

Michael W. Pelter
Department of Chemistry and Physics
Purdue University Northwest – Hammond, IN 46323-2094
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PROFESSIONAL EXPERIENCE

ADMINISTRATIVE POSITIONS

Dean's Faculty Fellow

Purdue University Calumet

Jan – May 2016

Hammond, Indiana

- Led development of interdisciplinary and multidisciplinary curricular programs in the College of Engineering, Mathematics and Science.

Chemistry Program Coordinator

Purdue University Calumet

2009-2016

Hammond, Indiana

- Prepared schedule of classes for all chemistry courses each semester. Work with other Departments in the College to ensure course schedules and offerings meet students' needs.
- Hired and supervised Guest Lecturers/Adjunct Faculty.
- Acted as liaison between chemistry faculty and Department Head regarding discipline specific issues.
- Helped unify the chemistry courses and curricula in preparation for the formation of PNW.

Acting Department Head

Purdue University Calumet

2001-2004

Hammond, Indiana

- **Laboratory Renovation:** Responsible for all phases of planning, design, and renovation of the chemistry teaching laboratories and stockroom facilities. The state-of-the-art facilities enable better utilization of active-learning methodologies complete with computer projection systems.
- **External Review:**
 - Presided over an external review of the physics program,
 - Presided over a 2000-2001 review of chemistry
 - Insured that the suggestions and of comments from these reviews were incorporated into planning and successfully improving those programs.
- **Course Scheduling:** Course offerings were streamlined to lessen potential time conflicts and to produce a more student-friendly course schedule. These course-scheduling changes contributed to a 600-credit hour generation increase over the previous year.
- **Instrumentation Purchase:**
 - With \$350,000 committed from the Vice Chancellor for Academic Affairs, I upgraded and diversified the state-of-the-art instrumentation available to the chemistry program.
 - Supervised the purchase of an Atomic Absorbance Spectrophotometer, a Gas Chromatography-Mass Spectrometer, a Nuclear Magnetic Resonance Spectrometer, a Differential Scanning Calorimeter, a Thermogravimetric Analyzer, an Electrochemical Analyzer, an Ultraviolet-Visible Spectrophotometer, a

Fluorescence Spectrophotometer, a Raman Spectrophotometer, and an Inert Atmosphere Glove Box.

ACADEMIC POSITIONS

Associate Professor of Chemistry

1997–present

Assistant Professor of Chemistry

1991-1997

Purdue University Northwest/ Purdue University Calumet

Hammond, Indiana

- **Curriculum Development:**

- Developed and taught courses in Polymer Chemistry, Molecular Modeling & Visualization, and Combinatorial Chemistry for junior and senior chemistry majors. While the Polymer Chemistry course has been offered for over 20 years, the Combinatorial and Computational courses are recent additions. The course on Combinatorial Chemistry grew out of my involvement with a National Science Foundation (NSF)-sponsored workshop.
- In spring 2016, developed and taught a Polymer Laboratory course.
- Lead the development of the Materials Science concentration for the B.S. in Chemistry degree, which has been approved for Fall 2016.
- Developed and taught a course in Brewing Science as a General Education Laboratory Science course for non-science majors. This unique aspect includes a laboratory component.¹

- **Research Mentor:** Directed over 30 students on undergraduate research projects funded through the PUC Undergraduate Research Program and the NSF-funded, Indiana Louis Stokes Alliance for Minority Participation Program. Student co-authors on 8 publications and 17 presentations.

- **Academic Advisor:**

- Advisor to students enrolled in Chemistry and Physical Science Programs.
- Served as leader in curriculum development and reform.
- Instituted an in-depth degree audit in sophomore and senior seminar classes to encourage students to take ownership of their education to ensure a timely graduation.

- **Distance Learning:** Prepared and taught distance learning courses for organic chemistry I and II. Achieved distance learning certification in fall 2015.

- **Molecular Modeling:** Incorporated molecular modeling software in sophomore organic chemistry lecture courses for over 18 years. This permits students to better visualize organic molecules and enables them to investigate structure-property relationships.

- **Organic Chemistry Laboratory:** Have a strong track record for developing and implementing inquiry-based experiments in the organic chemistry laboratory courses to better teach students what organic chemists do in the laboratory. The published experiment entitled “Oxidation Puzzle” was selected for inclusion in an organic chemistry laboratory textbook.²

¹ Articles regarding this course have been published in the *Journal of College Science Teaching* and the *Journal of Chemical Education*. See publication list for complete citation.

