Greg M. Landry, PhD, DABT

Associate Professor of Pharmacology & Toxicology
Program Director, B.S. Pharmacology & Toxicology
Massachusetts College of Pharmacy and Health Sciences
School of Pharmacy
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Education & Training

4/2014-8/2016	**Postdoctoral Research Fellow,** Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, MN
9/2014	**Visiting Research Fellow,** Institute of Molecular, Cell and Systems Biology, College of Medical, Veterinary, and Life Sciences, University of Glasgow, Glasgow, Scotland, UK
8/2013-4/2014	**Postdoctoral Teaching/Research Fellow,** Pharmacology, Toxicology, and Neuroscience, Louisiana State University-Health Sciences Center, Shreveport, LA
7/2008-8/2013	**Doctor of Philosophy (Ph.D.)**, Pharmacology, Toxicology, and Neuroscience Concentration: Toxicology Louisiana State University-Health Sciences Center; Shreveport, LA
8/2004-5/2008	**Bachelor of Science (B.S.)**, Biological Sciences; Chemistry minor Concentration: Microbiology/Molecular Biology Southeastern Louisiana University, Hammond, LA

Licenses & Certifications

2019-Present	**Diplomate**, American Board of Toxicology
2024	Preparing to Teach Online Certification, University of North Texas Health Sciences Center

Academic Appointments

7/2022-Present	**Associate Professor of Pharmacology & Toxicology,** Department of Pharmaceutical Sciences, School of Pharmacy, Massachusetts College of Pharmacy & Health Sciences, Boston, MA
7/2021-Present	**Program Director, B.S. Pharmacology & Toxicology**, Department of Pharmaceutical Sciences, School of Pharmacy, Massachusetts College of Pharmacy & Health Sciences, Boston, MA
4/2025-Present	**Term Lecturer/Course Developer** *(Adjunct, Online)*, Department of Health Sciences, Massachusetts General Hospital-Institute of Health Professions, Boston, MA
3/2022-Present	**Instructor** *(Adjunct, Online)*, Department of Microbiology, Immunology, & Genetics, University of North Texas Health Sciences Center, Fort Worth, TX
1/2014-Present	**Visiting Professor** (*Adjunct, Online*), Chamberlain University-College of Nursing, Downers Grove, IL
8/2016-6/2022	**Assistant Professor of Pharmacology & Toxicology,** Department of Pharmaceutical Sciences, School of Pharmacy, Massachusetts College of Pharmacy & Health Sciences, Boston, MA
2015-2016	**Instructor,** Department of Molecular Pharmacology and Experimental Therapeutics (Academic rank), Mayo Clinic College of Medicine, Rochester, MN

Research Experience

Massachusetts College of Pharmacy & Health Sciences:

1. Nephro- and Neuro-toxicological/target organ toxicity characterization of diethylene and ethylene glycol poisoning
2. Using *Drosophila melanogaster* and primary human proximal tubule cells as models for calcium oxalate nephrolithiasis and oxalate/heavy metal toxicity
3. Nephrotoxicological characterization of grape toxicity in canines and lily toxicity in felines

Models/Methods applicable to all 3 research projects:

- Tissue culture, isolation, and maintenance of human and canine primary proximal tubule epithelial cells, SH-SY5Y cell culture and differentiation, mouse inner medullary collecting duct (mIMCD-3), Madin-Darby canine kidney (MDCK), and Crandell Rees Feline Kidney (CRFK) culture, transfection, and characterization
- Cell death assays, mitochondrial function assays, ROS detection assays, ELISA, western blot; transporter protein cloning, *E. coli* amplification and mammalian cell transfection
- Small animal (rats, mice) toxicity/risk assessment models, gavage, dose response, histopathological techniques, data analysis and interpretation
- *Drosophila melangaster* calcium oxalate uro- and nephrolithiasis models, insect urogenital/digestive morphology, physiology, and genetics, Malpighian tubule isolation/assays, calcium oxalate crystallization assays
- Heavy metal (specifically Pb^{2+}) transport physiology, characterization, and toxicity related to calcium oxalate nephrolithiasis, as well as overt kidney toxicity
- Fluorescence and Differential Interference Contrast (DIC) Microscopy

Mayo Clinic College of Medicine and University of Glasgow:

Postdoctoral: Using *Drosophila melanogaster* as a genetic model for calcium oxalate nephrolithiasis (PI: Michael Romero, Ph.D. and Julian Dow, Ph.D., Sc.D.)

Models/Methods:

- *Drosophila melanogaster* calcium oxalate uro- and nephrolithiasis models, insect urogenital/digestive morphology, physiology, and genetics, Malpighian tubule isolation/assays, qPCR, RNA extraction, SILAC
- Fluorescence Microscopy
- Zn^{2+} /heavy metal transport physiology, characterization, and toxicity related to calcium oxalate nephrolithiasis
- *Xenopus laevis* oocyte harvest surgeries, oocyte transporter RNA microinjection and subsequent transporter electrophysiological measurements
- Canine kidney excision, blood and aqueous humor collection; blood chemistry analyzation

LSU-Health Sciences Center-Shreveport:

Postdoctoral: Assessing toxicological risk of DEG poisoning using Wistar and Fischer-344 rat strains (PI: Kenneth McMartin, Ph.D.)

Models/Methods:

- Small animal (rats, mice) toxicity/risk assessment models, gavage, dose response, histopathological techniques, data analysis and interpretation

Doctoral: Investigating the molecular mechanisms of diglycolic acid as the metabolite responsible for diethylene glycol-induced proximal tubule cell toxicity (Advisor: Kenneth McMartin, Ph.D.)

