

Keith R. McCain, Pharm.D., DABAT

Curriculum Vitae

December 2023

Office: Arkansas Poison and Drug Information Center
University of Arkansas for Medical Sciences (UAMS)
College of Pharmacy
4301 W. Markham St. #522-2
Little Rock, AR 72205
501-686-6161
Email: krmccain@uams.edu

EDUCATION

| | |
|-----------|---|
| 1996-2000 | Doctor of Pharmacy University of Arkansas for Medical Sciences College of Pharmacy Little Rock, Arkansas |
| 1993-1996 | Pre-Pharmacy studies Henderson State University Arkadelphia, Arkansas |
| 1992-1993 | General undergraduate studies University of Central Arkansas Conway, Arkansas |
| 1989-1992 | Graduate Lake Hamilton High School Percy, Arkansas |

CERTIFICATIONS

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| 2011, 2016, 2021 | Diplomate of the American Board of Applied Toxicology (DABAT), American Academy of Clinical Toxicology |
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LICENSURE

Registered Pharmacist, Arkansas #PD09212

NATIONAL PROVIDER IDENTIFIER

1598089120

FACULTY APPOINTMENT

- 2014-present Associate Professor
UAMS College of Pharmacy
Department of Pharmacy Practice
Little Rock, Arkansas
- 2003-2014 Assistant Professor
UAMS College of Pharmacy
Department of Pharmacy Practice
Little Rock, Arkansas

PROFESSIONAL EXPERIENCE

- 2000-present Clinical Toxicologist
Arkansas Poison and Drug Information Center
Little Rock, Arkansas
Howell Foster, Pharm.D., DABAT
- 2018-present Clinical Pharmacist
Option Care Health
Little Rock, Arkansas
Anne Cook, P.D.
- 2008-2018 Clinical Pharmacist
Baptist Health Home Infusion
Little Rock, Arkansas
Kimberly Young, Pharm.D., BCPS
- 2001-2008 Clinical Infusion Pharmacist
American HomePatient
Little Rock, Arkansas
Gayle Luttrell, P.D.
- 2003 Director of Pharmacy Services (interim)
American HomePatient
Little Rock, Arkansas
Lesa Cate, R.N.
- 2000-2003 Pharmacist
Drug Emporium
Little Rock, Arkansas
Karen Christian, P.D.
- 1997-2000 Poison Information Provider
Arkansas Poison and Drug Information Center
Little Rock, Arkansas
Howell Foster, Pharm.D., DABAT

TEACHING EXPERIENCE

UAMS College of Pharmacy

- 2018-present **Small Group Facilitator**, PhPr 7103 Career Orientation & Communication. Fall 2023 (3 hours) Fall 2022 (4 hours) Fall 2021 (4 hours) Fall 2020 (5 hours) Fall 2019 (5 hours) Fall 2018 (4 hours)
- 2016-present **Lecturer**, PhPr 7201 Principles of Pharmacy Practice. Concepts in parenteral sterile products and admixture. Fall 2023 (5 hours) Fall 2022 (5 hours) Fall 2021 (5 hours) Fall 2020 (4 hours) Fall 2019 (4 hours) Fall 2018 (4 hours) Fall 2017 (4 hours) Fall 2016 (4 hours)
- 2016-present **Lab Instructor**, PhPr 7201 Principles of Pharmacy Practice. Aseptic technique validation. Fall 2023 (18 hours) Fall 2022 (22.5 hours) Fall 2021 (27.5 hours) Fall 2020 (27.5 hours) Fall 2019 (18 hours) Fall 2018 (22.5 hours) Fall 2017 (12 hours), Fall 2016 (32 hours)
- 2014-present **Lecturer**, PhSc 7104 Pharmaceutics I – Parenteral – Sterile Products. Fall 2023 (4 hours) Fall 2022 (4 hours), Fall 2021 (4 hours) Fall 2020 (4 hours), Fall 2019 (4 hours) Fall 2018 (4 hours) Fall 2017 (4 hours) Fall 2016 (4 hours) Fall 2015 (4 hours) Fall 2014 (4 hours)
- 2010-present **Preceptor**, PhPr 7417 Experience – Specialty Pharmacy Practice, Toxicology. Academic year 2023-2024 (5 students) 2022-2023 (3 students) 2021-2022 (5 students) 2020-2021 (5 students) 2019-2020 (5 students) 2018-2019 (7 students), 2017-2018 (9 students) 2016-2017 (6 students), 2015-2016 (9 students) 2014-2015 (12 students) 2013-2014 (11 student), 2012-2013 (8 students) 2011-2012 (10 students) 2010-2011 (9 students).
- 2002-present **Lecturer**, PhSc 7351 Toxicology. Clinical toxicity and associated treatment of various prescription and non prescription pharmaceuticals. Spring 2023 (4 hours) Spring 2022 (6 hours) Spring 2021 (6 hours) Spring 2020 (6 hours) Spring 2019 (6 hours) Spring 2018 (6 hours) Spring 2017 (6 hours) Spring 2016 (6 hours) Spring 2015 (6 hours) Spring 2014 (7 hours) Spring 2013 (6 hours) Spring 2012 (4 hours) Spring 2011 (4 hours) Spring 2010 (6 hours) Spring 2009 (8 hours) Spring 2008 (4 hours) Spring 2007 (6 hours) Fall 2005 (4 hours) Fall 2004 (2 hours) Fall 2003 (2 hours) Fall 2002 (3 hours) Fall 2001 (2 hours)
- 2009-2015 **Lecturer**, PhPr 4454 Dispensing. Concepts in parenteral sterile products and admixture. Fall 2015 (3 hours) Fall 2014 (3 hours) Fall 2013 (3 hours) Fall 2012 (3 hours) Fall 2011 (3 hours) Fall 2010 (3 hours) Fall 2009 (2 hours)

