Alison Harrill, Ph.D.

Assistant Professor
Department of Environmental & Occupational Health
University of Arkansas for Medical Sciences
4301 W. Markham Street, Slot 820-11
Little Rock, AR 72205
Office: (501) 526-6619
Fax: (501) 526-6570
ahharrill@uams.edu

Education

Postdoctoral Fellowship, The Hamner Institutes for Health Sciences, Research Triangle Park, NC	2009 - 2010
Ph.D. in Toxicology, University of North Carolina at Chapel Hill, Chapel Hill, NC	2004 - 2008
B.S. in Genetic Engineering (magna cum laude), Cedar Crest College, Allentown, PA	1998 - 2002

Current Position

Assistant Professor, Tenure-track Environmental & Occupational Health University of Arkansas for Medical Sciences Little Rock, AR	2013 - present
Special Government Employee. Appointee to US Food and Drug Administration Advisory Board for Pharmaceutical Science and Clinical Pharmacology	2015 - present

Professional Experience

Senior Research investigator, Translational Pharmacogenomics Laboratory The Hamner Institutes for Health Sciences Research Triangle Park, NC	2012 - 2013
Research Investigator, Translational Pharmacogenomics Laboratory The Hamner Institutes for Health Sciences Research Triangle Park, NC	2010 - 2012
Graduate Research Assistant, Curriculum in Toxicology The University of North Carolina at Chapel Hill Chapel Hill, NC	2004 - 2008

Academic Appointments

Assistant Professor (Secondary Appointment) Pharmacology and Toxicology University of Arkansas for Medical Sciences Little Rock, AR	2013 - present
Adjunct Assistant Professor Pharmacology and Experimental Therapeutics University of North Carolina at Chapel Hill Chapel Hill, NC	2012 - 2014

Other Positions and Employment

Research Technician, Applied Pharmacology Branch — 2003 - 2004
U.S. Army Medical Research Institute of Chemical Defense
Edgewood, MD

Research Technician, U.S. Military HIV Research Program — 2002 – 2003
The Henry M. Jackson Foundation for the Advancement of Military Medicine
Rockville, MD

Intern, RheoGene, Inc. – a division of The Rohm and Haas Company — 2000 – 2002
Norristown, PA

Professional Memberships and Activities (***active service***)

Society of Toxicology — 2005 – present
- *Appointed Member, Contemporary Concepts in Toxicology Committee (2014 - present)*
- *Junior Counselor, Molecular and Systems Biology Specialty Section (2014-present)*
- Postdoctoral Assembly Secretary (2009 – 2010)
- Chairperson, Specialty Section Graduate Committee (2007 – 2008)
- Secretary-Treasurer, Student Advisory Council (2007 – 2008)
- Student Representative, Toxicologic and Exploratory Pathology Specialty Section (2005 – 2007)

American Society for Pharmacology and Experimental Therapeutics — 2012 – present
- *Secretary/Treasurer-Elect, Toxicology Division (2015-present)*

American College of Toxicology — 2012 - present
Genetics Society of America — 2012 – present
The Toxicology Forum — 2014 - present

Honors and Awards

1. Best Paper, Society of Toxicology Molecular and Systems Biology Specialty Section — 2014
2. Mentor Award, Perry Gehrig Postdoctoral Fellow Mentoring, Society of Toxicology Risk Assessment Specialty Section (Mentee: Rachel Church) — 2014
3. Top 10 Abstract, Society of Toxicology Risk Assessment Specialty Section — 2013
4. Mentor Award, Perry Gehrig Postdoctoral Fellow Mentoring, Society of Toxicology Risk Assessment Specialty Section (Mentee: Merrie Mosedale) — 2013
5. John Doull Risk Assessment Abstract Mentor Award — 2013
6. Triangle Business Journal “Beautiful Minds” Competition Winner — 2011
7. Outstanding Published Paper Advancing the Science of Risk Assessment, Society of Toxicology Risk Assessment Specialty Section — 2009
8. Leon Goldberg Toxicology Travel Award — 2008 and 2007
9. North Carolina Society of Toxicology Student Award, First Place — 2008
10. Risk Assessment Specialty Section Best Student Abstract Award — 2007
11. Science to Achieve Results (STAR) Fellowship, U.S. Environmental Protection Agency — 2007-2008
12. First Place, Student Poster Award, Toxicogenomics Research Consortium — 2005
13. Toxicologic and Exploratory Pathology Specialty Section Travel Award — 2005
14. Student Poster Award, Toxicogenomics Research Consortium — 2004
15. Oak Ridge Institute for Science and Education (ORISE) postgraduate research fellowship — 2003-2004
16. Commander’s Award of Excellence, U.S. Army Medical Research Institute for Chemical Defense — 2004