² D. L. Pavia, G. M. Lampman, G. S. Kriz, R. G. Engel, Introduction to Organic Laboratory Techniques: A Small Scale Approach, 2nd ed., Brooke/Cole – Thomson Learning, 2005, pp 553-556.

Visiting Research Associate Professor (on Sabbatical leave) **January–July 2013.**
University of Nebraska-Lincoln *Lincoln, Nebraska*

- Performed computational studies on heterobimetallic catalyst systems and their relative stability with different metals.
- Conformational and spectral properties were also studied. This project is in collaboration with James M. Takacs.

Visiting Assistant/Associate Professor **2005 and 1995**
University of Nebraska-Lincoln *Lincoln, Nebraska*

- Taught Organic Chemistry I lecture during five-week summer sessions.

Visiting Scholar (on Sabbatical) **1999–2000**
Center for Nanoscale Science and Technology
Rice University *Houston, Texas*

- Investigated preparative combinatorial routes to thousands of precise mesoscale conjugated oligomers for optoelectronic applications under the direction of James M. Tour.

Visiting Lecture Scholar **1990–1991**
University of Nebraska-Lincoln *Lincoln, Nebraska*

- Investigated the synthesis of novel amphiphilic molecules for designed two-dimensional structures under the direction of Patrick H. Dussault.
- Taught organic chemistry lecture courses to over 100 students per semester.

Visiting Assistant Professor **1989–1990**
*University of Southern Colorado*³ *Pueblo, Colorado*

- Taught a lecture and laboratory course in organic chemistry, a lecture course in applied spectroscopy, and a general chemistry lecture course for allied health majors.

Post-doctoral Research Associate **1988–1989**
Colorado State University *Fort Collins, Colorado*

- Investigated the thermal rigidification of polyquinolines by thermolytic elimination of ethylene from a 9,10-dihydro-9,10-ethanoanthracene unit under the direction of the late John K. Stille.

EDUCATION

Ph.D.: 1987, Miami University, Oxford, OH (Organic Chemistry)

M.S.: 1984, Shippensburg University of Pennsylvania, Shippensburg, PA (Chemistry)

B.S.: 1982, Juniata College, Huntingdon, PA (Biology)

1980-1981; Philipps Universität, Marburg an der Lahn, Germany (Exchange Student)

³ Renamed Colorado State University – Pueblo in 2003.

DISSERTATIONS AND THESES

Ph.D. Dissertation: “Macromolecular Reagents: The Use of Sulfur Nucleophiles in the Modification of Polychlorotrifluoroethylene and a Study of Phosphorylations Using Glycerol Kinase.” Miami University, 1987 (Richard T. Taylor, advisor)

M.S. Thesis: “Diethylmethylenemalonate as a Mercaptan Protecting Group in the Synthesis of Block Copolymers.” Shippensburg University of Pennsylvania, 1984 (John H. Grezlak, advisor)

COMMITTEE SERVICE

Department-Level Committees

Chemistry Program [Chair 2009-2016]
Promotion and Tenure Committee (various)
Faculty Search Committees (various)

College-Level Committees:

LAS Faculty Senate (1995-1998)
LAS Curriculum Committee (1995-1998) [Chair 1995-1996]
LAS Faculty Senate Agenda Committee (1995-1996)
EMS Curriculum Committee (1998-1999 & 2000-2001 & 2007-2010 & 2012-2016)
[Chair 1998-1999 & 2014-2016]
EMS Grade Appeals Screening Committee (2001-2016)
EMS Policy Committee (2009-2012)
CES Grade Appeals Screening Committee (2016-2017)
CES Dean’s Advisory Committee (2017-2018)
CES Curriculum Committee (2017)

University-Level Committees:

Hazard Management Committee (1992-1999)
Faculty Grievance Committee (1992-1993)
Faculty Instructional Technology Services – Policy Advisory Committee (1996-1997)
Secondary Education Advisory Committee (1998-1999)
BlackBoard Policy Advisory Committee (2001-2003)
Diversity Steering Committee (2002-2004)
Teacher Education Advisory Committee (2002-2004)
Faculty Senate (2019-pres.)
Faculty Senate – Student Affairs Subcommittee (2019-pres.)

