

EPA'S IRIS PROGRAM: REVIEWING ITS PROGRESS AND ROADBLOCKS AHEAD

Statement of

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Chairwoman Sherrill, Chairwoman Fletcher, distinguished members of the Subcommittees, I am honored to appear before you today for this hearing entitled, “EPA’s IRIS Program: Reviewing its Progress and Roadblocks Ahead.” My name is Ivan Rusyn. I am Professor in the Department of Veterinary Integrative Biosciences, Chair of the Interdisciplinary Faculty of Toxicology and Director of a Superfund Research Center at Texas A&M University.

As a matter of full disclosure pertaining to the topic of today’s hearings, I am currently chairing a Workshop Committee of the National Academies of Sciences, Engineering & Medicine to Support Development of EPA’s IRIS Toxicological Reviews. However, I appear before you today representing my own perspectives, and not those of the National Academies, or Texas A&M University. I will offer insights from my role as a researcher in the field of toxicology and a person with understanding of the process of developing human health assessments in general, and the IRIS program in particular. I have more than a decade of service as peer reviewer of various IRIS assessments, including *Review of the Environmental Protection Agency’s Draft IRIS Assessment of Formaldehyde*, which was released in 2011. I also served as a faculty fellow to the IRIS Program for 2 years where I interacted with IRIS staff on a variety of scientific and methodological issues directly relevant to implementation of the advice from the National Academies. In addition, I reviewed a number of listings in the Report on Carcinogens by the National Toxicology Program, served on the working groups conducting human cancer hazard evaluations at the International Agency for Research on Cancer, and advise several state environmental protection agencies. My laboratory is funded by the National Institutes of Health, the Environmental Protection Agency, the National Academies, California EPA, and the European Petroleum Refiners Association. Of nearly 230 scientific publications that I have co-authored, many include colleagues in academia, government and industry. Therefore, I believe I have a good

understanding of the importance of IRIS, the challenges that this program has, and the progress that it has made in the past decade.

As requested by the Subcommittees, I am here to offer my thoughts on the progress IRIS has made addressing recommendations made by the National Academies, and the role IRIS plays in the field of chemical toxicity assessment. I also would like to use a case example of the Environmental Protection Agency's Draft IRIS Assessment of Formaldehyde to highlight the challenges that IRIS is facing with timely delivery of its products and the apparent controversies with the division of responsibilities in developing chemical toxicity assessments between the offices within EPA.

The role IRIS plays in the field of chemical toxicity assessment

I begin with stating my personal opinions on the role IRIS plays in the field of chemical toxicity assessment. The history of the IRIS program and its goals have been already widely addressed and I will not re-state the well known facts. I do wish to point out the importance of the placement of this program within the Office of Research and Development, independent of the program and regional offices of the EPA. IRIS is responsible for developing toxicologic assessments of environmental chemical contaminants, these assessments contain hazard identifications and dose-response assessments and cover cancer and noncancer outcomes. It is difficult to overstate the importance of the IRIS program to the protection of public health in the United States and abroad.

It was noted by the National Research Council in 2014 that *“although [IRIS] was created to increase consistency among toxicologic assessments within [EPA], other federal agencies, various state and international agencies, and other organizations have come to rely on IRIS assessments*

for setting regulatory standards, establishing exposure guidelines, and estimating risks to exposed populations.”¹ The EPA itself acknowledges the key role that IRIS-produced assessments play in many risk management decisions and Superfund site cleanup. EPA OSWER Directive 9285.7-53 states that “IRIS remains in the first tier of the recommended hierarchy as the generally preferred source of human health toxicity values. IRIS generally contains [toxicity] values that have gone through a peer review and EPA consensus review process. IRIS normally represents the official Agency scientific position regarding the toxicity of the chemicals based on the data available at the time of the review.”²

The process of conducting toxicologic assessments of environmental contaminants by IRIS involves many steps, requires comprehensive and systematic review of all available evidence followed by integration and synthesis of the voluminous information. Draft assessments are subject to public comment and undergo extensive intra-governmental and external peer review. These are among the most scrutinized assessments of the potential hazardous effects of chemicals. The products are toxicity values for health effects resulting from chronic exposure to chemicals and, if the chemical was evaluated for its potential carcinogenicity in humans, a classification with respect to the chemical’s potential to pose human cancer hazard. The focus of IRIS is on protecting the human population (including sensitive subgroups) under conditions of continuous inhalation or oral exposure to chemicals; therefore, IRIS values are relevant for protecting the health and wellbeing of everyone, not only those who may be exposed in the workplace, and not

¹ Review of EPA’s Integrated Risk Information System (IRIS) Process. Report of the National Research Council. 2014.

