Curriculum Vitae – Monty L. Fetterolf

Department of Chemistry and Physics
University of South Carolina Aiken
471 University Parkway, Aiken SC 29801
November 2024

EDUCATIONAL BACKGROUND

Degrees – Ph.D. Physical Chemistry, University of California Santa Barbara, 1987
B.S. Chemistry, Wichita State University, 1981

Academic Positions – Endowed Chair in the Sciences, University of South Carolina Aiken, July 2015 – 2021.
Distinguished Professor Emeritus in Chemistry, July 2021 – Present.
Professor, 2004 – 2021, University of South Carolina Aiken
Associate Professor, 1994 (tenured) – 2004, University of South Carolina Aiken
Assistant Professor, 1989 – 1994, University of South Carolina Aiken
Adjunct Instructor: California State University Long Beach, 1989; California Polytechnic University, Pomona, CA, 1988; Pierce College, Woodland Hills, CA, 1988–89; University of California Santa Barbara, 1987.

Postdoctoral Research Positions – University of Southern California with Dr. Arthur Adamson, 1987–1989; University of California Santa Barbara with Dr. Henry Offen, 1987.

Graduate Work – University of California Santa Barbara, Ph.D. Awarded March 1987, Mentor Dr. Henry Offen, Dissertation Title: Pressure, Temperature, and Solvent Effects on Excited State Processes of Ru(II) Polypyridyls.

Professional Affiliations – American Chemical Society, Since 1982
Sigma Xi, The Scientific Research Society, Since 1990
South Carolina Academy of Science, Since 1990

AWARDS

USC Aiken Community Service Award 2011.
Finalist for *USC Aiken Excellence in Teaching Award* 2000 and 2015.
Volunteer Recognition Award, South Carolina Department of Health and Environmental Control, 2007 (Aided with the Graniteville chlorine spill follow-up health clinic.)
Recognition of Outstanding Service, American Chemical Society – Savannah River Section, 1991 – 1998, 2006, 2007, 2012.

TEACHING

Contact Coursework –

Introductory, General and Physical Chemistry, averaged 12 contact hours with laboratories per semester. (Two or three course releases per year as department chair.) Student Evaluations of Teaching routinely Very Good to Excellent.

Taught AP Chemistry Institute for SC High School AP Chemistry Teachers, June 2004, 2006 – 2008.

Nominated for *USCA Excellence in Teaching Award*, 2000, 2005, 2010, 2012, 2015, and 2019.

Course Development (Selected) –

Developed and taught courses: "Chemical Analysis of an Urban Wetlands"; "Introduction to Physical Chemistry"; "Chemistry for AP Teachers."

Authored in-house laboratory manual for Physical Chemistry Lab I and II.

Co-authored in-house lab manual for General Chemistry I and II.

Assisted in developing the integrated lecture/lab format for General Chemistry I and II.

Independent Student Study –

Mentored senior research (56), independent studies (22), honors contracts (7), honors enrichments (9).

Mentored 9 poster presentations, 3 oral presentations USCA Research Day and Scholar's Showcase, 2009 – 2019; 2 posters USC Discovery Day 2011 and 2013; 7 posters SC Academy of Science 1994, 1997, 2003, 2011, 2012, 2018.

Mentored 2 USC Magellan Scholars, 2011 and 2013.

SERVICE

University System Service –

President's Search Committee for USC Aiken Chancellor, 2000.

University Committee Service (Selected) –

Subcommittee – Honors, Awards, and Scholarship Committee, Various Faculty Awards, 2015 – 2020.

Co-chair, Vice Chancellor's Faculty Evaluation Review Committee, 2016 – 2018.

Post Tenure Review Committee, 2015 – 2017.

Search Committee for Dean of the College of Sciences and Engineering, 2015 – 2016.

Steering Committee for Campus Retention, Progression and Graduation, January 2014 – January 2015.

Chair, Search Committee for USC Aiken Vice Chancellor For Business and Finance, May – October, 2011.

Chair, USCA Strategic Planning Committee, 2008 – 2011; Member January 2007 – August 2008.

Chair, Vice Chancellor's Review Committee on the BIS Program, 2005 – 2006.

Search Committee for Chair of Department of Mathematical Sciences, 2004 – 2005.

Co-chair, USCA Strategic Planning Action Team – Communications, 2002 – 2003.

USCA Strategic Planning Subcommittee – Institutional Values, 2000 – 2001.

