



Contact Information

310-703-9567

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Professional

2010 – Present: Founder, President and Chairman of the Board of The Werc Shop, Inc.

Responsible for corporate vision, product development and commercialization of The Werc Shop's offerings to the medical cannabis and greater sustainable chemistry markets.

2004 – Present: Member of Board of Directors and President at KinetiChem, Inc.

Provide oversight of the research, development and commercialization of KinetiChem's continuous flow microreactor technology platform.

2002 – 2005: Director of Product Development at Avrion Molecular, Inc.

Responsible for the research, development and commercialization of Avrion's proprietary reaction methodology. Responsible for technology transfer efforts to third party manufacturer for the production of Avrion's first commercially available products.

2003 – 2005: Research Assistant at the University of Southern California.

Responsible for lab oversight as well as the development of new synthetic methodologies and the creation of novel biologically active compounds.

1997 – 2002: Independent Contractor.

Provided organic chemistry tutoring and IT consulting services.

1995 – 1997: System Administrator at Lebanon MobileFone.

Responsible for starting up and maintaining internet service provider business through installation and maintenance of required servers and networking hardware and software.

1994 – 1997: Sole Proprietor of Creative Technology Solutions.

Provided IT consulting, computer training, and custom web page design services.

Education

2002 – 2003: Post-Doctoral Fellowship; University of Southern California

Research: New synthetic methodologies.

Advisor: Prof. Nicos A. Petasis.

1997 – 2002: Ph.D. Organic Chemistry; University of Southern California

Dissertation: Design and synthesis of novel heterocycles and peptidomimetics from organoboronic acids, amines and carbonyl compounds.

Advisor: Prof. Nicos A. Petasis.

Award: Harold & Lillian Moulton Fellowship

1993 – 1997: B.S. Biochemistry; Lebanon Valley College

GPA: cum. 3.41/4.00; in major 3.54/4.00.

Research Activities:

Biochemistry: Molecular modeling and phylogenetic analysis of Ribulose-1,5-Bisphosphate Carboxylase/Oxygenase in photosynthetic organisms.

Computational Chemistry: Molecular modeling in education directed at producing quick time movies for distribution via the Internet.

Organic Chemistry: Synthetic studies on the addition of organometallic reagents to quinones.

Awards: Vickroy Scholarship, Andrew & Ruth Bender Scholarship, Who's Who in College Students, USA Today All-USA Academic Team, AIC Outstanding Achievement in Biochemistry.

Patents & Publications

Nitrogen-Containing Heterocycles, Petasis, N. A., Yao, X., Raber, J. C., *US Patent*, 6,927,294 (2005).

Method and Apparatus for Mixing and Dispensing Products, Raber, J. C., *US Patent* 8,210,736 (2012).

Reactions of Alkylolithium and Grignard Reagents with Benzoquinone: Evidence for an Electron-Transfer Mechanism, McKinley, J., Aponick, A., Raber, J. C., Fritz, C., Montgomery, D., and Wigal, C. T., *J. Org. Chem.*, 1997, 62, 4874.

Quinone Alkylation Using Organocadmium Reagents: A General Synthesis of Quinols, McKinley, J., Aponick, A., Raber, J. C., and Wigal, C. T., *J. Org. Chem.*, 1998, 63, 2676.

Using Cyclic Voltammetry and Molecular Modeling to Determine Substituent Effects in the One-Electron Reduction of Benzoquinones, Heffner, J. E., Raber, J. C., Moe, O. A., and Wigal, C. T., *J. Chem. Ed.*, 1998, 75, 365.

Halogen/Lithium Exchange in Hydrocarbon Media; Basic and Continuous Reactor Studies, Slocum, D. W., Kusmic, D., Raber, J. C., Whitley, P. E., *Tetrahedron Letters*, 2010, 51 (2010) 4793–4796.

Determination of Pesticides in Cannabis Smoke, Sullivan, N., Elzinga, S., Raber, J. C., *Journal of Toxicology*, 2013, Article ID 378168.