TEACHING EXPERIENCE (cont.)

- 2009-2015 **Lab Instructor**, PhPr 4454 Dispensing. Aseptic technique validation. Fall 2015 (30 hours) Fall 2014 (32 hours) Fall (27.5 hours) Fall 2012 (24 hours), Fall 2011 (32 hours) Fall 2010 (16 hours) Fall 2009 (15.5 hours)
- 2005-2013 **Lecturer**, PhPr 5892 Problem Based Learning in Therapeutics. Clinical toxicology based therapeutic assessment and planning. Fall 2013 (2 hours) Fall 2007 (4 hours) Fall 2006 (2 hours) Fall 2005 (4 hours)
- 2009-2013 **Small Group Facilitator**, PhPr 3422 Career Orientation & Communication. (4-5 hours per fall semester)
- 2005-2008 **Small Group Facilitator**, PhPr 3423 Pharmacy Practice I. (4-5 hours per fall semester)
- 2004-2010 **Preceptor**, PhPr 6714 Experience - Direct Patient Care - Acute Care, Toxicology/Emergency Medicine. Academic year 2009-2010 (10 students) 2008-2009 (14 students) 2007-2008 (10 students) 2006-2007 (9 students) 2005-2006 (9 students) 2004-2005 (6 students)

UAMS College of Medicine

- 2011-2019 **Guest Lecturer**, Department of Emergency Medicine residency program, Medical Toxicology rotation. Novel Drugs of Abuse. 2019 (2 hours) 2017 (1 hour) 2016 (2 hours) 2015 (3 hours) 2014 (3 hours) 2013 (2 hours) 2012 (3 hours) 2011 (3 hours)

PHARMACY RESIDENT TRAINING

- 2018 Preceptor, Toxicology, Kevin Chilbert, Pharm.D., ASHP PGY-1 Baptist Health Medical Center – Little Rock
- 2017 Preceptor, Toxicology, Madison Schwartz, Pharm.D., ASHP PGY-1 Baptist Health Medical Center – Little Rock
- 2016 Preceptor, Toxicology, Qiu Min Yeo, Pharm.D., BCPS. Ministry of Health, Singapore
- 2015 Preceptor, Drug Information/Poison Control Center, Bethany Jensen, Pharm.D., ASHP PGY-1 UAMS Medical Center
- 2011-2022 **Lecturer and Small Group Leader**, UAMS College of Pharmacy Postgraduate Teaching Certificate Program Summer Seminar

GRADUATE STUDENT DISSERTATIONS ADVISORY COMMITTEE

- 2016-2019 William Hyatt, Ph.D., M.D., Pharmacology and Toxicology, UAMS College of Medicine. Dissertation: *Acute and persistent impulsive effects of the synthetic cathinone 3,4-methylenedioxypropylvalerone (MDPV)*.
- 2013-2016 Brenda Gannon, Ph.D., Interdisciplinary Toxicology, UAMS College of Medicine. Dissertation: *In vivo characterization of major 'bath salt' constituent 3,4-methylenedioxypropylvalerone (MDPV) in mice*.

RESEARCH

James LP, Moran JH, **McCain KR** "Detection of K2 and Metabolites" UAMS IRB#217584

McCain KR, et. al., "Internet Impact on Call Volume to a U.S. Regional Poison Center." UAMS IRB exempt

Day K, Bhandari NR, Payakachat N, Franks AM, **McCain KR**, Ragland D, "Knowledge, Use, and Perceptions of Electronic Cigarettes among Pregnant Women" UAMS IRB protocol #203968

Franks AM, Hawes W, Payakachat N, **McCain KR**, "Knowledge, Attitudes, and Behavior Concerning Electronic Cigarettes among Health Science Students" UAMS IRB protocol #203325.