Models/Methods:

- Tissue culture, isolation, and maintenance of human and rat primary proximal tubule epithelial cells
- Cell death assays, western blotting, flow cytometry, mitochondrial function assays, ROS detection assays, ELISA
- Molecular physiological/inhibitory studies involving *SLC13* transporter family (particularly, NaDC-1-3) in primary human proximal tubule cells

- Small animal (rats, mice) toxicity models, survival and non-survival surgeries (jugular vein catheter implantation, bilateral nephrectomy)

Southeastern Louisiana University:

Independent Research Study: Analyzing constraints on V(D)J rearrangement in primary lymphocytes and nonlymphoid cells in inducible RAG transgenic mice (PI: Penny Shockett, Ph.D.)

Models/Methods: Real-time and reverse transcriptase PCR and DNA agarose gel electrophoresis on tail snips from RAG transgenic mice

Teaching Experience **(*Indicates *de novo* course design, construction, & implementation)**

Massachusetts College of Pharmacy & Health Sciences

2024-Present	**Course Director/Instructor,** *Drug Metabolism* (PSB 815) Dept. Pharmaceutical Sciences-Graduate Studies; MS/PhD programs (All lectures, 3 cr.)
2023-Present	**Co-Course Director/Instructor,** *Analytical Methods in Pharmacology/Toxicology II* (PSB 371) Dept. Pharmaceutical Sciences-School of Pharmacy; BS program in Pharmacology/Toxicology (6 lectures/laboratories, 3 cr.)
2023-Present	**Lecturer/Instructor**, *Systems Pharmacology* (PSB 712) Dept. Pharmaceutical Sciences-Graduate Studies; MS/PhD program (4 lectures, 3 cr.)
2021-Present	**Instructor**, *Introduction to the Major 101* (ITM 101); School of Arts & Sciences; Freshman seminar for pharmacology & toxicology majors (13 lectures, 1 cr.)
2020-Present	**Course Director/Instructor,** *Anatomy & Physiology for Pharmacy* (PSB 225); Dept. Pharmaceutical Sciences-School of Pharmacy; pre-PharmD program (8 lectures, 3 cr.)
2017-Present	**Course Director/Instructor,** *Principles of Toxicology II* (PSB 461); Dept. Pharmaceutical Sciences-School of Pharmacy; BS program in Pharmacology/Toxicology (13 lectures, 3 cr.)
2017-Present	**Lecturer/Instructor,** *Physiology/Pathophysiology II* (PSB 329); Dept. Pharmaceutical Sciences-School of Pharmacy; PharmD program (11 lectures, 4 cr.)
2016-Present	**Course Director/Instructor,** *Principles of Toxicology I* (PSB 460); Dept. Pharmaceutical Sciences-School of Pharmacy; BS program in Pharmacology/Toxicology (25 lectures, 3 cr.)
2016-Present	**Instructor,** *Pharmacology & Toxicology Seminar I* (PSB 401); Dept. Pharmaceutical Sciences-School of Pharmacy; BS program in Pharmacology/Toxicology (14 hrs, 1 cr.)
2016-Present	**Lecturer/Instructor,** *Physiology/Pathophysiology I* (PSB 328); Dept. Pharmaceutical Sciences-School of Pharmacy; PharmD program (10-15 lectures, 4 cr.)
2025	**Instructor,** *Pharmacology & Toxicology Seminar IV* (PSB 404); Dept. Pharmaceutical Sciences-School of Pharmacy; BS program in Pharmacology/Toxicology (8 hrs., 1 cr.)
2022-2023	**Course Director**, *Analytical Methods in Pharmacology/Toxicology I* (PSB 370); Dept. Pharmaceutical Sciences-School of Pharmacy; BS program in Pharmacology/Toxicology (Administrative role/TA supervision, 1 cr.)
2017-2023	**Course Director/Instructor,** *Pharmacology & Toxicology Seminar II* (PSB 402); Dept. Pharmaceutical Sciences-School of Pharmacy; BS program in Pharmacology/Toxicology (14 hrs, 1 cr.)
2017-2023	**Lecturer/Instructor,** *Neuropharmacology* (PSB 856); Dept. Pharmaceutical Sciences-Graduate Studies; MS/PhD program (4 lectures, 3 cr.)
2019-2021	***Course Director/Instructor,** *Clinical Toxicology* (PSB 715); Dept. Pharmaceutical Sciences-School of Pharmacy; PharmD program (15 lectures, 3 cr.)
2020-2021	**Lecturer/Instructor,** *Clinical Pharmacology II* (PAS 520); School of Physician Assistant Studies; MPAS program, Clinical Toxicology (2 lectures, 3 cr.)
2017-2018	**Instructor**, *Introduction to the Major 101* (ITM 101); School of Arts & Sciences; Freshman seminar for pre-pharmacy majors (13 lectures, 1 cr.)

2018 **Lecturer/Instructor,** *Medical Biochemistry II* (PSB 338); Dept. Pharmaceutical Sciences-School of Pharmacy; PharmD program (8 lectures, 3 cr.)

2017 **Lecturer/Instructor,** *Medical Biochemistry I* (PSB 331); Dept. Pharmaceutical Sciences-School of Pharmacy; PharmD program (6 lectures, 3 cr.)

Massachusetts General Hospital-Institute of Health Professions

2025-Present **Term Lecturer**, *Toxicology;* Dept. of Health Sciences, Online pre-requisites program; Online, part-time term lecturer

University of North Texas Health Sciences Center

2022-Present ***Adjunct Instructor**, *Toxicology* (BMSC 4310); Dept. of Microbiology, Immunology, & Genetics – School of Biomedical Sciences; Online, part-time instructor of record

Chamberlain University - College of Nursing

2013-Present ***Visiting Professor,** *Advanced Pharmacology* and *Advanced Pharmacology for Family Care* (NR 508 & 566); Graduate Faculty – Chamberlain College of Nursing – MSN/FNP track; Online, part-time instructor of record

Mayo Clinic College of Medicine

2016 **Lecturer,** *Physiology from Cells to Organism* (BMEP 6700); Dept. Physiology and Biomedical Engineering; Renal Pharmacology (1 lecture, 1 hr)

