*, Wabash College – F'04, S'05, S'06, & F'06
- Instructor, BIO 202: *Electron Microscopy*, Wabash College – S'05 & S'06
- Instructor, CHE 102: *Forensic Chemistry*, Wabash College – S'06
- Freshman Tutorial Instructor, FT Q: *Nanoscience and Nanohype*, Wabash College – S'05
- Instructor, CHE 171: *Chemical Nanotechnology*, Wabash College – S'04
- Teaching Assistant, CHM 641: *Advanced Inorganic Chemistry*, Purdue University – 2000
- Teaching Assistant, CHM 266: *Synthetic Organic Chemistry*, Purdue University – 1999
- Teaching Assistant, CHEM 1132: *Problem Solving in General Chemistry*, University of Houston – 1999
- Teaching Assistant, CHEM 1131: *Problem Solving in General Chemistry*, University of Houston – 1998

### Awards and Honors:

- American Chemical Society Petroleum Research Fund, Type GB Grant – 2006
- Camille and Henry Dreyfus Foundation Start-up Award – 2003
- National Science Foundation Graduate Research Fellowship – 1999 - 2002
- Indiana Instrumentation Institute (III) Graduate Research Fellowship – 2002 - 2003
- Research Seminar Award, Purdue University Chemistry Dept. - 2003
- New Orleans ACS National Meeting, Div. of Colloid and Surface Chem. Poster Award – 2003
- Purdue Univ. Sigma Xi Research Poster Competition, First Place – 2002

- Purdue Univ. Materials Consortium (MatCon) Research Poster Competition, First Place – 2002
- Univ. of Houston, Natural Sciences and Mathematics Alumni Association's Distinguished Young Alum – 2000
- Phi Kappa Phi Graduate Fellowship – 1999
- Materials Research Science and Engineering Center, Univ. of Houston (MRSEC-UH) Fellow – 1998
- Univ. of Houston, Department of Chemistry, Pennzoil Outstanding Student Award – 1998
- Univ. of Houston, Department of Chemistry, Outstanding Senior Award – 1998
- Univ. of Houston, Department of Chemistry, Pennzoil Outstanding Student Award – 1997
- Univ. of Houston, Department of Chemistry, Outstanding Junior Award – 1997
- Natural Sciences and Mathematics Alumni Association's Student Challenge (Research Poster Session and Competition) First Place Winner, Undergraduate Division – 1996
- Univ. of Houston, Department of Chemistry, Shell Oil Outstanding Student Award – 1996
- Univ. of Houston, College of Natural Sciences and Mathematics Continuing Undergraduate Scholarship – 1996
- Univ. of Houston, Astronaut and Space Science Scholarship – 1996
- Univ. of Houston, Natural Sciences and Mathematics Alumni Association's Student Challenge (Research Poster Session and Competition) First Place Winner, Undergraduate Division – 1996
- Univ. of Houston, Department of Chemistry, Outstanding Sophomore Award – 1996
- Univ. of Houston, Department of Chemistry, Incoming Freshman Award – 1995
- Univ. of Houston, Alumni Association Legacy Scholarship – 1995
- Univ. of Houston, Cullen Leadership Scholarship – 1995
- Univ. of Houston, Dean's List – 1995 - 1999

### Major Publications:

- ***Introductory Nanoscience and Nanotechnology for Undergraduates: A Liberal Arts Approach***, Lon A. Porter, Jr., in Nanoscale Science and Engineering Education: Issues, Trends and Future Directions, edited by Sudipta Seal and Aldrin E. Sweeney, (American Scientific, New York, in press). –*Invited*
- ***Chemical Nanotechnology: A Liberal Arts Approach toward a Basic Course in Emerging Interdisciplinary Science and Technology***, Lon A. Porter, Jr., *J. Chem. Educ.*, **84**, 259 (2007).
- ***Nanotechnology and the Future of Bioanalytical Methods***, Lon A. Porter, Jr., in Immunoassay and Other Bioanalytical Techniques, edited by Jeanette van Emon, (Taylor & Francis, Boca Raton, 2007). –*Invited*
- ***Synthesis and Patterning of Gold Nanostructures on InP and GaAs via Galvanic Displacement***, Mohammad Reza Hormozi Nezhad, Masato Aizawa, Lon A. Porter, Jr., Alexander E. Ribbe, and Jillian M. Buriak, *Small*, **1**, 1076 (2005).