Presentations

“A Web Site for the Chemistry Department at Lebanon Valley College: Information on Students, Chemistry Programs and Molecular Modeling,” Cornelius, R. D., Wigal, C. T., Raber, J. C., presented at the American Chemical Society, Middle Atlantic Regional Meeting, March 1996.

“A Model of the Evolution of Type I Ribulose-1,5-Bisphosphate Carboxylase/Oxygenase (RuBisCO) from the Common Ancestor of the Spinach Chloroplast and *Synechococcus*,” Raber, J. C., Westerhoff, L. M., Moe, O. A., presented at the Pennsylvania Academy of Science, April 12-14, 1996.

“A Phylogeny of Photosynthetic Bacteria and Chloroplasts Based on Parsimony Analysis of *rbcl* Sequences,” Westerhoff, L. M., Raber, J. C., Williams, S. E., presented at The Pennsylvania Academy of Science, April 12-14, 1996.

“A Model Web Site for a Chemistry Department at a Small College: Instructional Support, Departmental Information, and Delivery of Materials for Molecular Modeling,” Cornelius, R. D., Wigal, C. T., Raber, J. C., presented at the 213th National Meeting of the American Chemical Society, San Francisco, CA, April 13-17, 1997.

“New Methodology For Quinol Synthesis,” Aponick, A., Raber, J. C., and Wigal, C. T., presented at the 214th National American Chemical Society Meeting in Las Vegas, September 1997.

“Integration of Molecular Modeling Into the Chemistry Laboratory Curriculum,” Wigal, C.T., Raber, J. C., and Cornelius, R. D., presented at the 214th National American Chemical Society Meeting in Las Vegas, September 1997.

“Synthesis of Benzodiazepines from 1,3-Diamines and Organoboronic Acids”, Petasis, N. A., Raber, J. C., Patel, Z. D., presented at the 220th American Chemical Society meeting in Washington, D.C., August 20-24, 2000.

“Synthesis of Benzodiazepine Derivatives Using Organoboronic Acids”, Petasis, N. A., Raber, J. C., Yao, X., presented at the 222nd American Chemical Society meeting in Chicago, IL, August 26-30, 2001.

“New Boron-Based Multi-Component Reactions”, Petasis, N. A., Douglass, B. J., Raber, J. C., presented at the 229th American Chemical Society meeting in San Diego, CA, March 13-17, 2005.

“Makeover of the Lithium/Halogen Exchange: Continuous Reactor Studies”, Slocum, D. W., Kusmic, D., Raber, J. C., Reinscheld, T. K., Whitley, P. E., presented at the 240th American Chemical Society meeting in Boston, MA August 22-26, 2010.

“Flow Chemistry vs. Batch Chemistry: Halogen/metal Exchange Studies”, Slocum, D. W., Kusmic, D., DiLoreto, M. A., Raber, J. C., Whitley, P. E., presented at the 42nd National Organic Symposium, Princeton, NJ, June 5-9, 2011.

“Scalable, Non-cryogenic Approach to Halogen/metal Exchange and Subsequent Derivatization”, Whitley, P. E., Kusmic, D., Reinscheld, T. K., DiLoreto, M. A., Raber, J. C., Slocum, D. W., presented at the 43rd IUPAC World Chemistry Congress, San Juan, Puerto Rico, July 30-Aug. 7, 2011.

“Continuous TEMPO-Bleach Oxidation Using A Film-Shear Reactor: Rapid Oxidation of Alcohols In A Biphasic System”, Tinder, R., Whitley, P. E., Slocum, D. W., Reinscheld, T. K., Austin, N. D., Bush, S. J., Raber, J. C., presented at the 244th American Chemical Society meeting in Philadelphia, PA, August 19-23, 2012.

“Determination of Pesticides in Cannabis Smoke”, Raber, J. C., Sullivan, N. G., Ezlinga, S. E., presented at the 23rd Annual International Cannabinoid Research Society Symposium on Cannabinoid in Vancouver, BC, Canada, June 22-25, 2013.

Professional Memberships

American Chemical Society Member, 1993 - Present

Pennsylvania Society of Scientists, 1995 & 1996

Lebanon Valley Chamber of Commerce, 1996 & 1997