



Dr. Jim McGill

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Work Experience Associate Dean, College of Science, Technology, Engineering, and Mathematics

Southeast Missouri State University Cape Girardeau, MO 8/22 – present

Coordinate student, faculty, and staff recruitment and retention efforts for the College of STEM. Facilitate college compliance with University assessment plan, policies, and procedures and individual program accreditation activities. Serve on College Dean's leadership team and support Dean in planning, implementation, and completion of College initiatives.

Professor of Chemistry and Director of Forensic Chemistry

Southeast Missouri State University Cape Girardeau, MO 8/15 – present

Teaching undergraduate and graduate general, analytical, forensic chemistry courses; directing Forensic Chemistry program; developing forensic chemistry curriculum and courses; conducting research and supervising student research in forensic chemistry; serving on various committees.

Director, Jane Stephens Honors Program

Southeast Missouri State University Cape Girardeau, MO 8/17 – 12/20

Recruit and retain qualified Honors students and faculty; provide training and orientation to new Honors students and faculty; oversee academic aspects of the program, including offering Honors course sections, Honors contract credit, Honors capstone projects; monitor student progress and academic performance; act as liaison to Honors students (Student Honors Council) and faculty (Faculty Honors Council); Supervise staff, budget, and finances for Honors Program and Honors House; build relationships and promote student success.

Chair of Faculty Senate

Southeast Missouri State University Cape Girardeau, MO 4/17 – 4/18

Oversee functioning of the Faculty Senate. Preside over all meetings of the Faculty Senate. Represent the faculty to the administration and to the Board of Regents. Act as spokesperson for the established policies and positions of the faculty to officers of the administration, the media, student leadership representatives, and the Board of Regents.

Associate Professor of Chemistry (tenure awarded 2008)

Southeast Missouri State University Cape Girardeau, MO 8/08 – 8/09; 8/11 – 7/15

Teaching undergraduate and graduate general, analytical, forensic chemistry courses; directing graduate program in chemistry/forensic chemistry; developing forensic chemistry curriculum and courses; conducting research and supervising student research in forensic chemistry; serving on various committees.

Forensic Chemist

United States Department of Justice Largo, MD 8/09 – 7/11
Drug Enforcement Administration (DEA)

Analysis of physical evidence for the presence and quantities of controlled substances and adulterants; writing and submission of technical reports of the findings of analyses; provision of expert witness testimony in courts; provision of expert consultation and training to law enforcement entities and attorneys; performance of ancillary duties.

Assistant Professor of Chemistry

Southeast Missouri State University Cape Girardeau, MO 8/02 – 7/08

Teaching undergraduate and graduate general, analytical, forensic chemistry courses; directing graduate program in chemistry/forensic chemistry; developing forensic chemistry curriculum and courses; conducting research and supervising student research in forensic chemistry; serving on various committees.

Visiting Assistant Professor of Chemistry

Southeast Missouri State University Cape Girardeau, MO 8/01 - 7/02

Teaching undergraduate courses in general chemistry and environmental chemistry; conducting research and supervising student research in chemistry/forensic chemistry.

Graduate Research Assistant

Kansas State University Manhattan, KS 6/99 - 7/01

Conducted graduate research in organic and organometallic chemistry associated with doctoral dissertation projects.

Graduate Teaching Assistant

Kansas State University Manhattan, KS 8/96 - 5/99

Taught laboratory courses in general, organic, and advanced organic chemistry.

Education

Doctor of Philosophy (Chemistry)

Kansas State University Manhattan, KS 8/05

Dissertation: Design and synthesis of optically pure 8,8'-disubstituted 1,1'-binaphthyls and assessment of their applicability as chiral ligands for asymmetric Heck cyclization reactions. 2005

Awards/Honors

Phi Lambda Upsilon Graduate Research Award, 2001

Kansas State University Chemistry Graduate School Merit Fellowship, 1998

Phi Lambda Upsilon National Honorary Chemical Society, 1997-present; President Alpha Epsilon Chapter (1999-2000)

Alpha Chi Sigma Professional in Chemistry Fraternity, 1997-present

Bachelor of Science (Chemistry)

Southeast Missouri State University Cape Girardeau, MO 5/96

Earned American Chemical Society Certified BS Degree

Awards/Honors

Missouri Higher Education Scholarship, 1992-1996

National Science Foundation Research Experiences for Undergraduates Program, 1995

Research Corporation Scholarship, Southeast Missouri State University, 1995-1996

Outstanding Sophomore Chemistry Student, Southeast Missouri State University, 1994

Southeast Missouri State University Regent's Scholarship, 1992-1993

High School (General Diploma)

Charleston High School

Charleston, MO

5/92

Graduated with Honors

Awards/Honors

National Merit Commended Scholar, 1991

Courses Taught

First Year Seminar

Basic Principles of Chemistry

Basic Principles of Chemistry Online

General Chemistry I

General Chemistry II Laboratory

Qualitative Analysis

Organic Chemistry Laboratory I and II

Advanced Organic Chemistry

Advanced Organic Chemistry Laboratory

Environmental Chemistry

Forensic Chemistry (graduate/undergraduate course)

Clandestine Laboratory Chemistry (graduate/undergraduate course)

Forensic Expert Witness Testimony (graduate/undergraduate course)

Topics in Analytical Chemistry--Analytical Chromatography (graduate course)

Senior Seminar / Center for Strategic and International Studies (Washington, D.C.)