McCain KR, et al., "Impact of the Internet on Arkansas Poison Center "Glow Stick" Call Volume" UAMS IRB exempt

James LP, Foster HR, Moran JH, **McCain KR**, "Detection of K2 and its Metabolites in Patients in Arkansas" UAMS IRB #114712.

Franks AM, Schmidt J, **McCain KR**, Fraer M, "Effect of Energy Drink Consumption on Indices of 24-Hour Ambulatory Blood Pressure" UAMS IRB protocol #109404.

Spiller HA, Foster HF, Ryan M, **McCain KR**, "Evaluation of the Long-term Effects of Pit Viper Envenomation and the Impact of Antivenin" UAMS IRB protocol #109415.

McCain KR, Griffith JR, Spiller HA, "Evaluation of Terazosin Ingestions as Reported to Three US Poison Centers" UAMS IRB protocol #79615.

Griffith JR, **McCain KR**, Spiller HA, "Retrospective Evaluation of Topiramate Overdose as Reported to Poison Centers" UAMS IRB protocol #79561.

McCain KR, Sawyer TS, Spiller HA, "Evaluation of Centrally Acting Cholinesterase Inhibitor Exposure Following Acute Overdose as Reported to US Poison Centers". UAMS IRB protocol #54665.

RESEARCH (cont.)

Spiller HA, et al., “Poison Centers Evaluation of Adverse Events Following Reported Venlafaxine Overdose”. UAMS IRB protocol #54005.

GRANT SUBMISSIONS

“Synthetic Cannabinoid Toxicity: Role of Biotransformation” Co-Investigator. National Institutes of Health, Research Project Grant (R01). 2016-2021 [**Funded**, \$2,729,025]

“K2 in Arkansas: A Translational Public Health Response to an Emerging Drug of Abuse” Co-Investigator. UAMS Center for Translational and Clinical Research, CCTR Pilot Research Award, 2011-2012. [**Funded**, \$100,000]

“Biotransformation and biological activity of abused CB1 cannabinoids in K2 Spice.” Co-Investigator. National Institutes of Health, Research Project Grant (R01). 2010. [Not funded]

HRSA American Board of Applied Toxicology training program, 2006-2007, [**Funded** \$6,900]

HRSA American Board of Applied Toxicology training program, 2005-2006, [**Funded** \$6,900]

PEER REVIEWED PUBLISHED MANUSCRIPTS

Tran N, Fantegrossi WE, **McCain KR**, Wang X, Fujiwara R. *Identification of Cytochrome P450 Enzymes Responsible for Oxidative Metabolism of Synthetic Cannabinoid (1-Hexyl-1H-Indol-3-yl)-1-naphthalenyl-methanone (JWH-019). Catalysts*. 2023; 13(6):1008.

Pinson A, Yarbrough AL, Bush JM, Cabanlong CV, Shoeib A, Jackson BK, Fukuda S, Gogoi J, Fantegrossi WE, **McCain K**, Prather PL, Fujiwara R, Radomska-Pandya A. *Metabolism, CB1 Cannabinoid Receptor Binding and in Vivo Activity of Synthetic Cannabinoid 5F-AKB48: Implications for Toxicity*. *Pharmacol Biochem Behav* 2020 August; 195: 172949

McCain KR, Jones JO, Chilbert KT, Patton AL, James LP, Moran JH. *Impaired Driving Associated with the Synthetic Cannabinoid 5f-Adb*. *J Forensic Sci Criminol* 2018 6(1):105

Bhandari NR, Day KD, Payakachat N, Franks AM, **McCain KR**, Ragland D. *Use and Risk Perception of Electronic Nicotine Delivery Systems and Tobacco in Pregnancy*. *Womens Health Issues*. 2018 May-Jun;28(3):251-257.

PEER REVIEWED PUBLISHED MANUSCRIPTS (cont.)

Patton AL, Seely KA, Yarbrough AL, Fantegrossi W, James LP, **McCain KR**, Fujiwara R, Prather PL, Moran JH, Radomska-Pandya A. *Altered metabolism of synthetic cannabinoid JWH-018 by human cytochrome P450 2C9 and variants*. *Biochem Biophys Res Commun*. 2018 Apr 6; 498(3):597-602.