- *It was the Best of Times, it was the Worst of Times: Confessions of a Graduate School Survivor*, Lon A. Porter, Jr., *In Chemistry*, **14**, 16 (2004). –Invited
- *Harnessing Synthetic Versatility Toward Intelligent Interfacial Design: Organic Functionalization of Nanostructured Silicon Surfaces*, Lon A. Porter, Jr. and J. M. Buriak, in *Chemistry of Nanostructured Materials*, edited by Peidong Yang, (World Scientific, New York, 2003). –Invited
- *Metallic Nanostructures via Static Plowing Lithography*, Lon A. Porter, Jr., Alexander E. Ribbe, and J. M. Buriak, *Nano Letters*, **3**, 1043 (2003).
- *New Pairs of Inks and Papers for Photolithography, Microcontact Printing, and Scanning Probe Nanolithography*, Lon A. Porter, Jr., Hee Cheul Choi, J. M. Schmeltzer, Alexander E. Ribbe, and J. M. Buriak, *Materials Research Society (MRS) Symposium Proceedings*, **737**, 341 (2003).
- *Functionalization of Porous Silicon with Alkenes and Alkynes via Carbocation-Mediated Hydrosilylation*, J. M. Schmeltzer, Lon A. Porter, Jr., Michael P. Stewart, Carmen M. Lopez, and J. M. Buriak, *Materials Research Society (MRS) Symposium Proceedings*, **737**, 561 (2003).
- *Electroless Deposition and Patterning of Morphologically Complex Precious Metal Films on Semiconductor Surfaces*, Lon A. Porter, Jr., Hee Cheul Choi, Alexander E. Ribbe, and J. M. Buriak, *Materials Research Society (MRS) Symposium Proceedings*, **737**, 575 (2003).
- *Electroless Nanoparticle Film Deposition Compatible with Photolithography, Microcontact Printing, and Dip-Pen Nanolithography Patterning Technologies*, Lon A. Porter, Jr., Hee Cheul Choi, J. M. Schmeltzer, Alexander E. Ribbe, Lindsay C. C. Elliott, and J. M. Buriak, *Nano Letters*, **2**, 1369 (2002).
  - See: [NBC News](#), Feb. 2003, "[Bio Detector](#)"
  - See: [Materials Today](#), Feb. 2003, "[Nanoparticles by Accident](#)"
  - See: [MICRO Magazine](#), Jan. 2003, "[Worth Their Weight](#)"
  - See: [Nanoparticle News](#), Jan. 2003, "[High Purity Metals Deposited, Patterned on Semiconductors](#)"
  - See: [Materials World](#), Jan. 2003, "[Precious Metal Deposition via Galvanic Displacement](#)"
  - See: [Science News](#), Dec. 21, 2002, "[Gold Deposits: Scientists Design Nanoparticle Films](#)"
  - See: [Nanotech News](#), Dec. 20, 2002, "[Galvanic Displacement Lays Down Nanoparticle Films](#)"
  - See: [Global Techno Scan](#), Dec. 20, 2002, "[Nanoparticles Could Aid Biohazard Detection, Computer Industry](#)"
  - See: [NanoApex News](#), Dec. 20, 2002, "[Nanoparticles Could Aid Biohazard Detection, Computer Industry](#)"
  - See: [EE Times Asia](#), Dec. 19, 2002, "[Deposition Technique Spins Metal Salt into Pure Gold](#)"
  - See: [Semiconductor Business News](#), Dec. 17, 2002, "[Deposition Technique Spins Metal Salt into Pure Gold](#)"
  - See: [EE Times UK](#), Dec. 18, 2002, "[Deposition Technique Spins Metal Salt into Pure Gold](#)"
  - See: [Space Daily](#), Dec. 17, 2002, "[Nanoparticles Could Aid Biohazard Detection, Computer Industry](#)"
  - See: [EE Times](#), Dec. 17, 2002, "[TOP STORY: Purdue Spins Metal Deposition Alternative](#)"
  - See: [Washington File](#), Dec. 17, 2002, "[Researchers Develop Chip to Detect Biohazards](#)"
  - See: [Times of India](#), Dec. 17, 2002, "[New Chip Developed to Detect Biohazards](#)"
  - See: [AM Costa Rica](#), Dec. 17, 2002, "[Pure Gold Links Organic Molecules](#)"
  - See: [WBAA Radio, Morning Addition](#), Dec. 13, 2002, "Nanoparticles"
  - See: [Cosmiverse](#), Dec. 12, 2002, "[Nanoparticles Could Aid Biohazard Detection, Computer Industry](#)"
  - See: [Small Times](#), Dec. 12, 2002, "[Nanoparticles Could Aid Biohazard Detection, Computer Industry](#)"
  - See: [Nanoelectronics Planet](#), Dec. 12, 2002, "[High-Purity Nanoparticles Could Help Interconnects](#)"
  - See: [Science Daily Magazine](#), Dec. 12, 2002, "[Nanoparticles Could Aid Biohazard Detection, Computer Industry](#)"
  - See: [EurekAlert!](#), Dec. 12, 2002, "[Nanoparticles Could Aid Biohazard Detection, Computer Industry](#)"
  - See: [Innovations Report](#), Dec. 12, 2002, "[Nanoparticles Could Aid Biohazard Detection, Computer Industry](#)"