² OSWER Directive 9285.7-53: Human Health Toxicity Values in Superfund Risk Assessments. December 05, 2003. <https://www.dtsc.ca.gov/LawsRegsPolicies/Regs/upload/EPA-Tox-Criteria-Hierarchy-OSWER-Directive-9285-7-53.pdf>

only by a narrow choice of the routes of exposure or conditions of use. As such, IRIS values are broadly applicable in a variety of risk management decisions.

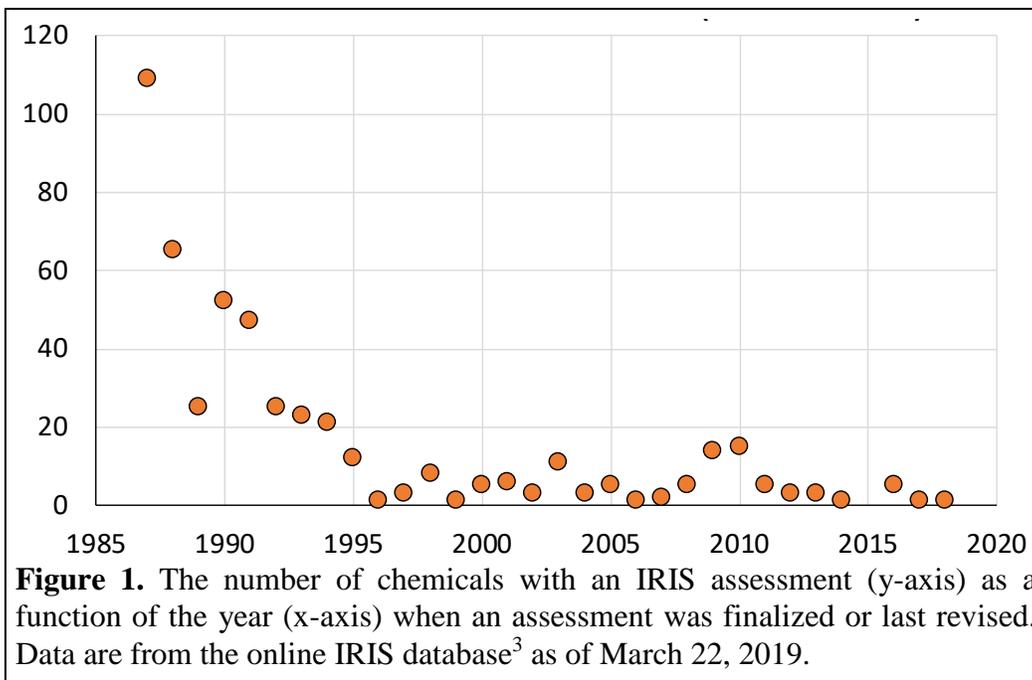
The progress IRIS has made addressing recommendations from the National Academies

As of March 22, 2019, the IRIS program lists a total of 482 substances with assessments that derived reference dose (RfD), reference concentration (RfC), drinking water unit risk values, or inhalation unit risk values.³ The first assessments were completed in 1987 and the most recent assessment was added in 2018. The IRIS database contains a total of 354 substances with an oral non-cancer toxicity value, 159 with an inhalation non-cancer toxicity value, and 265 with at least one of the cancer slope values. There are 22 assessments currently listed by IRIS as “*in development for which draft materials have been released to the public.*”⁴ The number of chemicals with an IRIS toxicity value is woefully small as compared to the estimated number of chemicals in the environment; therefore, other parts of the EPA and Federal government, as well as many States, derive similar values for chemicals of concern.

