MERRIE MOSEDALE, PH.D.

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PROFESSIONAL EXPERIENCE

Assistant Director, Institute for Drug Safety Sciences 2016-Present
Research Assistant Professor, Division of Pharmacotherapy and Experimental Therapeutics 2016-Present
UNC Eshelman School of Pharmacy, The University of North Carolina at Chapel Hill, Chapel Hill, NC

Research Investigator, Hamner-UNC Institute for Drug Safety Sciences 2014-2015
The Hamner Institutes for Health Sciences, Research Triangle Park, NC

RESEARCH EXPERIENCE

Postdoctoral Fellow, Hamner-UNC Institute for Drug Safety Sciences 2012-2013
Advisors: Alison H. Harrill, Ph.D. and Paul B. Watkins, M.D.
The Hamner Institutes for Health Sciences, Research Triangle Park, NC

Graduate Student Researcher, Biomedical Sciences Ph.D. Program 2006-2012
Advisor: Steven D. Chessler, M.D., Ph.D.
University of California, San Diego, La Jolla, CA

Undergraduate Research Assistant, Sarah Stedman Nutrition and Metabolism Center 2005-2006
Advisors: Timothy R. Koves, Ph.D and Deborah M. Muoio, Ph.D.

Volunteer Research Assistant, Department of Radiation Oncology 2004
Advisor: Randy L. Jirtle, Ph.D.
Duke University, Durham, NC

Summer Medical and Research Training Program, Children's Nutrition Research Center 2004
Advisor: Agneta Sunehag, M.D., Ph.D.
Baylor College of Medicine, Houston, TX

EDUCATION

Ph.D., *Biomedical Sciences*; Specialization: Molecular Pharmacology March 2012
Dissertation: *The Role of Neurexins in Insulin Exocytosis from Pancreatic Beta Cells*
University of California, San Diego (UCSD), La Jolla, CA

B.S., *Biology with Distinction*; Minor: Chemistry May 2006
Thesis: *The Role of Peroxisome Proliferator-activated Receptor-γ Co-activator 1α in Regulating Intramyocellular Triacylglycerol Synthesis and Turnover*
Duke University, Durham, NC

ADDITIONAL TRAINING

Regulatory Affairs Training Program Initiated April 2020
Office of Regulatory Affairs and Quality, Duke University via WebEx

Applying the Quality Matters Rubric in Online Course Design Completed February 2020
Carolina Office for Online Learning, Chapel Hill, NC

Mary Frances Picciano Dietary Supplement Research Practicum Completed May 2019
Office of Dietary Supplements, National Institutes of Health, Bethesda, MD

Basics of Extracellular Vesicles Completed December 2016
International Society of Extracellular Vesicles via www.coursera.org

Next Generation Sequencing Data Analysis Completed November 2016
UNC Center for Bioinformatics, Chapel Hill, NC

Toxicologic Pathology of the Hepatobiliary System Completed October 2016
Society of Toxicologic Pathology, Raleigh, NC

US Regulatory Affairs Certification Workshop Completed September 2015
North Carolina Regulatory Affairs Forum, Research Triangle Park, NC

Network Analysis in Systems Biology Completed March 2015
Icahn School of Medicine at Mount Sinai via www.coursera.org

Data Analysis and Statistical Inference Completed November 2014
Duke University via www.coursera.org

Physiologically Based Pharmacokinetic (PBPK) Modeling Completed September 2014
The Hamner Institutes for Health Sciences, Research Triangle Park, NC

Computing for Data Analysis (Programming in R) Course Completed October 2012
Johns Hopkins via www.coursera.org

Life Science Immersion Program – Industry Certificate Completed December 2011
BIOCOM Institute, San Diego, CA

Good Laboratory Practices Course Completed December 2011
University of California, San Diego Extension, La Jolla, CA

NIH/UCSD Systems Pharmacology and Translational Biology Summer Course Completed July 2008
University of California, San Diego, La Jolla, CA

TEACHING EXPERIENCE

Faculty Presenter, Division of Pharmacotherapy and Experimental Therapeutics Seminar Series 2016
UNC Eshelman School of Pharmacy, The University of North Carolina at Chapel Hill, Chapel Hill, NC

Guest Lecturer, Pharmacogenomics and Personalized Medicine 2014
Department of Pharmacology, Duke University, Durham, NC