PROFESSIONAL ORGANIZATIONS

American Chemical Society
Indiana Academy of Science

Council on Undergraduate Research
Sigma Xi

RESEARCH GRANTS AND AWARDS RECEIVED

National Science Foundation, Division of Undergraduate Education, Instrumentation and Laboratory Improvement Program. "Incorporating FT-IR into the Laboratory Curriculum." Principal Investigator: Michael W. Pelter. co-PI's: Maria Longas and Charles Kriley, \$11,952 plus \$11,952 match. Sept. 96-Aug 98.

1997 American Chemical Society Division of Organic Chemistry Faculty Travel Award to attend the National Organic Symposium, Trinity University, San Antonio, TX, June 22-26, 1997.

"Novel Thermosetting Materials from Substituted-Ethanoanthracene Pre-polymers." Summer Faculty Grant, Purdue Research Foundation, Summer 1994, \$5000.

"Polymer-immobilized Oxidation Catalysts." Summer Faculty Grant, Purdue Research Foundation, Summer 1993, \$5000.

1993 American Chemical Society Division of Organic Chemistry Faculty Travel Award to attend the National Organic Symposium, Montana State University, Bozeman, Montana, June 13-17, 1993.

HyperChem 3.0 through Autodesk Educational Grant, May 1993, \$3500.

BOOKS

M. L. Hackert, R. K. Sandwick, M. W. Pelter, L. S. W. Pelter, "Study Guide and Solutions Manual" for "Chemistry and Life" by Hill, Baum, and Scott-Ennis, Prentice-Hall: New Jersey, 2000.

A. Carter, L. S. W. Pelter, M. W. Pelter, "Instructor's Solutions Manual with Test Bank" for "Chemistry and Life" by Hill, Baum, and Scott-Ennis, Prentice-Hall: New Jersey, 2000.

BOOK CHAPTERS⁴

R. T. Taylor, M. W. Pelter, and L. A. Paquette*, "The Domino Diels-Alder Reaction," *Organic Syntheses Collective Volume 8*, John C. Wiley: New York, 1993, p298-302.

REFEREED PUBLICATIONS^{5,6}

M. W. Pelter,* **M. T. Howell**, **C. Anderson**, **A. Sayeed** "A Computational Activity to Visualize Stereoisomers in Molecules with an Axis of Chirality" *Journal of Chemical Education*, **2019**, Submitted for publication.

M. W. Pelter* and **N. Walker** "Chemoselective Hydrochlorination of Carvone A Guided-Inquiry Approach to the Analysis of the Product ¹³C NMR Spectra." *Journal of Chemical Education*, **2012**, *89*, 1183-1185. DOI: 10.1021/ed200515m

⁴ [Lead Author*]

⁵ [Lead Author*, PUC/PNW Student]

⁶ The last five entries on this list are from dissertation and post-doctoral work.