Honors Research

Publications

4-Methoxymethcathinone (Methedrone) Seized from a Parcel Being Shipped to Joppa, Maryland. Unattributed Authorship. DEA Microgram Bulletin—Law Enforcement Restricted (Microgram Bulletin LE), 44(10), 99, 2011

Discovery of an Interesting Temperature Effect on the Sensitivity of the Cobalt Thiocyanate Test for Cocaine. Dixon, C.; McGill, J.; Ritter, D.; Sides, J. Microgram Journal 6(1-2), 26-35, 2008

Validation of RAY Triple Dye Stain Solution for Post-Cyanoacrylate Fumed Prints. McGill, J.; Warren, D. Internal Report, Missouri State Highway Patrol, Jefferson City, MO; 2008

Fourier Transform Infrared Reflectance Spectra of Latent Fingerprints: A Biometric Gauge for the Age of an Individual. Hemmila, A.; McGill, J.; Ritter, D. Journal of Forensic Sciences

53(2), 369-376, 2008

Parallel and perpendicular stacking of ferrocene rings. Syntheses, x-ray structures, and electrochemistry of 1,8-bis-[1-(1'-phenylthio)ferrocenyl]naphthalene and 8,8'-bis-[1-(1'-phenylthio)ferrocenyl]-1,1'-binaphthyl. Hua, D.H.; McGill, J.W.; Lou, K.; Ueki, A.; Helfrich, B.; Desper, J.; Zanello, P.; Cinquantini, A.; Corsini, M.; Fontani, M. *Inorganica Chimica Acta*, 350, 259-265, 2003

Crystal Structure of Tri-[1-(phenylthio)-1-ferrocenyl]boroxin. Hua, D.H.; McGill, J.W.; Robinson, P.D.; Meyers, C.Y. *Acta Crystallographica*, E57(9), m413, 2001

Resolution of 8'-Alkoxy- and Hydroxy-1,1'-binaphthalene-8-ols. Hua, D.H.; Nguyen, T.X.C.; McGill, J.W.; Chen, Y.; Robinson, P.D. *Tetrahedron: Asymmetry*, 12(14), 1999, 2001

Short Syntheses of 8'-Substituted 8-[1-(1'-Phenylthio)ferrocenyl]-1,1'-binaphthyls and 8-[1-(1'-Phenylsulfinyl)ferrocenyl]-1,1'-binaphthyls from Suzuki Coupling Reactions. A Strategy for Generating New Chiral Ligands and Charge-Transfer Complexes. Hua, D.H.; McGill, J.W.; Ueda, M.; Stephany, H.A. *Journal of Organometallic Chemistry*, 637-639, 832, 2001

Synthesis and Evaluation of Novel Aldose Reductase Inhibitors: Potential New Drugs for the Prevention of Cataracts. Lewis, S.; Chen, Y.; Tan, Z.; Hua, D.; Takemoto, D.; Fenwick, B.; Brightman, A.; Pang, Y-P.; McGill, J. *Molecular Vision*, 7, 2001.
www.molvis.org/molvis/v7/a23

Cis,cis,cis-Tetramethyl 1,2,4,5-cyclohexanetetracarboxylate. Robinson, P.D.; Hua, D.H.; Fan, J.; Liu, L.; McGill, J.W.; Arshid, M.; Meyers, C.Y. *Acta Crystallographica*, C56, 1471-1472, 2000

From Carbon Dioxide to C2 Organic Molecules Mediated by Aresta's Nickel Carbon Dioxide Complex. Gong, J.K.; McGill, J.W.; Sutterer, A.; Thorn, M.; Wright, C.A. *Advances in Chemical Conversions for Mitigating Carbon Dioxide, Studies in Surface Science and Catalysis*, 114, 491-494, 1998

Ketene formation and Their Bonding to Late Transition Metal Complexes. Gong, J.K.; McCauley, K.; McGill, J.W.; Thorn, M.; Wright, C.A. *Proceedings of the 4th International Conference on Carbon Dioxide Utilization (Elsevier Science)*. 1997

A First Example of "Wittig Reaction" on a Coordinated Carbon Dioxide Nickel Complex. Gong, J.K.; Hinze, S.M.; McGill, J.W.; Prince, R.B.; Sutterer, A.; Thorn, M.; Wright, C.A. *Journal of the American Chemical Society*, 118, 10305, 1996

From Carbon Dioxide to C2 Organic Molecules (1). Gong, J.K.; Hinze, S.M.; McGill, J.W.; Prince, R.B.; Sutterer, A.; Thorn, M.; Wright, C.A. *ACS Symposium Series (edited by the Division of Fuel Chemistry)*, 41(4), 1364-1367, 1996

An Inorganic Experiment: An Application of Second Order 31P NMR Computer Simulation. Gong, J.K.; Hinze, S.M.; McGill, J.W.; Wright, C.A. *The Chemical Educator*, 1(4), 1, 1996

A New Carbon-Carbon Coupling Reaction of a Coordinated Carbon Dioxide Nickel Complex. Gong, J.K.; Hinze, S.M.; McGill, J.W.; Sutterer, A.; Thorn, M.; Wright, C.A. *Missouri Journal of Undergraduate Chemical Research*, 4, 1, 1995

Presentations

The Effects of Ultraviolet (UV) Radiation on Time-Dependent Changes in the Composition of Latent Fingerprints. McGill, J.; Digmann, A. Poster presented at the 68th Annual Scientific Meeting of the American Academy of Forensic Sciences; Las Vegas, Nevada; February 25, 2016

Effects of Donor Age and Water Exposure on the Quality of Oil Red O-Stained Latent Prints. McGill, J.; Skaggs, K.; Robinson, M. Poster presented at the 68th Annual Scientific Meeting of the American Academy of Forensic Sciences; Las Vegas, Nevada; February 25, 2016

Fourier Transform Infrared Reflectance Spectra of Latent Fingerprints on Various Metal Surfaces: Correlation of Chemical Composition with Donor Age and Time Since Deposition. McGill, J.; Ritter, D.; Chapple, B.; Davis, J.; Mills, D. 44th Annual Midwestern Association of Forensic Scientists Fall Meeting, Mackinac Island, Michigan. Presented September 24, 2015

Duquenois-Levine Test Revisited: Studies Toward Reviewable Data. Cantrell, S.; McGill, J. Forensic Science: From Teaching to Research Symposium. 2014 Southeastern Regional Meeting of the American Chemical Society, Nashville, Tennessee. Presented October 19, 2014

Birth and Evolution of a Forensic Chemistry Program (and a Forensic Chemist). McGill, J.; Cantrell, S.; Forensic Science: From Teaching to Research Symposium. 2014 Southeastern Regional Meeting of the American Chemical Society, Nashville, Tennessee. Presented October 18, 2014