Guest Presenter, Division of Pharmacotherapy and Experimental Therapeutics Seminar Series 2014
UNC Eshelman School of Pharmacy, The University of North Carolina at Chapel Hill, Chapel Hill, NC

Teaching Assistant, Metabolic Biochemistry 2008
Department of Biology, University of California, San Diego, La Jolla, CA

PROFESSIONAL MEMBERSHIP

International Society of Extracellular Vesicles (ISEV) 2014-Present
Society of Toxicology (SOT) 2012-Present

Member of Drug Discovery Specialty Section, In Vitro Specialty Section, Mechanisms Specialty Section, Molecular Biology Specialty Section, Regulatory and Safety Evaluation Specialty Section, North Carolina Society of Toxicology, and Women in Toxicology Special Interest Group
American Society for Pharmacology and Experimental Therapeutics (ASPET) 2008-Present

HONORS/AWARDS

ASPET Division for Toxicology Early Career Award	2020
Burroughs Wellcome Fund Innovation in Regulatory Science Award	2017
Sternfels Prize for Drug Safety Innovation	2017
Best Paper in *Toxicological Sciences,* 2014-2015 (Co-first author)	2016
ASPET Postdoctoral Award for Integrative Research in Pharmacology	2013
SOT Risk Assessment Specialty Section Perry J. Gehring Best Postdoctoral Fellow Abstract Award	2013
SOT Risk Assessment Specialty Section Top 10 Abstract Award	2013
SOT Regulatory and Safety Evaluation Specialty Section Travel Award	2013
Finalist, SOT Drug Discovery Toxicology Specialty Section Postdoctoral Poster Competition	2013
Third Place, North Carolina Society of Toxicology President's Award for Research Competition	2012
European Association for the Study of Diabetes 46th Annual Meeting Travel Grant	2010
Kirschstein-NRSA Trainee in Cellular and Molecular Pharmacology	2007-2010
UCSD Biomedical Sciences Program Best Performance in First Year Classes	2007
Duke University Dean's List with Distinction	2004, 2005
Duke University Dean's List	2002, 2003

PROFESSIONAL AND COMMUNITY SERVICE

Botanical Safety Consortium Hepatotoxicity Technical Working Group	2020-present
Development of UNC Regulatory Science Master's Program	2019-present
UNC Pharmaceutical Sciences Research & Graduate Education Retreat Planning Committee	2019-present
Division of Pharmacotherapy and Experimental Therapeutics Graduate Program Search Committee	2018-present
North Carolina International Science Challenge Judge	2017-present
SOT Mechanisms Specialty Section Carl C. Smith Graduate Student Award Judge	2017-present
Ad hoc reviewer for scientific journals	2016-present

Including Acta Pharmaceutica, Sinica B, Alternatives to Animal Experimentation, Applied In Vitro Toxicology, BBA Molecular Basis of Disease, Clinical Pharmacology & Therapeutics, Drug Metabolism and Disposition, Heliyon, International Journal of Toxicology, Journal of Applied Toxicology, Journal of Medicinal Chemistry, Physiological Genomics, Small, Toxicology in Vitro, and Toxicological Sciences

UNC Eshelman School of Pharmacy PharmSci Conference Planning Committee	2016-2017
Duke Triangle Women's Forum Steering Committee	2015-2016
The Hamner Institutes 401K Committee	2014-2015
The Hamner Institutes IP Committee	2014-2015
The Hamner Institutes Seminar Series Organizing Committee	2014-2015
The Hamner Institutes Postdoc Seminar Series Organizing Committee	2013-2015
UCSD Ph.D. Career Conference Planning Committee	2011-2012
Association for Women in Science, San Diego Strategy Sessions Committee	2011-2012
Duke Alumni Club of San Diego Communications Chair	2010-2012
Duke Alumni Admissions Advisory Committee	2010-2012
UCSD Department of Pharmacology Seminar Series Committee	2009-2010
Duke Alumni Club of San Diego Board Member	2007-2012
Duke Young Alumni Admissions Link Program Participant	2007-2012

PUBLICATIONS

1. Nautiyal, M., Vorrink, S. U., Qasem, R.J., Fallon, J.K., Wolf, K.K, Smith, P.C., Ingelman-Sundberg, M., and **Mosedale, M**. Long-term culture of primary mouse hepatocytes in 3D spheroids supports development of an in vitro Collaborative Cross platform for the evaluation of genetic susceptibility factors associated with DILI. *In preparation.*