Committee Assignments and Administrative Services

- U.S. Food and Drug Administration Advisory Board for Pharmaceutical Science and Clinical Pharmacology — 2015 - present

• American Society for Pharmacology and Experimental Therapeutics, Secretary/Treasurer of Toxicology Division	2015 - present
• UAMS Library Advisory Committee	2014 - present
• Society of Toxicology, Molecular and Systems Biology Specialty Section, Junior Counselor	2014 - present
• Society of Toxicology, Contemporary Concepts in Toxicology, appointed member for three year term	2014 - present
• Society of Toxicology, Future Tox III Scientific Workshop Organizing Committee, member	2014 - present
• Society of Toxicology, miRNA Biomarkers of Toxicology Pathology Workshop Planning Committee, Chair	2014 - present
• ILSI/HESI Committee for the Application of Genomics to Risk Assessment, Steering Team member, incoming Co-Chair (Oct 2015)	2010 – present
• ILSI/HESI Biomarkers of Nephrotoxicity Committee, miRNA biomarkers of glomerular nephritis project team leader	2013 – present
• Predictive Safety Testing Consortium Hepatic Working Group, member	2011 - 2013
• *Ad hoc* manuscript reviewer: Chemical Research in Toxicology, Environmental Health Perspectives, G3: Genes|Genomes|Genetics, Genome Research, ILSI/HESI peer review, Journal of Pharmacology and Experimental Therapeutics, Pharmacogenomics and Personalized Medicine, PLoS Genetics, PLoS One, Scientific Reports, Toxicology and Applied Pharmacology, Toxicology In Vitro, Toxicological Sciences	
• *Ad hoc* grant reviewer: Research Triangle International Regional Comprehensive Metabolomics Resource Core Facility	

Educational Activities

• Pharmacogenomics - Undergraduate Course Guest Lecturer. Course director: Thomas Urban, Duke University	2012 - 2013
• Science and Methods in Drug Development – Graduate Course Guest Lecturer. Course Directors: Bob Dupuis and Melanie Joy, University of North Carolina at Chapel Hill Eshelman School of Pharmacy	2012 - 2013
• Systems Therapeutics - Graduate Course Guest Lecturer. Course Director: Philip Mayeux, University of Arkansas for Medical Sciences, Department of Pharmacology and Toxicology	2014 – Current
• Experimental Pharmacology and Toxicology - Graduate Course Guest Lecturer. Course Director: Eric Peterson, University of Arkansas for Medical Sciences, Department of Pharmacology and Toxicology	2015 – Current
• Principles of Pharmacology and Toxicology - Graduate Course Guest Lecturer. Course Director: William Fantegrossi, University of Arkansas for Medical Sciences, Department of Pharmacology and Toxicology	2015 – Current

Trainees

- Graduate Students
  - Lascelles Lyn-cook Jr., Ph.D. Candidate, Interdisciplinary Biomedical Sciences, 2013-Current
  - Julia Tobacyk, Ph.D. Candidate, Pharmacology & Toxicology , 2015-Current
  - Ryan Macleod, M.D. Ph.D. Candidate, Summer 2014 Rotation
  - Chuck Hayes, Ph.D. Candidate, Pharmacology & Toxicology, Spring 2014 Rotation
- Postdoctoral Fellows
  - Haixia Lin, Ph.D., 2015 - Current
  - Rachel Church, Ph.D., 2011-2013
  - Merrie Mosedale, Ph.D., 2011-2013
  - Rohit Singhal, Ph.D., Visiting Fellow from Sanofi, 2012
  - Catherine Lisa Kurtz, Ph.D. 2009-2011
- Undergraduate Students
  - Shamiso Ngongoni, Southern Arkansas University, Summer 2014
  - Laura Abbott, U. Arkansas at Fayetteville, Summer 2014
  - Jessica Brown, North Carolina State University, Summer 2011
  - Maria Davis, North Carolina State University, Summer 2011
  - Veronica Adams, North Carolina State University, Summer 2010