Franks AM, Hawes WA, **McCain KR**, Payakachat N. *Electronic Cigarette Use, Knowledge, and Perceptions among Health Professional Students*. *Curr Pharm Teach Learn*. 2017 Nov 9(6):10003-1009.

Seely KA, Patton AL, Moran CL, Womack ML, Prather PL, Fantegrossi WE, Radomska-Pandya A, Channell KB, Smith N, **McCain KR**, James LP, Moran JH. *Forensic investigation of K2, Spice, and "bath salt" commercial preparations: A three-year study of new designer drug products containing synthetic cannabinoid, stimulant, and hallucinogenic compounds*. *Forensic Sci Int*. 2013 Dec 10; 233(1-3):416-22

Patton AL, Seely KA, Chimalakonda KC, Tran JP, Trass M, Miranda A, Fantegrossi WE, Kennedy PD, Radomska-Pandya A, **McCain KR**, James LP, Endres GW, Moran JH. *Targeted Metabolomic Approach for Assessing Human Synthetic Cannabinoid Exposure and Pharmacology*. *Anal Chem*. 2013 Oct 1;85(19):9390-9.

Patton AL, Chimalakonda KC, Moran CL, **McCain KR**, Radomska-Pandya A, James LP, Kokes C, Moran JH. *K2 Toxicity: Fatal case of psychiatric complications following AM2201 exposure*. *J Forensic Sci*. 2013 Nov;58(6):1676-80.

Franks AM, Schmidt JM, **McCain KR**, Fraer M. *Comparison of the effects of energy drink versus caffeine supplementation on indices of 24-hour ambulatory blood pressure*. *Ann Pharmacother* 2012 Feb;46(2):192-9.

McCain KR, Sawyer TS, Spiller HA. *Evaluation of centrally acting cholinesterase inhibitor exposures in adults*. *Ann Pharmacother*. 2007 Oct; 41(10):1632-7.

LETTERS

Fantegrossi WE, **McCain KR**, Moran JH, Hoffman RS. *Not Simply Synthetic THC*. *J Pediatr*. 2013 Dec; 163(6):1797-8.

NON-PEER REVIEWED PUBLISHED MANUSCRIPTS

James LJ, Moran CL, **McCain KR**, Moran JH. *K2, Summit and Spice: Fake 'Weed' Is Not So Nice*. *Medical Laboratory Observer*. April, 2011.

Dunn EB, Wolfe JJ, **McCain KR**. *4 ml BID*. *Drug Topics*. February 25, 2004.

ABSTRACTS

Tran N, Fantegrossi WE, **McCain KR**, Fujiwara R. Identification of Cytochrome P450 Enzymes Responsible for Oxidative Metabolism of Synthetic Cannabinoid (1-hexyl-1H-indoyl-3-yl)-1-naphthalenyl-methanone (JWH-019). *Am J Pharm Educ* 2022;86(5) 9168

Day K, Bhandari N, Payakachat N, Franks A, **McCain K**, Ragland D. Knowledge and Use of Electronic Cigarettes Among Pregnant Women. *J Am Pharm Assoc* 2016;52(3):e40 [abstract 121].

Foster HR, **McCain KR**, Nolte WT, Harper JR, Rossi PR, Swafford EP, Darcey QP. Internet Impact on Call Volume to a U.S. Regional Poison Center. *Clinical Toxicology* 2014;52(7):774 [abstract 203]

McCain KR, Moran JH, James LP, Foster HR. Adverse Effects and Confirmatory Testing of JWH-018 and JWH-073 Following Synthetic Cannabinoid Use. *Clinical Toxicology* 2011;49(6):519 [abstract 162].

Moran CL, Lackey FD, Patton AL, Moran JH, James LP, Fantegrossi WE, Prather PL, Radominska-Pandya A, **McCain KR**. Developing a Model Statewide Forensic Surveillance and Toxicology Testing Program for Designer Drugs. 39th Annual Symposium on Communication in a Laboratory Setting, American Society of Crime Laboratory Directors. Denver, CO. September 21, 2011.

Franks AM, Schmidt JM, **McCain KR**, Fraer M. Comparison of the effects of energy drink and caffeine supplementation on indices of 24-hour ambulatory blood pressure. *Pharmacotherapy* 2009;29(10):190e [abstract 29].

McCain KR, Griffith JRK, Spiller HA. Evaluation of Terazosin Exposures as Reported to Three U.S. Poison Centers. [abstract 116]. *Clin Toxicol (Phila)* 2007; 45(6):625

McCain KR, Sawyer TS, Spiller HA. Evaluation of Adult Centrally Acting Cholinesterase Inhibitor Exposures as Reported to US Poison Centers. [abstract 100]. *Clin Toxicol (Phila)* 2006; 44:674.