- See: **E4**, Dec. 11, 2002, "Nanoparticles Could Spot Biohazards and Help Computer Industry"
- See: **Nanotechnology Now**, Dec. 11, 2002, "Nanoparticles Could Aid Biohazard Detection, Computer Industry"
- See: **Indiana Daily Insight**, Dec. 12, 2002, "Nanoparticles"
- **Controlled Electroless Deposition of Noble Metal Nanoparticle Films on Germanium Surfaces**, Lon A. Porter, Jr., Hee Cheul Choi, Alexander E. Ribbe, and J. M. Buriak, *Nano Letters*, **2**, 1067 (2002).
- **Hydride Abstraction Initiated Hydrosilylation of Terminal Alkenes and Alkynes on Porous Silicon**, J. M. Schmeltzer, Lon A. Porter, Jr., M. P. Stewart, and J. M. Buriak, *Langmuir*, **18**, 2971 (2002).
- **Gold and Silver Nanoparticles Functionalized by the Adsorption of Dialkyl Disulfides**, Lon A. Porter, Jr., David Ji, Sarah L. Westcott, Michael Graupe, Roman S. Czernuszewicz, Naomi J. Halas, and T. Randall Lee, *Langmuir*, **14**, 7378 (1998).
- **Metal Nanoparticles Functionalized by the Adsorption of Thiols and Disulfides**, Lon A. Porter, Jr., *Senior Honors Thesis*, (Advisor, T. Randall Lee - Dept. of Chemistry, Univ. of Houston)
- **As Big as Texas: The American Chemical Society Affiliates in Dallas**, Lon A. Porter, Jr., *In Chemistry*, **8**, 19 (1998). –Invited
- **The Effects of Long Term Storage on the Metallo- $\beta$ -Lactamase of *Bacillus cereus* 5/B/6**, Lon A. Porter, Jr., Newton P. Hilliard, and Robert W. Shaw, *Accounts of the Welch Summer Scholar Program*, 475 (1994).

## Presentations:

- **All Monolayers are Not Created Equal: Functionized Porous Silicon Stability Studies**, Lon A. Porter, Jr., oral presentation, American Chemical Society (ACS) National Meeting, Chicago, IL (2007).
- **Tabula Rasa: Tablet PCs in the Classroom and Beyond**, Lon A. Porter, Jr., oral presentation, Tech Talk, Wabash College, (2006).
- **An "Investigator-centered" Approach to a Capstone Laboratory Experience: Undergraduate Proposal Writing and Collaborative Research (CHE 441L)**, Lon A. Porter, Jr., oral presentation, Biennial Conference on Chemical Education (BCCE), Purdue University, West Lafayette, IN (2006). –Invited
- **Forensic Chemistry and the Educated Citizen: A Liberal Arts Approach**, Lon A. Porter, Jr., oral presentation, Biennial Conference on Chemical Education (BCCE), Purdue University, West Lafayette, IN (2006).
- **Exploring Nanoscience and Nanohype: A Liberal Arts Approach to Emerging Interdisciplinary Science and Technology**, Lon A. Porter, Jr., oral presentation, Biennial Conference on Chemical Education (BCCE), Purdue University, West Lafayette, IN (2006).
- **Discerning Science from Hype: A Liberal Arts Science Course in Forensic Chemistry**, Lon A. Porter, Jr., oral presentation, American Chemical Society (ACS) National Meeting, Atlanta, GA (2006).
- **Degradation of Alkyl Functionalized Porous Silicon in Simulated Acellular Plasma (blood)**, Benjamin T. Edquist, Trayton B. White, Gregory R. Fulmer, Daniel R. Thornberry, and Lon A. Porter, Jr., oral presentation, American Chemical Society (ACS) National Meeting, Atlanta, GA (2006).
- **Nanoscience-fiction Resources for the Chemistry Classroom: Read, Watch, and Play On!**, Lon A. Porter, Jr., poster presentation, American Chemical Society (ACS) National Meeting, San Francisco, CA (2006).