Grants and Contract Awards

- Active:
  - Burroughs Wellcome Award for Innovation in Regulatory Science, PI/Awardee, $500,000 (27% effort) — 2013 - 2018
  - U.S. Food and Drug Administration Contract, The Diversity Outbred: A Tool to Improve Preclinical Safety Testing and Pharmacogenomics Analysis, PI, $1,263,528 (30% effort) — 2014 - 2017

- Previous:
  - Janssen (formerly Johnson & Johnson), miRNA Biomarkers of Drug-Induced Tissue Pathology, PI ($228,091) — 2012 - 2013
  - Pfizer, Inc., Investigation of DILI using the Mouse Model of the Human Population, PI ($578,938) — 2009 – 2013
  - AstraZeneca, Development of Biomarkers of Compound X Induced Liver Response in Healthy Human Volunteers and in Mouse Genetic Models, Co-PI ($299,504) — 2011 – 2013
  - Revolutionizing preclinical detection of risk factors for idiosyncratic drug-induced liver injury, (NIH) 1RC1DK087510-01, Co-I, $1,000,000 ; — 2009 – 2012
  - Sanofi Aventis, Pharmacogenetic Analysis of Compound Y Hepatotoxicity Using the Mouse Model of the Human Population, PI (128,750) — 2011 – 2012
  - NeuroTherapeutics Pharma, Injury Biomarkers in a Canine Toxicology Study, PI ($14,750) — 2013

Publications (first and corresponding author)

Journal Articles

Circulating mitochondrial biomarkers for drug induced liver injury. Shi, Q., Yang, X., Mattes, W.B., Mendrick, D.L., **Harrill, A.H.,** Beger, R.D. *Biomarkers in Medicine* [In Press] 2015.

Importance of investigating epigenetic alterations for industry and regulators: an appraisal of current efforts by the Health and Environmental Sciences Institute. Miousse, I.R., Currie, R., Datta, K., Ellinger-Ziegelbauer, H., French, J.E., **Harrill, A.H**., Koturbash, I., Lawton, M., Mann, D., Meehan, R.R., Moggs, J.G., Rasoulpour, R.J., Reijo Pera, R.A., Thompson, K. *Toxicology* [In Press] 2015.

A multi-megabase copy number gain causes maternal transmission ratio distortion on mouse chromosome 2. Didion, J.P., Morgan, A.P., Clayshulte, A.M-F., Yadgary, L., Petkov, P.M., Bell, T.A., Gatti, D.M., Crowley, J.J., Hua, K., Aylor, D.L., Bai, L., Calaway, M., Chesler, E.J., French, J.E., Geiger, T.R., Gooch, T.J., Garland, T., **Harrill, A.H.**, Hunter, K., McMillan, L., Holt, M., Miller, D.R., O'Brien, D.A., Paigen, K., Pan, W., Rowe, L.B., Shaw, G.D., Simecek, P., Sullivan, P.F., Svenson, K.L., Weinstock, G.M., Threadgill, D.W., Pomp, D., Churchill, G.A., de Villena, F.P-M. *PLoS Genetics.* 2015 Feb 13;11(2):e1004850.

Sensitivity to hepatotoxicity due to epigallocatechin gallate is affected by genetic background in Diversity Outbred mice. 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., **Harrill, A.H.** *Food and Chemical Toxicology.* 2015 Feb;76:19-26.

Dysregulation of protein degradation pathways may mediate the liver injury and phospholipidosis associated with a cationic amphiphilic antibiotic drug. Mosedale, M., Wu, H., Kurtz, C.L., Schmidt, S.P., Adkins, K., **Harrill, A.H.** *Toxicology and Applied Pharmacology.* 2014; Oct 1; 280(1):21-29.