2016 **Lecturer,** *Pathopharmacology II* (PT 6225); Dept. of Physical Therapy; Neurotoxicology, Anti-seizure drugs, Metabolism of Chemotherapeutics (3 lectures, 3 hrs)

2015-2016 ***Course Director,** *Cardiovascular Pharmacology* (MPET 6811); Dept. Molecular Pharmacology and Experimental Therapeutics

2015-2016 **Lecturer,** *Physiology* (PT 6105); Dept. of Physical Therapy; Fluids (1 lecture, 2 hrs)

2015 **Lecturer**, *Molecular Pharmacology* (MPET 5808); Dept. Molecular Pharmacology and Experimental Therapeutics; Renal Pharmacology (1 lecture, 2 hrs)

2014-2016 **Lecturer**, *Cell Physiology* (BMEP 6870); Dept. Physiology and Biomedical Engineering; Energy of the Cell, H^+ -motive force, mitochondria (Kreb's and OXPHOS), phospholipid signaling (3 lectures, 4.5 hours)

2014-2016 **Course Director/Lecturer,** *SURF Student Undergraduate Lecture Series*; Dept. Physiology & Biomedical Engineering and Nephrology & Hypertension; Renal Toxicology (1 lecture; 1 hr); Course design, faculty coordination, and implementation

Louisiana State University Health Sciences Center-Shreveport

2013 **Lecturer/Instructor,** *Toxicology* (PHARM 245); Dept. Pharmacology, Toxicology, & Neuroscience, LSU-HSC-S; Biotransformation I and II, Immunotoxicology (3 lectures; 4.5 hrs)

2013 **Small Group Instructor,** *Pharmacology Small Groups* for 1st year medical students; LSU-HSC-S; Topics include pharmacokinetics and pharmacodynamics, pharmacological interactions, and autonomic pharmacology

2013 **Lecturer,** *Neuroscience*; LSU-HSC-S School of Allied Health Professions; Histology / Neurotransmitters (1 lecture; 1 hr)

2013 **Lecturer/Instructor,** *Biochemical and Molecular Methods* (IDSP 116); LSU-HSC-S School of Graduate Studies; Spectroscopy I and II (2 lectures; 2 hrs)

2012-2013 **Lecturer/Instructor**, *Neuropharmacology/Neurochemistry* (PHARM 233); Dept. Pharmacology, Toxicology, & Neuroscience, LSU-HSC-S; Neurotoxicity of Metals, Endocannabinoids, Alcohol, Marijuana, Hallucinogens (4 lectures; 4 hrs)

2012-2013 **Lecturer,** *Clinical Toxicology* (EMED 400); LSU-HSC-S School of Medicine; Diethylene Glycol Poisoning (1 lecture; 1 hr)

2012-2014 **Lecturer/Instructor,** *Pharmacology* (PYAS 6557); LSU-HSC-S School of Allied Health Professions; Pharmacokinetics, Adrenergic Receptor Agonists, Antifungals and Antivirals, Diuretics lectures (4 lectures; 10 hrs)

2009-2013 **Small Group Instructor**, *Patient Oriented Problem Solving (POPS)* sessions for medical students; LSU-HSC-S; Topics include pharmacokinetics and pharmacodynamics, adrenergic and cholinergic drugs, chronic heart failure, treatment of psychosis, and analgesic therapy complications

2009 **Graduate Teaching Assistant**, *Biological Sciences Lab 110* (BIOL 110); Dept. Biological Sciences, Louisiana State University-Shreveport; Weekly attendance of classes, grading assignments, assisting in laboratory protocols; Topics included principles of ecosystem dynamics, evolution, plant and animal systematics, basic physiology and toxicology

Student Mentoring:

Louisiana State University-Health Sciences Center:

Fall 2010-2014 Cody Dunning, Southwood High School BioStart Internship
Summer 2011 Corie Robinson, Xavior University, S.U.P.E.R. Internship
Spring 2011 Donald Williams, Southwood High School BioStart Internship
Fall 2011 Heidi Williams, Southwood High School BioStart Internship
Summer 2012 Mallory Hitt, Medical Student II, Research Internship
Tess Dupre, University of Louisiana-Monroe, S.U.P.E.R. Internship
Elise Fontenot, MD/PhD Student, Research Rotation
Fall 2012 Jenna Bison, Southwood High School BioStart Internship
Spring 2013 Talvin Revels, Southwood High School BioStart Internship
Spring 2013-2014 Taylor Conrad, Medical Student II, Research Internship
Summer 2013 Courtney Jamison, University of Texas-Dallas, S.U.P.E.R. Internship
Fall 2013 Laci Gilcrease, Southwood High School BioStart Internship
Fall 2013 Kevin Bradley, MD, LSUHSC-S Anesthesiology Resident

Mayo Clinic College of Medicine:

Summer 2014 Chris Gallo, University of Arizona, SURF Student Internship
2014-2016 Jacob Anderson, University of Minnesota-Rochester, Student Worker

Massachusetts College of Pharmacy & Health Sciences (MCPHS):

2016-2018 Tyler Osman, Student Worker, B.S. Pharmaceutical Sciences; School of Pharmacy
Julia Flaminio, Student Worker, B.S. Pharmaceutical Sciences; School of Pharmacy
2016-2018 Neira Dzindo, Independent Study, B.S. Pharmaceutical Sciences; School of Pharmacy
2018-2019 Harleigh Becotte, Independent Study, PharmD; School of Pharmacy
2017-2020 Anthony Branco, Research Intern, PharmD; School of Pharmacy
2019-2021 Dylan Freeman, Research Intern, PharmD; School of Pharmacy
2020 Bernard Amaechi, Summer Undergraduate Research Fellow, School of Pharmacy
2022-2024 Justin Capezzuto, Summer Undergraduate Research Fellow/Independent Study, School of Pharmacy
Spring 2024 Cohan Houniet, Independent Study, PharmD; School of Pharmacy
2023-2025 Penelope Pando, Summer Undergraduate Research Fellow/Independent Study, School of Arts & Sciences
2025-Present Tommaso Gradone, Summer Undergraduate Research Fellow, School of Pharmacy