2. **Mosedale, M**. Cai, Y., Eaddy, J.S., Kirby, P.J., Wolenski, F.S., Dragan, Y., and Valdar, W. Gene expression profiling in Collaborative Cross mice identifies mechanisms and risk factors for TAK-875-induced liver injury. *In preparation.*

3. Qasem, R.J., Fallon, J.K., Nautiyal, M., **Mosedale, M.,** and Smith, P.C. Differential detergent fractionation of membrane protein from small samples of hepatocytes and liver tissue for quantitative proteomic analysis of drug metabolizing enzymes and transporters. *In preparation.*

4. Hammond, S., Gibson, A., Jaruthamsophon, K., Roth, S., **Mosedale, M**., and Naisbitt, D.J. The hydroxybutyric acid tolvaptan metabolite activates T-cells from healthy human donors and patients with drug-induced liver injury. *Hepatology.* Submitted: April 30, 2020.

5. Nautiyal, M., Bauch, C., Walker, P., Watkins, P.B., and **Mosedale, M**. Fit-for-purpose hepatocyte models enable the identification of early events contributing to idelalisib-induced liver injury. *Appl In Vitro Toxicol.* Submitted: Apr 9, 2020.

6. **Mosedale, M**. and Watkins, P.B., Understanding idiosyncratic toxicity: lessons learned from drug-induced liver injury. *J Med Chem*. Epub ahead of print: Feb 9, 2020.

7. **Mosedale, M**., Cai, Y., Eaddy, J.S., Corty, R.W., Nautiyal, M., Watkins, P.B., and Valdar, W. Identification of candidate risk factor genes for human idelalisib toxicity using a Collaborative Cross approach. *Toxicol Sci.* 172(2): 265-278.

8. Holman, N. S., Church, R. J., Nautiyal, M., Rose, K.A., Thacker, S. E., Otieno, M. Wolf, K. K., LeCluyse, E., Watkins, P. B., **Mosedale, M**. (2019) Hepatocyte-derived exosomes promote liver immune tolerance: possible implications for idiosyncratic drug-induced liver injury. *Toxicol Sci.* 170(2): 499-508.

9. Norona, L.M., Nguyen, D.G., Gerber, D.A., Presnell, S.C., **Mosedale, M**.*, and Watkins, P.B.* (2019) Bioprinted liver provides early insight into the role of Kupffer cells in TGF-β1 and methotrexate-induced fibrogenesis. *PLoS One*. 14(1): e0208958.
   These authors contributed equally to this work as senior authors

10. Longo, D.B., Woodhead, J.L., Walker, P., Heredi-Szabo, K., Mogyorosi, K., Dragan, Y.P., **Mosedale, M.**, Siler, S.Q., Watkins, P.B., and Howell, B.A. (2019) Quantitative systems toxicology analysis of in vitro mechanistic assays reveals importance of bile acid accumulation and mitochondrial dysfunction in TAK-875-induced live injury. *Toxicol Sci*. 167(2): 458-67.

11. **Mosedale, M.** (2018) Mouse population-based approaches to investigate adverse drug reactions. *Drug Metab Dispos*. 46(11): 1787-95.

12. Thacker, S.E., Nautiyal, M., Otieno, M.A., Watkins, P.B., and **Mosedale, M.** (2018) Optimized methods to explore the mechanistic and biomarker potential of hepatocyte-derived exosomes in drug-induced liver injury. *Toxicol Sci.* 163(1): 92-100.

13. **Mosedale, M.**, Button, D., Jackson, J.P., Freeman, K.M., Brouwer, K.R., Caggiano, A.O., Eisen, A., Iaci, J.F., Parry, T.J., Stanulis, R., Srinivas, M., and Watkins, P.B. (2018) Transient changes in hepatic physiology that alter bilirubin and bile acid transport may explain elevations in liver chemistries observed in clinical trials of GGF2 (Cimaglermin alpha). *Toxicol Sci.* 161(2): 401-11.

14. **Mosedale, M.**, Eaddy, J.S., Trask Jr., O.J., Holman, N.S., Wolf, K.K., LeCluyse, E., Ware, B.R., Khetani, S.R., Lu, J., Brock, W.J., Roth, S.E., and Watkins, P.B. (2018) miR-122 release in exosomes precedes overt tolvaptan-induced necrosis in a primary human hepatocyte micropatterned coculture model. *Toxicol Sci.* 161(1): 149-58.