- L. S. W. Pelter,* **A. Amico, N. Gordon, C. Martin, D. Sandifer, M. W. Pelter**, “Analysis of Peppermint Leaf and Spearmint Leaf Extracts by Thin Layer Chromatography.” *Journal of Chemical Education*, **2008**, 85, 133-134. DOI: 10.1021/ed085p133
- M. W. Pelter, “Brewing Science: Using Beer and the Brewing Process to Stimulate Interest in Science and the Science Laboratory.” *Journal of College Science Teaching*, **2006**, 35(5), 48-52.
- M. W. Pelter* and **J. McQuade**. “Brewing Science in the Chemistry Laboratory: A ‘Mashing’ Investigation of Starch and Carbohydrates.” *Journal of Chemical Education*, **2005**, 82, 1811-1812. DOI: 10.1021/ed082p1811
- M. W. Pelter,* L. S. W. Pelter,* **D. Colovic, R. Strug** “The Microscale Synthesis of 1-Bromo-3-chloro-5-iodobenzene: An Improved Deamination of 4-Bromo-2-Chloro-6-iodoaniline.” *Journal of Chemical Education*, **2004**, 81, 111-112. DOI: 10.1021/ed081p111
- M. W. Pelter*, **R. M. Macudzinski, and M. E. Passarelli** “A Microscale Oxidation Puzzle.” *Journal of Chemical Education*, **2000**, 77, 1481. DOI: 10.1021/ed077p1481
- M. W. Pelter*, and **R. M. Macudzinski**, “A Puzzling Alcohol Dehydration Reaction Solved by GC/MS Analysis.” *Journal of Chemical Education* **1999**, 76, 826-828. DOI: 10.1021/ed076p826
- M. W. Pelter* and **R. M. Macudzinski**, “Inquiry-Based Experiments for the Organic Laboratory: Teaching What Organic Chemists Do,” Proceedings of the 14th International Conference on Chemical Education. **1996**, 110-115.
- M. W. Pelter* and G. P. Neff, “Computer Simulation of Vinyl Polymerization: An Exercise in Critical Thinking Using SOLVE,” *Journal of Chemical Education*. **1995**, 72, 808-812. DOI: 10.1021/ed072p808
- E. D. Gilfillan** and M. W. Pelter*, “Dinitration of 2-Benzylpyridine: A Microscale Synthesis of a Photochromic Compound,” *Journal of Chemical Education* **1994**, 71, A4-A5. DOI: 10.1021/ed071pA4
- M. W. Pelter and J. K. Stille*, “Thermal Rigidification of Polyquinolines by Thermolytic Elimination of Ethylene from a 9,10-Dihydro-9,10-ethanoanthracene Unit,” *Macromolecules*, **1990**, 23, 2418-2422. DOI: 10.1021/ma00211a002
- R. T. Taylor, M. W. Pelter, and L. A. Paquette*, “The Domino Diels-Alder Reaction,” *Organic Syntheses*, **1989**, 68, 198-205.
- R. T. Taylor* and M. W. Pelter, “Chemical Modification of 3-Mercaptopropionic Acid-substituted Poly(chlorotrifluoroethylene),” *Reactive Polymers, Ion Exchangers, Sorbents*, **1988**, 9, 229-235.
- M. W. Pelter and R. T. Taylor*, “The Substitution of Polychlorotrifluoroethylene with Sulfur, Selenium and Phosphorus Nucleophiles,” *Journal of Polymer Science Part A, Polymer Chemistry*, **1988**, 26, 2651-2667. DOI: 10.1002/pola.1988.080261003
- R. T. Taylor* and M. W. Pelter, “The Reaction of Chlorofluoropolymers with Nucleophiles,” *Journal of Polymer Science Part C, Polymer Letters*, **1987**, 25, 215-217. DOI: 10.1002/pol.1987.140250504

REFEREED REVIEWS

M. W. Pelter, "Recent Developments in Polyquinolines" in Trends in Macromolecular Research, Research Trends: Trivandrum, India, **1994**, *1*, 215-226.

PRESENTATIONS/PUBLISHED ABSTRACTS – INVITED SYMPOSIA

M. W. Pelter, "Beer: Good for Cooking and Chemistry" Cooking with Chemistry Symposium, Abstracts of Papers, 19th Biennial Conference on Chemical Education, West Lafayette, IN (August 2006)

PRESENTATIONS AND/OR PUBLISHED ABSTRACTS⁷

M. T. Howell, C. Anderson, A. Saveed, M. W. Pelter* "Computational Activity to Study Chirality" Abstracts of Papers, GLRM2019 – 2019 Great Lakes Regional Meeting of the American Chemical Society, Lisle, IL (May 2019)

M. W. Pelter*, L. S. W. Pelter*, "20 years of Computational Chemistry at a Public Regional University. Thoughts and Experiences" Abstracts of Papers, 249th American Chemical Society National Meeting, Denver, CO (March 2015)

L. S. W. Pelter*, M. W. Pelter*, "Examples of Instructional Units in Computation and Modeling for the Undergraduate Chemistry Curricula" Abstracts of Papers, 249th American Chemical Society National Meeting, Denver, CO (March 2015)

M. W. Pelter* "Computational Study of the Stereoisomers of Box-Box-bpy Ru Complexes" Purdue University Calumet Faculty Research Day, October 2014.

M. W. Pelter* "Computational Study of Substituted Bisoxazoline Complexes" Purdue University Calumet Faculty Research Day, October 2013.