A systems biology approach utilizing a mouse diversity panel identifies genetic differences influencing isoniazid-induced microvesicular steatosis. Church, R.J., Wu, H., Mosedale, M., Sumner, S.J., Pathmasiri, W., Kurtz, C.L., Eaddy, J.S., Pandher, K. Singer, M., Batheja, A., Watkins, P.B., Adkins, K, **Harrill, A.H.** *Toxicological Sciences*. 2014; Aug 1; 140(2):281-92.

Benign elevations in serum aminotransferases and biomarkers of hepatotoxicity in healthy volunteers treated with cholestyramine. Singhal, R., **Harrill, A.H.,** Menguy-Vacheron, F., Jayyosi, Z., Benzerdjeb, H., Watkins, P.B. *BMC Pharmacology and Toxicology.* 2014 Aug 3; 15(1):42.

MicroRNA-34c-3p is an early predictive biomarker for doxorubicin-induced glomerular injury progression in male Sprague-Dawley rats. Church, R.J., McDuffie, J.E., Sonee, M., Otieno, M., Ma, J.Y., Liu, X., Watkins, P.B., **Harrill, A.H.** *Toxicology Research.* 2014; 3(5):384-94.

Liver biomarker and in vitro assessment confirm the hepatic origin of aminotransferase elevations lacking histopathological correlate in beagle dogs treated with GABAA receptor antagonist NP260. **Harrill, A.H.**, Eaddy, J.S., Rose, K., Cullen, J.M., Ramanathan, L., Wanaski, S., Collins, S., Ho, Y., Watkins, P.B., Lecluyse, E.L. *Toxicology and Applied Pharmacology*. 2014 Jun 1;277(2):131-7.

Green tea epigallocatechin gallate binds to and inhibits respiratory complexes in swelling but not normal rat hepatic mitochondria. Weng, Z., Zhou, P., Salminen, W.F., Yang, X., **Harrill, A.H.,** Cao, Z., Mattes, W., Mendrick, D.L. *Biochemical and Biophysical Research Communications*. 2014 Jan 17;443(3):1097-104.

Safety biomarkers for drug-induced liver injury - current status and future perspectives. Antoine, D.J., **Harrill, A.H.,** Watkins, P.B., Park, B.K. *Toxicology Research*. 2014; 3:75-85.

Keratin-18 and microRNA-122 complement alanine aminotransferase as novel safety biomarkers for drug-induced liver injury in two human cohorts. Thulin, P., Nordahl, G., Gry, M., Yimer, G., Aklillu, E., Makonnen, E., Aderaye, G., Lindquist, L., Mattsson C.M., Ekblom, B., Antoine, D.J., Park, B.K., Linder, S., **Harrill, A.H.,**

Watkins, P.B., Glinghammar, B., Schuppe-Koistinen, I. *Liver International*. 2013 Sep 11.

A mouse diversity panel approach reveals the potential for clinical kidney injury due to DB289 not predicted by classical rodent models. **Harrill, A.H.,** Desmet, K.D., Wolf, K.K., Bridges, A.S., Eaddy, J.S., Kurtz, C.L., Hall, J.E., Paine, M.F., Tidwell, R.R., Watkins, P.B. *Toxicological Sciences*. 2012 Dec;130(2):416-26.

In vitro to *in vivo* extrapolation and species response comparisons for drug-induced liver injury (DILI) using DILIsym™: a mechanistic, mathematical model of DILI. Howell, B.A., Yang, Y., Kumar, R., Woodhead, J.L., **Harrill, A.H.**, Clewell, H.J. 3rd, Andersen, M.E., Siler, S.Q., Watkins, P.B. *Journal of Pharmacokinetics and Pharmacodynamics*. 2012 Oct;39(5):527-41.

The effects of heparins on the liver: application of mechanistic serum biomarkers in a randomized study in healthy volunteers. **Harrill, A.H**., Roach, J., Fier, I., Eaddy, J.S., Kurtz, C.L., Antoine, D.J., Spencer, D.M., Kishimoto, T.K., Pisetsky, D.S., Park, B.K., Watkins, P.B. *Clinical Pharmacology and Therapeutics*. 2012 Aug;92(2):214-20.