Institutional Self-Study Education Committee, March 1999 – December 2000.

Courses and Curricula Committee, 1998 – 2001.

Campus Committee on First-year Policy for Entering Students, 1998 – 2000.

Faculty Assembly Ad Hoc Committee – Formation of Post Tenure Review, 1997 – 1998.

Chair, Scholastic Standing and Petitions Committee, 1995 – 1997; Member 1994 – 1995.

Academic Services Committee, 1994 – 1997.

Kaplan Writing Award Committee, 1997.

Faculty Assembly Ad Hoc Committee – New Teaching Evaluation Form, 1994 – 1995.

Task Force for Campus Computing, 1994 – 1995.

Chair, Faculty Welfare Committee, 1993 – 1994; Member 1991 – 1993.

Honors, Awards, and Scholarship Subcommittee, 1992 – Present (10 years, intermittent).

Chair, Geology Tenure-Track Search Committee, 1992.

Chair, Academic Grievance Hearing Subcommittee, 1991.

Department Service (Selected) –

Chemistry Tutoring, USC Aiken Learning Center, Gregg-Graniteville Library, 2023, 2024, 2025.

Search Committee Chair, Physical Chemistry, 2020 – 2021.

Search Committee, Biochemist, 2014 – 15; Organic Chemist, 2015 – 2016.

Chair, Department of Chemistry & Physics at USCA, July 1999 – June 2014.

Co-author, Department Self Study, American Chemical Society Program Certification Preparation, 2010, 2012, 2015 (Awarded ACS Certification in 2016).

Academic Advisor, 4 – 25 students annually in chemistry and pre-pharmacy, 1990 – Present.

Faculty Advisor, Science Club, 1990 – 1997.

Faculty Advisor, Student Affiliates Chapter of the American Chemical Society, 1997 – 2000.

Faculty Facilitator, Pacesetter New Student Orientation, Summers in 1992 – 1994, 1998 – 2014.

Moderator, USCA Career Panel in Chemistry, 1994, 1995, 1997 – 2006.

Community Service (Selected) –

Assistant Coordinator, DHEC Graniteville Clinic, 2005.

Presenter, SEED, Science Education Enrichment Day, 1989 – 1995, 1998 – 2002, 2007 – 2011.

Judge, Aiken County High School Academic Team Final, 2002 – 2016.

Judge, CSRA Science Fair, 1991 – 1994, 1998, 2002.

Co-leader, National Chemistry Week Demonstration Shows, USCA, 1995, 1996, and 1997 (Two shows on campus per year, 750 6th–grade students each year); 1998; (200 students off campus at Leavelle – McCampbell Middle School and Mead Hall School).

Lecturer, University Science Technical Enrichment Program, USTEP, USCA, 1989 – 1997 (Weekend chemistry lab exercises for local high schools students underrepresented in the sciences).

Professional Service (Selected) –

Chair & Staff Member, American Chemical Society – Savannah River *National Chemistry Olympiad* Committee, 1993 – Present. (Coordinate CSRA efforts at area high school chemistry programs and national exam for selection to the International Chemistry Olympiad. Up to 400 area students annually.)

Editorial Board Member, Journal of Undergraduate Chemistry Research (Online), 2018 – Present.

Peer reviewer, RPS, SPARC, Magellan, and RISE USC System Grants, 2002 – Present.

Grader, AP Chemistry Exams, Clemson University, 2006; University of Nebraska, 2008 & 2009, Daytona Beach, FL, 2010 & 2011; Louisville, KY, 2012 & 2014; Salt Lake City, UT, 2015 – 2019, Online, 2020 – 2021; Salt Lake City, UT, 2022 – 2023; Tampa, FL, 2024.

Author & Reviewer, GRE Questions, Educational Testing Service, 2008 – 2014.

Invited Panelist, INBRE Postdoctoral Workshop on Academic Employment, USC School of Medicine, 2012.

Peer reviewer: *Journal of Chemical Education*, 2000 – Present; *Spectrochimica Acta Part A*, 2018 to present; *Reviews in Inorganic Chemistry*, 2019, 2021; *Journal of Luminescence,* 2016; *Journal of Chemical and Engineering Data*, 2007, 2010, 2013; *Journal of Hazardous Materials*, 2012; *The Chemical Educator*, 2011; *Journal of Undergraduate Chemical Research*, 2018 – Present.