Sawyer TS, **McCain KR**, Spiller HA. Adverse Events in Pediatric Exposures to the Cholinesterase Inhibitor Class of Drugs. [abstract 95]. *Clin Toxicol (Phila)* 2006; 44:671-2

BOOK CHAPTERS

McCain KR, Foster HR: *Clinical Toxicology*. In: Sutton SS, ed. *McGraw-Hill's NAPLEX Review Guide*, 1st ed. New York: McGraw Hill; 2010. (2nd ed. 2014; 3rd ed. 2018; 4th ed. 2021)

Foster HR, **McCain KR**. *All Hazard Preparedness*. In Sutton SS, ed. *McGraw-Hill's NAPLEX Review Guide*, 1st ed. New York: McGraw Hill; 2010. (2nd ed. 2014; 3rd ed. 2018)

ADVISORY PAPERS/MEMORANDUM

McCain KR. Issues Associated with Cathinone Derivatives (aka ‘Bath Salt’). Issued to Senate Committee on Public Health, Welfare and Labor members, television and print media, and attendants of Committee Hearing. February 2, 2011.

Bates JR, Moran JH, **McCain KR.** Arkansas Department of Health Medical Alert Regarding “Bath Salts”. Issued to Healthcare Providers, Hospitals, and EMT’s of the State of Arkansas. February 1, 2011.

CONFERENCE PRESENTATIONS

Southwest Center for Pediatric Environmental Health Children’s Environmental Health Symposium, Little Rock, Arkansas, 2023. Invited Speaker: “Poisoning in Children & Adolescents.”

7th Annual Arkansas Prescription Drug Abuse Prevention Summit. Hot Springs, Arkansas, 2018. Invited Plenary Speaker: “Over-the-counter Medications.”

21st Annual Family Medicine Update. Little Rock, Arkansas, 2017. Invited Speaker: “Novel Psychoactive Substances in Arkansas, 2010-present”

Arkansas 9th Annual State Drug Recognition Expert Conference. Little Rock, Arkansas 2014. Invited Speaker: “New Trends in Recreational Drug Use, a Poison Centers’ Experience”

Arkansas Collegiate Drug Education Committee Spring Conference. Little Rock, Arkansas 2014. Invited Speaker: “The Who, What, Why & When of Novel Psychoactive Substances”

35th Annual Arkansas EMT Association EMS Conference. Hot Springs, Arkansas, 2013. Invited Speaker: Tip of the Synthetic Iceberg: K2 and Bath Salts.

Arkansas Association of Health-System Pharmacist Fall Seminar. Hot Springs, Arkansas, 2012. Invited Speaker: Psychoactive Substances in Convenience Store Clothing: The Recent Trend of Synthetic Cannabinoids (K2/Incense) and Cathinones (Bath Salts) as “Legal Highs.

Drug Enforcement Agency/Homeland Security Designer Drug Symposium. North Little Rock, Arkansas, 2012. Invited Speaker: Current Understanding of Clinical Issues Associated with “K2” and “Bath Salts”.

North American Congress of Clinical Toxicology. Washington, D.C., 2011. Platform Presentation: Adverse Effects and Confirmatory Testing of JWH-018 and JWH-073 Following Synthetic Cannabinoid Use.

73rd Annual Scientific Meeting of The College on Problems of Drug Dependence. Hollywood, Florida, 2011. Invited Symposium: Clinical aspects of K2 / Spice in substance-abusing adolescents and young adults.

CONFERENCE PRESENTATIONS (cont.)

North American Congress of Clinical Toxicology. New Orleans, Louisiana, 2007
Poster Presentation: Evaluation of Terazosin Exposures as Reported to Three U.S. Poison Centers.

North American Congress of Clinical Toxicology. San Francisco, California, 2006
Poster Presentation: Evaluation of Adult Centrally-Acting Cholinesterase Inhibitor Exposures as Reported to US Poison Centers.

North American Congress of Clinical Toxicology. San Francisco, California, 2006
Poster Presentation: Adverse Events in Pediatric Exposures to the Cholinesterase Inhibitor Class of Drugs.

PRESENTATIONS

“Applied Biology”, Lake Hamilton High School AP Biology/Chemistry, Percy, Arkansas, February 9th, 2023.

“Atypical Illicit Substances”, Arkansas Children’s Hospital Pediatric Emergency Medicine Fellowship conference, Little Rock, March 2, 2022.

“A Hodgepodge of Notions from a Middle Aged Curmudgeon”, UAMS American Pharmacist Association – Academy of Student Pharmacist, Inaugural Last Lecture Series. Little Rock, November 18, 2020.