Graduate Thesis/Dissertation Major Advisor or Committee Member (MCPHS):

2017-2018 Ivan Barrera MS in Pharmaceutics Thesis Committee Member

2019-2021	Rajitha Gadde	MS in Pharmacology	Thesis Committee Member
2020-2022	Sanjana Sheth	MS in Pharmacology	Major Advisor
2019-2022	Kristi Reed	PhD in Pharmacology	Major Advisor
2021-2022	Manasi Hembade	MS in Pharmacology	Major Advisor
2021-2023	Sean Coyne	PharmD Honors	Major Advisor
2021-2023	Anoushka Vattamparambil	MS in Pharmacology	Major Advisor
2021-2024	Jiwon Jeong	PharmD Honors	Co-Advisor
2022-2024	Ji Hyung Beak	PharmD Honors	Co-Advisor
2022-2024	Aadya Jaipuria	MS in Medicinal Chemistry	Thesis Committee Member
2021-2024	Rajitha Gadde	PhD in Pharmacology	Dissertation Committee Member
2023-2025	Madison Castillo	PharmD Honors	Co-Advisor
2023-Present	James Boksanski	PhD in Pharmacology	Major Advisor
2024-Present	Waleed Elsweesey	PharmD Honors	Major Advisor
2024-Present	Adeeba Noor	MS in Medicinal Chemistry	Thesis Committee Member

Faculty Mentoring:

2022-Present Joseph Malaer, PhD Assistant Professor UNTHSC Faculty Mentoring Committee Member

Professional Affiliations

2009-Present **Society of Toxicology (SOT) (**Clinical & Translational Specialty Section; Mechanisms Specialty Section)

2016-Present **Northeast Regional Chapter of the Society of Toxicology (NESOT)**

Awards Funded

2024-Present American Society for the Prevention of Cruelty to Animals (ASPCA) **(Extramural)** - $12,650.81 *"Isolation and comparative cytotoxicity of solvent extracts from the Lilium, Hemerocallis, and Alstroemeria genera in Crandell-Rees feline kidney (CRFK) cells in vitro"*

2024-Present American Chemistry Council Panel on Ethylene Glycols **(Extramural)** - $130,800.00 *"Establishing and characterizing models of diethylene glycol (DEG) toxicity and acute ethylene glycol (EG)-induced nephrotoxicity as the critical effect in male C57/Bl6 and CD-1 mice, respectively"*

2024-Present Center for Research and Discovery Undergraduate Research Mini-Grant (Intramural) - $2,993.00

2023-2024 Center for Research and Discovery Undergraduate Research Mini-Grant (Intramural) - $2,582.00

2022-2023 Center for Research and Discovery Undergraduate Research Mini-Grant (Intramural) - $2,500.00

2018 Society of Toxicology Undergraduate Faculty Research Grant **(Extramural)** - $500.00

2018-2019 AACP New Investigator Award **(Extramural)** - $10,000.00 *"Effects of lead on oxalate nephrolithiasis"*

2017-2018 MCPHS Faculty Development Grant (Intramural) - $4,000.00 "*Combinatory toxic effects of lead (Pb^{2+}) and calcium oxalate monohydrate (COM) in primary human proximal tubule cells"*

2014-2016 NIH T32-DK007013 (PI: John Lieske)- Nephrology Research Training Grant Appointee

2011-2013 Ike Muslow Predoctoral Fellowship (Intramural) – $48,000.00 "*Mechanisms underlying the toxicity of diglycolic acid as a metabolite produced in diethylene glycol poisoning"*

2011-2014 AstraZeneca Pharmaceuticals Graduate Student Fellowship - $30,000.00

"*Role of dicarboxylate transporter-mediated accumulation of diglycolate in the mechanism of the renal toxicity from diethylene glycol"*

2013 Society of Toxicology Renal Toxicology Fellowship Award - $500.00

LSU-Health Sciences Center-Shreveport:

2010 **Best Graduate Student Poster Award** - Annual Meeting of SCC-SOT, Mississippi State University, Starkville, MS

2011 **Best Graduate Student Poster Award** – Annual Meeting of SCC-SOT, New Orleans, LA

2011 **Graduate Student Travel Award** – Annual Meeting of SCC-SOT, New Orleans, LA

2012 **SCC-SOT Student Representative Travel Award** – Society of Toxicology Annual Meeting, San Francisco, CA

2012 **Carl C. Smith Award: Honorable Mention Top 6** – Society of Toxicology Annual Meeting-Mechanisms Specialty Section, San Francisco, CA

2012 **2nd Place Platform Talk** – LSU-Health Sciences Center Graduate Research Day, Shreveport, LA

2012 **Informa Innovative Research Abstract Award** – North American Congress of Clinical Toxicology, Las Vegas, NV

2012 **3rd Place Platform Talk** - Annual Meeting of SCC-SOT, Little Rock, AR

2013 **Carl C. Smith Award: Honorable Mention Top 7** – Society of Toxicology Annual Meeting-Mechanisms Specialty Section, San Antonio, TX

2013 **Renal Toxicology Fellowship Award** – Society of Toxicology Annual Meeting-Mechanisms Specialty Section, San Antonio, TX

2014 **Dean's Award –** Louisiana State University Health Science's Center 2014 Annual Spring Commencement, Shreveport, LA

Mayo Clinic College of Medicine:

2015 **Teaching/Examination Privileges** – Mayo Clinic Graduate School and College of Medicine, Rochester, MN

Massachusetts College of Pharmacy & Health Sciences:

2021 **Gail P. and Edward A. Bucher Trustees' Award for Excellence in Faculty-Student Research Collaboration Award**