- ***Functionalized Porous Silicon: Tunable Platforms for Bioanalytical Sensor Design***, Lon A. Porter, Jr., oral presentation, American Chemical Society (ACS) National Meeting, San Francisco, CA (2006). –**Invited**
- ***Read, Watch, and Play on! Nanoscience Fiction Resources for the Chemistry Classroom***, Lon A. Porter, Jr., oral presentation and faculty session, Annual Meeting of the Midwestern Association of Chemistry Teachers in Liberal Arts Colleges (MACTLAC), Lawrence University, Appleton, WI (2005). –**Invited**
- ***Applications of Symmetry and Group Theory in Bonding and Vibrational Spectroscopy***, Lon A. Porter, Jr., oral presentation, Math/CS Colloquium, Wabash College (2005). –**Invited**
- ***From the PC to the ER: Wabash Student Research toward Silicon BioChip Technology***, Lon A. Porter, Jr., oral presentation,
  - Northeastern Illinois University, Chicago, IL (2005) –**Invited**
  - Wabash College, Ides of August (2005).
- ***Utilizing Learning Centered Approaches toward an Interdisciplinary Course in Chemical Nanotechnology***, Lon A. Porter, Jr., oral presentation, American Chemical Society (ACS) National Meeting, San Diego, CA (2005).
- ***Degradation of Alkyl Functionalized Porous Silicon in Simulated Acellular Plasma (blood)***, Daniel R. Thornberry, Gregory R. Fulmer, Steven D. Rhodes, and Lon A. Porter, Jr., poster presentation, American Chemical Society (ACS) National Meeting, San Diego, CA (2005).
- ***Utilizing Learning Centered Approaches toward an Interdisciplinary Course in Chemical Nanotechnology***, Lon A. Porter, Jr., oral presentation, American Chemical Society (ACS) National Meeting, San Diego, CA (2005).
- ***Undergraduate Proposal Writing and Collaborative Investigation: A Learning Centered Approach to a Capstone Laboratory Experience***, Lon A. Porter, Jr., poster presentation, American Chemical Society (ACS) National Meeting, San Diego, CA (2005).
- ***Discerning Science from Hype: A New Course in Chemical Nanotechnology***, Lon A. Porter, Jr., oral presentation, 18<sup>th</sup> Biennial Conference on Chemical Education (BCCE), Ames, IA (2004).
- ***Chemical Nanotechnology: A Balanced Course Approach toward Emerging Science and Technology***, Lon A. Porter, Jr., oral presentation,
  - American Chemical Society (ACS) National Meeting, Anaheim, CA (2004).
  - American Chemical Society (ACS) Great Lakes Central Regional Meeting, Peoria, IL (2004).
  - American Chemical Society (ACS) Central Regional Meeting, Indianapolis, IN (2004).
- ***Chemical Nanotechnology: A Liberal Arts Approach toward a Basic Course in Emerging Science and Technology***, Lon A. Porter, Jr., poster presentation,
  - 18<sup>th</sup> Biennial Conference on Chemical Education (BCCE), Ames, IA (2004).
  - American Chemical Society (ACS) National Meeting, Anaheim, CA (2004).
  - American Chemical Society (ACS) Central Regional Meeting, Indianapolis, IN (2004).
- ***Nanopatterning Noble Metals onto Semiconductor Substrates via Scanning Probe Nanolithography***, Lon A. Porter, Jr., Alexander E. Ribbe, and Jillian M. Buriak, oral presentation, American Chemical Society (ACS) National Meeting, Anaheim, CA (2004). –**Invited**
- ***Noble Metal Nanostructures on Semiconductor Substrates: Fabrication via Scanning Probe Nanolithography***, Lon A. Porter, Jr., Alexander E. Ribbe, and Jillian M. Buriak, poster presentation, American Chemical Society (ACS) National Meeting, Anaheim, CA (2004). –**Invited**
- ***Electroless Deposition of Noble Metal Nanoparticle Films: Facile Routes to Patterned Surfaces via Photolithography, Microcontact Printing, and Scanning Probe Nanolithography***, Lon A. Porter, Jr., Hee