“Unique Drug Use Trends in Arkansas”, LifeQuest of Arkansas, Little Rock, October, 16, 2019.

“Pharmacy and Medication Safety” Lake Hamilton Elementary School, Percy, Arkansas, May 21, 2018.

“Drugs of Abuse” Jefferson Regional Medical Center School of Nursing, Pine Bluff, Arkansas, April 2, 2018.

“Novel Psychoactives”, Jefferson Regional Medical Center School of Nursing, Pine Bluff, Arkansas, April 3, 2017.

“Novel Psychoactive Substances in Arkansas, a Poison Centers’ Experience and Perspective”, UAMS College of Medicine, Department of Internal Medicine Ground Rounds, Little Rock, Arkansas September 8, 2016.

“Emerging Drugs of Abuse”, Jefferson Regional Medical Center School of Nursing, Pine Bluff, Arkansas, April 11, 2016.

“Synthetic Cannabinoids: Not Simply Synthetic Marijuana”, Jefferson Regional Medical Center, Pine Bluff, Arkansas, November 19 & 20, 2015.

PRESENTATIONS (cont.)

“New Paradigms in Drugs of Abuse” PSYC 4301 Drug Abuse, University of Arkansas at Little Rock. April 22, 2015.

“Electronic Cigarettes” Arkansas Children’s Hospital/UAMS Pharmacology/Toxicology Journal Club, Little Rock Arkansas, May 22, 2014.

“Synthetic Trends in Substance Abuse” Spring professional development training, City of Faith Community Correctional Center, Little Rock, Arkansas, February 19, 2014.

“Novel Psychoactive Substances: An Alphabet Soup of Emerging Drugs of Abuse”, Arkansas Collegiate Drug Education Committee fall meeting, University of Central Arkansas. Conway, Arkansas, December 13, 2013.

“K2, Bath Salts & Beyond: Recent Trends in Psychoactive Substance Abuse”, UAMS College of Pharmacy, Continuing Pharmacy Education Program, ACPE# 0004-0000-13-374-L01-P, Little Rock, Arkansas, December 1, 2013.

“Niche Career Options” UAMS College of Pharmacy, Student Society of Health-System Pharmacy, Little Rock, Arkansas, October 15, 2013.

“Not for Human Consumption: A Review of Synthetic Cannabinoids and Cathinones” Grand Rounds, St. Bernard’s Regional Medical Center. Jonesboro, Arkansas, March 7, 2013.

“Pharmacy School and the UAMS College of Pharmacy” Pre-professional club. University of Arkansas at Monticello. Monticello, Arkansas, October 16, 2012.

“The Naked Zombie Apocalypse: A “K2” and “Bath Salt” Retrospective. UAMS College of Pharmacy Seminar Series, Little Rock, Arkansas, September 21, 2012.

Children’s Hospital Pediatric Emergency Medicine Fellows Toxicology Conference, Little Rock, Arkansas, March 26, 2011.

“KWho? History and overview of synthetic cannabinoid use/abuse” Arkansas Children’s Hospital/UAMS Pharmacology/Toxicology Journal Club, Little Rock Arkansas, June 2010.

“The Poison Center & Clinical Toxicology Practice” Pharmacy Camp, UAMS College of Pharmacy, Little Rock, Arkansas, June 2009.

“Non-toxins and Small Dose Toxins” Arkansas Children’s Hospital Pediatric Emergency Medicine Fellows Toxicology Conference, Little Rock, Arkansas, March 2009.

“The Arkansas Poison Control Center” Pharmacy Camp, UAMS College of Pharmacy, Little Rock, Arkansas, June 2008.

“Alcohol and Energy Drinks” Arkansas Children’s Hospital/UAMS Pharmacology/Toxicology Journal Club, Little Rock Arkansas, May 2008.

PRESENTATIONS (cont.)

“Pharmacy and the UAMS College of Pharmacy” Pre-Med Club, Arkansas Tech University, Russellville, Arkansas, February 2008.

“The Where, What, Why, and When of Poison Control” Nursing and Patient Care Staff, Hot Springs Rehabilitation Center, Hot Springs, Arkansas, December 2006.

“How to Become a Pharmacist; A Trusted Healthcare Professional” Pre-Med Club, Arkansas Tech University, Russellville, Arkansas, October 2006.

“Poison Prevention and Awareness” Wise Old and Wonderful group, Piney Grove United Methodist Church, Hot Springs, Arkansas, October 2006.

“Role of the Poison Specialist” Introduction to Pharmacy, UAMS College of Pharmacy, Little Rock, Arkansas, August 2005.

