Kristine L. Willett

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Department of BioMolecular Sciences
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EDUCATION

1993 – 1997 Texas A&M University
Ph.D. in Toxicology, Reagents Fellow
Dr. Stephen Safe, Advisor.
Thesis: Development of bioassays for polynuclear aromatic hydrocarbon contamination in the marine environment.

1989 – 1993 University of North Carolina, Chapel Hill, NC
B.A. with Honors and Distinction in Chemistry

EMPLOYMENT

2017 - Chair, Department of BioMolecular Sciences, School of Pharmacy, University of Mississippi

2013 - Professor of Pharmacology and Environmental Toxicology, BioMolecular Sciences, University of Mississippi

2006 - 2013 Associate Professor of Pharmacology, Environmental Toxicology Research Program, University of Mississippi

2000 - 2006 Assistant Professor of Pharmacology, Environmental Toxicology Research Program, University of Mississippi

1998 – 2000 RJR Leon Golberg Fellowship in Toxicology, Duke University. Dr. Richard DiGiulio, Advisor.

1997 - 1998 Dreyfus Postdoctoral Fellow in Environmental Chemistry, Indiana University. Dr. Ronald Hites, Advisor.

1993 Research Assistant, Geochemical and Environmental Research Group, Texas A&M University, Department of Geosciences.

1991 – 1992 Summer Intern, Chemical Industries Institute of Toxicology, Experimental Pathology and Toxicology Division, Teratology Section and Biochemical Toxicology Section.

1990 Professional Intern, Oak Ridge National Laboratory, Environmental Sciences Division, Biogeochemistry Section.

1987 - 1989 Summer Research Assistant, Ohio Agricultural Research and Developmental Center, Animal Science Department, Rumen Microbiology Laboratory and Laboratory for Pesticide Control and Application Technologies.

EDITORIAL BOARDS

Toxicological Sciences- Associate Editor since 2015; Deputy Editor 2020 -
Aquatic Toxicology

HONORS

UM School of Pharmacy, Faculty Service Award 2013 - 2014
UM School of Pharmacy, Distinguished Teaching Scholar, 2014 – 2017
UM Sally McDonald Barksdale Honors College Faculty Member of the Year 2016
UM School of Pharmacy, Faculty Instructional Innovation Award 2016-2017
University of Mississippi Faculty Achievement Award 2017
UM School of Pharmacy, Cumberland Pharmaceuticals Inc. Faculty Research Award 2019
American Association of Colleges of Pharmacy Graduate Education Special Interest Group Achievement Award 2020

REVIEW PANELS

National Academies Review of the EPA IRIS Handbook 2020-2021
NIH Continuous Submission Status based on Recent Substantial Service Eligible Fiscal Year 2018-19 (8 qualifying meetings: ZES1-LKB-K-S (three times); ZWA1-JAB-D-T; SIEE; ZRG1-DKUS-P-02)
NIH Continuous Submission Status based on Recent Substantial Service Eligible Fiscal Year 2017 (8 qualifying meetings: ZES1-LWJ-J-SF; ZRG1-DKUS-C-54; SIEE; EHS-TK; EHS-P3; ZES1-SET-D-C; ZRG1-DKUS-C-50; and ZES1-LKB-J-R2)
NIEHS Environmental Health Sciences Standing Review Panel Fall 2011 – 2015; P30 review 2020
NIEHS Superfund panel 2008, 2010, 2016
NIEHS Deepwater Horizon Consortia panel 2011
EPA Star panel 2005
NSF Ad hoc reviewer
Sea Grant review panels
MS Water Resources Research Institute (Advisory Board Member/Reviewer) 2014 -

PROFESSIONAL SOCIETIES

Society of Toxicology (SOT)
    Molecular and Systems Biology Specialty Section
    South Central Regional Chapter
Society of Environmental Toxicology and Chemistry (SETAC)
    Mid-South Regional Chapter
American Association of Colleges of Pharmacy
    Graduate Education Special Interest Group
Rho Chi

SOT LEADERSHIP

South Central Chapter of SOT

Member since 2000 and have served as Councilor, Secretary/Treasurer (2004-2006), VP elect – Past-President (2006-2010) and organized and hosted regional meeting at Ole Miss in 2007 and 2014.

Molecular and Systems Biology Specialty Section

Member since 1990s. Secretary/Treasurer (2007 – 2011), Junior – Senior Councilor (2011 – 2013), Presidential chain (2013-2017)

Undergraduate Education Resources Task Force

Member April 2010 – 2013

Undergraduate Education Subcommittee of the Education Committee

Member since 2013. Co-chair and chair 2015-2017

2014 Archive Vision and Change Scholars Program – NSF supported; 8 Week-Online course.

Faculty United for Toxicology Undergraduate Recruitment and Education (FUTURE)

Member 2019-2020

SOT Membership Committee

Elected 2021 -

Deepwater Horizon Response

Asked by SOT president to be part of a team of scientists to prepare the SOT Issue Statement related to the Deepwater Horizon Oil Spill. www.toxicology.org/pm/Deepwater_oil_spill.pdf - 2011-10-21 and update statement 2016.

SETAC LEADERSHIP

SETAC North America Board of Directors (2015 – 2018)

Board Liaison to North American Student Advisory Council

Board Liaison to Student Activities Committee

Mid-South SETAC Presidential Chain (2016-2017), Treasurer 2019 - present

Hosted regional chapter meeting in Oxford in May, 2017

UNIVERSITY OF MISSISSIPPI FLAGSHIP CONSTELLATIONS LEADERSHIP

Brain Wellness – Team Leader; Community Wellbeing – Steering Committee 2017 - 2019

GRANTS

Willett,K.L., and R.T. Di Giulio. Co-Principle Investigators, July 2000 – Jan. 2002. "Characterization of CYP1B1 gene activation in fish for use as a possible marker of cancer resistance." North Carolina Biotechnology Center. $53,107

Willett,K.L. Principle Investigator, March 2001 – May 2005 "Screening of environmental contaminants detected in Mississippi sediments as inducers and/or inhibitors of CYP1B1 expression in channel catfish." State Water Resources Research Program. $129,150

Willett,K.L., Principle Investigator, 2001 "CYP1B1-Dependent estrogen metabolism and oxidative stress in two related species of catfish." University of Mississippi Faculty Research Program. $5000

Slattery,M., Principle Investigator, November 2000 - April 2003 "Environmental Toxicology Congressional Initiative Environmental Signals and Sensors" CDC. Participant in Cluster Three: Chemicals, genes and development: genetic factors in susceptibility to environmental agents, specifically characterizing the role of CYP1B1 as a marker of cancer susceptibility. $97,828

Willett,K.L. and C.M. Foran, Co-Investigators, August 2001 - August 2002."Characterization of bioassays and chemical contaminants in croaker, oyster and sediments collected at two sites in the Mobile Bay National Estuary." Mobile Bay National Estuary Program. $5000

Willett,K.L. Principle Investigator, Dec. 2002 - Nov. 2003. "Characterization of flavonoids' ability to decrease CYP1B1 activity." American Association of Colleges of Pharmacy New Investigators Program. $10,000

Willett,K.L., Principle Investigator, Nov. 2003 – April 2004. "Flavonoid-mediated gene expression in human cancer cells." Mississippi Functional Genomics Network SGO. $30,000

Slattery,M., Willett, K.L. Co-PIs Nov. 2002 – October 2010. "Biosensors" NOAA-National Institute of Undersea Science and Technology. $191,675

Willett,K.L. University of Mississippi Associates' and Partners' Program. Criterion Precast Gel Electrophoresis System and Blotter 12/10/03. $942

Willett,K.L., Principle Investigator, **NIH R01 + ARRA** supplement. July 2004 – August 2010. Roles of CYP1& CYP19 in *Fundulus* Steroid & PAH Metabolism. NIEHS. $1,241,361 + $86,219 educational summer supplement.

Dasmahapatra, A., Principle Investigator, Willett, K.L., Co-PI. **NIH R03**. July 2007 – June 2009. Ethanol action in Japanese medaka: Alteration in specific gene methylation. NIAAA. $140,200

Willett, K.L, and Slattery, M. Co-PIs. Feb. 2009 – Aug 2009. YES Assay analyses of Cruise Ship Samples. SGS Environmental Services and Florida Spectrum Environmental Services. $6,750

Willett, K.L. and J. Rimoldi Co-PIs, Oct. 2009 – October 2011. "Seagrass Proteomics: Profiling and Surveillance in the Gulf of Mexico" NOAA-National Institute of Undersea Science and Technology. $100,000

Slattery, M., Principle Investigator, Gochfeld, D., Willett, K., Rimoldi, J., Boettcher, A., Co-PIs. Sept 2010 – Mar 2011. "Impacts of oil contamination to seagrass beds: Proteomic response" Northern Gulf Institute. $96,629

Willett, K.L., Principle Investigator, **NIH R03**. Apr 2010 – Mar 2012. "BaP-mediated reproductive and developmental toxicity" NIEHS. $138,916

Willett, K.L., Principle Investigator, Feb. 2009 – Sept. 2014. "Distribution, bioaccumulation and toxicity of nanosilver particles in medaka (*Oryzias latipes*)" US Army Engineering Research and Development Center. $527,919

Willett, K.L., Principle Investigator, **NIH R21**, Aug. 2011 – July. 2014. "Development of a fish model for epigenetic & multigenerational contaminant effects" NIEHS $384,650

Willett, K.L. Principle Investigator on Pilot Project, NIH P20 Pilot Project. Jan 2016 – Sept 2017. "Identifying novel cannabinoid analogues for the treatment of Dravet Syndrome" NIGMS $72,000

Willett, K.L., Principle Investigator, Intergovernmental Personnel Act Agreement with US Army Engineer ERDC. $40,100. 8/12/15 – 9/13/18.