Cheul Choi, J. M. Schmeltzer, Alexander E. Ribbe, and Jillian M. Buriak, oral presentation, American Chemical Society (ACS) National Meeting, New Orleans, LA (2003). **-Invited**

- ***Preparation and Characterization of Noble Metal Nanoparticle Films on Semiconductor Substrates***, Lon A. Porter, Jr., Hee Cheul Choi, Alexander E. Ribbe, and Jillian M. Buriak, poster presentation, American Chemical Society (ACS) National Meeting, New Orleans, LA (2003). **-Poster Award (COLL Division)**
- ***Facile Electroless Deposition Routes to Noble Metal Nanoparticle Films: New High-Surface-Area Substrates for Fundamental and Applied Investigations***, Lon A. Porter, Jr., Hee Cheul Choi, Alexander E. Ribbe, and Jillian M. Buriak, oral presentation, American Chemical Society (ACS) National Meeting, New Orleans, LA (2003).
- ***Facile Electroless Deposition Routes to Noble Metal Nanoparticle Films: New High-Surface-Area Substrates for Fundamental and Applied Investigations***, Lon A. Porter, Jr., Hee Cheul Choi, Alexander E. Ribbe, and Jillian M. Buriak, oral presentation, International Society for Optical Engineering (SPIE) International Symposium on Microlithography, Santa Clara, CA (2003).
- ***Electroless Deposition and Patterning of Morphologically Complex Precious Metal Films on Semiconductor Surfaces***, Lon A. Porter, Jr., Hee Cheul Choi, Alexander E. Ribbe, and Jillian M. Buriak, oral presentation, Materials Research Society (MRS) Fall Meeting, Boston, MA (2002).
- ***Nanoscale Patterning of Organic and Inorganic Structures on Silicon Surfaces***, Lon A. Porter, Jr., Hee Cheul Choi, Alexander E. Ribbe, J. M. Schmeltzer, and Jillian M. Buriak, oral presentation, Materials Research Society (MRS) Fall Meeting, Boston, MA (2002).
- ***New Pairs of Inks and Papers for Photolithography, Microcontact Printing, and Scanning Probe Nanolithography***, Lon A. Porter, Jr., Hee Cheul Choi, Alexander E. Ribbe, J. M. Schmeltzer, and Jillian M. Buriak, poster presentation, Materials Research Society (MRS) Fall Meeting, Boston, MA (2002).
- ***Patterned Electroless Deposition of Precious Metal Nanoparticles on Semiconductor Surfaces***, Lon A. Porter, Jr., Hee Cheul Choi, J. M. Schmeltzer, and Jillian M. Buriak, oral presentation, American Chemical Society (ACS) Great Lakes Regional Meeting, Minneapolis, MN (2002).
- ***Organic Monolayers on Silicon and Germanium Surfaces: Harnessing Synthetic Versatility Toward Intelligent Interfacial Design***, Lon A. Porter, Jr., J. M. Schmeltzer, and Jillian M. Buriak, oral presentation, Annual Meeting of the American Physical Society (APS), Indianapolis, IN (2002). **-Invited**
- ***Noble Metal Nanoparticle Films Compatible with Photolithography, Microcontact Printing, and Dip-Pen Nanolithography Patterning Technologies***, Lon A. Porter, Jr., Hee Cheul Choi, J. M. Schmeltzer, Alexander E. Ribbe, and J. M. Buriak, oral presentation, Purdue-Indiana-Notre Dame Universities (PINDU) Inorganic Chemistry Conference, Bloomington, IN (2002).
- ***Electroless Deposition of Morphologically Complex Noble Metal Films on Semiconductor Surfaces***, Lon A. Porter, Jr., Hee Cheul Choi, Alexander E. Ribbe, and J. M. Buriak, poster presentation, Purdue-Indiana-Notre Dame Universities (PINDU) Inorganic Chemistry Conference, Bloomington, IN (2002).
- ***Patterned Electroless Deposition of Precious Metal Nanoparticles on Metal and Semiconductor Surfaces***, Lon A. Porter, Jr., J. M. Schmeltzer, Hee Cheul Choi, and Jillian M. Buriak, poster presentation, Purdue Univ. Sigma Xi Graduate Research Poster Symposium, West Lafayette, IN (2002). **-First Place Award**
- ***Photopatterned Electroless Deposition of Precious Metal Nanoparticles on Semiconductor Surfaces***, Lon A. Porter, Jr., Hee Cheul Choi, J. M. Schmeltzer, and Jillian M. Buriak, poster presentation, Purdue Univ. Materials Consortium (MatCon) Graduate Research Poster Symposium, West Lafayette, IN (2002). **-First Place Award**
- ***Chemical Weapons of Mass Destruction: History, Synthesis, Toxicology, and Detection of Organophosphorous Nerve Agents***, Lon A. Porter, Jr., oral presentation, Inorganic Division Literature Seminar, Purdue Univ., West Lafayette, IN (2002).