“Pharmaceutical Care in the Emergency Department” UAMS Department of Emergency Medicine Resident Conference, Little Rock, Arkansas, June 2004.

“The Pharmacy Profession: Transitioning from Prescription Provider to Pharmaceutical Care” Lake Hamilton High School AP Chemistry/Biology students, Percy, Arkansas February 2003.

“The Poison Center and EMS” UAMS Emergency Medical Sciences students, Arkansas Poison Control Center, Little Rock, Arkansas, October 2001.

“New Oral Agents of 1999” Area pharmacist continuing education program (ASBP approved), Stuttgart, Arkansas, October 1999.

“Asthma Care Plans” Pharmacy Staff, Arkansas Children’s Hospital, Little Rock, Arkansas, August 1999.

“Changes in University Hospital Trovafloxacin Usage” Medical, Nursing and Pharmacy Staff In-service, University Hospital, Little Rock, Arkansas, June 1999.

SCIENTIFIC COUNCIL

Arkansas Department of Health, Synthetic Cannabinoids. April-May, 2015

Arkansas Department of Health, Etizolam. June-July 2014.

Center for Drug Detection and Response, UAMS College of Medicine, Department of Pharmacology and Toxicology. Faculty member. March 2013 – 2019.

SCIENTIFIC COUNCIL (cont.)

J. Delworth, J.D., Assistant United States Attorney: Eastern District of Missouri. Synthetic cannabinoids and cathinones. April 12, 2013.

T. Acker, J.D., Deputy Prosecuting Attorney, Pulaski County, Sixth Judicial District. Synthetic cannabinoids. November 27, 2012.

J. Moran Ph.D. Branch Chief of Environmental Chemistry, Arkansas Department of Health. Phenazepam. May 2012.

Arkansas Senate Committee on Public Health, Welfare and Labor, 88th General Assembly Regular Session, 2011. Bath Salts: A Growing Drug Problem. February 2, 2011.

Arkansas Department of Health, Scientific Advisory Board. Bath Salts. January 28, 2011.

MEDIA INTERVIEWS

Boston ABC television affiliate KCVB, news story “As synthetic drugs flood into Mass. prisons, officers struggle with its effects”. February 14, 2019.

Little Rock CBS television affiliate KTHV, news story “Kratom is now illegal, but some say it is a solution for opioid addiction”. November 16, 2017.

Arkansas Times, print story “The Science of K2”. October 5, 2017.

Arkansas Times, print story “K2 in Prison: Widely Available Difficult to Detect and Potentially Deadly”. October 5, 2017.

Little Rock NBC television affiliate KARK, news story “Lethal New Opiate Spotted on Arkansas ER Patient”. June 20, 2017.

Little Rock ABC television affiliate KATV, news story “Warning about superpotent synthetic opioid ‘carfentanil’ after drug spotted at UAMS”. June 20, 2017.

Little Rock CBS television affiliate KTHV, news story “New street drug Carfentanil has law enforcement worried about overdoses, exposure”. June 20, 2017

Little Rock ABC television affiliate KATV reporter Meredith Mitchell, background and clinical insight on synthetic cannabinoids. April 23, 2015.

Little Rock radio station KARN, First News with Kevin Miller, live on-air interview “Prescription Stimulant Abuse”. December 18, 2014.

MEDIA INTERVIEWS (cont.)

Little Rock ABC television affiliate KATV, news story “Electronic Cigarette Risks”. May 15, 2014.

Arkansas Democrat Gazette reporter Tina Parker, background and clinical insight on psychoactive agent use and toxicity. September 13, 2013.

Little Rock ABC television affiliate KATV reporter Joan Early Strauss, background and clinical insight to “neurodrinks”, novel sleep aids, and energy drinks. December 4, 2012.

Little Rock ABC television affiliate KATV, news story “The New Kind of Drug Parents Need to Know About”. August 29, 2012.

Little Rock ABC television affiliate KATV, news story “Synthetic Drugs Still Sold, Person Hospitalized”. February 16, 2011.

Arkansas News Bureau, print story “Senate panel to discuss dangers of bath salts”. February 1, 2011.

Little Rock ABC television affiliate KATV, news story “‘Bath Salts’ Being Used for Legal High”. January 27, 2011.

Little Rock ABC television affiliate KATV, news story regarding the toxicity of antifreeze. March 13, 2009.