Otts, S.S. Principle Investigator, Willett, K.L. and Green, J. Co-PIs. June 2016 – June 2017. "Reducing lead levels in Mississippi drinking water: Informing the policy debate through risk assessment and legal research" UM ORSP Investment Grant $7,000

Brooks, T. and Willett, K.L. Co-Principle Investigators. June 2016 – June 2017. "Developing an in vitro and in vivo model to screen chemotherapeutic compounds for the treatment of breast cancer" UM ORSP Investment Grant $8,156

Willett, K.L. Principle Investigator, Otts, SS and Green, J. Co-PIs. March 2017 – February 2018. "Assessing the effectiveness of community-based research strategies to analyze risk of lead contamination in public water supplies in the Mississippi Delta" Mississippi Water Resources Research Institute (WRRI) $30,185

Willett, K.L. Principle Investigator, **NIH R21**, July 2017 – June 2020. "Developmental Toxicity of Cannabidiol and Δ9-Tetrahydrocannabinol. NIDA $384,350.

Willett, K.L., Principle Investigator, NIEHS R21, Mechanisms of developmental and reproductive toxicity from preconceptional BaP exposure. – Summer Research Experiences for Students (Admin Supp) 06/01/19 – 08/16/19, $10,950.

Slattery, M. Principle Investigator, Willett, K.L., Gochfeld, D., Showalter Otts, S., Easson, G. Co-I. Abiotic and Biotic Influences on Current and Historic Distributions of Oyster Reefs. MBRACE. June 2017 – May 2019. $625,000.

Willett, K.L. Principle Investigator, **NIH R21**, December 2018 – November 2021. "Mechanisms of developmental and reproductive toxicity from preconceptional BaP exposure" NIEHS $410,954.

Otts, S.S. Principle Investigator, Surbeck, C., Co-PI, Alexander, K, Janasie, C. Willett, K.L., Team Members, Community Wellbeing Constellation Pilot Project. Helping Communities Uncover the Link between Water Quality and Health in Jackson, MS. 12/18 – 12/20. $3,560.

Gochfeld, D., Principle Investigator, Co-PIs: Willett. K.L., and Otts, S.S. Impacts of water quality on oyster development to inform oyster reef restoration and sustainability on the Mississippi Gulf Coast. MBRACE. March 2020 – February 2022. $442,942.

Majumdar, S. Principle Investigator, **NIGMS P30**, COBRE Phase III Transitional Center. 04/01/18 – 03/31/2023. Willett, K.L. Director of Pilot Project Program, Consultant of Neuropharmacology Core. $750,000 DC/year.

PUBLICATIONS

The entire list of Dr. Willett's publications can be found at:
https://www.ncbi.nlm.nih.gov/myncbi/kristine.willett.1/bibliography/public/

As of May 5, 2021: **h-index = 38** (since 2016 = 22) and **i10-index 62** (since 2016 = 38)

1) Willett, K.L., Loerch, S.C., and Willett, L.B. 1989. Effects of halogenated hydrocarbons on rumen microorganisms. *J.Veterinary Diagnostic Investigations*.1:120-123.

2) Willett, K.L., Turner, R.R and Beauchamp, J.J. 1992. Effect of chemical form of mercury on the performance of dosed soils in standard leaching protocols: EP and TCLP. *Hazardous Waste and Hazardous Materials*. 9:275-288.

3) Fister, T.F., Strossman, G.S., Willett, K.L., Odom, R.W. and Linton, R.W. 1995. *In situ* analysis of organic monolayers and their reactivity on single micrometer-sized particles by time-of-flight secondary ion mass spectrometry. *International J. of Mass Spectrometry & Ion Processes.*143:87-111.

4) Willett, K., Steinberg, M., Thomsen, J., Narasimhan, T.R., Safe, S., McDonald, S., Beatty, K. and Kennicutt, M.C. 1995. Exposure of killifish to benzo[a]pyrene: comparative metabolism,

DNA adduct formation and aryl hydrocarbon (Ah) receptor agonist activities. *Comparative Biochemistry and Physiology*. 112B:93-103.

5) Bowes, R.C., Parrish, A.R., Steinberg, M.A., Willett, K.L., Zhao,W., Savas, U., Jefcoat, C.R., Safe, S.H. and Ramos, K.S. 1996. Atypical cytochrome P-450 induction profiles in glomerular mesangial cells at the mRNA and enzyme level. *Biochemical Pharmacology.* 52:587-595.

6) McDonald, S., Willett, K., Thomsen, J., Narasimhan, T.R., Connor, K., Beatty, K., Erickson, C., and Safe, S. 1996. Sublethal detoxification responses to contaminant exposure associated with offshore production platforms. *Canadian J. Fisheries Aquatic Sciences.* 53:2606-2617.

7) Hoivik, D., Wilson, C., Wang, W., Willett, K., Barhoumi, R., Burghardt, R. and Safe, S.1997. Studies on the relationship between estrogen receptor content, glutathione S-transferase π expression and induction by 2,3,7,8-tetrachlorodibenzo-p-dioxin and drug resistance in human breast cancer cells. *Archives of Biochemistry and Biophysics.* 348:174-182.

8) Fiedler,H., Cooper, K., Bergek,S., Hjelt, M., Rappe, C., Bonner, M., Howell, F., Willett, K. and Safe, S. 1998. PCDD, PCDF, and PCB in farm-raised catfish from Southeast United States. *Chemosphere*.37:1645-1656.

9) Hoivik,D., Willett, K., Wilson, C. and Safe, S. 1997. Estrogen does not modulate 2,3,7,8-tetrachlorodibenzo-p-dioxin mediated effects in MCF-7 and Hepa 1c1c7cells. *Journal of Biological Chemistry*. 272:30270-30274.

10) Willett,K.L., Gardinali, P., Sericano, J., Wade, T. and Safe, S.H. 1997.Characterization of the H4IIE rat hepatoma cell bioassay for the evaluation of environmental samples containing polynuclear aromatic hydrocarbons (PAHs). *Archives of Environmental Contamination and Toxicology*. 32:442-448.

11) Willett,K.L., McDonald, S.J., Steinberg, M.A., Beatty, K.B., Kennicutt, M.C. and Safe,S.H. 1997. Biomarker sensitivity for polynuclear aromatic hydrocarbon contamination in two marine fish species collected in Galveston Bay, Texas. *Environmental Toxicology and Chemistry.* 16:1472-1479.

12) Willett,K.L., Randerath, K., Zhou, G-D. and Safe, S.H. 1998. Inhibition of CYP1A1activities by the PAH fluoranthene. *Biochemical Pharmacology*. 55:831-839.

13) Willett,K.L., Ulrich, E.M. and Hites, R.A. 1998. Differential toxicity and environmental fates of hexachlorocyclohexane isomers. *Environmental Science and Technology*. 32:2197-2207.

14) Willett,K.L., Wilson, C., Thomsen, J. and Porter, W. 1999. Evidence for and against the presence of polynuclear aromatic hydrocarbon and 2,3,7,8-tetrachloro-p-dioxin binding proteins in marine mussels. *Aquatic Toxicology*. 48:51-64.

15) Willett,K.L., and Hites, R.A. 2000. Chemical actinometry: Using o-nitrobenzaldehyde to measure lamp intensity in photochemical experiments. *Journal of Chemical Education.* 77:900-902.

16) Willett,K.L., Gardinali, P.R., Lienesch, L.A. and Di Giulio, R.T. 2000. Comparative metabolism and excretion of benzo(a)pyrene in two species of Ictalurid catfish. *Toxicological Sciences*. 58:68-76.

17) Ulrich,E.M., Willett, K.L., Caperell-Grant, A., Bigsby, R.M. and Hites, R.A. 2001.Understanding enantioselective processes: A laboratory rat model for α-hexachlorocyclohexane (α-HCH) accumulation. *Environmental Science and Technology*. 35:1604-1609.

18) Willett,K.L., Lienesch, L.A. and Di Giulio, R.T. 2001. No detectable DNA excision repair in UV-exposed hepatocytes from two species catfish. *Comparative Biochemistry and Physiology.* 128C:349-358.