- *Bioelectronic Sensor Arrays as Viable Sensing Alternatives for Analytes of Domestic and Defense Interest*, Lon A. Porter, Jr., oral presentation, Ecology Division, Biology Department, Purdue Univ., West Lafayette, IN (2001). -**Invited**
- *From the Backyard to the Battlefield: Arthropod-Based Neural BioFET Arrays as Viable Sensing Alternatives for Analytes of Domestic and Defense Interest*, Lon A. Porter, Jr., oral presentation, Inorganic Division Original Proposal (OP), Purdue Univ., West Lafayette, IN (2001).
- *Hydride Abstraction Initiated Hydrosilylation of Terminal Alkenes and Alkynes on Porous Silicon*, M. P. Stewart, Lon A. Porter, Jr., J. M. Schmeltzer, and J. M. Buriak, poster presentation, Purdue-Indiana-Notre Dame Universities (PINDU) Inorganic Chemistry Conference, West Lafayette, IN (2001).
- *Hydride Abstraction Initiated Hydrosilylation of Terminal Alkenes and Alkynes on Porous Silicon*, M. P. Stewart, Lon A. Porter, Jr., J. M. Schmeltzer, and J. M. Buriak, poster presentation, American Chemical Society (ACS) National Meeting, Chicago, IL (2001).
- *Metal Nanoparticles Functionalized by the Adsorption of Thiols and Disulfides*, Lon A. Porter, Jr., oral presentation, Senior Honors Thesis Defense, (Advisor, T. Randall Lee - Dept. of Chemistry, Univ. of Houston, 1999).
- *Gold and Silver Nanoparticles Functionalized by the Adsorption of Dialkyl Disulfides*, Lon A. Porter, Jr., David Ji, Sarah L. Westcott, Michael Graupe, Roman S. Czernuszewicz, Naomi J. Halas, and T. Randall Lee, poster presentation, American Chemical Society (ACS) National Meeting, Boston, MA (1998).
- *Synthesis and Characterization of Soluble Buckyball Dimer Molecules*, Lon A. Porter, Jr. and T. Randall Lee, poster presentation, University of Houston, Department of Chemistry Graduate Research Poster Symposium, Houston, TX (1998).
- *Synthesis, Isolation, and Characterization of Soluble Buckybarbells*, Lon A. Porter, Jr. and T. Randall Lee, poster presentation, American Chemical Society (ACS) National Meeting, Dallas, TX (1998).
- *A New Method for the Preparation of Endohedral Metallofullerenes*, Lon A. Porter, Jr., Dal-Young Jung, and T. Randall Lee, poster presentation, American Chemical Society (ACS) Southwest Regional Meeting, Houston, TX (1997).
- *Preparation, Isolation, and Characterization of Fullerenes and Endohedral Metallofullerenes*, Lon A. Porter, Jr., Dal-Young Jung, and T. Randall Lee, poster presentation, Natural Sciences and Mathematics Alumni Association Student Challenge, (1997). -**First Place Award**
- *The Thermodynamics of Solid State Propellant Systems*, Lon A. Porter, Jr. and Patricia Chriswell, poster presentation, Natural Sciences and Mathematics Alumni Association Student Challenge, (1996). -**First Place Award**
- *The Effects of Long Term Storage on the Metallo- $\beta$ -Lactamase of Bacillus cereus 5/B/6*, Lon A. Porter, Jr., Newton P. Hilliard, and Robert W. Shaw, poster presentation, Welch Summer Scholar Poster Symposium - Texas Tech. Univ., Lubbock, TX (1994).