15. Dong,O.M., Howard, R.M., Church, R., Cottrell, M., Forrest, A., Innocenti, F., **Mosedale, M**. Kashuba, A., Gonzalez, D., and Wiltshire, T. (2018) Pharmacy in the era of precision medicine: challenges and solutions for future pharmacy practice. *Am J Pharm Educ.* 82(6): 6652.

16. **Mosedale, M.**, Kim, Y., Brock, W.J., Roth, S.E., Wiltshire, T., Eaddy, J.S., Keele, G.R., Corty, R.W., Xie, Y., Valdar, W., and Watkins, P.B. (2017) Candidate risk factors and mechanisms for tolvaptan-induced liver injury are identified using a Collaborative Cross approach. *Toxicol Sci.* 156(2): 438-54.*
Editor's highlight with commentary.

17. **Mosedale, M.** and Watkins, P.B. (2017) Invited "state-of-the-art" review: Drug-induced liver injury: Advances in mechanistic understanding that will inform risk management. *Clin Pharmacol Ther.* 101(4): 469-80.

18. Woodhead, J.L., Brock, W.J., Roth, S.E., Shoaf, S.E., Brouwer, K.L.R., Church, R.J., Grammatopoulos, T.N., Stiles, L., Siler, S.Q., Howell, B.A., **Mosedale, M.**, Watkins, P.B., and Shoda, L.K.M. (2017) Application of a mechanistic model to evaluate putative mechanisms of tolvaptan drug-induced liver injury and identify patient susceptibility factors. *Toxicol Sci.* 155(1): 61-74.

19. Longo, D.B., Generaux, G., Howell, B.A., Siler, S.Q., Antoine, D.J., Caggiano, A., Eisen, A., Stanulis, R., Parry, T., **Mosedale, M.**, and Watkins, P.B. (2017) Refining liver safety risk assessment: Application of mechanistic modeling and serum biomarkers to cimaglermin alpha (GGF2) clinical trials. *Clin Pharmacol Ther.* 102(6): 961-969.

20. Watkins, P.B.* and **Mosedale, M.*** (2017) Mechanisms of drug-induced liver injury, in *Schiff's Diseases of the Liver*, Twelfth Edition (eds E.R. Schiff, W.C. Maddrey, and K.R. Reddy). John Wiley& Sons, Ltd.
These authors contributed equally to this work as first authors

21. Holman, N.S., **Mosedale, M.**, Wolf, K.K, LeCluyse, E.L., and Watkins, P.B. (2016) Sub-toxic alterations in hepatocyte-derived exosomes: an early step in drug-induced liver injury? *Toxicol Sci.* 151(2): 365-75.

22. Church, R.J., Gatti, D.M., Urban, T.J., Long, N., Yang, X., Shi, Q., Eaddy, J.S., **Mosedale, M.**, Ballard, S., Churchill, G.A., Navarro, V., Watkins, P.B., Threadgill, D.W., and Harrill, AH. (2015) Sensitivity to hepatotoxicity due to epigallocatechin gallate is affected by genetic background in diversity outbred mice. *Food Chem Toxicol.* 76(2): 19-26.

23. **Mosedale, M.**, Wu, H., Kurtz, C.L., Schmidt, S.P., Adkins, K., and Harrill, A.H. (2014) Dysregulation of protein degradation pathways may mediate the liver injury and phospholipidosis associated with a cationic amphiphilic antibiotic drug. *Toxicol Appl Pharmacol.* 280(1): 21-9.

24. Church, RJ.*, Wu, H.*, **Mosedale, M.***, Sumner, S.J., Pathmasiri, W., Kurtz, C.L., Pletcher, M.T., Eaddy, J.S., Pandher, K., Singer, M., Batheja, A., Watkins, P.B., Adkins, K., and Harrill, A.H. (2014) A systems biology approach utilizing a mouse diversity panel identifies genetic differences influencing isoniazid-induced microvesicular steatosis. *Toxicol Sci.* 140(2): 481-92.**
These authors contributed equally to this work as first authors
****Awarded best manuscript of the year in Toxicological Sciences, 2014-2015***

25. Koves, T.R., Sparks, L.M., Kovalik, J.P., **Mosedale, M.**, Arumugam, R., Debalsi, K.L., Everingham, K., Thorne, L., Phielix, E., Meex, R.C., Kien, C.L., Hesselink, M.K., Schrauwen, P., and Muoio, D.M. (2013) PPARγ coactivator-1α contributes to exercise-induced regulation of intramuscular lipid droplet programming in mice and humans. *J Lipid. Res*. 54(2): 522-34.