Fourier Transform Infrared Reflectance Spectra of Latent Fingerprints on Various Metal Surfaces: Correlation of Chemical Composition with Donor Age and Time Since Deposition. McGill, J.; Ritter, D.; Chapple, B.; Davis, J.; Mills, D. Forensic Science: From Teaching to Research Symposium. 2014 Southeastern Regional Meeting of the American Chemical Society, Nashville, Tennessee. Presented October 18, 2014

High Performance Liquid Chromatography. Technical Presentation to staff at DEA Mid-Atlantic Laboratory, Largo, MD. December 10, 2009

Women and Minorities in Forensic Chemistry. Arthur, J. (presenter); McGill, J.W.; Morgan Theall, R.A. Poster presented at the 237th ACS National Meeting; Salt Lake City, Utah; March 23, 2009

Use of Forensic Science to Promote Chemistry Learning. LaVictoire, D. (presenter); McGill, J.W.; Morgan Theall, R.A. Poster presented at the 237th ACS National Meeting; Salt Lake City, Utah; March 22, 2009

Determining Concentrations of Fentanyl in Decomposing and (Formalin-Stored) Postmortem Liver Tissue Over Time by Gas Chromatography/Mass Spectrometry (GC/MS). Eckert-Lumsdon, T. (presenter); McGill, J. Paper presented at the 61st Annual Scientific Meeting of the American Academy of Forensic Sciences; Denver, Colorado; February 19, 2009

Determination of the Origin of Commercial Pepper Spray Residues Using Gas Chromatography-Mass Spectrometry (GC-MS) and Attenuated Total Reflectance Fourier Transform Infrared Spectroscopy (ATR-FTIR). Darland, E. (presenter); Hirtzel, A. (presenter); McGill, J.; O'Pry, L. Poster presented at the 61st Annual Scientific Meeting of the American Academy of Forensic Sciences; Denver, Colorado; February 19, 2009

CSI: Chemistry. McGill, J.; Morgan Theall, R. (author, presenter). Paper presented at the 20th Biennial Conference on Chemical Education; Bloomington, Indiana; July 29, 2008

Forensic Chemistry: Cobalt Thiocyanate Test for Cocaine. McGill, J. An invited presentation to the Master of Science in Forensic Science Program in the College of Science at Southern Utah University, Cedar City, Utah on April 23, 2008

Bringing forensic chemistry to the public through volunteer education programs. LaVictoire, D. (presenter); McGill, J.; Morgan Theall, R. Paper presented at the 235th ACS National Meeting; New Orleans, Louisiana; April 7, 2008

Determining Concentrations of Fentanyl in Decomposing and Formalin-Stored Post-Mortem Liver Tissue Over Time by Gas Chromatography-Mass Spectrometry (GC-MS). Eckert-Lumsdon, T. (presenter); McGill, J. Poster presented at the 42nd American Chemical Society Midwest Regional Meeting; Kansas City, Missouri; November, 2007

Discovery of An Interesting Temperature Effect on the Sensitivity of the Cobalt Thiocyanate Test for Cocaine. Dixon, C. (presenter); McGill, J.; Sides, J. Poster presented at the 42nd American Chemical Society Midwest Regional Meeting; Kansas City, Missouri; November, 2007

Age Determination Using Latent Fingerprints. Hemmila, A. (presenter); McGill, J.; Ritter, D. Paper presented at the 43rd Annual Meeting of the Missouri Academy of Science; Saint Joseph, Missouri; April, 2007 (NOTE: This presentation was awarded first place for best presentation in the Collegiate Chemistry Division)

Applying Science to Forensic Problems: Monitoring the Aging Process of Unsaturated Fatty Acids by Fourier-Transform Infrared Spectroscopy. McGill, J.; Hart, J.; Ritter, D. An invited presentation to the Department of Chemistry at Austin-Peay State University, Clarksville, TN on February 24, 2006

Trace Metal Analysis of Ecstasy by Microwave-assisted Digestion and Inductively Coupled Plasma-Optical Emission Spectroscopy (ICP-OES). Crawford, P.; Johnson, P.; McGill, J. Skinner, E.; Stroder, T.; Goodrich-McGee, M. An invited presentation at the Annual Meeting of the Midwest Forensics Resource Center held in St. Louis, MO on April 26, 2006

Design and Synthesis of Chiral Phosphine Ligands for Asymmetric Catalysis. Hua, D.H.; McGill, J.W.; Sin, H-S.; Ichikawa, H.; Ueda, M.; Chiu, E.; Bodineau, N. Invited presentation given at the 36th ACS Midwest Regional Meeting, Lincoln, Nebraska, October, 2001

Short Syntheses of 8-Substituted 8'-[1-(1'-Phenylthio)ferrocenyl]-1,1'-Binaphthyls from Suzuki Coupling Reactions. McGill, J.W.; Hua, D.H.; Stephany, H.A.; Ueda, M. Paper presented at the 36th ACS Midwest Regional Meeting, Lincoln, Nebraska, October, 2001

Normalization of PKC- γ in Galactosemic Dogs by a Novel Aldose Reductase Inhibitor. Harris, R.; Browning, M.; Karrer, J.; Brightman, A.; McGill, J.; Hua, D.; Wagner, L.M.; Takemoto, D. Poster presentation [ARVO Abstract]. Invest Ophthalmol Vis Sci., 42(4): §541, 2001; Abstract number 2902

Design, Synthesis, and Applications of Novel Phosphine Ligands in Asymmetric Catalysis. McGill, J.W.; Hua, D.H. 2001 Phi Lambda Upsilon Graduate Research Award Lecture, Kansas State University, April, 2001

Design, Synthesis, and Applications of Novel Phosphine Ligands in Asymmetric Catalysis. McGill, J.W., Hua, D.H. Paper presented at the 2001 Kansas State University Graduate Research Forum, April, 2001