2025 **Society of Toxicology Undergraduate Educator Award**

Publications

Campbell C.T., Prince M., **Landry G.M**., Kha V., Kleiner H.E. (2007). Pro-apoptotic effects of 1'-acetoxychavicol acetate in human breast carcinoma cells. *Toxicology Letters, 173*(3), 151-160. doi: 10.1016/j.toxlet.2007.07.008

Landry G.M., Martin S., McMartin K.E. (2011). Diglycolic acid is the toxic metabolite in diethylene glycol poisoning inducing necrosis in human proximal tubule cells *in vitro*. *Toxicol. Sci., 124*(1), 35-44. doi: 10.1093/toxsci/kfr204
*(Cited by ***Sigma Aldrich*** as DGA mechanistic cornerstone)

Landry G.M., Dunning C.L., Conrad T., Hitt M.J., McMartin K.E. (2013). Diglycolic acid inhibits succinate dehydrogenase activity in human proximal tubule cells leading to mitochondrial dysfunction and cell death. *Toxicology Letters, 221*(3), 176-184. doi: 10.1016/j.toxlet.2013.06.231 *(Cited by ***Sigma Aldrich*** as DGA mechanistic cornerstone)

Landry G.M., Dunning C.L., Abreo, F., Latimer, B., Orchard E., McMartin, K.E. (2015). Diethylene glycol-induced kidney and liver toxicities show threshold dose response in Wistar and Fischer-344 rats. *Toxicology and Applied Pharmacology, 282*(3), 244-251. doi: 10.1016/j.taap.2014.12.010

Landry, G.M., Hirata, T., Anderson, J.B., Cabrero, P., Gallo, C.J.R., Dow, J.A.T., Romero, M.F. (2016). Sulfate and thiosulfate inhibit oxalate transport via a dPrestin (mSlc26a6)-dependent mechanism in an insect model of calcium oxalate nephrolithiasis. *Am J Physiol Renal Physiol, 310*(2), F152-F159. doi: 10.1152/ajprenal.00406.2015

Conrad, T., **Landry, G.M.,** Aw, T.Y., Nichols, R., McMartin, K.E. (2016). Diglycolic acid, the toxic metabolite of diethylene glycol, chelates calcium and produces mitochondrial dysfunction *in vitro. Clin Toxicol., 54*(6), 501-511. doi: 10.3109/15563650.2016.1162312

Landry, G.M., Furrow, E., Holmes, H., Hirata, T., Kato, A., Williams, P., Strohmaier, K., Gallo, C., Chang, MH., Pandey, M., Jiang, H., Bansal, A., Franz, MC., Montalbetti, N., Alexander, MP., Cabrero, P., Dow, JAT., DeGrado, TR., Romero, MF. (2019) Cloning, function, and localization of human, canine, and *Drosophila* Zip10 (Slc39a10), a Zn^{2+} transporter. *Am J Physiol Renal Physiol.,* 316(2), F263-F273. doi: 10.1152/ajprenal.00573.2017

Reed, K.J., Freeman, D.T., **Landry GM**. (2021) Diethylene glycol and its metabolites induce cell death in SH-SY5Y neuronal cells in vitro. *Toxicol In Vitro.*, 75:105196. doi: 10.1016/j.tiv.2021.105196.

Branco, A.J., Vattamparambil, A.S., **Landry, G.M.** (2021) Lead (Pb^{2+})-induced calcium oxalate crystallization *ex vivo* is ameliorated via inositol 1,4,5-trisphosphate receptor ($InsP_3R$) knockdown in a *Drosophila melanogaster* model of nephrolithiasis. *Environ Toxicol Pharmacol.,* 87:103695. doi: 10.1016/j.etap.2021.103695.

Tobin, J.D., Robinson, C.N., Jamison, C., Luttrell-Williams, E., **Landry, G.M.,** McMartin, K.E. (2022) Role of plasma membrane dicarboxylate transporters in the uptake and toxicity of diglycolic acid, a metabolite of diethylene glycol, in human proximal tubule cells. *Toxicol Sci.,* 190(1):1-12. doi: 10.1093/toxsci/kfac091.

Cirovic, A., Denic, A., Clarke, B.L., Vassallo, R., Cirovic, A., **Landry, G.M.** (2022) A hypoxia-driven occurrence of chronic kidney disease and osteoporosis in COPD individuals: new insights into environmental cadmium exposure. *Toxicology.* 482:153355. doi: 10.1016/j.tox.2022.153355.

Quiroz, J.P., Zeng, A., Young, M., Gordon, P., Jaipuria, A., Reed, K.J., **Landry, G.M**., Yang, S., Asher, S., Chen Zhang, S.R., Priefer, R. (2023) Homotaurine and curcumin analogues as potential anti-amyloidogenic agents. *Chemistry.* 5: 223-241.

Reed, K.J. and **Landry, G.M.** (2023) Diglycolic acid inhibits succinate dehydrogenase activity, depletes mitochondrial membrane potential, and induces inflammation in an SH-SY5Y neuroblastoma model of neurotoxicity *in vitro*. *Toxicol Appl Pharmacol.* 116414. doi: 10.1016/j.taap.2023.116414.

Tobin, J.D., Robinson, C.N., Luttrell-Williams, E., **Landry, G.M.,** McMartin, K.E. (2023) Lack of efflux of diglycolic acid from proximal tubule cells leads to its accumulation and to toxicity of diethylene glycol. *Toxicology Letters, 379,* 48-55. doi: 10.1016/j.toxlet.2023.03.007.

Coyne, S. and **Landry, G.M.** (2023) Tartaric acid induces toxicity in Madin-Darby Canine Kidney cells, but not Human Kidney-2 cells in vitro and is prevented by organic anion transporter (OAT) inhibition and

human OAT-4 transfection. *J Vet Emerg Crit Care (San Antonio). 33(3)*:298-304. doi: 10.1111/vec.13294. ***(Selected as one of the Best Papers of 2023 by the European Association of Poison Control and Clinical Toxicologists)***

Pando, P., Vattamparambil, A., Sheth, S., **Landry, G.M.** (2024) Acute lead (Pb^{2+}) exposure increases calcium oxalate crystallization in the inner medullary collecting duct, and is ameliorated by Ca^{2+}/Mg^{2+}-ATPase inhibition, as well as Capa receptor and SPoCk C knockdown in a *Drosophila melanogaster* model of nephrolithiasis, *Chem Biol Interact.* Oct 1;402:111201. doi: 10.1016/j.cbi.2024.111201. PMID: 39153536.