Chair, Chemistry & Biochemistry Session, South Carolina Academy of Science, USCA, 1994, 2002, 2012.

Review Panelist, Department of Energy, Radiochemistry Education Grants Program, 2002.

Proposal Reviewer, Petroleum Research Fund Grants, American Chemical Society, 1992 – 1995, 2002, 2015.

Assistant Content/Copy Editor; Pearson/Benjamin Cummings, Harper Collins, Marcel Dekker, 1995 – 2002. (12 Projects in chemistry textbooks and science-based monograph books.)

Book Reviewer "Graphene" by Les Johnson and Joseph Meany, Prometheus Books; Dust Jacket Blurb.

Mentor/Researcher, NSF Young Scholars Summer Research Program, Gifted High School Science Students Summer Research, 5 Students, 1991 – 1995.

Newsletter Editor, Savannah River Section – American Chemical Society, 1990 – 1992.

SCHOLARLY ACTIVITY

Books –

Cathy Cobb; Monty Fetterolf; Harold Goldwhite *The Chemistry of Alchemy: From Dragon's Blood to Donkey Dung, How Chemistry Was Forged*; Prometheus Publications, Amherst, NY, **2014**.

Cathy Cobb, Monty Fetterolf, Jack Goldsmith *Crime Scene Chemistry for the Armchair Sleuth*; Prometheus Publications, Amherst NY, **2007**.

Cathy Cobb; Monty Fetterolf *The Joy of Chemistry: The Amazing Science of Familiar Things*; Prometheus Publications, Amherst, NY, **2005** (named an Outstanding Academic Book, *Choice*, 2005).

Peer Reviewed Journal Articles – (Student Author Underlined; Lead Author *)

Sommer Farmer, Massiel Payero Garcia, Raymond Belliveau, Gerard Rowe, Monty Fetterolf*, Observation of Raman Peak Shifts in Five Solvents for Six Benzoate Analogs, Manuscript in Preparation.

Sara Villamizar Mendoza, Jessica Reel, Ashleigh Kimberlin, James Taylor, Melanie Howe, Gerard Rowe, Monty Fetterolf*; *Chemical Physics Letters*, **2024**, *841*, 141167; Changing Absorption Intensity Ratios for Methylene Violet Bernthsen in Different Normal Alcohols and at Different Temperatures.

Cathy L. Cobb, Wilson Haddock, Monty L. Fetterolf*; *Journal of Chemical Education*, **2020**, *97*, 162; Aluminum Metal Digestion as a Demonstration of an Oscillating Voltage Reaction: An Application Beyond the Textbook.

Monty L. Fetterolf*, Chad. L. Leverette, Christopher Perez, Garriet W. Smith; *Spectrochimica Acta, Part A*, **2017**, *185*, 276; Identification of a Consistent Polyene Component of Purple Pigment in Diseased Sclerites of Caribbean Corals Across Region, Species, and Insult Agent.

PremKumar Sivasubramanian, Rana Mohtadi, Ragaiy Zidan, Kutty Pariyadath, Chad L. Leverette, Monty L. Fetterolf*; *Applied Spectroscopy*, **2012**, *66*, 591; Spectroscopic Evidence for the Atmospheric Stabilization of Aluminum Borohydride in Polydimethylsiloxane Grease.

M. L. Fetterolf*; *Journal of Chemical Education*, **2007**, *84*, 1062; Enhanced Intensity Analysis of the Rotational-Vibrational Spectrum of HCl.

M. L. Fetterolf*, H. V. Patel, J. M. Jennings; *Journal of Chemical and Engineering Data*, **2003**, *48*, 831; Adsorption of Methylene Blue and Acid Blue 40 on Titania from Aqueous Solution.

Monty L. Fetterolf*, Jack G. Goldsmith*; *Journal of Chemical Education*, **1999**, *76*, 1276; An Interactive Dry Lab Introduction to Vibrational Raman Spectroscopy Using Carbon Tetrachloride.

C. Wes Fountain, Jeanne Jennings, Cheryl McKie, Patrice Oakman, Monty L. Fetterolf*; *Journal of Chemical Education,* **1997***, 74,* 224; Viscosity of Common Seed and Vegetable Oils.

Monty L. Fetterolf*, Henry W. Offen; *Journal of Physical Chemistry,* **1988,** *92*, 3437; Reductive Quenching of $Ru(bpy)_3^{2+}$ at High Pressures.