19) Willett,K.L., Wassenberg, D., Lienesch, L.A., Reichert, W. and Di Giulio, R.T. 2001. *In vivo* and *in vitro* inhibition of CYP1A-dependent activity in *Fundulus heteroclitus* by the polynuclear aromatic hydrocarbon (PAH) fluoranthene. *Toxicology and Applied Pharmacology*.177:264-271.

20) Zhang,L., Khan, I.A., Willett, K.L., Foran, C.M. 2003. *In vivo* effects of black cohosh and genistein on estrogenic activity and lipid peroxidation in Japanese medaka (*Oryzias latipes*). *Journal of Herbal Pharmacotherapy*. 3(3):33-50.

21) Contractor,R., Foran, C.M., Li, S., and Willett, K.L. 2004. Evidence of sex and tissue specific promoter methylation and the potential for ethinylestradiol-induced changes in Japanese medaka (*Oryzias latipes*) estrogen receptor and aromatase genes. *Journal of Toxicology and Environmental Health* 67A:1-22.

22) Annavarapu,S., Foran, C.M., Gardinali, P., Metzger, C., and Willett, K.L. 2004. Comparison of two sites in Mobile Bay using *in vivo* biomarkers in largemouth bass, sediment bioassays, and sediment contaminant analysis. *Archives of Environmental Contamination and Toxicology.* 46:502-510.

23) Butala,H., Metzger, C., Rimoldi, J., and Willett, K.L., 2004. Microsomal estrogen metabolism in channel catfish. *Marine Environmental Research*. 58:489-494.

24) Willett,K.L. and Bouldin, A.S., 2004. Development and assessment of an online elective toxicology course. *American Journal of Pharmaceutical Education*.68 (#57):1-9.

25) Willett,K.L., Roth, R.A., and Walker, L. 2004. Workshop overview: Hepatotoxicity assessment for botanical dietary supplements. *Toxicological Sciences*. 79:4-9.

26) Tabanca,N., Khan, S.I., Bedir, E., Annavarapu, S., Willett, K.L., Khan, I.A., Kirimer,N., and Baser, K.H.C. 2004. Estrogenic activity of isolated compounds and essential oils of *Pimpinella* species from Turkey, Evaluated using a recombinant yeast screen. *PlantaMedica*. 70:728-735.

27) Chaudhary,A.M. and Willett, K.L. 2006. Inhibition of human cytochrome CYP1 enzymes by flavonoids of St. John's wort. *Toxicology*. 217:194-205.

28) Patel,M.R., Scheffler, B.E., and Willett, K.L. 2006. Effects of benzo(a)pyrene exposure on killifish (*Fundulus heteroclitus)* aromatase activities and mRNA. *Aquatic Toxicology*. 77:267-278.

29) Willett, K.L., Ganesan, S., Patel, M., Metzger, C.M., Quiniou, S., Waldbieser, G., Scheffler, B. 2006. *In vivo* and *in vitro* CYP1B mRNA expression in channel catfish. *Marine Environmental Research.* 62: S332-S336.

30) Zhu, N., Lightsey, D., Foroozesh, M., Alworth, W., Chaudhary, A., Willett, K.L., and Stevens, C.L.K. 2006. Naphthoflavone propargyl ether inhibitors of cytochrome P450. *Journal of Chemical Crystallography*. Journal of Chemical Crystallography. 36:289-296.

31) Rao, K.V., Donia, MS., Yousaf, M., Reddy, M.K., Martin-Aparicio, E., Garcia-Palomero, E., Alonso, D., Martinez, A., Medina, M., Franzblau, S.G., Tekwani, B.L., Khan, S.I., Wahyuono, S., Willett, K.L., and Hamann, M.T., 2006. New manzamine B, E- and ircinal A related alkaloids from an Indonesian *Acanthostrongylophora* sponge and their activity against infectious, tropical parasitic and alzheimer's diseases. *Journal of Natural Products.* 69:1034-1040.

32) Wang, L., Scheffler, B.E. and Willett, K.L. 2006. CYP1C1 messenger RNA expression is inducible by benzo(a)pyrene in *Fundulus heteroclitus* embryos and adults. *Toxicological Sciences*. 93:331-340.

33) Chaudhary, A., Pechan, T., and Willett, K.L. 2007. Differential protein expression of peroxiredoxin I and II by benzo(a)pyrene and quercetin treatment in 22 Rv1 and PrEC prostate cell lines. *Toxicology and Applied Pharmacology*. 220:197-210.

34) Dong, W., and Willett, K.L. 2008. Local expression of CYP19A1 and CYP19A2 in developing and adult killifish (*Fundulus heteroclitus*). *General and Comparative Endocrinology*. 155: 307-317.

35) Zhu, S., Li, L., Thorton, C., Carvalho, P., Avery, B.A., and Willett, K.L. 2008. Simultaneous determination of benzo[a]pyrene and eight of its metabolites in *Fundulus heteroclitus* bile using ultra performance liquid chromatography with mass spectrometry. *Journal of Chromatography B.* 863:141-149.

36) Dong, W., Wang, L., Thornton, C., Scheffler, B.E., and Willett, K.L., 2008. Benzo(a)pyrene decreases brain and ovarian aromatase mRNA expression. *Aquatic Toxicology*. 88: 289-300.

37) Wills, L.P., Zhu, S., Willett, K.L., and Di Giulio, R.T. 2009. Effect of CYP1A inhibition on the biotransformation of benzo(a)pyrene in two populations of *Fundulus heteroclitus* with different exposure histories. *Aquatic Toxicology*. 92:195-201.

38) Hu, Y, Willett, K.L., Khan, I.A., Scheffler, B.E., and Dasmahapatra, A.K. 2009. Ethanol disrupts chondrification of the neurocranial cartilages in medaka embryos without affecting

aldehyde dehydrogenase 1A2 (Aldh1A2) promoter methylation. *Comparative Biochemistry and Physiology Part C.* 150(4):495-502.

39) Kasimsetty, S.G., Bialonska, D., Reddy, M.K., Thornton, C., Willett, K.L., and Ferreira, D. 2009. Effects of pomegranate chemical constituents/intestinal microbial metabolites on CYP1B1 in 22Rv1 prostate cancer cells. *Journal of Agricultural and Food Chemistry*. 57(22):10636-10644.

40) Singh, S.P., Azua, A., Chaudhary, A., Khan, S., Willett, K.L., and Gardinali, P. 2010. Occurrence and distribution of steroids, hormones and selected pharmaceuticals in South Florida coastal environments. *Ecotoxicology*. 19:338-350.

41) Fang, X., Dong, W., Thornton, C., Scheffler, B., and Willett, K.L. 2010. Benzo(a)pyrene-induced glycine *N*-methyltransferase messenger RNA expression in *Fundulus heteroclitus* embryos. *Marine Environmental Research*. 69: S74-76.

42) Weston, J., Warren, C., Chaudhary, A., Emerson, B., Argote, K., Khan, S., and Willett, K.L. 2010. Use of bioassays and sediment PAH concentrations to predict toxicity at coastal Hurricane Katrina impacted sites. *Environmental Toxicology and Chemistry*. 29(7):1409-1418.

43) Scornaienchi, M.L., Thornton, C., Willett, K.L., and Wilson, J.Y. 2010. Cytochrome P450 mediated 17β-estradiol metabolism in zebrafish (*Danio rerio*) using a heterologous expression system. *Journal of Endocrinology*. 206: 317-325.

44) Wang, L., Camus, A., Thornton, C., and Willett, K.L. 2010. Role of CYP1C1 and CYP1A in PAH-induced carcinogenesis in a fish model: *Fundulus heteroclitus*. *Aquatic Toxicology*. 99: 439-447.

45) Fang, X., Dong, W., Thornton, C., and Willett, K.L. 2010. Benzo[a]pyrene increases glycine N-methyltransferase mRNA expression but decreases enzyme activity in *Fundulus heteroclitus* embryos. *Aquatic Toxicology* 98:130-138.

46) Scorniaenchi, M.L., Thornton, C., Willett, K.L., and Wilson, J.Y. 2010. Functional differences in the cytochrome P450 1 family enzymes from zebrafish (*Danio rerio*) using heterologously expressed proteins. *Archives of Biochemistry and Biophysics*. 502:17-22.

47) Wills, L.P., Jung, D., Koehrn, K., Zhu, S., Willett, K.L., Hinton, D.E. and Di Giulio, R.T. 2010. Comparative chronic liver toxicity of benzo[a]pyrene in two populations of the Atlantic killifish (*Fundulus heteroclitus*) with different exposure histories. *Environmental Health Perspectives*. 118: 1376-1381.

48) Duzgoren-Aydin, N.S., Avula, B., Willett, K.L. and Khan, I.A. 2011. Determination of solid-bound trace element concentrations using collision/reaction cell inductively coupled plasma-mass spectrometry. *Environmental Monitoring and Assessment*. 172: 51-66.