REFEREE/REVIEWER

| | |
|--------------|---|
| 2020-present | <i>Journal of the American College of Clinical Pharmacy</i> |
| 2015 | Elsevier, Inc. |
| 2011 | <i>Remington: The Science and Practice of Pharmacy, 22nd ed.</i> |
| 2008–present | <i>The Annals of Pharmacotherapy</i> |
| 2008–present | <i>the journal of Pharmacy Technology</i> |

HONORS and AWARDS

| | |
|-----------|--|
| 2012 | Inducted to Rho Chi Honor Society, Beta Iota chapter |
| 2011 | Inaugural Jonathan J. Wolfe and Donna M. Wolfe Annual Endowed Award for Faculty Excellence. Selected by UAMS College of Pharmacy Faculty and Staff |
| 2011 | Cited as an AACP Teacher of the Year, American Association of Colleges of Pharmacy |
| 2006-2007 | American Board of Applied Toxicology training program |
| 2005-2006 | American Board of Applied Toxicology training program |
| 2005 | American HomePatient Extreme Service Award |

HONORS and AWARDS (cont.)

- 2003 American HomePatient Little Rock, Most Valuable Employee of the Year
2003 American HomePatient Certificate of Excellence
2000 The SmithKline Beecham Pharmaceuticals Award for Superior Achievement in Patient Care, UAMS College of Pharmacy
1997-2000 UAMS College of Pharmacy Dean's List
1997-2000 Vice President UAMS College of Pharmacy Class of 2000

NATIONAL PROFESSIONAL SERVICE ACTIVITIES

- 2017-present Member, American Board of Applied Toxicology Exam Committee
2017 Judge, North American Congress of Clinical Toxicology 2017 Publisher Awards for best oral platform presentation & best poster or lightning oral presentation. (5 member panel)
2012-2014 Member, American Board of Applied Toxicology Examination Study Guide Committee, American Board of Applied Toxicology
2006-2014 Specialist in Poison Information Volunteer Committee, American Association of Poison Control Centers
2003-2017 American Association of Poison Control Centers Contact SPI for the Arkansas Poison and Drug Information Center

STATE PROFESSIONAL SERVICE ACTIVITIES

- 2019-2021 Member, State and Public School Life and Health Insurance Board Drug Utilization and Evaluation Committee
2013 Judge, Arkansas Association of Health System Pharmacist Fall Seminar Poster Contest
2012 Speaker, Arkansas Association of Health System Pharmacist Fall Seminar

UAMS COLLEGE OF PHARMACY SERVICE ACTIVITIES

- 2023-present Curriculum Transformation Working Group (Pharmaceutical Calculations, Pharmaceutics I & II, and Pharmacokinetics & Personalized Medicine)
2022-2023 Ad hoc Drug Information/Principles of Pharmacy Practice transformation workgroup
2020-2021 Section Leader, ACPE Self Study Structure and Organization Committee
2020 Member, Nuclear Education Online Director Search Committee
2019 Ad hoc Grievance Panel Committee
2017-present Member, Promotion & Tenure Committee
2014-2017 Representative, UAMS Academic Senate Council
2013 Section Leader, Self Study Student Standards Committee
2012-2013 Member, ACPE Self Study Student Standards Committee
2010 Chair, Ad hoc Grievance Panel Committee
2009-2011 Member, Ad hoc Promotion and Tenure Guideline Committee

UAMS COLLEGE OF PHARMACY SERVICE ACTIVITIES (cont.)

| | |
|--------------|--|
| 2008-2010 | Member, Awards and Financial Aid Committee |
| 2008-2009 | Member, Faculty Student Affairs Committee |
| 2007-present | Member, Admissions Committee |
| 2007 | Member, Student Research Committee |
| 2006-2010 | Member, Curriculum Committee |
| 2006-2007 | Member, Self Study Curriculum Committee |
| 2003-present | Mentor, P1 Doctor of Pharmacy students |
| 2003-2008 | Faculty liaison to the UAMS Department of Emergency Medicine |

UAMS DEPARTMENT OF PHARMACY PRACTICE SERVICE ACTIVITIES

| | |
|-----------|---|
| 2007-2013 | PGY-1 Pharmacy Practice Resident recitation evaluator |
| 2007-2010 | P3 Early Practice Experience mentor |
| 2003-2013 | Direct acute patient care conference leader |

ARKANSAS POISON AND DRUG INFORMATION CENTER PROFESSIONAL ACTIVITIES

| | |
|-----------|---|
| 2012 | Director, Arkansas Poison and Drug Information Center undergraduate summer internship program |
| 2000-2011 | Arkansas Poison and Drug Information Center Intern/PIP Supervisor |

PROFESSIONAL MEMBERSHIPS

American Board of Applied Toxicology
American Academy of Clinical Toxicology
American Association of Poison Control Centers
Arkansas Pharmacists Association
Arkansas Association of Health-System Pharmacists
National Home Infusion Association
Rho Chi Society – The Academic Honor Society in Pharmacy