The number of chemicals with new or updated assessments by IRIS has been on a steady decline since the program released a large number of assessments in the late 1980s (Figure 1, data from³). It is especially obvious that the number of completed or updated assessments is particularly low since 2011, only 14 assessments have been released in 2012-2019 time period. A slow-down in the rate of assessment completion by IRIS can be due to a number of reasons, one of them is likely a 2011 National Research Council’s report *Review of the Environmental Protection Agency’s Draft IRIS Assessment of Formaldehyde*. The 15-member committee that produced this report focused

³ IRIS Advanced Search: <https://cfpub.epa.gov/ncea/iris/search/index.cfm>

⁴ https://cfpub.epa.gov/ncea/iris_drafts/atoz.cfm?list_type=erd



on addressing specific questions related to the derivation of the RfCs for noncancer effects and of unit risk estimates for cancer from exposures to formaldehyde. In addition, the committee assessed the processes underlying the development of the IRIS assessments and made a number of suggestions on how the process can be improved and expedited. The committee identified a number of recurring methodologic problems with how IRIS assessments were developed and presented. Most of the committee’s comments were on the general methodology of the assessment and the processes used by EPA to develop IRIS assessments, but not on the IRIS program itself. The committee was concerned with the persistence of the problems, particularly in light of the continued evolution of risk assessment methods and the increasing societal and legislative pressure to evaluate a greater number of chemicals in an expedient manner. The committee offered a roadmap for changes in the overall process and some more specific guidance on the steps of evidence identification, evidence review and evaluation, weight-of-evidence evaluation, selection of studies, and calculation of toxicity values. The committee recognized that

this process may take some time and that the EPA is fully capable of implementing suggested improvements, hence no delay in releasing other assessments was recommended.

Two subsequent committees of the National Academies have weighed in on the progress made by the IRIS program in implementing recommendations and improving the process. As an external peer-reviewer of the 2014 National Research Council's report *Review of EPA's Integrated Risk Information System (IRIS) Process*,¹ I fully agree with the committee's conclusion that "*the changes that EPA has proposed and implemented to various degrees constitute substantial improvements in the IRIS process.*" In 2018, the National Academies issued another report *Progress Toward Transforming the Integrated Risk Information System (IRIS) Program: A 2018 Evaluation*,⁵ which concluded that "*The committee is encouraged by the steps that EPA has taken, which have accelerated during the last year under new leadership. It is clear that EPA has been responsive and has made substantial progress in implementing National Academies recommendations.*" I have read this report and its appendices and fully agree with this conclusion.

Another important reason for why the productivity of IRIS is suffering, in my personal opinion, is the lack of support to this program from the EPA leadership. It is disconcerting to me that it appears that IRIS lacks sufficient financial resources and adequate staffing. As has been stated in the 2019 GAO report⁶, there have been a number of recent events that may have grave long-term consequences to the ability of IRIS to continue implementation of the advice from the National Academies, to complete draft assessments, and to set priorities commensurate with the needs of

⁵ Progress Toward Transforming the Integrated Risk Information System (IRIS) Program: A 2018 Evaluation. Report of the National Academies of Sciences, Engineering, and Medicine. 2018.

⁶ CHEMICAL ASSESSMENTS: Status of EPA's Efforts to Produce Assessments and Implement the Toxic Substances Control Act. GAO-19-270. United States Government Accountability Office. 2019.

the other offices at the EPA and of other stakeholders. These developments are troubling and I encourage the Subcommittees to look into the GAO report's facts and conclusions to determine whether the EPA may need to support and strengthen IRIS, as suggested by the National Academies.

Overall, it is my opinion that substantial improvements in the IRIS process have been made in a relatively short period of time, and it is clear that IRIS welcomed the advice it has been receiving from the National Academies and other stakeholders. IRIS fully embraced the concept of systematic review and has become a leader in creating a process for implementation of the best practices from the systematic review in clinical medicine to environmental health. This process is neither easy, nor it is straightforward and IRIS is to be commended for their leadership. Also, a number of strategic decisions were made by the leadership of NCEA and IRIS to develop specific guidance and further standardize the process of developing the assessments. A number of software solutions have been implemented to streamline the process and facilitate teamwork. Investments in staff training and interactions with outside stakeholders were made, which further increases my personal confidence that the program is on the right track.