Chiral 8,8'-Disubstituted 1,1'-Binaphthyls in Asymmetric Catalytic Palladium-Mediated Ring Closure Reactions. McGill, J.W.; Sin, H-S.; Nguyen, T.; Chen, Y.; Huang, X.; Roach, P.; Mijares, K.; Hua, D.H. Paper presented during the Organometallic Chemistry in Organic Synthesis Special Symposium at the 35th ACS Midwest Regional Meeting, St. Louis, MO, October, 2000; Abstract number 56

Preparation of Optically Pure 8,8'-Disubstituted 1,1'-Binaphthalenes via a Resolution Method and Their Application in Asymmetric Catalysis. Chen, Y.; Fuji, K.; Hua, D.H.; Huang, X.; McGill, J.W.; Nguyen, T.X.C.; Sin, H-S.; Tanaka, K. Paper presented at the 33rd ACS Midwest Regional Meeting, Wichita, KS, November, 1998

From Carbon Dioxide to C2 Organic Molecules. Gong, J.K.; Hepp, A.F.; McGill, J.W.; Wright, C.A. Poster presented at the 212th ACS National Meeting, Orlando, FL, August 1996

A First Example of "Wittig Reaction" on a Coordinated Carbon Dioxide Nickel Complex. Gong, J.K.; Hinze, S.M.; McGill, J.W.; Prince, R.B.; Sutterer, A.; Thorn, M.; Wright, C.A. Poster presented at the 211th ACS National Meeting, New Orleans, LA, March 1996

A First Example of "Wittig Reaction" on a Coordinated Carbon Dioxide Nickel Complex. Gong, J.K.; Hinze, S.M.; McGill, J.W.; Prince, R.B.; Sutterer, A.; Thorn, M.; Wright, C.A. Poster presented at the 4th Annual Southeast Missouri State University Student Research Conference, Cape Girardeau, MO, April 1996. (poster received the "Best Poster" award for the conference)

A First Example of "Wittig Reaction" on a Coordinated Carbon Dioxide Nickel Complex. Gong, J.K.; McGill, J.W.; Wright, C.A. Paper presented at the 19th Annual ACS Area Collegiate Chemistry Meeting, University of Tennessee at Martin, April 1996

Funded Grant Proposals

Southeast Missouri State University Grants and Research Funding Committee
Effect of UV Light Exposure on FTIR Spectroscopic Determination of Time Since Deposition of Latent Prints, \$2,500, 2015

Shimadzu Scientific Instruments, Inc.
Equipment Grants for Research: LC-MS Program. Grant to purchase LCMS-8030 Triple Quadrupole LC-MS instrument and accessories; two FTIR spectrometers, FTIR microscope, and GC-FID instruments. Awarded \$135,000. Accepted grant with matching funds from NIJ-OJP grant. 2013

National Institute of Justice
Establishment of a forensic science research and education laboratory at Southeast Missouri State University (co-author: Phil Crawford), \$700,000, 2008

Shimadzu Scientific Instruments, Inc.
Equipment Grants for Research—LC-MS Program. LCMS-IT-TOF instrument and accessories matching funds grant. \$175,000 (no funding match by university). 2009

Midwest Forensics Resource Center / National Institute of Justice
Trace Metal Analysis of Ecstasy by Microwave-assisted Digestion and Inductively Coupled Plasma-Optical Emission Spectroscopy (ICP-OES) submitted to MFRC (co-PI: Phil Crawford, Pam Johnson), \$52,469, 2004

Southeast Missouri State University Funding for Results Committee
Inquiry-Based Learning in Qualitative Analysis (co-PI: Matthew Fasnacht), \$4,658, 2003

Southeast Missouri State University Grants and Research Funding Committee
Vinyl Phosphonium Salts as New Chiral Dienophiles for Asymmetric Diels-Alder Cycloaddition Reactions, \$2,519, 2003

Southeast Missouri State University Funding for Results Committee
A Graduate Teaching Assistant Training Program for Chemistry (co-PIs: Michael Rodgers, Mohammed Ali), \$14,968, 2003

Graduate Thesis Committees

Thesis Committee Chairperson, Amanda Milbrandt: Using FTIR for prediction of DNA preservation in human skeletal remains (graduated 2022).

Non-Thesis Committee Chairperson, Melyssa Aviles: Forensic DNA Analysis: STR Typing (graduated 2017).

Thesis Committee Chairperson, Lauren Ditto: Discrimination Among Modern and Prehistoric Skeletal Remains using Fourier-transform infrared spectroscopy (in progress).

Thesis Committee Chairperson, Brett Tebbe: Determination of time since deposition of gunshot residue using Fourier-transform infrared spectroscopy (graduated 2018).

Thesis Committee Chairperson, Ana Alicea Rodriguez: Identification of forensic parameters for the collection of human microbiome samples (graduated 2016).

Thesis Committee Chairperson, James Roach: The effects of time and humidity on the reaction between the reagent 1,2-indanedione and nine amino acids found in latent print residue (graduated 2016).

Thesis Committee Chairperson, Allyson Digmann: The effects of ultraviolet (UV) radiation on time-dependent changes in the composition of latent fingerprints (graduated 2016).

Non-Thesis Committee Chairperson, Christina Hayes: A discussion of six different opioids using NFLIS data trends, chemical analysis, toxicology, and metabolism (graduated 2015).

Thesis Committee Chairperson, Sariah Cantrell: Thin-layer chromatographic and Duquenois-Levine presumptive tests for marijuana revisited: studies toward reviewable data (graduated 2015).

Thesis Committee Chairperson, Whitney Certain: A comparison of citrate analysis and Raman spectroscopy for post-mortem interval estimation of skeletal remains (graduated 2015).

Thesis Committee Chairperson, Max Wetstein: Seeking a presumptive color test for synthetic cannabinoids (graduated December 2014).

Thesis Committee Chairperson, Susan (Snyder) Flieg: Derivatization protocols for gas chromatographic-mass spectrometric (GC-MS) analysis of controlled substances (in progress).

Non-Thesis Committee Chairperson, Sarah (Hillebrand) Brown: A literature review of clandestine laboratory methamphetamine production and syntheses and the hazards associated (graduated 2013).