## Major Student Presentations:

- *Stability of Functionalized Porous Silicon in a Simulated Gastrointestinal Track*, Daniel S. Albrecht, Hieu Minh (Duncan) Dam, Jason L. Siegel, and Lon A. Porter, Jr., student poster presentation,
  - American Chemical Society (ACS) National Meeting, Chicago, IL (2007)
  - American Chemical Society (ACS) Indiana Local Section Poster Session (2006)
  - Wabash Celebration of Student Research, Scholarship, and Creative Work (2007)

- ***Probing Monolayer Stability via Deterioration of Functionalized Porous Silicon in Alkaline Environments***, Wassim W. Labaki and Lon A. Porter, Jr., student poster presentation,
  - American Chemical Society (ACS) National Meeting, Chicago, IL (2007)
  - American Chemical Society (ACS) Indiana Local Section Poster Session (2006)
  - Wabash Celebration of Student Research, Scholarship, and Creative Work (2007)
- ***Probing Monolayer Stability through Chemical Reactions on Functionalized Porous Silicon***, Steven D. Rhodes, Syud M. Ahmed, and Lon A. Porter, Jr., student poster presentation,
  - American Chemical Society (ACS) National Meeting, Atlanta, GA (2006)
  - American Chemical Society (ACS) Indiana Local Section Poster Session (2005)
  - Wabash Celebration of Student Research, Scholarship, and Creative Work (2006)
- ***Degradation of Long-chain Alkyl Functionalized Porous Silicon in Simulated Acellular Plasma***, Benjamin T. Edquist, Trayton B. White, Gregory R. Fulmer, Daniel R. Thornberry, and Lon A. Porter, Jr., student poster presentation,
  - American Chemical Society (ACS) National Meeting, Atlanta, GA (2006)
  - American Chemical Society (ACS) Indiana Local Section Poster Session (2005)
  - Wabash Celebration of Student Research, Scholarship, and Creative Work (2006)
- ***Degradation of Short-chain Alkyl Functionalized Porous Silicon in Simulated Acellular Plasma***, Trayton B. White, Benjamin T. Edquist, Gregory R. Fulmer, Daniel R. Thornberry, and Lon A. Porter, Jr., student poster presentation,
  - American Chemical Society (ACS) National Meeting, Atlanta, GA (2006)
  - American Chemical Society (ACS) Indiana Local Section Poster Session (2005)
  - Wabash Celebration of Student Research, Scholarship, and Creative Work (2006)
- ***Degradation of Functionalized Porous Silicon in Simulated Gastric Fluid***, Daniel R. Thornberry, Gregory R. Fulmer, Steven D. Rhodes, and Lon A. Porter, Jr., student poster presentation,
  - American Chemical Society (ACS) National Meeting, San Diego, CA (2005)
  - American Chemical Society (ACS) Indiana Local Section Poster Session (2004)
  - Wabash Celebration of Student Research, Scholarship, and Creative Work (2005)
- ***Degradation of Functionalized Porous Silicon in Simulated Body Fluids***, Gregory R. Fulmer, Daniel R. Thornberry, Steven D. Rhodes, and Lon A. Porter, Jr., student poster presentation, presentation,
  - American Chemical Society (ACS) National Meeting, San Diego, CA (2005)
  - American Chemical Society (ACS) Indiana Local Section Poster Session (2004)
  - Wabash Celebration of Student Research, Scholarship, and Creative Work (2005)
- ***Organic Synthesis on a Chip: Chemical Reactions on Functionalized Porous Silicon***, Steven D. Rhodes and Lon A. Porter, Jr., student poster presentation, American Chemical Society (ACS) National Meeting, San Diego, CA (2005).
- ***Carbocation Mediated Hydrosilylation of Porous Silicon: A Route toward Organic Synthesis on a Chip***, Steven D. Rhodes and Lon A. Porter, Jr., student poster presentation,
  - American Chemical Society (ACS) Indiana Local Section Poster Session (2004)
  - Wabash Celebration of Student Research, Scholarship, and Creative Work (2005)
- ***Initial Efforts toward the Preparation, Isolation, and Characterization of Polymeric Monolayer Protected Gold Clusters***, Syud M. Ahmed and Lon A. Porter, Jr., student poster presentation, Wabash Celebration of Student Research, Scholarship, and Creative Work (2005).