Formaldehyde assessment: A case study of the challenges facing IRIS

The 2011 National Research Council's report *Review of the Environmental Protection Agency's Draft IRIS Assessment of Formaldehyde* has hastened the evolution of IRIS, a process that has been implemented with full embrace of the recommendations from several subsequent committees of the National Academies. However, it is worth reminding everyone that the 2011 report did not recommend that EPA delay the revisions and release of the formaldehyde assessment while amendments to the overall approach and process are undertaken. In fact, the

2011 committee provided specific guidance as to the steps needed to revise and finalize the draft that was presented to the Academies in 2010. Not only has the draft assessment been in development for many years before 2010, but also, very regrettably, it remains in draft form still. The formaldehyde IRIS assessment has not yet been released for public comment and moved to completion; to the contrary, some in the EPA appear to be inclined to stop this assessment by IRIS and instead conduct evaluation of formaldehyde under the Toxic Substances Control Act.⁷

Before 2016, the EPA had no mandate to review or assess the safety of chemicals already in commerce as part of TSCA. The Frank R. Lautenberg Chemical Safety for the 21st Century Act does provide that under TSCA, Office of Pollution Prevention and Toxics evaluates and regulates, as appropriate, the full life cycle, i.e., manufacture (import), distribution in commerce, use and disposal, of industrial chemicals, which includes both existing and new industrial chemicals. Therefore, formaldehyde and other existing industrial chemicals can be evaluated under TSCA; however, this evaluation should not duplicate or negate high-quality comprehensive assessments that are ready for completion under the IRIS process. In my personal opinion, the potential transfer of the formaldehyde assessment from IRIS to TSCA is a very troubling development that, at the least, will further delay the release of the assessment and establishment of public health-protective guideline toxicity values for formaldehyde exposure to the general population, including sensitive individuals. Formaldehyde is a known human carcinogen as listed in the Congress-mandated

⁷ Initiation of Prioritization Under the Toxic Substances Control Act (TSCA). A Notice by the Environmental Protection Agency on 03/21/2019. 84 FR 10491. <https://www.federalregister.gov/documents/2019/03/21/2019-05404/initiation-of-prioritization-under-the-toxic-substances-control-act-tsca>

Report on Carcinogens⁸ and as concluded by the committee of the National Research Council⁹ (for full disclosure I have served as a member of the committee that produced the 2014 report⁹). Therefore, delays in completing the evaluation of this chemical are unacceptable and detrimental to the protection of public health.

Recommendations

- The IRIS program has implemented the recommendations of the National Academies, in fact, it is a leader in the evolution of risk assessment practices. Therefore, IRIS should be supported with adequate financial resources and staff.
- While important improvements are being made to the IRIS process, it is important to complete IRIS assessments that are in draft, including formaldehyde assessment, and to increase the number of evaluations that IRIS generates. These changes will need an increase in resources as compared to the current budget. IRIS is vital to public health protection in the United States and abroad.
- Congress shall strengthen oversight of the implementation of the Frank R. Lautenberg Chemical Safety for the 21st Century Act.

Thank you for the opportunity to appear before the hearing of the United States House of Representatives Committee on Science, Space and Technology Subcommittee on Investigations and Oversight and Subcommittee on Environment. I would be happy to answer any questions the members might have.

⁸ NTP (National Toxicology Program). Formaldehyde. Pp. 195-205 in Report on Carcinogens, 12th Ed. U.S. Department of Health and Human Services, Public Health Service, National Toxicology Program, Research Triangle Park, NC. 2011.

⁹ Review of the Formaldehyde Assessment in the National Toxicology Program 12th Report on Carcinogens. Report of the National Research Council. 2014.

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Education

Bogomolets National Medical University (Kiev, Ukraine)	M.D.	1994	Medicine
University of North Carolina at Chapel Hill (Chapel Hill, NC)	Ph.D.	2000	Toxicology