26. **Mosedale, M.**, Egodage, S., Calma, R.C., Chi, N.W., and Chessler, S.D. (2012) Neurexin-1α contributes to insulin-containing secretory granule docking. *J Biol. Chem*. 287(9): 6350-61.

27. Suckow, A.T., Comoletti, D., Waldrop, M.A., **Mosedale, M.**, Egodage, S., Taylor, P., and Chessler, S.D. (2008) Expression of neurexin, neuroligin, and their cytoplasmic binding partners in the pancreatic β-cells and the involvement of neuroligin in insulin secretion. *Endocrinology* 149(12): 6006-17.

28. Koves, T.R., Ussher, J.R., Noland, R.C., Slentz, D., Mosedale, M., Ilkayeva, O., Bain, J., Stevens, R., Dyck, J.R., Newgard, C.B., Lopaschuk, G.D., and Muoio, D.M. (2008) PPARγ coactivator-1α contributes to exercise-induced regulation of intramuscular lipid droplet programming in mice and humans. *Cell Metab*. 7(1): 45-56.

ACCEPTED ABSTRACTS (PRESENTING AUTHOR)

1. Nautiyal, M., Vorrink, S. U., Qasem, R.J., Fallon, J.K., Wolf, K.K, Smith, P.C., Ingelman-Sundberg, M., and Mosedale, M. Gene Expression Analysis, Quantitative Proteomics, and Chronic Toxicity Studies in Primary Mouse Hepatocyte Spheroids Support the Development of an *In Vitro* Collaborative Cross Platform for the Evaluation of Genetic Susceptibility Factors Associated with DILI. Society of Toxicology Annual Meeting, Anaheim, CA. [Online] March 17, 2020.

2. Mosedale, M., Rose, K.A., Nautiyal, M., and Watkins, P.B. Development of an In Vitro Assay to Predict Idiosyncratic Drug-Induced Liver Injury Using Hepatocyte-Derived Exosomes. Eshelman Institute for Innovation Igniting Innovation Symposium, Chapel Hill, NC. October 10, 2019.

3. Nautiyal, M., Vorrink, S.U., Ingelman-Sundberg, M., and Mosedale, M. Improved phenotypic relevance of primary mouse hepatocyte spheroids supports development of an in vitro Collaborative Cross Platform for the Evaluation of Genetic Susceptibility Factors Associated with DILI. American Association for the Study of Liver Diseases/FDA DILI Conference, Hyattsville, MD. May 7, 2019.

4. Mosedale, M., Cai, Y., Eaddy, J.S., Corty, R.W., Nautiyal, M., Therrien, J., Valdar, W., and Watkins, P.B. Identification of candidate risk factor genes for human idelalisib toxicity using a Collaborative Cross approach. Society of Toxicology Annual Meeting, Baltimore, MD. March 11, 2019.

5. Nautiyal, M., Vorrink, S.U., Ingelman-Sundberg, M., and Mosedale, M. Improved phenotypic relevance of primary mouse hepatocyte spheroids supports development of an in vitro Collaborative Cross Platform for the Evaluation of Genetic Susceptibility Factors Associated with DILI. Society of Toxicology Annual Meeting, Baltimore, MD. March 11, 2019.

6. Holman, N. S., Church, R. J., Nautiyal, M., Thacker, S. E., Otieno, M. Wolf, K. K., LeCluyse, E., Watkins, P. B., Mosedale, M. Hepatocyte-derived exosomes promote liver immune tolerance: possible implications for idiosyncratic drug-induced liver injury. PharmAlliance Annual Meeting, Melbourne, AUS. February 6, 2019.

7. Mosedale, M., Foley, B. Nicoletti, P., Cirulli, E.T., Black, M.B., Thomas, R.S., and Watkins, P.B. A common genetic variant associated with the risk of idiosyncratic liver injury due to a variety of drugs is identified via hepatic gene expression-based clustering analysis. Society of Toxicology Annual Meeting, San Antonio, TX. March 12, 2018.

8. Nautiyal, M., Vorrink, S.U., Ingelman-Sundberg, M., and Mosedale, M. Long-term culture of primary mouse hepatocytes in 3D spheroids supports development of an in vitro Collaborative Cross platform for the evaluation of genetic susceptibility factors associated with DILI. Society of Toxicology Annual Meeting, San Antonio, TX. March 12, 2018.