An analysis of N-acetylcysteine treatment for acetaminophen overdose using a systems model of drug-induced liver injury. Woodhead, J.L., Howell, B.A., Yang, Y., **Harrill, A.H.,** Clewell, H.J. 3rd, Andersen, M.E., Siler, S.Q., Watkins, P.B. *Journal of Pharmacology and Experimental Therapeutics*. 2012 Aug;342(2):529-40.

Replication and narrowing of gene expression quantitative trait loci using inbred mice. Gatti, DM, **Harrill, A.H.,** Wright, F.A., Threadgill, D.W., Rusyn, I. *Mammalian Genome*. 2009 Jul;20(7):437-46.

Mouse population-guided resequencing reveals that variants in CD44 contribute to acetaminophen-induced liver injury in humans. **Harrill, A.H**., Watkins, P.B., Su, S., Ross, P.K., Harbourt, D.E., Stylianou, I.M., Boorman, G.A., Russo, M.W., Sackler, R.S., Harris, S.C., Smith, P.C., Tennant, R., Bogue, M.A., Paigen, K., Harris, C., Contractor, T., Wiltshire, T., Rusyn, I., and Threadgill, D.W. *Genome Research*. 2009 Sep;19(9):1507-15.

Population-Based Discovery of Toxicogenomics Biomarkers for Hepatotoxicity Using a Laboratory Strain Diversity Panel. **Harrill, A.H.,** Ross, P.K., Gatti, D.M., Threadgill, D.W., and Rusyn, I. *Toxicological Sciences*. 2009 Jul;110(1):235-43.

Systems biology and functional genomics approaches for the identification of cellular responses to drug toxicity. **Harrill, A.H.,** Rusyn, I.R. *Expert Opinion on Drug Metabolism and Toxicology*. 2008 Nov;4(11):1379-89.

Microarray analysis of mouse ear tissue exposed to bis-(2-chloroethyl) sulfide: gene expression profiles correlate with treatment efficacy and an established clinical endpoint. Dillman III, J.F., **Hege, A.I.,** Orzolek, L.D., Phillips, C.S., Sylvester, A.J., Bossone, C., Henemyre-Harris, C., Kiser, R.C., Choi, Y.W., Schlager, J.J., and Sabourin, C.L. *Journal of Pharmacology and Experimental Therapeutics*. 2006 Apr;317(1):76-87.

Genomic analysis of murine pulmonary tissue following carbonyl chloride inhalation. Sciuto, A.M., Phillips, C.S., Orzolek, L.D., **Hege, A.I**., Moran, T.S., and Dillman III, J.F. *Chemical Research in Toxicology*. 2005 Nov;18(11):1654-60.

Genomic Analysis of Rodent Pulmonary Tissue Following Bis-(2-Chloroethyl) Sulfide Exposure. Dillman, J.F. III, Phillips, C.S., Dorsch, L.M., Croxton, M.D., **Hege, A.I.,** Sylvester, A.J., Moran, T.S., and Sciuto, A.M. *Chemical Research in Toxicology*. 2005 Jan;18(1):28-34.

Book Chapters

Mouse population based toxicology for personalized medicine (chapter). **Harrill, A.H.** Drug Discovery Toxicology: From Target to Translational Biomarkers. John Wiley & Sons. Editors: Yvonne Will, James Eric McDuffie, Andrew J. Olaharski, and Brandon D. Jeffy. *In Press.*

Abstracts and Presentations

Oral Presentations

Mouse population models and systems toxicology improve translation of chemical safety risks to humans. Department of Environmental Science and Engineering, the University of North Carolina at Chapel Hill. Chapel Hill, NC. August, 2015.

Diversity Outbred mice are a tool to predict and prevent rare adverse drug events. Annual Meeting of the Complex Trait Community. Portland, OR. June, 2015.

Session Chair. Introduction: Current understanding of immune-mediated adverse drug reactions. Annual Meeting of the Society of Toxicology. San Diego, CA. March, 2015.

Idiosyncratic drug-induced liver injury potential of zileuton is detected in Diversity Outbred mice. Annual Meeting of the American Society for Pharmacology and Experimental Therapeutics. Boston, MA. March, 2015.

Mouse populations enable translational pharmacogenomic approaches for understanding and predicting adverse drug events. Rodent Populations for Environmental Risk Assessment. National Institute for Environmental Health Sciences. Research Triangle Park, NC. March, 2015.