## Collaborations with Industry and Consulting Projects:

- Block MEMS, LLC, MA – Surface chemistry applications in MEMS devices (2005-2007)
- W. H. Freeman and Company – Undergraduate forensic chemistry texts (2005-2006)
- Motorola, Inc., IL – Porous silicon applications in high vacuum instrumentation (2003)
- Boston Scientific/SciMed, Inc., MN – Electroless metal deposition onto stainless steel (2003)
- Network Photonics, Inc., CO – Surface chemistry applications in MEMS devices (2002)

## Affiliations and Leadership Experience:

- American Chemical Society (ACS) – 1998 – present
  - Younger Chemist Committee (National Committee Member) – 2006 – present
  - Faculty Advisor, American Chemical Society Student Affiliates – 2004 - present
  - Local Section Summit, Washington, D.C. – 2006
- Materials Research Society – 2002 - present
- Midwestern Association of Chemistry Teachers in Liberal Arts Colleges – 2005 – present
- Phi Lambda Upsilon (Honorary Chemical Society) – 2004 - present
- Reviewer, *Journal of Chemical Education* – 2003 - present
- Chair and Organizer, *Forensic Chemistry in the Undergraduate Curriculum*, Chemical Education Division (CHED), 234<sup>th</sup> Annual National Meeting of the American Chemical Society, Boston, CA. – 2007
- Chair, *Chemical Educators and Nanotechnology Development*, 19<sup>th</sup> Biennial Conference on Chemical Education (BCCE), West Lafayette, IN. – 2006
- Chair, *Surface Chemistry of Inorganic Materials: Biological Interfaces with Inorganic Materials*, Inorganic Division (INOR), 227<sup>th</sup> Annual National Meeting of the American Chemical Society, Anaheim, CA. – 2004
- Chair and Organizer, *Award Symposium for Jillian M. Buriak* (2003 ACS Award in Pure Chemistry), Inorganic Division (INOR), 225<sup>th</sup> Annual National Meeting of the American Chemical Society, New Orleans, LA. – 2002 - 2003
- Chair, *Symposium F: Nanocrystalline Semiconductors Materials and Devices* (Semiconductor Nanowires and Nanotubes I), 2002 Materials Research Society (MRS) Fall Meeting, Boston, MA. – 2002
- American Physical Society (APS) – 2002 - 2003
- International Society for Optical Engineering (SPIE) – 2002 - 2003
- Purdue Univ. Inorganic Division Seminar Chair – 2002
- The National Journal of Young Investigators (an undergraduate research journal sponsored by NSF and supervised by *Science* magazine)
  - Associate Editor – Chemistry (Interfacial and Materials Science) – 1999 - 2000
- American Chemical Society Student Affiliates – University of Houston – 1996 - 1999
  - Initiated and spearheaded successful effort to reactivate the UH Chapter
  - UH Chapter President - 1997 & 1998
  - Undergraduate program volunteer in planning and execution of undergraduate program for the Dallas National Meeting

- Undergraduate correspondent for *In Chemistry* at the Dallas National Meeting
- Undergraduate program volunteer for undergraduate program for the Boston National Meeting
- Alpha Chi Sigma, BO Chapter, Univ. of Houston
  - Vice Master Alchemist - 1997
  - Master Alchemist - 1998
- American Association for the Advancement of Science (AAAS) – 1997 - 1998
- Golden Key National Honor Society
- Alpha Lambda Delta - Phi Eta Sigma National Honor Society
- Phi Kappa Phi National Honor Society
- Academic Honesty Panel Member, Univ. of Houston, 1997-1999
- Houston Alumni Organization
- Natural Sciences and Mathematics Alumni Association, Univ. of Houston – 1997 - 1999
  - Executive Board Member
  - After winning NSMAA Student Challenge two consecutive years, elected VP of Student Challenge in charge of the planning, marketing, and execution of the event.
- College of Natural Sciences and Mathematics Scholars
- The Honors College, Univ. of Houston