49) Warren, C., Duzgoren-Aydin, N.S., Weston, J., and Willett, K.L. 2012. Trace element concentration in surface estuarine and marine sediments along the Mississippi gulf coast following Hurricane Katrina. *Environmental Monitoring and Assessment*. 184: 1107 – 1119.

50) Master, Z., Chaudhary, A., Sutter, T.R., and Willett, K.L. 2012. Effects of flavonoids on CYP1 expression in RL95-2 endometrial carcinoma cells. *Food Chemistry*. 133: 912-922.

51) Slattery, M., Ankisetty, S., Corrales, J., Marsh-Hunkin, K.E., Gochfeld, D.J., Willett, K.L., and Rimoldi, J.M., 2012. Marine Proteomics: A critical assessment of an emerging technology. *Journal of Natural Products*. 75: 1833-1877.

52) Karami, A., Syed, M.A., Christianus, A., Willett, K.L., Mazzeo, J.R., Courtenay, S.C., 2012. Fluorescent aromatic compound (FAC) recovery from fish bile by acetone. *Journal of Hazardous Materials*. 223-224:84-93.

53) Carmichael, R.H., Jones, A.L, Patterson, H.K., Walton,W.C., Pérez-Huerta, A., Overton, E.B., Dailey, M., and Willett,K.L., 2012. Assimilation of oil-derived elements by oysters due to the Deepwater Horizon oil spill. *Environmental Science and Technology*. 46, 12787-12795.

54) Fang, X., Thornton, C., Scheffler, B.E., and Willett, K.L., 2013. Benzo[a]pyrene decreases global and gene specific DNA methylation during zebrafish development. *Environmental Toxicology and Pharmacology*. 36, 40-50.

55) Fang, X., Corrales, J., Thornton, C., Scheffler, B.E., and Willett, K.L., 2013. Global and gene specific DNA methylation changes during zebrafish development. *Comparative Biochemistry and Physiology, Part B*. 166, 99-108.

56) Corrales, J., Fang, X., Thornton, C., Mei, W., Barbazuk, W.B., Duke, M., Scheffler, B.E. and Willett, K.L., 2014. Effects on specific promoter DNA methylation in zebrafish embryos and larvae following benzo[a]pyrene exposure. *Comparative Biochemistry and Physiology, Part C*. 163, 37-46.

57) Corrales, J., Thornton, C., White, M., and Willett, K.L., 2014. Multigenerational effects of benzo[a]pyrene exposure on survival and developmental deformities in zebrafish larvae. *Aquatic Toxicology*. 148, 16-26.

58) Booc, F., Thornton, C., Lister, A., MacLatchy, D., Willett, K.L., 2014. Benzo[a]pyrene effects on reproductive endpoints in *Fundulus heteroclitus. Toxicological Sciences*. 140, 73-82.

59) Hawkins, A.D., Bednar, A.J., Cizdziel, J.V., Bu, K., Steevens, J.A., and Willett, K.L., 2014. Identification of silver nanoparticles in *Pimephales promelas* gastrointestinal tract and gill tissues using flow field flow fractionation ICP-MS. *RSC Advances*. 4, 41277-41280.

60) Hawkins, A.D., Thornton, C., Steevens, J.A., and Willett, K.L., 2014. Alteration in *Pimephales promelas* mucus production after exposure to nanosilver or silver nitrate. *Environmental Toxicology and Chemistry*.33, 2869-2872.

61) Hawkins, A.D., Thornton, C., Kennedy, A., Bu, K., Cizdziel, J., Jones, B., Willett, K.L.,

2015. Gill histopathologies following exposure to nanosilver or silver nitrate. *Journal of Toxicology and Environmental Health, Part A.* 78,301-315.

62) Garcia-Reyero, N., Thornton, C., Hawkins, A.D., Escalon, L., Kennedy, A. J., Steevens, J.A., Willett, K.L., 2015. Unique particle effects in fathead minnow gill gene expression and mucus production following exposure to nanosilver and silver nitrate. *Environmental Nanotechnology, Monitoring and Management*. 4: 1-9.

63) Fang X, Corrales J, Thornton C, Clerk T, Scheffler BE, and Willett KL., 2015. Transcriptomic changes in zebrafish embryos and larvae following benzo[a]pyrene exposure. *Toxicological Sciences*. 146(2):395-411.

64) Wolff S, Brown G, Chen J, Meals K, Thornton C, Brewer S, Cizdziel JV, Willett KL. 2016. Mercury concentrations in fish from three major lakes in north Mississippi: Spatial and temporal differences and human health risk assessment. *J Toxicol Environ Health A*. 79(20):894-904.

65) Alharthy, KM., Albaqami, FF., Thornton, C., Corrales,J., and Willett, KL., 2017. Mechanistic evaluation of benzo[a]pyrene's developmental toxicities mediated by reduced Cyp19a1b activity. *Toxicological Sciences*. 155(1):135-147.

66) Carty, D., Thornton, C., Gledhill, J. and Willett, KL., 2018. Developmental effects of cannabidiol and Δ9-tetrahydrocannabinol in zebrafish. *Toxicological Sciences.* 162(1):137-145.

67) Carty, DR., Miller, ZS, Thornton, C., Pandelides, Z., Kutchma, ML. Willett, K.L., 2019. Multigenerational consequences of early-life cannabinoid exposure in zebrafish. *Toxicology and Applied Pharmacology*. 364: 133-143.

68) Dickson, K., Janasie, C., Willett, K.L. 2019. Cannabinoid conundrum: A study of marijuana and hemp legality in the United States. *Arizona Journal of Environmental Law & Policy*. 10(1):132-150.

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BOOK CHAPTERS

1) Marsh, K.E., Willett, K.L., Foran, C.M. and Brooks, B.W. 2003. Aquatic Resources and Human Health. Chapter 3. In: *A Web of Connections: Achieving Sustainable Freshwater Systems*. Island Press. Eds: Holland, MM., Blood, E. and Shaffer, L.R. pp 65-83.

2) Schlenk, D., Celander, M., Gallagher, E.P., George, S., James, M., Kullman, S.W., van den Hurk, P., Willett, K.L. 2008. Biotransformation in Fishes - Chapter 4. In: *The Toxicology of Fishes*. CRC Press. Eds: R.T. DiGiulio and D.E. Hinton. pp 153-234

3) Willett, K.L. and Foran, C.M. Ecological and Health Risks at Low Doses. IN *Encyclopedia of Sustainability Science and Technology*, Springer. Editor-in-chief: Meyers, Robert A. 1st Edition., 2012, 10500 p. 2500 illus. in color. In 12 volumes, not available separately $8100. Hardcover, ISBN 978-0-387-89469-0

4) Willett, K.L. Considering Epigenetics in Adverse Outcome Pathways. Chapter 6. IN *Systems Biology Approaches for Advancing Adverse Outcome Pathways for Risk Assessment*. Springer. Eds: N. Garcia-Reyero and C. Murphy. ISBN 9783319660820

BOOK EDITOR

Willett, K.L and Aluru, N. *The Toxicology of Fishes*. 2nd Edition. CRC Press. In progress for 2022.

SCIENTIFIC MEETINGS TYPICALLY ATTENDED

Society of Toxicology, Society for Environmental Toxicology and Chemistry, American Association of Colleges of Pharmacy, Aquatic Animal Models for Human Disease, Pollutant Responses in Marine Organisms (list of all presentations available on request).

TEACHING EXPERIENCE

University of Mississippi (2000 – 2021)

PHCL381: **Introduction to Toxicology**, Undergraduate Pharmacy and Forensic Chemistry students. 3 credits. Traditional and Online Format. (12 semesters)

PHCL675: **Principles of Pharmacology and Toxicology**, Graduate Pharmacology students. 4 credits. (10 semesters)

BMS767: **Advanced Topics in Toxicology**, Graduate Pharmacology and Environmental Toxicology students. 2 credits. (4 semesters).

PHCL 347/547: **Environmental Toxicology**, Undergraduate Pharmacy and Graduate Environmental Toxicology students. 2 credits. (8 semesters)

MEDC317: **Pharmacogenetics and Pharmacoimmunology**. Co-instructor, taught 1/3rd of course. P3 Professional Pharmacy students. 3 credits. (2 semesters)

HON 101 and 102: **Freshman Seminar**, Undergraduate Honors students. 6 credits. (7 semesters each)

HON391 and 392: **Conversations in Environmental Health,** Undergraduate Honors students. 1 credit (3 semesters each)

HON420: **Honors Experiential Learning, Drinking Water Quality in Mississippi**, 3 credits (1 semester)

PHCL651: **Directed Studies in Pharmacology and Toxicology**, Graduate Pharmacology students. 1-2 credit.