9. Mosedale, M., Jackson, J.P., Brouwer, K.R., Button, D., Eisen, A., Caggiano, A., Iaci, J., Stanulis, R., Parry, T., and Watkins, P.B. Transient changes in hepatic physiology impacting bilirubin and bile acid transport may help explain the elevations in liver chemistries observed in clinical trials of GGF2 (cimaglermin alpha). Society of Toxicology Annual Meeting, Baltimore, MD. March 15, 2017.

10. Mosedale, M., Eaddy, J.S., Trask Jr., O.J., Holman, N.S., Wolf, K.K., LeCluyse, E.L., Brock, W.J., Roth, S.E., and Watkins, P.B. miR-122 release in exosomes accompanies tolvaptan-induced mitochondrial dysfunction, oxidative stress, and apoptosis in a micropatterned primary human hepatocyte coculture model. Society of Toxicology Annual Meeting, New Orleans, LA. March 16, 2016.

11. Mosedale, M., Wiltshire, T., Eaddy, J.S., Brock, W.J., Roth, S., Dodd, D.E., Corty, R.W., Xie, Y., Valdar, W., and Watkins, P.B. Candidate risk factors for tolvaptan-induced liver injury are identified using a Collaborative Cross approach. Society of Toxicology Annual Meeting, San Diego, CA. March 23, 2015.

12. Mosedale, M., Adkins, K., Wu, H., and Harrill, A.H. Prdm2 is identified as a potential risk factor for zileuton-induced liver injury using a mouse genetic diversity panel. Society of Toxicology Annual Meeting, Phoenix, AZ. March 24, 2014.

13. Mosedale, M., Adkins, K., Wu, H., and Harrill, A.H. Prdm2 is identified as a potential risk factor for zileuton-induced liver injury using a mouse genetic diversity panel. North Carolina Society of Toxicology Spring Meeting, RTP, NC. March 11, 2014.

14. Mosedale, M., Kurtz, C.L., Eaddy, J.S., Adkins, K., Wu, H., Watkins, P.B., and Harrill, A.H. Safety assessment of a novel antibiotic using a mouse population-based approach predicts risk of DILI in humans where classical models fail. Society of Toxicology Annual Meeting, San Antonio, TX. March 11, 2013.

15. Mosedale, M., Kurtz, C.L., Eaddy, J.S., Adkins, K., Wu, H., Watkins, P.B., and Harrill, A.H. Safety assessment of a novel antibiotic using a mouse population-based approach predicts risk of DILI in humans where classical models fail. RTP Drug Metabolism Discussion Group Winter Symposium, RTP, NC. February 28, 2013.

16. Mosedale, M., Egodage, S., Calma, R.C., and Chessler, S.D. A possible role for neurexin in the docking of insulin granules at the β-cell membrane. American Diabetes Association Scientific Sessions, San Diego, CA. June 26, 2011.

17. Mosedale, M., Suckow, A.T., Egodage, S., Calma, R.C., and Chessler, S.D. The role of neurexins in the exocytosis of insulin granules from β cells. European Association for the Study of Diabetes Annual Meeting, Stockholm, Sweden. September 22, 2010.

18. Mosedale, M., Suckow, A.T., Egodage, S., Calma, R.C., and Chessler, S.D. The role of neurexins in the exocytosis of insulin granules from β cells. Western Region Islet Study Group, Eatonville, Washington. May 23, 2010.

19. Mosedale, M., Suckow, A.T., Egodage, S., Calma, R.C., and Chessler, S.D. The role of neurexins in exocytosis of insulin from β cells. University of California, San Diego All Graduate Research Symposium, San Diego, CA. February 5, 2010.

20. Mosedale, M., Suckow, A.T., and Chessler, S.D. The role of neurexins in exocytosis of insulin from β cells. American Diabetes Association Scientific Sessions, New Orleans, LA. June 8, 2009.

INVITED PRESENTATIONS

1. Mouse population-based approaches to understand and predict adverse drug reactions. UNC Department of Genetics Research Colloquium, Chapel Hill, NC. January 29, 2020.

2. Genetics of drug-induced liver injury. American Association for the Study of Liver Disease Emerging Topic Conference: The Genomics Revolution, Arlington, VA. September 20, 2019.