Monty Fetterolf, Alan E. Friedman, Yun-Yen Yang, Henry Offen,, Peter C. Ford*; *Journal of Physical Chemistry,* **1988,** *92,* 3760; Pressure Effects on the Photophysical Properties of the Platinum(II) Dimer $Pt_2(POP)_4^{4-}$ and Related d^8-d^8 Dinuclear Complexes in Solution.

Monty L. Fetterolf and Henry W. Offen*; *Inorganic Chemistry,* **1987,** *26,* 107; Photosubstitution Reactions of Ruthenium(II) Polypyridyls at High Pressures.

Monty L. Fetterolf, Henry W. Offen*; *Journal of Physical Chemistry,* **1986,** *90*,1828; Luminescence Lifetimes of Ruthenium(II) Polypyridyls in H_2O and D_2O at High Pressures.

Mary E. Zawadski, Arthur W. Adamson, Monty Fetterolf, Henry W. Offen*; *Langmuir,* **1986,** *2*, 541; Effect of Pressure on the Adsorption of Tris(2,2'-bipyridine)ruthenium(2+) from Solution.

Monty L. Fetterolf and Henry W. Offen*; *Journal of Physical Chemistry,* **1985,** *89,* 3320; Luminescence of Ruthenium(II) and Osmium(II) Polypyridyls in Acetonitrile at High Pressures.

Turley, D., Fetterolf, M.L., Offen, H.W.* *High Pressure in Science and Technology* Materials Research Society Symposia Proceedings, **1984,** vol. 22, part II, p 155; Luminescence in Solutions Under Pressure.

Presentations (Selected) – *Student Author/Presenter Underlined; Presenter* *)

"The Temperature Dependence of the Solvatochromism of Methylene Violet in Primary Alcohol Solvents," Sara Villamizar Mendoza* and Monty Fetterolf, USCA Scholar's Showcase (Poster), 2019.

"Raman Spectroscopy of Methyl-4-dimethylaminobenzoate (MDAB) and Analogs in Four Solvents," Massiel Payero Garcia* and Monty Fetterolf, SC Academy of Science, Clinton, SC, (Poster); USCA Scholar's Showcase (Oral Presentation), 2018.

"Temperature Dependence of the Visible Absorption of Methylene Violet Dye in Alcohols," James Taylor* and Monty Fetterolf, USCA Scholar's Showcase (Oral Presentation), 2018.

"Beer's Law Analysis of the Visible Absorption Intensities of Methylene Violet in Alcoholic Solvents," Melanie Lynn Howe* and Monty Fetterolf, USCA Scholar's Showcase (Poster), 2018.

"Raman Spectra of EDAB and Its Analogs in Various Solvents," S.E. Farmer*, M. L. Fetterolf, and G.T. Rowe, Spring National Meeting American Chemical Society, Denver, CO (Poster); USCA Research Day, (Poster), 2015.

"A Colorful Story: Pigmented Sclerites from Gorgonians," C. Perez, M.L. Fetterolf, C.L. Leverette, G.W. Smith*, USCA Research Day (Poster); 38th Eastern Fish Health Workshop, Gettysburg, PA, (Poster) 2013.

"The Temperature Dependence of the Solvatochromism of Methylene Violet in Alcoholic Solvents," A. Kimberlin*, G. Rowe, and M. Fetterolf, USC Discovery Day (Poster), USCA Research Day (Poster), 2013.

"Investigations Into Analogs of EDAB as Raman Spectroscopic Probes of Solute/Solvent Interactions," S. Henson* and M.L. Fetterolf, USCA Research Day, (Poster) 2013.

"Solvent-Induced Raman Peak Shifts in Analogs of Ethyl-dimethylaminobenzoate," R. Belliveau* and M.L. Fetterolf, SC Academy of Science, Aiken, SC, 2012. (Oral Presentation)

"The Role of Solvent Acceptor Number in Methylene Violet Solvatochromism," J.L. Moore* and M.L. Fetterolf, SC Academy of Science, Orangeburg, SC (Poster); USC Discovery Day, (Poster); USCA Research Day (Silver Medal Oral Presentation) 2011.

"The Changing Color of Methylene Violet Dye in Different Solvents," P.Shaw* and M.L. Fetterolf, USCA Research Day, (Poster) 2010.

"Probing the Interactions of EDAB and Mixed Solvent Systems Using Raman Spectroscopy," S. Wright* and M.L. Fetterolf, USCA Research Day, (Poster) 2009.