PHCL541: **Problems in Pharmacology**, Undergraduate and Graduate independent study/research students. 2 credits. (most semesters)

Guest Lectures in PHCL676: Principles of Pharmacology and Toxicology II, GE460: Waste Management, CHEM105: General Chemistry, PHCY603 Genitourinary and Reproductive Health; PHCY606: Population and Rural Health,

Duke University

ENV212: Environmental Toxicology, Instructor of Record. Masters and PhD students in Nicholas School of the Environment. Fall 1999

GRADUATE STUDENT ADVISING AND COMMITTEES

Directed Masters Theses (n=9)

#	Name	Title	Defense	Dept/Division
1	**Rooha Contractor**	Analysis of estrogen receptor and aromatase genes in Japanese medaka: Characterization of promoter methylation	12/02	Pharmacology
2	**Luling Zhang**	Biological activity of natural product components in Japanese medaka (*Oryzias latipes*): determining estrogenicity and antioxidative potential	12/02	Pharmacology
3	**Srinivas Annavarapu**	Use of bioassays to determine receptor-mediated induction of cytochrome P4501A and estrogenic activity in sediment and natural product samples	07/03	Pharmacology
4	**Monali Master Patel**	Effects of polycyclic aromatic hydrocarbons on CYP19 and CYP1B expression in teleosts	11/03	Pharmacology
5	**Zankana Master**	Effects of flavonoids on CYP1 expression in RL95-2 endometrial carcinoma cells	12/04	Pharmacology
6	**Crystal Warren**	Monitoring Effects of Hurricane Katrina to the Mississippi Gulf Coast	07/09	Environmental Toxicology
7	**Megan Dailey**	Temporal and Spatial Assessment of PAHs in Water, Sediment, and Oysters as a result of the Deepwater Horizon Oil Spill	06/12	Environmental Toxicology
8	**Frank Booc**	Benzo[a]pyrene effects on *Fundulus heteroclitus* reproductive endpoints	07/13	Environmental Toxicology
9	**James Gledhill**	The effects of hypoxia and freshwater intrusion on the Eastern oyster (*Crassostrea virginica*)	11/19	Environmental Toxicology

Masters Committee Service (n = 13)

#	Name	Advisor	Date	Dept/Division
1	**Harshala Butala**	Ajit Sadana	07/03	Engineering
2	**Rebecca Rummer**	Christy Foran	03/04	Biology
3	**Ranjita Kokje**	Robert Speth	11/06	Pharmacology
4	**Surinder Kaur**	Robert Speth	04/06	Pharmacology
5	**Xueqing Wang**	Asok Dasmahapatra	04/06	Pharmacology
6	**Jaijia Wang**	Rae Matsumoto	10/07	Pharmacology
7	**Yuhui Hu**	Asok Dasmahapatra	07/09	Environmental Toxicology
8	**Felicia Rabey**	Robert Speth	09/09	Pharmacology
9	**Lindsay Krentz O'Donahue**	Marc Slattery	03/10	Environmental Toxicology

10	**Suzanne Seale**	Abir El-alfy	06/10	Environmental Toxicology
11	**Kimberly Foster**	John Rimoldi	11/12	Environmental Toxicology
12	**Riaz Mohammad**	Joshua Sharp	05/19	Pharmacology
13	**Ann Farley Barnett**	Deb Gochfeld, Marc Slattery	11/19	Environmental Toxicology

Directed Ph.D. Dissertations (n= 9)

#	Name	Title	Defense	Dept/Division
1	**Amit Chaudhary**	Mechanistic analysis of cancer chemopreventative flavonoids and benzo[a]pyrene in prostate cancer cells	12/06	Pharmacology
2	**Shiqian Zhu**	The roles of cytochrome P450s in the toxicity of polycyclic aromatic hydrocarbons (PAHs)	11/07	Pharmacology
3	**Lu Wang**	CYP1 expression in *Fundulus heteroclitus* following benzo(a)pyrene (BaP) exposure	07/09	Pharmacology
4	**Xiefan Fang**	Epigenetic effects of benzo[a]pyrene in *Fundulus heteroclitus* and *Danio rerio*.	07/11	Pharmacology
5	**Adam Hawkins**	Effects of nanosilver and silver nitrate exposure on fathead minnows (*Pimephales promelas*) and zebrafish (*Danio rerio*)	06/14	Environmental Toxicology
6	**Khalid Alharthy**	Physiological consequences of decreased aromatase activity	07/15	Pharmacology
7	**Faisal Albaqami**	Effects of saffron constituents on prostate cancer in vitro and in vivo models	03/16	Environmental Toxicology
8	**Dennis Carty**	Characterizing the developmental and reproductive toxicities of cannabidiol and delta9-tetrahydrocannabinol	11/17	Environmental Toxicology
9	**Trisha Dhawan**	Developing zebrafish as an in vivo model to screen compounds for anti-cancer activity in human breast cancer	08/18	Pharmacology

PhD. Committee Service (n = 25)

#	Name	Advisor	Date	Dept/Division
1	**Duane Hugget**	Wade Waters	06/01	Pharmacology
2	**Anand Ramakrishnan**	Ajit Sadana	07/02	Engineering
3	**Kenosha Hobson**	Susan Petigo	09/03	Chemistry
4	**Francis Tukov**	John Matthews	11/03	Pharmacology
5	**Erick Bourassa**	Robert Speth	07/08	Pharmacology
6	**Xu Zhang**	Randy Wadkins	12/08	Chemistry
7	**Sashi Kasimsetty**	Daniel Ferreira	09/09	Pharmacognosy
8	**Minghui Wu**	Asok Dasmahapatra	06/10	Pharmacology
9	**Mona Heron**	Asok Dasmahapatra	07/13	Pharmacology
10	**Cole Easson**	Marc Slattery, Deb Gochfeld	08/13	Environmental Toxicology
11	**Tahmineh Tabrizian**	Zia Madar	11/14	Pharmacology
12	**Hassan Madkhali**	Zia Madar	04/15	Pharmacology
13	**Rhianna K. Morgan**	Tracy Brooks	03/17	Pharmacology
14	**Harshul Batra**	Tracy Brooks	07/17	Pharmacology
15	**Jagrati Jain**	Babu Tekwani	07/17	Pharmacology
16	**Taisen Hao**	Tracy Brooks	07/17	Pharmacology
17	**Surendra Jain**	Babu Tekwani	11/17	Pharmacology
18	**Erik Hodges**	Nicole Ashpole	05/20	Pharmacology
19	**Disha Prabhu**	Nicole Ashpole	05/20	Pharmacology
20	**Vimal Sharma**	Ikhlas Khan	07/20	Pharmacognosy
21	**Hao Lia**	Joshua Sharp		Pharmacology
22	**Salahuddin Mohammed**	Jason Paris		Pharmacology
23	**Alaa Qrareya**	Jason Paris		Pharmacology
24	**Amelia Clayshulte**	Marc Slattery		Environmental Toxicology
25	**Rabina Shrestha**	Josh Bloomekatz		Biology

POSTDOCTORAL TRAINEES (n = 5)

#	Name	Dates at UM	Current Employment
1	**Wu Dong**	2005 - 09	Professor Inner Mongolia University
2	**Jone Corrales**	2010 - 13	Biologist at US EPA in Washington DC
3	**Nurdan Duzgoren-Aydin**	2009 - 10	Associate Provost for Academic Affairs, New Jersey City University
4	**Zacharias Pandelides**	2018 -	
5	**Jessica Pruett**	2020 -	

HIGH SCHOOL STUDENT MENTORING (n = 9)

#	Name	Program	Date
1	**Diana Kahle**	MS School Math & Science	Summer 2001
2	**Hallie Freyaldenhoven**	MS School Math & Science	Summer 2006
3	**Sarah Castle**	Lafayette HS - ARISE	Summer 2015
4	**Tristan Dailey**	MS School Math & Science - ARISE	Summer 2016
5	**Kayci Kimmons**	MS School Math & Science - ARISE	Summer 2017
6	**Alexus Weekley**	Lafayette HS - ARISE	Summer 2017
7	**Ebony Eddins**	Southaven HS - ARISE	Summer 2018
8	**Carissa Strum**	Oxford HS – ARISE	Summer 2019
9	**Anh-Thu Le**	Oxford HS - ARISE	Summer 2021

UNDERGRADUATE STUDENT MENTORING (n = 56)