Non-Thesis Committee Chairperson, Pavani Pandilla: Superficially porous silica microspheres for fast high performance liquid chromatography of macromolecules (graduated 2013).

Thesis Committee Chairperson, Sandeep Uppalapati: Synthesis and characterization of newly prepared analogs of 2,5-dimethoxy-N-(2-methoxybenzyl)phenethylamine (NBOMe) compounds (graduated 2013).

Non-Thesis Committee Chairperson, Joanna Sides: Differentiating isomers pertinent to recent trends in drug chemistry (graduated 2012)

Thesis Committee Chairperson, Danielle LaVictoire: Corrosion of cartridge brass by fatty acids commonly found in fingerprints (graduated 2009).

Thesis Committee Chairperson, Rachel Mertens: Effect of temperature on known false positives for the Scott presumptive test for cocaine (graduated 2009).

Thesis Committee Chairperson, Erin Darland: Determination of the origin of commercial pepper spray residues via gas chromatography-mass spectrometry (graduated 2009).

Thesis Committee Chairperson, Angela Hirtzel: Determining the origin of commercial pepper spray residues using attenuated total reflectance Fourier transform infrared spectroscopy (graduated 2008).

Thesis Committee Member, Sheena Arink. Chemical and spectral analysis for the detection of lithium uptake in Arabidopsis for forensic application in locating methamphetamine labs (graduated 2008).

Thesis Committee Member, Elizabeth Cheesman (Griffin). Extraction of DNA from epithelial cells and sweat from latex gloves (graduated 2007).

Thesis Committee Member, Stephen Schroepel II. Goodness of fit test for the homogeneous Poisson process using repairable systems (graduated 2007; MNS in Mathematics).

Thesis Committee Member, Emily Smelser (Morgan). Trace metal analysis of MDMA by inductively coupled plasma-optical emission spectroscopy and principal component analysis (graduated with non-thesis option: A review of extraction procedures commonly used for narcotic analgesics, 2012).

Thesis Committee Member, Nishanth Visagaratnam. Measurement of lithium ion concentrations in septic systems by atomic absorption spectroscopy as an indicator of clandestine methamphetamine manufacture (graduated 2006).

Thesis Committee Chairperson, Anita Hicklin: Analysis of trace metal and organic components in gunshot residue by Fourier transform infrared spectroscopy (graduated 2006).

Thesis Committee Member, Tim Stroder: Trace metal analysis of ecstasy by microwave-assisted digestion and inductively coupled plasma-optical emission spectroscopy (ICP-OES) (graduated 2006).

Thesis Committee Chairperson, Emily Skinner: Trace metal analysis of ecstasy by microwave-assisted digestion and inductively coupled plasma-optical emission spectroscopy (ICP-OES) (graduated 2009).

Thesis Committee Chairperson, Jenn Riestis: The determination of the production capacity of clandestine methamphetamine laboratories using ultraviolet/ visible spectrometric measurements of pseudoephedrine pill soak solutions (graduated 2009).

Thesis Committee Member, Becky Moden: Buccal cell collection from beverages to determine DNA quantity and usefulness for profiling using the ABI 310 (graduated 2004).

Thesis Committee Chairperson, Lauren O'Pry: Determining the origin of commercial pepper spray residues based upon their capsaicinoid compositions using gas chromatography-mass spectrometry (graduated 2004).

Thesis Committee Member, Danny Bryant: Determining the origin of cocaine samples using inductively coupled plasma (ICP) methods to quantitatively and qualitatively detect trace metals (graduated 2003).

Thesis Committee Chairperson, Tiffany Eckert: Determining concentrations of fentanyl in decomposing and formalin-stored post-mortem liver tissue by gas-chromatography and mass spectrometry (GC-MS) (graduated 2003).

Thesis Committee Member, Stina Larson: Quantitative analysis of the trace metals found in the jacketing material of copper jacketed bullets using x-ray fluorescence spectrometry (graduated 2003).

Thesis Committee Chairperson, Michale Goodrich-McGee: Source determination of clandestine manufactured 3,4-methylenedioxymethamphetamine from the analysis of trace metal impurities (graduated 2003).

Thesis Committee Chairperson, John Hart: Evaluation of the chemical composition of human fingerprint residue and its evolution as a function of time using Fourier transform infrared spectroscopy: steps toward a method of fingerprint age determination (graduated 2009).

Training / Workshops

Scientific and Technical Training

Bruker Service and Maintenance. Troubleshooting, service, and maintenance of the AVANCE II, Avance III and AVANCE III HD NMR spectrometer systems. Bruker BioSpin Corporation. Billerica, Massachusetts. 07/19 – 07/22/2016

Bruker Avance I. Introduction to basic operation of NMR spectrometers and administration of the spectrometer workstation. Bruker BioSpin Corporation. Billerica, Massachusetts. 02/29 – 03/03/2016

Latent Prints. American Society of Crime Laboratory Directors (ASCLD) Webinar Series, Part 5. 90-minute webinar. 02/11/16

The Role of Chemistry in Global Security. American Chemical Society Webinar. 02/09/2016

Digital Multimedia Evidence. American Society of Crime Laboratory Directors (ASCLD) Webinar Series, Part 4. 90-minute webinar. 02/04/16

Controlled Substances. American Society of Crime Laboratory Directors (ASCLD) Webinar Series, Part 3. 90-minute webinar. 01/28/16

Toxicology. American Society of Crime Laboratory Directors (ASCLD) Webinar Series, Part 2. 90-minute webinar. 01/21/16

Firearms. American Society of Crime Laboratory Directors (ASCLD) Webinar Series, Part 3. 90-minute webinar. 01/14/16

Designer Drug Trends and Legislation. Half-day Workshop. 44th Annual Meeting of the Midwestern Association of Forensic Scientists. Mackinac Island, Michigan. 09/23/15

Measurement Uncertainty. Half-day Workshop. 44th Annual Meeting of the Midwestern Association of Forensic Scientists. Mackinac Island, Michigan. 09/23/15

Evidence From the Smoking Gun: Organic Components of Gunshot Residue. American Chemical Society Webinar. 05/12/2015