"Melt Rate Improvement at Higher Waste Loading," P. McGrier*, M.L. Fetterolf, T. Lorier, SC Academy of Science, Clemson Univ. SC, (Oral Presentation) 2003.

"Predicting Student Performance in General Chemistry Using the Toledo Placement American Chemical Society Exam," J.G. Goldsmith*, M.L. Fetterolf, and K. Pariyadath, Southeast Regional American Chemical Society Meeting, Savannah, GA, (Poster) 2001.

"One Hundred and Ten Minutes: Combining Lecture and Lab into One Class Period," K. Pariyadath*, M.L. Fetterolf, J.G. Goldsmith, and T.J. Moore, Spring National Meeting American Chemical Society, San Francisco, CA, (Oral Presentation) 2000.

"Integrated Lab-Lecture in the General Chemistry Sequence: A Three-Semester Study," K. Pariyadath*, M.L. Fetterolf, J.G.Goldsmith, and T.J. Moore, Fall National Meeting American Chemical Society, New Orleans, LA, (Oral Presentation) 1999.

"Dye Adsorption Onto Titanium Dioxide Particulates Correlated with the Ionic Charge of the Dye," M.L. Fetterolf and Patrick Smallwood*, SC Academy of Science Meeting, Columbia, SC, (Poster) 1997.

"Environmental Monitoring with Fiber Optic and Electrochemical Sensors Via Radio Telemetry," M.L. Fetterolf, K. Dickey, and D. Davenport*, SC Academy of Science Meeting, Aiken, SC, (Oral Presentation) 1994.

"Photodegradation of Chlorophenols in Aqueous Slurries of Titanium Dioxide Particulates," M.L. Fetterolf and J. Rhoads*, SC Academy of Science Meeting, Aiken, SC, (Poster) 1994.

"Adsorption and Photodegradation of 3- and 4-Chlorophenol in Aqueous Solutions of TiO_2 Particulates Under Acidic and Basic Conditions," M.L. Fetterolf, M. Ramachandran, J. S. Lewis, and J. Rhoads*, Mid-Atlantic/Southeast Regional American Chemical Society Meeting, Washington, D.C., (Poster) 1992.

"Photodegradation at Different Surface Coverages of 4-Chlorophenol Adsorbed from Aqueous Solution Onto Titanium Dioxide Particulates," M.L. Fetterolf and J. Rhoads*, Southeast Regional American Chemical Society Meeting, Richmond, VA, (Poster) 1991.

Research Grants (Funded) –

National Science Foundation, Multidisciplinary Research Instrument Program.

Received funding to purchase a Raman microscope, September 2010, and use it for undergraduate research and community outreach. Served a minor role as co-PI for the project along with Dr. Garriett Smith. Dr. Chad Leverette was PI. ($265,000)

United States Environmental Protection Agency, Environmental Education Grants Program.

Project titled "Enhanced Understanding of Environmental Issues and Teaching Skills for Area Middle School and High School Teachers Using Chemical Analysis of Rainwater Runoff from an Urban Wetlands Setting," July 1999 – 2001, ($4700).

American Chemical Society Petroleum Research Fund (nationally peer-reviewed)

Work titled "Surface Studies of Methylene Blue on TiO_2 Particulates by ATR-FTIR," 1993 – 1996, ($20,000).

Research and Productive Scholarship Grant, USC System, 1990 – 1992, ($2750).

Economic Enterprise Institute Grant, USCA, 1990 – 1991, ($2500).

Vice Chancellor's Summer Research Incentive Grant, USCA, 1990, ($500).

Research/Professional Consulting –

South Carolina University Research Foundation (SCUREF)/Westinghouse Savannah River Company

(WSRC)/USCA Partnership, PI, Faculty Liaison and/or Associate Scientist for Three Projects:

Synthesis/Spectroscopic Investigations of Novel Hydrogen Storage Materials, 2007 – 2009, ($38,000)

Modeling Organic Decomposition Products in Waste Tanks at SRS, 1998, ($15,000)

Environmental Monitoring with Fiber Optics Based Systems, 1993 – 94, ($90,000).

Toups Technology, Inc., Largo, FL, Associate Scientist Testing Possible Fuel Gas, 1998, ($1000).

Trantor Inc., Edgefield, SC, Associate Scientist Working to Determine Reason for Unexpected Gas Production in a Refrigeration Cell and How to Rectify Problem, 1991 – 1992, ($500)