#	Name	Program	Date
1	**Jason Hudson**	UM Forensic Chemistry	2001-2002
2	**LaDiedra Jackson**	SRIU, Biology major MVSU	Summer 2003
3	**Scharri Ezell**	McNair, Chemistry major Tougaloo	Summer 2004
4	**Kimberly Jefferson**	SRIU, Biology major MVSU	Summer 2004
5	**Dolaclisha Ross**	UM Forensic Chemistry	Fall 2004
6	**Wesley Bowen**	UM Forensic Chemistry	Fall 2004
7	**Deborah Leslie**	UM Forensic Chemistry	Fall 2005
8	**Beth Emerson**	UM Forensic Chemistry	Spring 2006
9	**Jacqueline Washington**	UM Forensic Chemistry	Spring 2006
10	**Anna Marie Hailey**	UM Forensic Chemistry	Spring 2007
11	**Claire Rogers**	UM Forensic Chemistry - **Honors**	2006-2007
12	**Adrienne Wells**	McNair REO, Biol major Tougaloo	Summer 2009
13	**Christina Schmalz Pryor**	UM Forensic Chemistry	Spring 2009
14	**Danielle Nordurf**	UM Chemistry - **Honors**	2010 - 2011
15	**Catherine Freeland**	Hanover College	Summer 2011
16	**Mallory White**	UM Pharmacy - **Honors**	2011-2014
17	**Kate Mislan**	UM Pharmacy	Summer 2012
18	**Will Guyton**	UM Forensic Chemistry	2013-2014
19	**Terika Tillman**	McNair, Chemistry major Tougaloo	Summer 2013
20	**Kristen Dickerson**	UM Forensic Chemistry	Spring 2014
21	**Jenn Shore**	UM Forensic Chemistry	Spring 2014
22	**Tamara King**	UM Forensic Chemistry	2014
23	**Autumn Burkett**	UM Forensic Chemistry	2014
24	**Stacy Wolff**	UM Forensic Chemistry - **Honors**	2013 - 2014
25	**Natalia Ribeiro-Santos**	Brazilian Pharmacy Exchange	2013 - 2014
26	**Nateasha Carter**	McNair, Biology major Tougaloo	Summer 2015
27	**Kayla Frost**	UM Chemistry	2015 - 2016

28	**James-Roland Markos**	UM Biochemistry, COBRE SURP	Summer 2016
29	**Mary Kathryn Pearson**	UM Pharmacy - **Honors**	Summer 2016
30	**James Gledhill**	UM Chemistry	2016-2017
31	**Collin Dietrich**	UM Exercise Science - **Honors**	2016-2017
32	**Patricia Ward**	UM Chemistry	Spring 2017
33	**Alex Fan**	UM Pharmacy, SOP Research Fellow	Summer 2017
34	**Trisha Lipson**	UM Biochemistry - **Honors**	2017 - 2018
35	**Ashten Anderson**	UM Pharmacy - **Honors**	2017 - 2018
36	**Jessica Haig**	UM Forensic Chemistry	2017 - 2018
37	**Elizabeth Thompson**	UM Chemistry	2017 – 2018
38	**Alexandra Slocum**	UM Forensic Chemistry	2017 - 2018
39	**Marissa Kutchma**	UM Biology/Neuroscience - **Honors**	2017 - 2019
40	**Ryan Cox**	UM Forensic Chemistry	Spring 2018
41	**Liza Almand**	UM Biology - **Honors**	2018 - 2019
42	**Kennedy Dickson**	UM Forensic Chemistry - **Honors**	2018- 2020
43	**Kelle Thigpen**	UM Pharmacy – NIEHS REU	Summer 2019
44	**Takaija Smith**	UM Biology – NIEHS REU	Summer 2019
45	**Bailey Westling**	UM Biology REU	Summer 2019
46	**Haley Watts**	UM Biology - **Honors**	2019 - 2021
47	**Mary Beth Gillespie**	UM Engineering - **Honors**	2019 - 2021
48	**Kayla Lovitt**	UM Biology - **Honors**	2019 - 2020
49	**William Farmer**	UM Biochemistry - **Honors**	2020 - 2021
50	**Jayci Keylon**	UM Pharmacy - **Honors**	2019 -
51	**Ashton Custer**	UM Chemistry	2020 -
52	**Victoria Jackson**	UM Biochemistry - **Honors**	2020 -
53	**Megha Patel**	UM Biology - **Honors**	2020 -
54	**Kayci Kimmons**	UM Biology - **Honors**	2020 -
55	**Khamaria Yelder-Anderson**	McNair REO, Biol major Tougaloo	Summer 2021
56	**Caroline Sturgis**	UM Pharmacy - **Honors**	2021 -

TRAINEE AWARDS

Awards that my University of Mississippi (Under*) Graduate Trainees have earned:

Harshala Butala, 3rd Place Platform Award, 2002 Mid-South SETAC Annual Meeting.

Rooha Contractor, 1st Place Travel Award to National Meeting, 2002 Mid-South SETAC Annual Meeting.

Monali Patel, 3rd place Poster Award, 2003 Mid-South SETAC Annual Meeting.

Srinivas Annavarapu, 1st Place Platform Award, 2003 Mid-South SETAC Annual Meeting.

Zankhana Master, Poster Presentation Award, 2004 SEPS Regional Meeting.

Amit Chaudhary, Best Poster Presentation, Biology Division, 2004 Sigma Xi Poster Session.

Travel Award to attend 2004 National Society of Toxicology Meeting.
Best Poster Presentation in Marine Sciences, 2005 Sigma Xi Poster Session.
Pritchard Award for Excellence in Graduate Studies, 2005 Department of Pharmacology.
SCSOT Technology Transfer Award ($250).

Beth Emerson*, 2nd place Platform Award, 2006 Mid-South SETAC Annual Meeting.
1st place AAUW undergraduate poster 2006 Sigma Xi Poster Session.

Shiqian Zhu, SOT Travel Award ($500)

Cammi Thornton, 1st place Presentation Award, 2008 South Central Chapter Society of Toxicology.

Lu Wang, SETAC Travel Award ($275).
SOT Travel Award and SOT National Graduate Student Award (finalist).
SOT Toxicologic and Pathology Specialty Section Award ($1000)
Student Travel Award to the Society of Toxicologic Pathology Symposium.

Xiefan Fang, South Central SOT Travel Award ($300)
SETAC Travel Award
SOT Travel Award ($1000)
SCSOT Technology Transfer Award ($1000).
UM Graduate Student Research Award ($500)
UM Graduate Student Award (campus wide)

Frank Booc, SOT Reproductive and Developmental Toxicology Specialty Section Student Award ($100)
SCCSOT Travel Award Application ($500)
UM Graduate Student Research Grant ($1000).
1st place Biology Division, 2012 University of Mississippi Research Symposium.

Meghan Dailey, SETAC travel award

Mallory White*, UM Taylor Medal

Terika Tillman*, Undergraduate travel award for SCC-SOT; at the meeting she earned a – 1st place presentation award

Khalid Alharthy, 3rd place platform award, SCC-SOT regional meeting, 2014

Trisha Dahwan, Research Grant- Graduate School Council Research Grant, May 2016
Travel grant- Graduate School Council, SOT Annual meeting, March 2016
Awarded 3rd place best graduate student poster for GSC Research Forum poster presentation, April 2015
Travel grant- Reproductive and Developmental Toxicology Specialty Section (RDTSS), SOT Annual Meeting, March 2015

Travel grant- Graduate School Council, SOT Annual meeting, March 2015
Edith Prichard Pharmacology Graduate Student Award, August 2017

Dennis Carty, COBRE graduate student fellowship program ($10,000), 2015
American College of Toxicology membership and graduate fellowship ($5000/year for two years plus travel costs to annual meeting) 2016
William Benson Outstanding Graduate Student in Environmental Toxicology Award 2016
UM Graduate Student Achievement Award 2017
Mid-South SETAC 1st Place Poster Presentation, May 2017

Alex Fratesi*, MS Water Resources Research Meeting, 1st place Platform Presentation (co advisee with Dr. John Green and Stephanie Otts), April 2017

Zacharias Pandelides, South Central Chapter of the Society of Toxicology, Superior Platform Presentation, October 2018.

Kennedy Dickson*, 2019 National Collegiate Honors Council Portz Scholar.

SERVICE

1. *Routine service to the University*.

Faculty Senate, 2003 – 2006, Finance and Faculty Governance Sub-Committees
Institutional Animal Care and Use Committee, 2001-2004; 2013- 2016
School of Pharmacy, Executive Committee, 2017 -
School of Pharmacy, Curriculum Committee, 2007 – 2012, Chair 2011-2012
School of Pharmacy, Assessment Committee, 2013 – 2020, Chair 2018-2020
School of Pharmacy Computer Committee, 2001-2003, Chair 2001-2002
School of Pharmacy Committee on Committees, 2001 – 2002
School of Pharmacy Information Technology Committee 2003 – 2005, Vice-chair
Library & Educational Resources ACPE Self-Study Committee, 2005 – Co-Chair
School of Pharmacy Task Force on Partnerships & Collaborations, 2004 - 2006
Pharmacology Curriculum Committee, 2000 - 2006
Pharmacology Graduate Student Admissions, Retention and Review Committee 2000 – until combined with Pharmacology Curriculum Committee
Environmental Toxicology Graduate Student Program Coordinator, 2007- present
School of Pharmacy Strategic Planning: Sub Committee on Facilities and Resources, 2006-2007
Internal Advisory Board Member, COBRE NIH Grant, 2007-2009
University Environmental Task Force, 2007 -2008
University Committee on Sensitivity and Respect, 2007-2009
University Task Force on Energy, Environment and Sustainability, 2009 -2011
University Task Force on Distance Education, 2009-2010
AACP Reaccreditation Self Study Curriculum Committee Member, 2011-2012.