Translational approaches to using genetically diverse mouse populations to understand and predict drug toxicity in humans. Annual Meeting of the Society for Toxicologic Pathology. Washington, DC. June, 2014.

Genetically diverse mouse populations facilitate toxicogenetic analysis of drug-induced hepatotoxicity. Invited Seminar. United States Army Medical Research Institute for Chemical Defense. Aberdeen, MD. June, 2014.

Predicting drug-induced liver injury: qualification of biomarkers and preclinical models. Invited Seminar. Arkansas Children's Hospital. Little Rock, AR. June, 2014.

Session Chair and Speaker, Novel biomarkers provide insight into benign drug-induced ALT elevations in the clinic. Annual Meeting of the Society of Toxicology. Phoenix, AZ. March, 2014.

Genetically diverse mouse populations facilitate toxicogenetic analysis of drug-induced hepatotoxicity. Annual Meeting of the Society of Toxicology. Phoenix, AZ. March, 2014.

Translational approaches to using genetically diverse mouse population models to understand and predict drug toxicity in humans. American Association of Pharmaceutical Scientists Annual Meeting. San Antonio, TX. November, 2013.

Translational pharmacogenetic analysis and safety assessment using mouse population based models. Invited Seminar. The Jackson Laboratory. Bar Harbor, ME. October, 2013.

Translational pharmacogenomics using mouse populations: a potential tool for safety assessment and patient stratification. Invited seminar. U.S. Food and Drug Administration, National Center for Toxicological Research. Jefferson, AR. September, 2013.

Translational pharmacogenetic analysis and safety assessment using mouse population based models. Applied Pharmaceutical Analysis Meeting and the Boston Society. Boston, MA. September, 2013.

Translational pharmacogenetic analysis and safety assessment using mouse population based models. St. Jude Children's Research Hospital and University of Tennessee Health Center. Memphis, TN. September, 2013.

The use of population based mouse models in toxicology. "Study III- Genetically Diverse Mouse Models Improve Prediction of Clinical Toxicity Risk." The Toxicology Forum. Aspen, CO. July, 2013.

Workshop Chair and Speaker, Use of genetically diverse mouse models in pharmaceutical development. One day workshop. ILSI/HESI Committee for the Application of Genomics to Risk Assessment. Washington, DC. November, 2012.

Translational aspects of liver toxicity biomarkers. American College of Toxicology Annual Meeting. Phoenix, AZ. November, 2011.

Translational pharmacogenetics: improving toxicity risk prediction by using genetically defined rodents. Animal Clinical Chemistry Division Fall Meeting on "Hepatotoxicity: Mechanisms, Predictivity, and Biomarkers." Raritan, NJ. October, 2011.

Qualification of novel liver biomarkers in a healthy volunteer study of heparin treatment. AASLD/FDA/PhRMA Annual Drug-Induced Liver Injury Meeting. Silver Spring, MD. March, 2011.

Development of new in vivo models. American College of Toxicology Annual Meeting. Baltimore, MD. November, 2010.

Globalization Pharmaceutics Education Network short course entitled "Drug-induced toxicity: a major factor in clinical failure of drug candidates". Chapel Hill, NC. November, 2010.

Collaborative Cross inbred mice as a model for idiosyncratic adverse drug events. Gordon Research Conference on Drug Metabolism. Waterville, ME. July, 2010.

Translational pharmacogenomics of DILI using the Collaborative Cross mouse population. Drug-Induced Liver Injury Network Annual Meeting. Research Triangle Park, NC. April, 2010.

Predicting and understanding adverse drug reactions from mouse to man using novel genetic and *in silico* tools. North Carolina Society of Toxicology Spring Meeting. Research Triangle Park, NC. March, 2010.

Drug-induced liver injury: predicting risk from mouse to man using novel genetic and *in silico* Tools. University of North Carolina Department of Pharmacotherapy and Experimental Therapeutics Seminar Series. Chapel Hill, NC. November, 2009.

Pharmacogenetics of drug-induced liver injury using the mouse model of the human population. International Society for the Study of Xenobiotics. Baltimore, MD. October, 2009.