Chemistry in the Courtroom: Demystifying Science for Judge and Jury. American Chemical Society Webinar. 02/19/2015

Emerging Trends in Synthetic Drugs Workshop. National Institute of Standards and Technology (NIST) / Drug Enforcement Administration (DEA) co-sponsored two-day online training workshop originating from Gaithersburg, Maryland. April – May 2013

Drug Enforcement Administration Basic Forensic Chemist Training Program. DEA Mid-Atlantic Laboratory, Largo, MD. 2009-2010

Drug Enforcement Administration Basic Forensic Sciences School #19. DEA Training Academy, Quantico, VA. June 14 – July 2, 2010

Drug Enforcement Administration Basic Clandestine Laboratory School #51—includes OSHA HAZWOPR certification and specialized clandestine laboratory training and certification. DEA Training Academy, Quantico, VA. June 7-11, 2010

Agilent 7890 Gas Chromatograph Maintenance and Troubleshooting Course. Agilent North America Training Center, Alpharetta, GA. July 20-23, 2010

Training in Latent Fingerprint Development, Latent Fingerprints section of the Missouri State Highway Patrol Troop E Laboratory, Cape Girardeau, Missouri, 2007

PolarisQ Operations Training Course (Thermo Trace gas chromatograph-Polaris Q mass spectrometer system operation and maintenance), Thermo Scientific Training Institute, West Palm Beach, Florida; July 23-26, 2007

Instrument Training: Tecan Freedom EVO 75 liquid handling instrument, Tecan Columbus microplate washer, and Tecan Sunrise absorbance reader for toxicological analysis of drugs in blood and urine by Enzyme-Linked Immunosorbent Assay (ELISA), Missouri State Highway Patrol Troop E Laboratory, Cape Girardeau, Missouri; one-day training, 2007

Federal Bureau of Investigation Research Partner Program Technology Transfer Workshop: Analysis of UV Dye-Free Pepper Sprays, FBI Academy, Quantico, VA, 2004

Midwestern Association of Forensic Scientists Drug Analysis Workshop, Michigan State Police Forensic Laboratory, Lansing, Michigan, 2002

Teaching and Advising Enhancement Training

Online Teaching Academy Master Class Series. Southeast Missouri State University. 2018-2019

Safe Zone Training Workshop. LGBTQ+ Resource. Southeast Missouri State University. 2018

Quality Matters (QM) Peer Reviewer Norming Session. Southeast Missouri State University. 05/13/2016

Quality Matters (QM) Peer Reviewer Course. Two-week Online Workshop by Quality Matters. 10/20/15 – 11/03/15

Quality Matters (QM) Cohort 4. Faculty group discussing QM Rubric and strategies for meeting criteria for compliance. Southeast Missouri State University. 09/10/14 – 10/14/14

Applying the Quality Matters (QM) Rubric. Two-week Online Workshop by Quality Matters. 08/19/14 – 09/02/14

National Science Foundation-sponsored Multi-Initiative Dissemination (MID) Project Workshop at University of Missouri-Columbia on April 11-12, 2003

Multiple Teaching, Advising, and Technology Workshops and Training Sessions, Southeast Missouri State University Center for Scholarship in Teaching and Learning, Cape Girardeau, Missouri, 2001-present

Leadership, Communication, and Professional Growth Training

Active Shooter Response Training. Part 1. Southeast Missouri State University Department of Public Safety. 11/2022 - present

Title IX for Higher Education. 06/08/2017

Harassment Prevention for Managers - Higher Education Edition. 06/08/2017

Harassment Prevention for Employees - Higher Education Edition. 06/08/2017

Banner Training: Overview; Navigation; Chart of Accounts; Budget Queries A and B; Requisition Approval Using Self-Service. 06/02/2017

Confronting Ourselves: Promoting Diversity, Cultural Competence and Inclusive Excellence. Southeast Missouri State University. 02/07/2017

National Science Foundation (NSF) Workshop: Science: Becoming the Messenger. 08/12/13 – 08/13/2013

American Heart Association Heart Saver First Aid, CPR, and Automated External Defibrillator (AED). DEA Mid-Atlantic Laboratory, Largo, MD. May 5, 2010

**Professional
Experience and
Service**

Member, President's Task Force on Diversity Education. 2019-present

LGBTQ Ally. Southeast Missouri State University LGBTQ+ Resource Center. 2018-present

Member, Baptist Student Center Outreach Committee. 2017-2019

Member, Midwestern Association of Forensic Scientists Awards Committee. 2016-present

Judge for Emerging Forensic Scientist Award at 68th Annual Scientific Meeting of the American Academy of Forensic Sciences; Las Vegas, Nevada; February 26, 2016

Reviewed courses: Elementary Probability and Statistics (MA223; Southeast Missouri State University); Strategic Cost Management (BA660; Southeast Missouri State University); Basic Photography (ART 180z; Cecil College) for alignment with Quality Matters online course rubric

Reviewed manuscript "Polarographic determination of the stability constant of the ternary complex formed between cocaine and cobalt thiocyanate" by Pardo, et. al. for Toxicological and Environmental Chemistry journal (published February 2016)

Midwestern Association of Forensic Scientists (MAFS) Visiting Scientist. Derivatization in Controlled Substance Analysis. Eight-hour lecture / laboratory course taught at Miami Valley Regional Crime Laboratory in Dayton, Ohio, June 28, 2013

Assisted in providing training in controlled substance recognition and field testing, evidence handling, packaging, and submission, and phencyclidine (PCP) safety for Coast Guard law enforcement officers. United States Coast Guard Station Washington, DC, Bolling Air Force Base, Washington, DC.; United States Coast Guard Station Annapolis, Curtis Bay, MD. 2010

Drug Enforcement Administration Mid-Atlantic Laboratory Research and Validation Coordinator. Reviewed papers for presentation at professional meetings as well as research proposals.