M. W. Pelter*, L. S. W. Pelter*, **K. Berry, A. Harrigan, M. Hugg, K. Johnson** "Synthesis and activity of fluororous-phase oxime palladacycle catalysts" Abstracts of Papers, 241st American Chemical Society National Meeting, Anaheim, CA (March 2011)

M. W. Pelter*, L. S. W. Pelter*, **K. Pawlus, A. Henderlong** "Molecular Modeling in Sophomore Organic Chemistry: Implementation of a Guided-Inquiry Approach." Abstracts of Papers, MWARM2009 – 44th Midwest Regional Meeting of the American Chemical Society, Iowa City, IA (October 2009)

M. W. Pelter*, L. S. W. Pelter*, **A. E. Walsko, R. Longfellow** "Synthesis and Activity of Fluorous-Phase Oxime Palladacycle Catalysts." Abstracts of Papers, MWARM2009 – 44th Midwest Regional Meeting of the American Chemical Society, Iowa City, IA (October 2009)

M. W. Pelter* and **A. E. Walsko** "Synthesis and Activity of Fluorous-Phase Oxime Palladacycle Catalysts." Abstracts of Papers, CERMACS2007 - Central Regional Meeting of the American Chemical Society, Covington, KY (May 2007).

R. E. Verduzco, J. M. McDonald, M. W. Pelter, L. S. W. Pelter* "Selectivity and Reactivity of Sonogashira Coupling Reactions." Abstracts of Papers, CERMACS2007 - Central Regional Meeting of the American Chemical Society, Covington, KY (May 2007).

L. S. W. Pelter* and M. W. Pelter* "Microwave Heating in the Undergraduate Organic Laboratory." Abstracts of Papers, 19th Biennial Conference on Chemical Education, West Lafayette, IN (August 2006)

⁷ [Lead Author*, Presenter, PUC/PNW Student]

- M. W. Pelter, “Brewing Science: Using Beer to Stimulate Interest in Science.” Abstracts of Papers, 19th Biennial Conference on Chemical Education, West Lafayette, IN (August 2006)
- M. W. Pelter, “Brewing science: Using beer to stimulate interest in science” Abstracts of Papers, 230th American Chemical Society National Meeting, Washington, DC, (August 2005).
- L. S. W. Pelter*, **B. Heiberger**, **S. E. Brown**, M. Pelter, “Synthesis and coupling of halogenated benzene compounds useful in the construction of nanoelectronic components” Abstracts of Papers, 230th American Chemical Society National Meeting, Washington, DC, (August 2005).
- R. J. Strug**, **K. R. Berg**, **A. S. Gorcowski**, **S. L. Snyder**, **S. E. Brown**, L. Pelter*, M. Pelter,* “Combinatorial Approach to Organic Synthesis of Nanoelectronic Components” Abstracts of Papers, 18th National Conference On Undergraduate Research (NCUR 2004), Indianapolis, IN. (April 2004)
- M. W. Pelter,* L. S. W. Pelter*, **R. Strug**, **K. Berg**, **A. Gorkowski**, “Combinatorial Screening of Reagents and Catalysts in Homogeneous Metal Mediated Cross-Coupling Reactions” Abstracts of Papers, 38th National Organic Symposium, Bloomington, IN. (June 2003).
- M. W. Pelter,* L. S. W. Pelter, **D. Colovic**, **R. Strug**, “Linking Strategies for Solid Phase Synthesis: Polymer Supported Synthesis of Conjugated Oligomers” Council on Undergraduate Research Undergraduate Research Posters on the Hill, Washington, DC. (April 2002)
- M. W. Pelter,* L. S. W. Pelter, J. M. Tour, **D. Colovic**, **V. Eulloqui**, “Polymer Supported Synthesis of Conjugated Oligomers: Linking Strategies for Solid Phase Synthesis” Abstracts of Papers, 36th Midwest Regional Meeting of the American Chemical Society, Lincoln, NE (October 2001)
- R. M. Macudzinski**, **J. C. Aros**, **M. E. Passarelli**, M. W. Pelter,* J. M. Takacs,* “Synthesis of Photorefractive Polyimides.” Argonne Symposium for Undergraduates, Chicago, IL (November 1997).
- R. M. Macudzinski**, **J. C. Aros**, M. W. Pelter,* J. M. Takacs,* “Synthesis of Photorefractive Polyimides.” Abstracts of Papers, Great Lakes Regional Meeting of the American Chemical Society, Chicago, IL (May 1997).
- M. W. Pelter, “Utilizing Technology in the Organic Chemistry Laboratory: Teaching What Chemists Do.” Faculty Poster Session, Purdue University Calumet, (February 1997).
- M. W. Pelter,* **R. M. Macudzinski**, and **B. J. Felt**, “Inquiry-Based Experiments For The Organic Laboratory: Teaching What Organic Chemists Do.” Abstracts of Papers, 211th American Chemical Society National Meeting New Orleans, LA, (March 1996).
- V. J. Fryer** and M. W. Pelter*, “Anthracene-Containing Polymers,” Abstracts of Papers, 210th American Chemical Society National Meeting, Chicago, IL, (August 1995).
- M. W. Pelter* and **V. J. Fryer**, “A Non-Aromatic Route to Poly(aromatics),” Faculty Poster Session, Purdue University Calumet, (February 1995).
- E. D. Gilfillan**, **M. A. Gratkowski**, and M. W. Pelter*, “Changing Colors In Organic Lab: A Microscale Multi-Step Synthesis Of Photochromic Compounds,” Abstracts of Papers, American Chemical Society Great Lakes/Central Regional Meeting, Ann Arbor, MI (June 1994).
- M. W. Pelter*, and G. P. Neff, “Computer Simulation of Vinyl Polymerization: An Exercise in Critical Thinking Using PC:SOLVE,” Gordon Research Conference on “Innovations in the Teaching of College Chemistry”, Oxnard, CA, (January 1994).