Jaipuria, A., Castillo, M., Boksanski, J., **Landry, G.M.**, Beak, J-H., Young, M., Priefer, D.T., Guessab, K., Ellis, C.N., Priefer, R. (2024) Extended chalcones: synthesis, *in vitro* analysis, and *in vivo* testing against a *Drosophila melanogaster* Alzheimer's Disease model. *Chemistry*. *6*(6), 1477-1494.

Book Chapters

Landry, G.M. and Carroll-Turpin, M. Extrinsic Organ Dysfunction as a Result of Toxicant-Induced Renal Injury, Reference Module in Biomedical Sciences, Elsevier, 2024, ISBN 9780128012383, https://doi.org/10.1016/B978-0-323-95488-4.00123-6. (https://www.sciencedirect.com/science/article/pii/B9780323954884001236)

Provisional Patents

U.S. Application No. 63/427,454 Treatment of Tartaric Acid Toxicity in Dogs with Probenecid
U.S. Application No. 19/048,532 Anti-Amyloidgenic Curcumin Analogues

Editorial Boards

Chemico-Biological Interactions - Elsevier

Service

***Ad hoc* Reviewer for**: *Cardiovascular Toxicology, Pharmacological Research, Urolithiasis, Biochemistry, Asian Journal of Urology, Clinical Toxicology, Oncotarget*, McGraw Hill *Human Physiology*, 16th edition by Stuart Fox; Chapters: Cell Respiration and Metabolism & Physiology of the Kidneys, *Alcoholism: Clinical and Experimental Research, PLOS One, Nutrients, Journal of Clinical Medicine, International Journal of Molecular Sciences, Archives of Toxicology, European Respiratory Review, Biological Trace Element Research, Chemico-Biological Interactions, Renal Failure, Journal of Molecular Histology, Cell Press (Heliyon), Biophysics, Journal of Trace Elements in Medicine and Biology, Toxicology and Applied Pharmacology, Scientific Reports, Cell Biology and Toxicology, Food & Chemical Toxicology, Toxicological Sciences, European Journal of Pharmaceutical Sciences, Journal of Veterinary Internal Medicine*

National:

2025-Present	**Member**, Education and Experiential Opportunities Committee, Society of Toxicology
2019-2023	**Member**, Continuing Education Committee, Society of Toxicology
2021-2022	**Member,** Out Toxicologists and Allies Nominating Committee Society of Toxicology
2012-2013	**Graduate Student Representative/Councilor**, Clinical and Translational Toxicology Specialty Section, Society of Toxicology

Regional:

2025-Present	**Vice President**, Northeast Chapter of the Society of Toxicology
2024-2025	**Senior Councilor,** Northeast Chapter of the Society of Toxicology
2023-2024	**Junior Councilor**, Northeast Chapter of the Society of Toxicology

2011-2012 **Graduate Student Representative**; South Central Chapter of the Society Toxicology

Community:

2010-2015 **Member of the Board of Directors**; Philadelphia Center: Northwest Louisiana HIV/AIDS Resource Center

Massachusetts College of Pharmacy & Health Sciences

2024-Present **Member,** B.S. Academic Standing Committee; School of Pharmacy
2021-Present **Member,** Institutional Animal Care and Use Committee (IACUC)
2019-Present **Member** of the Scientific Advisory Board for the Center for Research & Discovery
2022-2024 **Chair,** B.S. Academic Standing Committee; School of Pharmacy
2021-2022 **Member,** B.S. Academic Standing Committee; School of Pharmacy
2019-2024 **Member,** PharmD Honors Program Committee, School of Pharmacy
2019-2021 **Member**, Dean Search Committee, School of Pharmacy-Boston
2018-2021 **Chair,** B.S. Curriculum Committee; School of Pharmacy
2019-2021 **Graduate Program Coordinator**, MS/PhD Pharmacology, School of Pharmacy
2016-2018 **Member,** B.S. Curriculum Committee; School of Pharmacy
2016-2019 **Member,** PharmD Admissions Committee; School of Pharmacy
2017-2018 **Member,** B.S. Academic Standing Committee; School of Pharmacy
2016-2018 **Member,** B.S. Awards Committee; School of Pharmacy

Mayo Clinic College of Medicine:

2014-2015 Member of the Mayo Research Fellow Association (MRFA) Executive Committee and **Co-Chair** of 2014 MFA/MRFA Research Day
2015-2016 **Co-Coordinator**; 2016 Nephrology/Urology Summer Undergraduate Research Fellowship (nuSURF) NIH/NIDDK Research Symposium
2015-2016 **Judge;** Mayo Graduate School and IMSD Research Symposia

Invited Presentations

1. *Grand Rounds* – **Greg M. Landry** and Kenneth E. McMartin. "Diethylene Glycol Poisoning: Metabolites and Mechanisms" **Department of Surgery, Division of Emergency Medicine – Medical Toxicology,** University of Texas Southwestern Medical Center, Dallas, TX 4-5 February 2013.
2. *Grand Rounds* – **Greg M. Landry.** "The inhibition/induction intersection of calcium oxalate crystallization in a *Drosophila melanogaster* model of nephrolithiasis" **Nephrology and Hypertension Grand Rounds**, Division of Nephrology and Hypertension; Mayo Clinic College of Medicine, Rochester, MN, 4 August 2015.
3. *Continuing Medical Education* – **Greg M. Landry.** "Diethylene Glycol Poisoning: A Taste of Raspberries" **Nephrology and Hypertension Acid/Base Conference**, Division of Nephrology and Hypertension; Mayo Clinic College of Medicine, Rochester, MN, 6 March 2015.
4. *Research Seminar* – **Greg M. Landry.** "Mechanisms of diethylene glycol-induced neurotoxicity *in vitro*" **Inaugural Seminar** in the **School of Pharmacy-Boston Faculty Research Seminar Series**, Massachusetts College of Pharmacy & Health Sciences, Boston, MA, 1 December 2022.
5. *Research Seminar* - **Greg M. Landry.** "Mechanisms of diethylene glycol-induced neurotoxicity *in vitro*" **Department of Psychology & Neuroscience**, Emmanuel College, Boston, MA 3 March 2023.