Analyzed approximately 200 controlled substance exhibits at DEA Mid-Atlantic Laboratory. Two court appearances to date (Andrews Air Force Base and Superior Court of the District of Columbia). 2009-2010

Served as Research and Validation Coordinator, member of Emergency Response Team, and instrument monitor for balances, microscopes, gas chromatographs, and high-performance liquid chromatographs at DEA Mid-Atlantic Laboratory. 2009-2010

Reviewed manuscript "Detection of illicit substances in fingerprints by infrared spectral imaging" by Reedy, et. al. for Analytical and Bioanalytical Chemistry journal (published in 2009; 394:2039-2048)

Member ad hoc committee to explore accreditation of forensic chemistry degree programs by Forensic Education Programs Accrediting Committee (FEPAC). 2008-2009

Adjunct Staff, Southeast Missouri Regional Crime Laboratory. 2005-2006

Founding Member of the Midwest Forensic Educators' Consortium through the Midwest Forensics Resource Center (MFRC) at Ames Lab, Iowa State University. 2004-2009

Forensic Research and Development Advisory Committee of the Midwest Forensics Resource Center (MFRC) at Ames Lab, Iowa State University. Duties include advising the MFRC leadership in policies regarding the forensic research and development funding program, the issuing of calls for proposals thereto, and providing critical reviews of submitted research proposals. 2002-2012

Designed and taught Crime Scene Investigation workshops and short courses for 9-14 year-old students as outreach and enrichment projects for Southeast Missouri State University Extended and Continuing Education. 2005-2009; 2012-present

Co-wrote proposals for Congressional funding to establish a Midwest Forensic Research and Education Laboratory at Southeast Missouri State University. 2004, 2006, 2007, 2008. Received funding for \$700,000 in 2010

Developed and taught new courses in Forensic Chemistry (2004), Forensic Expert Witness Testimony (2013), and Clandestine Laboratory Chemistry (2014) for graduate and advanced undergraduate students.

Member, ad hoc committee to develop a curriculum proposal for forensic chemistry undergraduate degree options. Helped to develop curriculum proposals for new Forensic Chemistry emphasis areas for the Chemistry BS and BA degree programs. 2004

Member, Search Committee for Forensic Chemist, Southeast Missouri Regional Crime Laboratory. 2005

Reviewed research proposals for National Science Foundation and ACS Petroleum Research Fund. 2002-2008

Professional Memberships

National Academic Advising Association, 2018-2019

American Academy of Forensic Sciences, 2009-present

American Chemical Society, 1997-present

ACS Chemistry and the Law Division, 2007-present

ACS Organic Division, 1997-present

International Association for Identification, 2008-present

Midwestern Association of Forensic Scientists, 2009-present

Phi Lambda Upsilon National Honorary Chemical Society, 1997-present; President Alpha Epsilon Chapter (1999-2000)

Alpha Chi Sigma Professional in Chemistry Fraternity, 1997-present

Professional Certifications

Certified as Diplomate of the American Board of Criminalistics. Specialty Area: Drug Analysis (certification number: 1824). First Awarded: August 2009; Renewed: August 2015; Expired: July 2020

Certified as Quality Matters Higher Education Peer Reviewer. November 2015 – 2019

Certified as Master Advisor (Academic Advising). Southeast Missouri State University. December 2016 – present

Certified as Bruker NMR Maintenance Correspondent. Bruker BioSpin. July 2016 – present

Certified by American Red Cross in First Aid, Cardiopulmonary Resuscitation (CPR), and Automated External Defibrillator (AED). August 2023 – present

Certified in Mental Health First Aid by Mental Health First Aid Missouri. April 2023 - present

University Service Southeast Missouri State University

Member, University Exploratory Artificial Intelligence (AI) / Chat GPT Working Group. 2022 - present

Member, University General / Interdisciplinary Studies Working Group. 2022 - present

Member, Southeast Missouri State University General Education Committee. 2020-2023

Member, Southeast Missouri State University Outstanding Academic Advisor Award selection committee. 2019-2021

Member, Presidential Scholarship selection committee. 2018-2020

Director, Jane Stephens Honors Program. 2017-2020

Member, Search Committee for Freshman Recruitment Coordinator. 2018

Member, Southeast Missouri State University President's Scholarship Selection Committee. 2018-2020

Member, Southeast Missouri State University Commencement Committee. 2018-2021

Organized and co-Facilitated (Courtney Kisat) Center for Scholarship in Teaching and Learning Take Away Friday Workshop: Sustainability at Southeast. September 7, 2018.

Organized and co-Facilitated (with Chris Martin and Jonathan Kessler) Center for Scholarship in Teaching and Learning Take Away Friday Workshop: Faculty and the Political Conversation. November 2, 2018.

Organized and Facilitated Center for Scholarship in Teaching and Learning Take Away Friday Workshop: Faculty Workloads. November 30, 2018

Chairperson, Faculty Senate Professional Affairs Committee. 2018-present

Faculty Advisor, Beta Xi Chapter of Sigma Sigma Sigma Sorority. 2013 - 2018

Training Workshop Delivered: Southeast Missouri State University Academic Support Centers Spring 2018 Friday Forum Series. Diversity Awareness: Working with High Achieving Students. Co-Presenter: Jennifer Blair. Spring 2018

Training Workshop Delivered: Southeast Missouri State University Master Advisor Topical Workshop Series. Advising Honors Students. Co-Presenter: Jennifer Blair. Spring 2018

Training Workshop Delivered: The Role of the Honors Faculty Member. Fall 2017; Spring 2018

Training Workshop Delivered: Presentation: Advising Tips for Honors Students: Advocating for Yourself. Fall 2017

Chair, Faculty Senate. 2017-2018

Member, Budget Review Committee Subcommittee on Fees. 2016-2018

Member, Jane Stephens Honors Program Faculty. 2015-present

Member, Jane Stephens Honors Program Faculty Honors Council. 2015-present

Co-Chairperson, Academic Advising Council. 2014-2015

Member, Funding for Results Team. 2014-2017

Member, FFR Subcommittee for Undergraduate Research and Faculty Mentored Student Research and Creative Activity Grant Programs. 2016-2017

Member, Search Committee for Assistant Director of Academic Advising. 2015

Member, Search Committee for Coordinator of Academic Advising. 2015

Member, Search Committee for Director of Research and Grant Development. 2014-2015