- E. D. Gilfillan**, L. S. Pelter, and M. W. Pelter*, “Polymer-immobilized Ruthenium Oxidation Catalysts,” Abstracts of Papers, 205th American Chemical Society National Meeting, Denver, Colorado (March 1993).
- P. H. Dussault*, **C. Uche**, J. M. Takacs*, M. Pelter, X. Gong, “New Amphiphilic Molecules for Designed Two-Dimensional Structures” Abstracts of Papers, 27th American Chemical Society Midwest Regional Meeting, Lawrence, Kansas (November 1992)
- M. W. Pelter**, P. H. Dussault*, J. M. Takacs*, C. Uche, “Synthesis of Novel Amphiphilic Molecules for Monolayer Films.” Abstracts of Papers, 24th American Chemical Society Central Regional Meeting, Cincinnati, Ohio (May 1992).
- R. T. Taylor*** and M. W. Pelter, “Chemical Modification of 3-Mercaptopropionic Acid-substituted Poly(chlorotrifluoroethylene).” Abstracts of Papers, Third Chemical Congress of North America, Toronto, Canada (June 1988).
- M. W. Pelter** and R. T. Taylor*, “The Reaction of Chlorofluoropolymers with Sulfur Nucleophiles.” Abstracts of Papers, 193rd American Chemical Society National Meeting, Denver, Colorado (April 1987).
- M. W. Pelter** and R. T. Taylor*, “Sulfur Reagents in Polymer Modification.” Abstracts of Papers, 18th American Chemical Society Central Regional Meeting, Bowling Green, Ohio (June 1986).
- R. T. Taylor***, S. J. Burks, and M. W. Pelter, “Reaction of Chlorofluoropolymers with Nucleophiles.” Abstracts of Papers, 29th National Organic Symposium, Newark, Delaware (June 1985).⁸

INVITED LECTURES

- “The Science of Brewing” Sigma Xi Local Meeting, Purdue University Calumet, Hammond, IN (November 2012).
- “Synthesis and Activity of Fluorous-Phase Oxime Palladacycle Catalysts” Lycoming College, Williamsport, PA (October 2011)
- “Catalysts for Carbon-Carbon Bond Forming Reactions” University of Texas at Tyler, Tyler, TX (March 2011)
- “Catalysts for Carbon-Carbon Bond Forming Reactions” Rose-Hulman Institute of Technology, Terre Haute, IN (May 2007)
- “Catalysts for Carbon-Carbon Bond Forming Reactions: A Combinatorial Approach.” University of Tennessee – Martin, Martin, TN (February 2007)
- “Microwave Heating in the Undergraduate Laboratory” as part of the National Science Foundation-Sponsored Workshop “Solid Phase Synthesis and an Introduction to Combinatorial Chemistry,” Miami University, Oxford, OH (August 2005)
- “The Science of Brewing” University of Nebraska-Lincoln, Lincoln, NE (June 2005).
- “Molecular Electronics: Synthesis of Wires and Components,” North Carolina Central University, Durham, NC (May 2005).
- “Molecular Electronics: Synthesis of Wires and Components,” Armstrong Atlantic State University, Savannah, GA (February 2005).
- “Polymer Supported Synthesis of Conjugated Oligomers for Use in Molecular Scale Electronics,” Prairie View A&M University, Prairie View, TX (August 2003).