Posters, Presentations, etc ***Presenting author(s) in bold***

1. *Platform Talk* – **Penelope Pando** and Greg M. Landry. Mechanisms of tartaric acid-induced nephrotoxicity in canines using Madin-Darby canine kidney (MDCK) cells *in vitro*. **Society of Toxicology 64th Annual Meeting,** Orlando, FL March 16-20, 2025
2. *Platform Talk* – **James Boksanski** and Greg M. Landry. Diglycolic acid inhibits succinate dehydrogenase activity, depletes mitochondrial membrane potential, and induces cell death in TKPTS mouse proximal tubule cells *in vitro*. **Northeast Society of Toxicology Annual Meeting,** Cambridge, MA, October 25, 2024
3. *Poster* – **Penelope Pando** and Greg M. Landry. Tartaric acid inhibits citrate synthase and depletes ATP in Madin-Darby canine kidney (MDCK) cells *in vitro*. **Northeast Society of Toxicology Annual Meeting,** Cambridge, MA, October 25, 2024
4. *Poster* – **Penelope Pando** and Greg M. Landry. Acute lead (Pb^{2+}) exposure induces calcium oxalate crystallization, as well as cell death in mIMCD-3 cells **Northeast Society of Toxicology Annual Meeting,** Shrewsbury, MA, October 20, 2023
5. *Poster* – **Justin Capezzuto** and Greg M. Landry. L-cysteine, but not N-acetylcysteine, ameliorates diglycolic acid-induced cytotoxicity in SH-SY5Y neuroblastoma cells *in* vitro. **Society of Toxicology 62nd Annual Meeting,** Nashville, TN, March 19-23, 2023
6. *Platform Talk* – **Sean Coyne** and Greg M. Landry. Tartaric acid induces toxicity in Madin-Darby Canine Kidney cells, but not Human Kidney cells and is prevented by organic anion transporter (OAT) inhibition or human (h)OAT-4 transfection. **Northeast Society of Toxicology Annual Meeting,** Boston, MA, October 21, 2022
7. *Poster* – **Kristi J. Reed** and Greg M. Landry. Diglycolic acid inhibits mitochondrial complex II, chelates calcium, and increases inflammatory cytokine release in SH-SY5Y neuroblastoma cells *in vitro*. **Northeast Society of Toxicology Annual Meeting,** Boston, MA, October 21, 2022
8. *Poster* – **Justin Capezzuto** and Greg M. Landry. Diglycolic acid induces significant cell death in SH-SY5Y neuroblastoma cells *in vitro*, which is ameliorated by cysteine co-treatment. **Northeast Society of Toxicology Annual Meeting,** Boston, MA, October 21, 2022
9. *Poster* – **Kristi J. Reed** and Greg M. Landry. Diglycolic acid chelates calcium in SH-SY5Y neuronal cells in vitro resulting in decreased mitochondrial membrane potential and ATP production. **Society of Toxicology 61st Annual Meeting,** San Diego, CA, March 25-30, 2022
10. *Poster* – **Sanjana Sheth** and Greg M. Landry. Lead (Pb^{2+}) induces cytotoxicity in mouse inner medullary collecting duct (m-IMCD-3) cells in vitro. **Society of Toxicology 61st Annual Meeting,** San Diego, CA, March 25-30, 2022
11. *Poster* – **Kristi J. Reed** and Greg M. Landry. Diglycolic acid induces time and threshold concentration dependent cell death in SH-SY5Y neuronal cells in vitro. **Society of Toxicology 60th Annual Meeting,** Orlando, FL, *Virtual Due to COVID-19*
12. *Poster* – **Kristi J. Reed** and Greg M. Landry. Diglycolic acid, the toxic metabolite of diethylene glycol, induces apoptosis followed by secondary necrosis in SH-SY5Y neuronal cells in vitro. **Society of Toxicology 59th Annual Meeting,** Anaheim, CA, *Virtual Due to COVID-19*
13. *Poster* – **Kristi J. Reed** and Greg M. Landry. Diglycolic acid, the toxic metabolite of diethylene glycol, induces apoptosis followed by secondary necrosis in SH-SY5Y neuronal cells in vitro. **Northeast Chapter of the Society of Toxicology Annual Meeting,** Cambridge, MA, October 25, 2019
14. *Poster* – **Greg M. Landry**, Anthony J. Branco, and Harleigh Becotte. Effects of lead (Pb^{2+}) on oxalate nephrolithiasis. **American Association of Colleges of Pharmacy**, Chicago, IL, July 12-17, 2019
15. *Poster* **– Anthony J. Branco** and Greg M. Landry. Lead-induced increases in calcium oxalate crystal formation is ameliorated via IP3-receptor knockdown. **Society of Toxicology 58th Annual Meeting,** Baltimore, MD, March 10-14, 2019.
16. *Poster* **– Harleigh Becotte** and Greg M. Landry. Combination lead (Pb^{2+}) and oxalate show a trend towards inducing renal inner medullary collecting duct cell necrosis and intracellular

calcium mobilization. **Society of Toxicology 58th Annual Meeting,** Baltimore, MD, March 10-14, 2019.