3. Mouse population-based approaches to understand and predict adverse drug reactions. World Preclinical Congress, Boston, MA. June 20, 2019.

4. Exploring the utility of exosomes to understand and predict drug-induced liver injury. PharmAlliance Research Symposium, Melbourne, AUS. February 7, 2019.

5. mir-122 release in exosomes precedes overt tolvaptan-induced necrosis in the human HEPATOPAC® model. HEPATOPAC User Group Meeting, Boston, MA. October 18, 2018.

6. A human cholangiocyte culture system to support modeling of cholestatic DILI. DILI-sim Initiative Annual Meeting, Research Triangle Park, NC. September 11, 2018.

7. Standardization of a fluidic in vitro exposure system for DILI prediction. DILI-sim Initiative Annual Meeting, Research Triangle Park, NC. September 13, 2017.

8. Evaluation of tolvaptan-induced stress response in HepatoPac: Combining exosome analysis, high content imaging, and toxicogenomics. Society of Toxicology Annual Meeting, Baltimore, MD. March 15, 2017.

9. Precision DILI risk management – the tolvaptan initiative. American Association for the Study of Liver Disease Hepatotoxicity Webinar. June 17, 2015.

10. Personalized DILI risk management – the tolvaptan initiative. FDA Drug-Induced Liver Injury Conference, College Park, MD. March 19, 2015.

11. An integrative approach to identify a personalized strategy for DILI risk management. Hamner Seminar Series, RTP, NC. February 3, 2015.

12. Collaborative Cross mouse and hepatocyte studies. Tolvaptan and Drug Induced Liver Injury Research Forum, Philadelphia, PA. September 17, 2014.

13. Utilizing mouse population models to understand and predict drug toxicity in humans. World Pharma Congress, Boston, MA. May 21, 2014.

14. Use of an inbred, laboratory mouse diversity panel for predicting and understanding adverse drug reactions in human populations. Hamner Postdoc Seminar Series, RTP, NC. April 2, 2013.

15. The role of neurexins in exocytosis of insulin from β cells. San Diego β-cell Society Meeting, San Diego, CA. January 21, 2010.

16. The role of neurexins in exocytosis of insulin from β cells. University of California, San Diego Islet Research Interest Group, San Diego, CA. June 18, 2009.

17. The role of neurexins in exocytosis of insulin from β cells. University of California, San Diego Pharmacology Trainee Retreat, San Diego, CA. April 20, 2010.

TRAINEES

Senior/Primary Mentor

Niyati Vachharajani, Postdoctoral Fellow 2019-Present
Institute for Drug Safety Sciences, UNC Eshelman School of Pharmacy
Mentee Awards
2020 Colgate-Palmolive Postdoctoral Fellowship Award in *In Vitro* Toxicology
2020 Association of Scientists of Indian Origin SIG Dr. Dharm Singh Postdoctoral Fellow Best Abstract Award
2020 UNC Core Facility Advocacy Committee Pilot Funding Award

Sarah E. Thacker, Postdoctoral Fellow 2016-2017
Institute for Drug Safety Sciences, UNC Eshelman School of Pharmacy

Mentee Awards
2017 International Society of Regulatory Toxicology and Pharmacology Travel Award
2017 SOT Regulatory and Safety Evaluation Specialty Section Travel Award
2017 2nd Place, SOT Drug Discovery Toxicology Specialty Section Postdoctoral Poster Competition

Junior/Secondary Mentor

Leah M. Norona, Ph.D. Student 2016-2017
Curriculum in Toxicology, UNC School of Medicine
Mentee Awards
2017 AASLD Young Investigator Travel Award
2016-2017 Best Paper in *Toxicological Sciences*

Natalie S. Holman, Ph.D. Student 2014-2016
Curriculum in Toxicology, UNC School of Medicine
Mentee Awards
2016 SOT Mechanisms Specialty Section Sheldon D. Murphy Travel Award
2015 1st Place, Graduate Student Poster Competition, UNC Curriculum in Toxicology Annual Retreat
2015 2nd Place, Poster Competition, SOT North Carolina Regional Chapter Spring Meeting
2015 Leon Goldberg Memorial Travel Award for SOT, UNC Chapel Hill
2015 1st Place, Platform Presentation, Gordon Research Seminar, Cellular and Molecular Mechanisms of Toxicity
2014 UNC Student Nominee, PhRMA Foundation Pre-doctoral Fellowship in Pharmacology & Toxicology
2014 1st Place, Graduate Student Poster Competition, UNC-HHMI Translational Medicine Annual Symposium

FUNDING

Ongoing Research Support

R21OD028216 Mosedale (PI) 9/19 - 8/21
Development of an in vitro mouse genetic reference platform to improve preclinical drug safety assessment
The goal of this research is to evaluate the utility of the Collaborative Cross population for improving preclinical safety assessment and to identify interspecies differences in drug toxicity between animals and humans.