School of Pharmacy Reorganization Committee, 2013
UM Innovations in STEM Education Working Group: Student Recruitment, Retention and Career Placement 2013
Lucky Day Residence Hall Faculty Fellow, 2010 – 2020
UM Online Education Task Force, 2015
Honors College Common Reading Nomination Committee 2015 – 2017
Honors College Welcome Week session host 2015 - present
School of Pharmacy Executive Committee 2017 – present
Council on Community Engagement 2016 – present
Intellectual Property Management Group for Life and Pharmaceutical Sciences 2017 – present
Kappa Epsilon Pharmacy Fraternity Faculty Advisor 2018 – present
BMS Student Advocates Faculty Advisor 2018 - present
Led BMS Department through Self-Study and External Review 2019.
Honors College Academic Integrity Review Committee 2019 - present

Member of Search Committees:
Environmental Toxicology Coordinator, 2000
Director for the National Center for National Product Research Center, 2002
Department of Pharmacology Chairperson, 2002, 2012
Assistant Research Professor, Environmental Toxicology Program, 2002
Pharmacology Faculty Search, 2004, 2005, 2011
NIUST – OBCR Associate Director 2006
Field Station/CWWR Associate Director 2006
Associate Dean for Academic Affairs 2013
Pharmacy Administration Professor 2014
Chair of BMS search for 5 positions 2015
Dean of Liberal Arts 2015
Director of the National Center for Natural Products Research 2016
Chair of Biology 2016
Pharmacology Professor 2016
Dean of the Graduate School 2018
Dean School of Pharmacy 2021

2. ***Non-routine service to the University*****.**

Judged Sigma Xi Poster Session, 2002
Judged MS Region VII Science and Engineering Fair, 2001-2015
Judged and Awarded SOT Best Science Fair Project Award 2009-2010
Judged Oxford Middle School Science Fair, 2001
Served on a Focus Group for the University Creed Committee
Paper reviewer and platform judge for Junior Science and Humanities Symposium 2005
Participated in the Department of Chemistry's Site Visit for Accreditation of the BS in Forensic Chemistry, 2004, 2016
Volunteered as part of Move-In 2001

Member of Panel for Dr. Bouldin's Teaching Assistant Seminar, Topic: Curriculum vitas

Daily Mississippian Letter to Editor 11/03 To encourage The University of Mississippi to increase their recycling efforts on campus.

Season ticket holder for Ole Miss football (2000-2020), men's basketball (2000-2020), baseball (2005-2021).

Season ticket holder and donor to Ole Miss University Theater Program (2000 – 2017).

Member University Dames (2000 – 2018).

Service Learning Project: SMARxT safe drug disposal program display in Grove as part of Earth Day Activities April 22, 2010.

Hand wrote letters to prospective undergraduate students 2009-2011

Panelist on Science, Technology, Engineering, and Mathematics (STEM) Roundtable "Answers to Questions You Hesitated to Ask but Wanted to" April 22, 2010

Honors College Freshman ventures trip presentation judging annually since 2011

Perspective Pharmacy Student Interviews, annually since 2011

Environmental Toxicology Graduate Program Recruiting presentation MSU biochemistry students 2/27/12

Waller Lecture Organizing Committee 2011-12

Initiated the William H. Benson Environmental Toxicology Graduate Student Endowment

Successfully nominated Dr. Jeff Steevens Distinguished Alumni Award 2014

Honors College Panelist for Senior Thesis Advising Workshop, 2019, 2020

Faculty Achievement Award Selection Committee 2019, 2020

SEC Achievement Award Selection Committee 2020

3. *Service to Society*.

Served as External Honors Examiner, Kenyon College, Department of Biology for students Emelyne Dengler and Blythe Philips.

Member of School of Pharmacy Relay for Life Team (raised money for American Cancer Society).

Attended a Congressional Visit with Congressman Wicker to discuss the importance of continued support of the National Institutes of Health and the Department of Energy. Tupelo 6/25/01

Invited Speaker. University Outreach; Examples of research experience programs. SETAC Mid-South Regional Meeting. Oxford, MS. May 26-28, 2004. Platform. Part of "Teach the Teachers Workshop".

Gave tour/laboratory demo for Lafayette High School AP Biology Class 4/17/09.

Presented talk "Fish, Fish, Fish!" At Oxford Lafayette Public Library June 23, 2010. 38 children and 28 adults attended the presentation. Featured in *Oxford Enterprise* on 6/27/10.

Interviewed on SuperTalk Mississippi by Sid Salter about oil spill research 9/21/10

Oil spill Research also highlighted on University web page, Ole Miss Football Program 9/25/10, *Oxford Eagle* (9/24/10), *Daily Mississippian* (11/8/10), School of Pharmacy Annual Report and the UM Alumni magazine.

Participated in Della Davidson's 5th Grade Career Day as a "Scientist" 4/12/13.

Hosted 5th Grade Horizons class to discuss careers in science/toxicology 2016

Hosted Tri-County Workforce Alliance ~70 students total from MS Delta High Schools came to campus to learn about how their water was analyzed for lead as part as a community participatory research project. June 2016, 2017, 2018

Introduction to Toxicology Research and Lab Tours for Pharmacy Camp students (n = 21). June 4, 2019.

Graduate Program Review – Baylor University Environmental Sciences, October 2019.

Regeneron Science Talent Search Judge 2020 – 2021.

Conference Organizing Committees:

As member of SETAC Short Course Committee, Coordinated Short Courses at 2000 SETAC NA meeting:
"Receptors and Signal Transduction in Environmental Toxicology"
"Environmental Fate Data: Estimates, Assessments, and Pollution Prevention"

Coordinated the following Short Courses at 2001 SETAC meeting:
"Introduction to the Biotic Ligand Model"
"Using data quality objectives to optimize data collection"

Member of Organizing Committee of the South Central Chapter of the Society of Toxicology meeting. Oxford, MS. October 25-26th, 2001.

Chaired poster session entitled "Education and Public Outreach" Society of Toxicology Meeting, Baltimore, MD. 2004.

Participated in "Teach the Teachers Workshop" SETAC Mid-South SETAC Regional Meeting. Oxford, MS. May 26-28, 2004.

Organizing Committee 2007 National North American SETAC Meeting, Milwaukee, WI.

Chair of Organizing Committee of the South Central Chapter of the Society of Toxicology meeting. Oxford, MS. September 27-28, 2007.

Proposed, organized, and moderated both a special symposia on Hurricane Katrina and a platform session on PAH Effects in Aquatic Organisms at the 2008 National SETAC meeting, Tampa, FL.

Chair of Organizing Committee of the South Central Chapter of the Society of Toxicology meeting. Oxford, MS. October 23-24, 2014.

Moderated Three Undergraduate Educator Network Webinars; permanently archived for future retrieval at http://www.toxicology.org/education/ edu/ugWebinars.asp

Co-chair of Organizing Committee of the Mid-South SETAC Meeting, Oxford MS May 2017. Panelist in Short Course on Scientific Publishing.

Brain Wellbeing Summer Science Expo, Oxford MS July 23, 2019.

Interviewed by SOT TV about our developmental toxicology research on cannabinoids https://www.youtube.com/watch?v=T__hUMwNiuw

Technology Transfer:

Hosted Dr. Adria Elskus from the University of Kentucky in my laboratory for a week so that she could learn fish primary cell culture techniques.

Hosted Mr. Adam Kuhl from the University of Southern Mississippi in my laboratory for two days so that he could learn the aromatase assay.

Hosted Ms. Lauren Wills from Duke University in my laboratory for a week so that she could learn bile and embryo extractions for BaP metabolite quantitation.

MANUSCRIPT REVIEW

Ad hoc reviewer for:
Brain Research, Cannabis and Cannabinoid Research, Chemosphere, Comparative Biochemistry and Physiology, Environmental Health Perspectives, Environmental Protection, Environmental Science and Technology, Environmental Toxicology and Chemistry, Environmental Toxicology and Pharmacology, iScience, Journal of Biomolecular Screening, J. Chromatography A, J. of Exposure Science and Environmental Epidemiology, Journal of Natural Products, Int. J. Environmental Research and Public Health, Marine Environmental Research, Phytotherapy Research, Planta Medica, Toxicology and Applied Pharmacology, Toxicological Letters

INVITED PRESENTATIONS

Seminar Speaker, USDA, Catfish Genetics Research Unit, Stoneville, MS. Mechanisms contributing to the differential sensitivity to PAH-induced liver cancer in two catfish species, May 28, 2003.

Seminar Speaker, Department of Medicinal Chemistry Seminar Series. Benzo(a)pyrene and flavonoid effects on gene and protein expression in prostate and endometrial cancer cells: Possible mechanisms for cancer chemoprevention, November 29, 2005.