17. *Poster* **– Anthony J. Branco** and Greg M. Landry. Lead-induced increases in calcium oxalate crystal formation is ameliorated via IP3-receptor knockdown. **KUH Summer Undergraduate Research Conference 2018**, Simmons College hosted by: Harvard Summer Research Program in Kidney Medicine, Boston, MA, August 1-3, 2018.
18. *Poster* – Anthony Branco and **Greg M. Landry**. Effects of lead on calcium oxalate crystallization in an insect model of nephrolithiasis. **Society of Toxicology 57th Annual Meeting,** San Antonio, TX, March 11-15, 2018.
19. *Poster* – **Greg M. Landry,** Hirata, T., Gallo, C.J.R., Cabrero, P., Strohmaier, K., Williams, P., Dow, J.A.T., Furrow, E., Romero, M.F. Effects of heavy metals on calcium oxalate (CaOx) crystal formation in a *Drosophila melanogaster* model of nephrolithiasis. **Society of Toxicology 55th Annual Meeting**, New Orleans, LA, March 13-17, 2016.
20. *Poster* – **Greg M. Landry,** Hirata, T., Anderson, J.B., Gallo, C.J.R., Romero, M.F. Sulfate and thiosulfate competitively inhibit oxalate transport via a *Drosophila* Prestin (dPrestin, dSlc26a5)-dependent mechanism. **American Society of Nephrology Annual Meeting**, San Diego, CA, November 4-8, 2015
21. *Poster* – **Greg M. Landry,** Christopher Gallo, Pablo Cabrero, Kari Strohmaier, Paige Williams, Taku Hirata, John Lieske, Julian Dow, Eva Furrow, Michael Romero. "Effects of diuretics and zinc on renal calcium oxalate crystallization in a *Drosophila* model of oxalate nephrolithiasis" **Comparative and Evolutionary Physiology Intersociety Meeting (APS),** San Diego, CA, 5-9 October 2014.
22. *Poster* – **Greg M. Landry**, Cody Dunning, Tess Dupre, Mallory Hitt, and Kenneth E. McMartin. "Diglycolic acid induces cytotoxicity in human proximal tubule cells via preferential inhibition of succinate dehydrogenase and oxidative phosphorylation" **52nd Annual Meeting of the Society of Toxicology,** San Antonio, TX, 9-14 March 2013.
23. *Platform Talk* – **Greg M. Landry,** Cody L. Dunning, Tess V. Dupre, Mallory J. Hitt, and Kenneth E. McMartin. "Diglycolic acid induces human proximal tubule cell death by inhibition of succinate dehydrogenase and oxidative phosphorylation" **South Central Chapter of the Society of Toxicology Annual Meeting**, Little Rock, AR, 1-2 November 2012.
24. *Platform Talk* – **Greg M. Landry**, Cody L. Dunning, and Kenneth E. McMartin. "Diglycolic Acid, the Nephrotoxic Metabolite of Diethylene Glycol, produces cytotoxicity via molecular mimcry and metabolic disruption" **North American Congress of Clinical Toxicology Annual Meeting**, Las Vegas, NV. 2-6 October 2012.
25. *Platform Talk* – **Greg M. Landry**, Cody L. Dunning, and Kenneth E. McMartin. "Diglycolic Acid, the Nephrotoxic Metabolite of Diethylene Glycol, Induces Necrosis in Human Proximal Tubule Cells via Metabolic Disruption" **LSU-Health Sciences Center Graduate Research Day,** Shreveport, LA, 4 May 2012
26. *Poster* – **Greg M. Landry** and Kenneth E. McMartin. "Diglycolic Acid, the Nephrotoxic Metabolite of Diethylene Glycol, Induces Necrosis via Intracellular Accumulation and Metabolic Disruption" **51st Annual Meeting of the Society of Toxicology,** San Francisco, CA, 11-15 March 2012
27. *Poster*- **Greg M. Landry** and Kenneth E. McMartin. "Diglycolic Acid as the Nephrotoxic Metabolite of Diethylene Glycol and the Toxic Mechanisms Associated with Proximal Tubule Dysfunction" **South Central Chapter of the Society of Toxicology Annual Meeting**, New Orleans, LA, 28-29 October 2011
28. *Poster*- **Greg M. Landry,** Sarah Martin, and Kenneth McMartin. "Investigating the Metabolite Responsible for the Renal Toxicity of Diethylene Glycol *In Vitro*"
South Central Chapter of the Society of Toxicology Annual Meeting, Starkville, MS, 15 October 2010

29. *Poster*- **Greg M. Landry,** Sarah Martin, and Kenneth McMartin. "Investigating the Metabolite Responsible for the Renal Toxicity of Diethylene Glycol *In Vitro*"
North American Congress of Clinical Toxicology Annual Conference, Denver, CO, 7-12 October 2010
30. *Poster*- **Greg M. Landry,** Sarah Martin, and Kenneth McMartin. "Do Metabolites of Diethylene Glycol Produce Apoptosis in Human Proximal Tubular Cells?" **South Central Chapter of the Society of Toxicology Annual Meeting**. Shreveport, LA, 8-9 October 2009
31. *Poster*- **Greg M. Landry** and Heather E. Kleiner. "1'Acetoxychavicol acetate induces morphological changes and activation of the pro-apoptotic protein caspase-3 in human breast carcinoma MB-MDA-231 cells" **SUPER program presentation LSU-HSC-S**, Shreveport, Louisiana. 3 August 2007
32. *Poster*- **Greg M. Landry** and Heather E. Kleiner. "1'Acetoxychavicol acetate induces morphological changes and activation of the pro-apoptotic protein caspase-3 in human breast carcinoma MB-MDA-231 cells" **South Central Chapter of the Society of Toxicology Annual Meeting**. Oxford, Mississippi, 28-29 September 2007
33. *Poster* **– Greg M. Landry**, Brittany R. Williams, Tiffany E. Thomas, Debra D. Dolliver, "Synthesis of chiral N-alkoxybenzohydroximoyl halides" **National American Chemical Society Meeting**, New Orleans, Louisiana. April 2008