Sponsored Research Agreement, Janssen Research & Development, LLC Mosedale (PI) 9/19 - 8/21
Exploring the utility of exosomes to predict and understand idiosyncratic drug-induced liver injury
The goal of this project is to understand how drugs that cause idiosyncratic drug-induced liver injury influence exosome release and activation of other nonparenchmal cell types in the liver.

Burroughs Wellcome Innovation in Regulatory Science Award Mosedale (PI) 9/17 - 8/22
Development of an in vitro platform for the evaluation of genetic susceptibility factors associated with ADRs
The goal of this research is to transform the Collaborative Cross mouse genetic reference population into an *in vitro* platform to investigate gene-by-treatment interactions associated with adverse drug response.

Completed Research Support

Eshelman Institute for Innovation Award Mosedale (PI) 7/18 - 12/19
Development of a novel human in vitro system to predict cholestatic drug-induced liver injury

PharmAlliance Grant Creek (PI); Brouwer, Mosedale, and Watkins (Co-Is) 11/18 - 10/19
Novel approach to predict drug-induced liver injury using metabolomics and systems toxicology

Research Services Agreement, Alnylam Pharmaceuticals Mosedale (PI) 3/19 - 6/19
Evaluation of 2D and 3D HepaRG models for predicting clinical transaminase elevations associated with trivalent n-acetyl galactosamine-conjugated small interfering RNAs

1 R44 GM123796-01 McClelland and Mosedale (Co-PIs) 9/17 - 2/19
Standardization of a fluidic in vitro exposure system for IVIVE predictive toxicity data

Research Services Agreement, Allecra Therapeutics GmbH Mosedale (PI) 7/17 - 6/18
Identification of stress response pathways initiated in primary human hepatocytes exposed to AAI101

Research Funding Agreement, Millennium (Takeda) Pharmaceuticals, Inc. Mosedale (PI) 4/17 - 3/19
Continuation of "A research plan to identify mechanisms underlying liver injury due to TAK-875"

Research Funding Agreement, Wapta, LLC Mosedale (PI) 4/17 - 3/18
Investigation of an HLA supertype approach to identify patients susceptible to idiosyncratic adverse drug reactions

Funded Research Agreement, Gilead Sciences, Inc. Mosedale (PI) 10/16 - 12/18
A research plan to identify mechanisms underlying liver injury due to idelalisib

Sponsored Research Agreement, Janssen Research & Development, LLC Mosedale (PI) 7/16 - 6/19
Exploring the utility of exosomes to predict and understand drug-induced liver injury

Sponsored Research Agreement, Organovo, Inc. Mosedale and Watkins (Co-PIs) 5/16 - 8/17
Development of an in vitro model for compound-induced hepatic fibrosis

Sponsored Research Agreement, Takeda Pharmaceuticals International, Inc. Mosedale (PI) 1/15 – 12/15
Identification of stress response pathways Initiated in primary human hepatocytes expose to TAK-875

Sponsored Research Agreement, Takeda Pharmaceuticals International, Inc. Mosedale (PI) 1/15 – 12/15
Toxicogenetic analysis of TAK-875 using Collaborative Cross mice

Sponsored Research Agreement, Acorda Therapeutics, Inc. Mosedale (PI) 11/14 - 12/16
Identification of genomic changes associated with the GGF2-induced downregulation of CYP3A4 mRNA in primary human hepatocytes

Sponsored Research Agreement, Otsuka Pharmaceutical, Inc. Mosedale (PI of 2 studies) 1/14 - 1/16
A research plan to identify a personalized medicine approach to manage the risk of liver injury due to tolvaptan.

Postdoctoral Award for Integrative Research in Pharmacology, ASPET Mosedale (PI) 1/13 – 12/13
Validation of a genetically diverse panel of inbred laboratory mouse strains as a predictive model of idiosyncratic drug-induced liver injury risk in humans