Member, Strategic Enrollment Management Committee—Retention Subcommittee. 2011-12

Member, Academic Advising Council. 2012-2015

Member, University Planning Committee. 2004-2009

Chair-Elect, Faculty Senate. 2016-2017

Chairperson, Johnson Faculty Centre Governing Committee. 2016-2017

Member, Faculty Senate Membership Committee. 2015-2016

Vice Chair, Faculty Senate Governance Committee. 2015-2016

Member, Faculty Senate Governance Committee. 2015-2016

Vice Chair, Faculty Senate Academic Affairs Committee. 2014-2015

Member, Faculty Senate Academic Affairs Committee. 2014-2015

Faculty Senate Liaison to Student Government. 2007-2008; 2014-present

Member, Johnson Faculty Centre Governing Committee. 2007-2009

Member, Faculty Senate Executive Committee. 2007-2009; 2016-2018

Member, University Budget Review Committee. 2007-2009; 2016-2018

Chairperson, Faculty Senate Membership Committee. 2007-2009

Member, Faculty Senate Documents Committee. 2006-2009

Member, Faculty Senate Membership Committee. 2005-2009; 2015-2016

Member, Faculty Senate. 2005-2009; 2014-present

College of Science, Technology, Engineering, and Mathematics

Chairperson, College of Science, Technology, Engineering, and Mathematics (CoSTEM) Assessment Committee. 2022 - present

Chairperson, College of Science, Technology, Engineering, and Mathematics (CoSTEM) Recruitment and Retention Committee. 2022 - present

Member, College of Science, Technology, Engineering, and Mathematics (CoSTEM) Diversity, Equity, Inclusion, and Belonging Committee. 2021-2023

Member, College of Science, Technology, and Agriculture Student Retention Committee. 2016-2017

Member, College of Science, Technology, and Agriculture Governance and Planning Committee. 2012-2018

Department of Chemistry

Faculty Advisor, Forensic Science Club. 2013 – present

Chairperson, Forensic Chemistry Faculty Search Committee. 2017-2018

Member, Organic Chemistry Faculty Search Committee. 2017-2018

Member, Analytical Chemistry Faculty Search Committee. 2016-2017

Member, Department of Chemistry Student Retention Committee. 2016-2017

Chairperson, Department of Chemistry NMR User Group. 2016-present

Member, Department of Chemistry NMR User Group. 2015-present

Chairperson, Department of Chemistry Program Learning Outcomes Committee. 2016

Chairperson, Department of Chemistry Forensic Programs Committee. 2011-present

Member, Department of Chemistry Budget and Space Committee. 2007-2009; 2012-2014

Member, Department of Chemistry Website Committee. 2008-2009; 2014-2015

Department of Chemistry Promotion and Tenure Committee. 2008-2009; 2016-2019

Chairperson, Department of Chemistry Graduate Program Committee. 2004-2009; 2018-2019

Member, Department of Chemistry Scholarships and Awards Committee. 2004-09; 2013-14

Member, Department of Chemistry Freshman Program Committee. 2004-2007

Member, Department of Chemistry Assessment Committee. 2002-2004

Member, Department of Chemistry Graduate Program Committee. 2002-2004; 2011-present

Member, Department of Chemistry Safety Committee. 2002-2004; 2011-2013

Awards and Recognitions

Commencement Speaker. Southeast Missouri State University Spring Commencement Ceremony. May 2023

Institutional Faculty/Staff of the Month. Awarded by National Residence Hall Honorary, Southeast Missouri State University, in recognition of outstanding support of the Residence Hall system on the campus of Southeast Missouri State University. February 2022

State of Missouri Governor's Award for Excellence in Education. Presented to educators from public institutions of higher education for "challenging and motivating Missouri students to reach their maximum potential. April 2019

Honorary Senator. "An Honorary Senator must be a person who has shown extraordinary dedication to Southeast Missouri State University Student Government over a period of time. It is the highest honor Student Government may give an individual and should be given sparingly and only to the most deserving candidates." Must be approved by a three-fourths majority of the voting members of the Senate. To date, Southeast SGA has recognized four Honorary Senators. April 2019

Provost's Research, Instruction, and Development for Excellence (PRIDE) Award (2018). Southeast Missouri State University PRIDE Award is presented annually to the faculty member who best exemplifies the teacher-scholar model. The selection is made by the University's Council of Deans from nominees made from each college. January 2019

College of Science, Technology, Engineering, and Mathematics (STEM; formerly College of Science, Technology, and Agriculture) Pride Award. Selected and awarded annually by vote of the College of STEM Honors Committee at Southeast Missouri State University to the faculty member in the college who makes outstanding contributions in the areas of Teaching, Research, and Service. October 2018

National Academic Advising Association (NACADA) Outstanding Advising Award Winner-- Faculty Advising Category. April 2018

Outstanding Faculty Academic Advisor. Awarded by Master Advisor Program at Southeast Missouri State University in recognition of excellence in academic advising. April 2018

Southeast Missouri State University Presidential Shout-Out Award for outstanding service and dedication to students and faculty at Southeast Missouri State University. April 2018

Southeast Missouri State University Student Government Association Outstanding Faculty Member Award. February 2018

Institutional Faculty/Staff of the Month. Awarded by National Residence Hall Honorary, Southeast Missouri State University, in recognition of outstanding support of the Residence Hall system on the campus of Southeast Missouri State University. January 2018

Faculty Exempli Gratia Award. Southeast Missouri State University, in recognition of contributions to the Jane Stephens Honors Program and outstanding example for the Honors community. May 2017

Honorary Member, Alpha Epsilon Delta Health Preprofessional Honor Society. April 2016

Institutional Faculty/Staff of the Month. Awarded by National Residence Hall Honorary, Southeast Missouri State University, in recognition of outstanding support of the Residence Hall system on the campus of Southeast Missouri State University. April 2016

Greek Life Professor of the Year. Awarded by Order of Omega, Southeast Missouri State University, in recognition of contributions made to the Greek community and the student learning experience as a whole. April 2015