⁸ The last four entries on this list are from dissertation work.

- “The Nature of the Polymer Matrix” as part of the National Science Foundation-Sponsored Workshop “Solid Phase Synthesis and an Introduction to Combinatorial Chemistry,” Miami University, Oxford, OH (July 2003)
- “The Science of Brewing” Indiana University Northwest, Gary, IN (February 2003)
- “The Science of Brewing” Valparaiso University, Valparaiso, IN (January 2003)
- “The Science of Brewing” Indiana University-Purdue University Ft Wayne, Ft. Wayne, IN (November 2001)
- “Polymer Characterization: Micro & Macro” as part of the Associated Colleges of the Chicago Area (ACCA) Chemistry Seminar Series on Polymer Chemistry, Argonne National Laboratory, (September 1995).
- “Reactive Polymers” Loyola University, Chicago, IL (September 1994)
- “Polymer Chemistry: An Overview” Andrews University, Berrien Springs, MI (January 1994)
- “Reactive Materials” Purdue University Calumet, Hammond, IN (October 1993)
- “Polymer Chemistry: An Overview” Purdue University Calumet, Hammond, IN (May 1993)
- “Reactive Polymers” Chicago State University, Chicago, IL (November 1992).
- “Thermal Rigidification of Polyquinolines” Illinois Institute of Technology, Chicago, IL (March 1991)
- “Thermal Rigidification of Polyquinolines” University of Nebraska – Lincoln, Lincoln, NE (January 1991)
- “The Use of Sulfur Nucleophiles in the Modification of Polychlorotrifluoroethylene” South Dakota State University, Brookings, SD (March 1990)
- “The Use of Sulfur Nucleophiles in the Modification of Polychlorotrifluoroethylene” University of Southern Colorado, Pueblo, CO (March 1990)

TEACHING INSTITUTES – INVITED INSTRUCTOR

- National Science Foundation-Sponsored Workshop “Solid Phase Synthesis and an Introduction to Combinatorial Chemistry,” Miami University, Oxford, OH (8/05).
- National Science Foundation-Sponsored Workshop “Solid Phase Synthesis and an Introduction to Combinatorial Chemistry,” Miami University, Oxford, OH (8/03).

TEACHING INSTITUTES – PARTICIPANT

- POGIL-PCL (Physical Chemistry Laboratory) Workshop, Cornell College, Mt. Vernon, IA, October 17-19, 2019.
- Association of College and University Educators (ACUE) course on Effective Teaching Practices, Purdue University Northwest. May 2018 – April 2019.
- National Science Foundation-Sponsored Workshop on Teaching Guided-Inquiry Organic Chemistry Labs, University of Minnesota - Twin Cities, Minneapolis, MN. July 10 – 15 Jul 2011.
- “Beer & Food: A Hands-On Encounter,” Siebel Institute of Technology, Chicago, IL February 4, 2011.
- Gaussian, Inc. Workshop “Introduction to Gaussian: Theory and Practice,” Ohio Supercomputing Center, Columbus, OH, July 14 – 18, 2010
- POGIL Standard Workshop, Grand Valley State University, Allendale, MI. June 11 – 13, 2009. (Process Oriented Guided Inquiry Learning)

Varian Training Course on “Techniques of Ion Trap GC/MS”, Wooddale, IL. December 9-12, 2002.

National Science Foundation-Sponsored Workshop on Solid Phase Synthesis and an Introduction to Combinatorial Chemistry, Wright State University, Dayton, OH. August 12 – 16, 2002.

TA Instruments Differential Scanning Calorimetry and Thermogravimetric Analysis Training Courses, Newark, DE, June 12-13, 2002.

“Foods & Flavors” Workshop, Miami University, Oxford, OH. June 25-29, 2001.