Abstracts / Poster Presentations

Diversity Outbred mice are a tool for predicting idiosyncratic liver toxicity. **Harrill, A.H.,** Lyn-Cook Jr., Gatti, D.M., Luo, S., Churchill, G.A. Gordon Research Conference: Cellular & Molecular Mechanisms of Toxicity. Andover, NH. 2015

The role of genetic background on adverse health effects due to prenatal exposure to environmental obesogen tributyltin. Tobacyk, J., Luo, S., **Harrill, A.H.** Gordon Research Conference: Cellular & Molecular Mechanisms of Toxicity. Andover, NH. 2015

The Diversity Outbred: A tool to improve preclinical safety testing and pharmacogenetic analysis. **Harrill, A.H.,** Lyn-Cook Jr., Gatti, D.M., Luo, S., Churchill, G.A. U.S. Food and Drug Administration Office of Regulatory Science Innovation Symposium. White Oak, MD. 2015.

Idiosyncratic drug-induced liver injury potential of zileuton is detected in Diversity Outbred mice. **Harrill, A.H.,** Lyn-Cook Jr., Gatti, D.M., Luo, S., Churchill, G.A. Annual Meeting of the American Society for Pharmacology and Experimental Therapeutics. Boston, MA, 2015.

Diversity Outbred mice indicate idiosyncratic drug-induced liver injury potential. Lyn-Cook Jr., Gatti, D.M., Luo, S., Churchill, G.A., **Harrill, A.H.** Annual Meeting of the Society of Toxicology. San Diego, CA. 2015.

Time-dependent release and expression of microRNAs occurs following α-naphthylisothiocyanate exposure in the rat. Church, R.J., Otieno, M., McDuffie, J.E., Sonee, M., Hall, L., Singer, M., Watkins, P.B., **Harrill, A.H.** Annual Meeting of the Society of Toxicology. San Diego, CA. 2015.

Using targeted metabolomics to predict drug hepatotoxicity in Diversity Outbred mice. Chandramouli, B., Cosgrove, J.R., Lyn-Cook Jr., L, Benskin, J.P., **Harrill, A.H.** Annual Meeting of the Society of Toxicology. San Diego, CA. 2015.

Diversity Outbred mice indicate idiosyncratic drug-induced liver injury potential. Lyn-Cook Jr., Gatti, D.M.,

Luo, S., Churchill, G.A., **Harrill, A.H.** National Institute for Environmental Health Sciences. Research Triangle Park, NC. March, 2015.

Characterizing candidate genes in non-small cell lung cancer. Ngongoni, S., **Harrill, A.H.,** Orloff, M. University of Arkansas for Medical Sciences Research Day. Little Rock, AR. 2014.

Diversity Outbred mice may facilitate prediction of drug-induced liver injury. **Harrill, A.H.** Gordon Research Conference: Drug Safety. Easton, MA. 2014.

Doxorubicin-induced glomerular injury is associated with urinary microRNA alterations in the rat. Church, R.J., McDuffie, J.E., Sonee, M., Otieno, M., Watkins, P.B., **Harrill, A.H**. Annual Meeting of the Society of Toxicology. Phoenix, AZ. 2014.

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

Advancing regulatory science through translational pharmacogenomics. **Harrill, A.H.** Burroughs Wellcome Fund New Awardee Meeting. Research Triangle Park, NC. 2013.

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

Identification of genomic regions linked to epigallocatechin gallate induced liver toxicity using the Diversity Outbred stock. Church, R.J., Gatti, D.M., Mosedale, M., Eaddy, J.S., Churchill, G.A., Watkins, P.B., Threadgill, D.W., **Harrill, A.H.** Annual Meeting of the Society of Toxicology. San Antonio, TX. 2013.

Population based toxicity assessment implicates mitochondrial dysfunction as an early event in isoniazid-induced liver injury. Eaddy, J.S., Kurtz, C.L., Adkins, K., Wu, H., Watkins, P.B., **Harrill, A.H.** Annual Meeting of the Society of Toxicology. San Francisco, CA. 2012.

Pharmacogenomics of Thelin induced liver injury in a mouse diversity panel. Kurtz, C.L., Adkins, K., Wu, H., Rago, B., Barricklow, J., Pandher, K., **Harrill, A.H.** Annual Meeting of the Society of Toxicology. San Francisco, CA. 2012.