Merck-AAAS Seminar Speaker, Department of Biology, University of South Alabama. Mechanisms contributing to the differential sensitivity to PAH - induced liver cancer in two catfish species, December 9, 2005.

Platform Presenter, Risk and benefit analysis of an online undergraduate toxicology course. #713. Society of Toxicology, San Diego, CA, March 5-9, 2006.

Seminar Speaker. UMMC Department of Biochemistry. Using *Fundulus* to study mechanisms of benzo(a)pyrene toxicity. October 18, 2007.

Seminar Speaker. Army Corps of Engineers, ERDC, Vicksburg, MS. Using *Fundulus* to study mechanisms of benzo(a)pyrene toxicity. June 15, 2007.

Seminar Speaker. Are chemicals in the environment affecting reproduction and development? Sarah Isom Brown Bag Lecture, September 15, 2008.

Seminar Speaker. Using *Fundulus heteroclitus* to study mechanisms of benzo[a]pyrene toxicity. University of Southern Mississippi Gulf Coast Research Lab, February 11, 2010.

Seminar Speaker. Using fish to study mechanisms of benzo[a]pyrene toxicity. University of Memphis, Biology Department September 2, 2010.

Seminar Speaker. Using *Fundulus heteroclitus* to study mechanisms of benzo[a]pyrene toxicity. Wilfrid Laurier University, Biology Department July 20, 2010.

Conference Speaker. Using fish to study BaP-mediated changes in methylation status during development. 5th Aquatic Animal Models for Human Disease. September 20-22, 2010. Corvallis, OR. Platform.

Panelist on Mississippi Public Broadcasting Television Program. Science of the Spill Scientific Roundtable. Aired August 31st, 2010. http://spillscience.com/programs.html

Seminar Speaker as Part of the UM Common Reading Experience “The Immortal Life of Henrietta Lacks”. Use of HeLa and Other Cancer Cell Lines on the Ole Miss Campus. October 25, 2011.

Participating Panelist, COSEE Community Forum, Information regarding the Gulf Oil Spill, October 20, 2011.

Seminar Speaker. University of Florida, Dept. of Physiology. Reproductive, developmental and epigenetic effects of benzo(a)pyrene in *Fundulus heteroclitus* and *Danio rerio*. October 18, 2011.

Symposium Speaker. Future of the South Symposium: The Gulf Oil Spill after One Year. "The Oil Spill and the Wetlands – Toxicological Considerations" April 1-2, 2011

Participating Speaker. Assessment of nano silver toxicity on fish gills and embryo development. Risk of Engineered Nanomaterials External Advisory Board Meeting. ERDC, Vicksburg, MS Sept. 29, 2011.

Seminar Speaker. Duke University Toxicology Program. Reproductive, developmental and epigenetic effects of benzo(a)pyrene in *Fundulus heteroclitus* and *Danio rerio*, October 19, 2012.

Cancer Brown Bag Presenter, School of Pharmacy. Mechanisms of carcinogenicity and multi-generational effects of benzo(a)pyrene in *Fundulus heteroclitus* and *Danio rerio*. October 31, 2012.

Presenter. 60 second lecture entitled "Environmental Toxicology of Delta Fish and Waterways" on Thacker Mountain Radio Show January 31, 2013

Community Outreach Speaker. Oxford Science Café. What is Environmental Toxicology? March 26, 2013.

Invited Seminar Speaker. Using Fish Models to study Mechanisms of Benzo(a)pyrene Toxicity. University of Alabama-Birmingham, Department of Chemistry. April 25, 2013.

Invited Seminar Speaker. Overview of Willett Lab Research Using Fish to Study Cancer. UMMC – Cancer Genomics Group Meeting July 8, 2013.

Invited Seminar Speaker. Using Fish Models to study Mechanisms of Benzo(a)pyrene Toxicity. UMMC Department of Neurobiology and Anatomical Sciences – Seminar July 9, 2013.

Invited Seminar Speaker. Using Fish Models to study Mechanisms of Benzo(a)pyrene Toxicity. Purdue University. School of Health Sciences, January 14, 2014.

Webinar Presenter. Partnerships for Environmental Public Health (PEPH) Webinar – Alternatives to Animal Testing. NIEHS January 23, 2014.

Video Interview about Environmental Toxicology with Candid Careers as part of Mississippi Health Professions Day at Ole Miss. Also participated in the Recruiting Fair. February 4, 2014.

Video Interview for the film "I Didn't Do It" by Melanie Addington. Discussed the toxicology of Ricin. 8/27/14

Webinar Moderator: Using Open Source Biological Pathway Databases for Education and Discovery, June 4, 2015

Webinar Moderator: Using Fish to Illustrate Toxicology Principles in Undergraduate Lab Classes, December 15, 2015.

Webinar Moderator: Using Non-Vertebrate Model Organisms to Illustrate Toxicology Principles in Undergraduate Lab Classes, October 20, 2016. Permanently archived for future retrieval at http://www.toxicology.org/education/edu/ugWebinars.asp

Plenary Lecturer, Molecular, Physiological and Histopathological Effects of Nanosilver or Silver Nitrate Exposures on Fathead Minnow Gills. Mid-South SETAC Meeting, Vicksburg, MS May 12, 2015.

Platform Presenter and Panel Discussion Participant. Using changes in the transcriptome and promoter methylation to explain benzo[a]pyrene-mediated developmental adverse outcomes. Society of Toxicology, March 13-17, 2016, New Orleans, LA.

Panelist with Cathy Janasie, Buka Okoye and Jennifer Stollman. "Something in our water: Perspectives on Flint, Jackson and Environmental Racism in America" Panel Discussion for Green Week. April 20, 2016

Presenter with Cammi Thornton. Using zebrafish for assessing developmental toxicity and epilepsy efficacy in drug discovery. Neuroscience/Drugs of Abuse Brown Bag Meeting - April 21, 2016.

Community Outreach Speaker. Know your Watershed: Forum and Potluck. April 24, 2016. Sustainable Oxford.

Presenter and Panelist for Water Securities Institute. Relationships of water quality/quantity to public health, sociodemographic concerns, poverty, population trends. May 25, 2016.

Presenter, Using zebrafish for drug discovery. Infectious Disease Brown Bag Meeting – October 27, 2016.

Seminar Speaker. Assessing benzo[a]pyrene-mediated effects on the zebrafish transcriptome and promoter methylation to explain developmental adverse outcomes. University of Southern Mississippi Gulf Coast Research Lab, August 31, 3017.

Invited Presenter. Using zebrafish to understand mechanisms of benzo[a]pyrene. Recent Advances in Environmental Health Research, Jackson State University, September 11, 2017.

Seminar Speaker. Developmental and multigenerational effects of cannabidiol and delta-9-tetrahydrocannabinol exposure in zebrafish. Woods Hole Oceanographic Institution. July 25, 2018.

Panelist Delta Regional Forum Clarksdale, MS July 2018, 2020 Lead in Drinking Water

Invited Speaker. University of Mississippi Flagship Constellation on Brain Health and Wellness, Mississippi Academy of Sciences, Hattiesburg, MS. February 21, 2019.

Invited Speaker. Inner Mongolia University for the Nationalities, Tongliao, China. June 10, 2019. Two talks: "Developmental and multigenerational effects of cannabidiol and delta-9-tetrahydrocannabinol exposure in zebrafish" and "Toxicology, the University of Mississippi, and Me".

Invited Speaker. University of Southern Mississippi, Hattiesburg, MS February 18, 2020. Two presentations with Dr. Jason Paris to a class and a community meeting (n= ~40 each): "Opioids from painkilling to pain causing – 'The Drugs'".

Seminar Speaker. UMMC Neuroscience Program and Journal Club. October 13, 2020, Jackson, Mississippi. Acute and Chronic Outcomes of Developmental Exposure to Cannabidiol and Δ^9-Tetrahydrocannabinol in Zebrafish.

Panelist. Lead in Drinking Water: Preventing Lead Exposures. Multiple Presentations with Stephanie Otts, John Green and Cris Surbeck:

Delta Scholars 06/25/20
UM Uncommon Read Presentation 10/21/20
Institute for the Advancement of Minority Health Webinar 9/16/20 and 10/16/20
MSDH Lead Poisoning Prevention and Healthy Home Virtual Zoom Training 10/30/20

Invited Speaker. AAAS. Cannabidiol 2021: Science, Safety, and Societal Issues, February 8, 2021 Assessing toxicity, mechanisms of action, and therapeutic potential of cannabidiol using zebrafish.

Invited Speaker. 60th SOT Annual Meeting. Assessing Toxicity, Mechanisms of Action, and Therapeutic Potential of Cannabidiol Using Zebrafish. March 12-27, 2021

Invited Speaker. 60th SOT Annual Meeting. Δ9-Tetrahydrocannabinol Developmental Exposure Effects Zebrafish Long-term Neurobehavior and Aging Phenotypes. March 12-27, 2021

Panelist. 60th SOT Annual Meeting. Tiny Talk - How and why you need to write a good impact statement.