65th Short Course on Brewing Technology, Siebel Institute of Technology, Chicago, IL. May 18-29, 1998

Wyatt Technology Corp. workshop on Absolute Macromolecular Characterization, Chicago, IL, April 28, 1998.

TA Instruments Workshop on Thermal Analysis, Chicago, IL, November 30, 1997.

“Introducing Molecular Modeling into the Undergraduate Chemistry Curriculum” St. Mary’s College, Notre Dame, IN, January 7, 1997.

“Teaching Enhancement Workshop – When Does Teaching Induce Learning?” Indiana University Northwest, Gary, IN November 1, 1996.

National Science Foundation Materials Science Leaders Workshop, Beloit College, Beloit, WI, June 30-July 2, 1994

Gordon Research Conference on “Innovations in the Teaching of College Chemistry”, Oxnard, CA, January 9-14, 1994.

National Science Foundation-POLYED Summer Polymer Education Workshop, University of Wisconsin-Stevens Point, Stevens Point, WI, August 4-7, 1993.

National Science Foundation Summer Workshop on Two-Dimensional Nuclear Magnetic Resonance Spectroscopy, Alma College, Alma, MI, July 25-30, 1993.

National Science Foundation Summer Institute on Microscale Organic Laboratory Techniques, Bowdoin College, Brunswick, ME, June 15-19, 1992.

GRANT REVIEW PANELIST

National Science Foundation, Department of Undergraduate Education, Transforming Undergraduate Education in Science, Technology, Engineering, and Mathematics (TUES) Program. July 2010

National Science Foundation, Academic Research Infrastructure – Recovery and Reinvestment (ARI-R2) Program. October 2009.

National Science Foundation, Department of Undergraduate Education, Course, Curriculum and Laboratory Improvement (CCLI) Program. July 2008

National Science Foundation, Department of Undergraduate Education, Course, Curriculum and Laboratory Improvement (CCLI) Program. July 2007

National Science Foundation, Department of Undergraduate Education, Course, Curriculum and Laboratory Improvement (CCLI) Program. July 2006

National Science Foundation, Department of Undergraduate Education, Course, Curriculum and Laboratory Improvement (CCLI) Program. February 2004

National Science Foundation, Department of Undergraduate Education, Course, Curriculum and Laboratory Improvement (CCLI) Program. July 2001

National Science Foundation, Department of Undergraduate Education, Course, Curriculum and Laboratory Improvement (CCLI) Program. July 2000

PROFESSIONAL SERVICE

External Review Panel: Chemistry Program, Indiana University/Purdue University – Ft. Wayne, Ft. Wayne, IN, (November 2011)

Reviewer for the *Journal of Chemical Education*. (1997-present)

Reviewer of various organic chemistry lecture and laboratory textbooks for John Wiley, W. F. Freeman, Jones & Bartlett, Prentice-Hall, Inc. (1997-present)

Reviewer for *Human Ecology Review* (2007)

COURSES TAUGHT

Organic Chemistry I and II – A one-year, two-course sequence in organic chemistry involving the chemistry of carbon compounds, typically taken by biology and chemistry majors during the sophomore year.

Organic Chemistry Laboratory I and II – A one-year, two-course sequence in the organic chemistry laboratory, typically taken by biology and chemistry majors during the sophomore year.

Intermediate Organic Chemistry (CHM 46200) – This is an advanced elective for junior and senior chemistry majors and students from other majors who are seeking a chemistry minor.

Polymer Chemistry (CHM 46400) – This is an advanced elective for junior and senior chemistry majors and students from other majors who are seeking a chemistry minor. This course is required for chemistry students seeking the Materials Science option.

Polymer Chemistry Laboratory (CHM 46401) – This is an advanced elective for junior and senior chemistry majors and students from other majors who are seeking a chemistry minor. This course is required for chemistry students seeking the Materials Science option.

Molecular Modeling and Visualization (CHM 45200) – This is an advanced elective for junior and senior chemistry majors and students from other majors who are seeking a chemistry minor.

Brewing Science (SCI 15000) – This course is a General Education science elective for non-science majors over 21 years of age.

Combinatorial Chemistry – This is an advanced elective for junior and senior chemistry majors and students from other majors who are seeking a chemistry minor.

Physical Chemistry Laboratory (CHM 36700) – This is a required course for junior and senior chemistry majors.