A mouse diversity panel approach predicts clinical DB289-related renal toxicity. **Harrill, A.H.,** DeSmet, K., Wolf, K., Hall, J.E., Paine, M., Tidwell, R., Watkins, P.B. Annual Meeting of the Society of Toxicology. San Francisco, CA. 2012.

Idiosyncratic adverse drug reactions modeled using a genetically diverse mouse panel may facilitate pharmacogenomics. **Harrill, A.H**., Adkins, K., Wu, H., Pletcher, M.T., Watkins, P.B. Mouse Genetics. Washington, DC. 2011.

Sorbitol dehydrogenase and glutamate dehydrogenase are not superior to traditional biomarkers of liver injury: a healthy volunteer study of heparins. **Harrill, A.H.,** Eaddy, J.S., Roach, J., Fier, I.D., Watkins, P.B. Annual Meeting of the Society of Toxicology. Washington, DC. 2011.

The Collaborative Cross: a systems biology resource for understanding and predicting adverse drug reactions", **Harrill, A.H.,** Threadgill, D.W., and Watkins, P.B. Quantitative and Systems Pharmacology Workshop II. Bethesda, MD. 2010.

Idiosyncratic adverse drug reactions modeled using a mouse diversity panel may facilitate pharmacogenomics. **Harrill, A.H.,** Pletcher, M.T., Lawton, M., Watkins, P.B. Annual Meeting of the Society of Toxicology. Salt Lake City, UT. 2010.

Phenotypic anchoring of gene expression from acetaminophen hepatotoxicity studies in the mouse model of the human population reveals biomarkers of response. **Hege, A.I.,** Ross, P.K., Watkins, P.B., Threadgill, D.W., and Rusyn, I. Annual Meeting of the Society of Toxicology. Seattle, WA. 2008.

Toxicogenetics, using a mouse diversity panel, reveals population-based biomarkers of response to acetaminophen hepatotoxicity. **Hege, A.I.,** Threadgill, D.W., and Rusyn, I. UNC Curriculum in Toxicology

Annual Retreat. Chapel Hill, NC. 2008.

Cross-species association mapping identifies genetic risk factors for liver toxicity. **Hege, A.I.,** Russo, M.W., Su, S., Ross, P.K., Stylianou, I.M., Boorman, G.A., Tennant, R., Bogue, M.A., Paigen, K., Wiltshire, T., Watkins, P.B., Threadgill, D.W., and Rusyn, I. Annual Meeting of the Society of Toxicology. Charlotte, NC. 2007.

Time and dose dependent factors in genetic susceptibility to acetaminophen hepatotoxicity. **Hege, A.I.,** Ross, P.K., Balletta, L.D., Bradford, B.U., Tennant, R., Stylianou, I.M., Bogue, M.A., Paigen, K., Threadgill, D.W., and Rusyn, I. Annual Meeting of the Society of Toxicology. San Diego, CA. 2006.

Toxicogenetic analysis of susceptibility to acetaminophen-induced liver injury. **Hege, A.I.,** Ross, P.K., Balletta, L.D., Bradford, B.U., Tennant, R., Stylianou, I.M., Bogue, M.A., Paigen, K., Threadgill, D.W., and Rusyn, I. Toxicogenomics Research Consortium Annual Meeting. Portland, OR. 2005.

Toxicogenetic analysis of susceptibility to acetaminophen-induced liver injury**. Hege, A.I.,** Lodestro, C., Lee, D., Balletta, L.D., Bradford, B.U., Maki, A., Tennant, R., Bogue, M.A., Paigen, K., Threadgill, D.W., and Rusyn, I. Annual Meeting of the Society of Toxicology. New Orleans, LA. 2005.

Toxicogenetic analysis of susceptibility to acetaminophen-induced liver injury**. Hege, A.I.,** Lodestro, C., Lee, D., Balletta, L.D., Bradford, B.U., Maki, A., Tennant, R., Bogue, M.A., Paigen, K., Threadgill, D.W., and Rusyn, I. Toxicogenomics Research Consortium Annual Meeting. 2004.