Professional Experience

2016-	Chair, Interdisciplinary Faculty of Toxicology, Texas A&M University
2014-	Professor, Department of Veterinary Integrative Biosciences, College of Veterinary Medicine and Biomedical Sciences, Texas A&M University
2002-2014	Professor (2010-2014), Associate (with tenure, 2007-2010) and Assistant Professor (2002-2007), Department of Environmental Sciences & Engineering, University of North Carolina (UNC) at Chapel Hill
2002-2014	Member, Associate Director (2007-2011), Curriculum in Toxicology, UNC
2008-2014	Director, Carolina Center for Computational Toxicology Gillings School of Global Public Health, UNC-Chapel Hill
2004-2014	Member, Executive Committee, Curriculum in Toxicology School of Medicine, UNC-Chapel Hill
2003-2014	Full Member, Lineberger Comprehensive Cancer Center, School of Medicine, UNC-Chapel Hill
2003-2014	Member, Bowles Center for Alcohol Studies School of Medicine, UNC-Chapel Hill
2003-2014	Member, Center for Environmental Health and Susceptibility
2002-2014	Member, Carolina Center for Genome Sciences
2011-2013	Faculty fellow, National Center for Environmental Assessment (US EPA)
2001-2002	Postdoctoral Associate Division of Bioengineering and Environmental Health Massachusetts Institute of Technology, Cambridge, MA <u>Research Advisor:</u> Leona D. Samson , Ph.D.
2000-2001	Golberg Postdoctoral Fellow Department of Environmental Sciences and Engineering University of North Carolina, Chapel Hill, NC <u>Research Advisor:</u> James A. Swenberg , D.V.M., Ph.D.
1996-2000	Postdoctoral Fellow/Ph.D. Candidate, Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC <u>Research Advisor:</u> Ronald G. Thurman , Ph.D. (1941-2001) <i>Ph.D. Dissertation:</i> Role of Oxidants in Molecular Mechanism of Action of Peroxisome Proliferators

- 1995-1996 Guest-Researcher & Fellow, German Academic Exchange Service (DAAD)
Institute for Physiological Chemistry I
University of Düsseldorf, Germany
Research Advisor: **Helmut Sies**, Ph.D.
- 1994-1995 Intern, Department of Otolaryngology
Kiev Regional Clinical Hospital, Ukraine
- 1993-1995 Research Assistant, Department of Immunology
Scientific Research Laboratory Center
Bogomolets National Medical University, Kiev, Ukraine

Honors and/or Special Awards

- 2019 2018 *Toxicological Sciences* Paper of the Year Award: Venkatratnam et al.
Toxicol Sci 158:48-62, 2017
- 2018 Top 25 NIEHS-funded Papers of the Year: Wignall et al. ***Environ Health Perspect***
126(5):057008, 2018
- 2017 Outstanding Research Leader Award, College of Veterinary Medicine and
Biomedical Sciences, Texas A&M University
- 2015 Distinguished service award (for service as Councilor), Society of Toxicology
- 2013 Paper of the Year, Society of Toxicology Occupational and Public Health Specialty
Section: Zeise et al. ***Environ Health Perspect*** 121:23-31, 2013
- 2009 Outstanding Published paper in 2009 Award for Advancing the Science of Risk
Assessment, Society of Toxicology Risk Assessment Specialty Section: Harrill et
al ***Genome Res*** 19: 1507-1515, 2009
- 2008 Achievement Award, Society of Toxicology
- 2002-2005 Transition to Independent Position Award, NIEHS
- 2000-2002 Individual Postdoctoral National Research Service Award, NIEHS
- 2000-2001 Leon & Bertha Golberg Memorial Postdoctoral Fellowship, UNC-Chapel Hill
- 2000 Young Investigator Award, Society for Free Radical Research International
- 2000 AACR - Bristol Myers Squibb Oncology Young Investigator Scholar Award
- 2000 Carl C. Smith Mechanisms Specialty Section Award, Society of Toxicology
- 2000 Visiting Professor of Surgery, Yamanashi Medical University, Japan
- 1998/99/2001 Young Investigator Award, Oxygen Society
- 1995-1996 Research Fellowship, German Academic Exchange Service (DAAD)
- 1994 First Class Honors Diploma, Ukrainian State Medical University, Kiev, Ukraine

Membership in Professional Societies:

- 2012 - European Association for the Study of the Liver (EASL)
- 1997 - Society of Toxicology (National and Lone Star Chapter)
- 2011 - 2012 American Society for Pharmacology and Experimental Therapeutics
- 1998 - 2007 Society for Free Radical Biology and Medicine
- 1998 - 2007 Society for Free Radical Research International

Bibliography

Refereed papers (full listing):

* , indicates a doctoral trainee; & , indicates a postdoctoral trainee; # , indicates a masters trainee

1. &Furuya, S., &Cichocki, J.A., Konganti, K., Dreval, K., Uehara, T., Katou, Y., &Fukushima, H., Kono, H., Pogribny, I.P., Argemi, J., Bataller, R., and **Rusyn, I.** Histopathological and molecular signatures of a mouse model of acute-on-chronic alcoholic liver injury demonstrate concordance with human alcoholic hepatitis. *Toxicol Sci* (in press).
2. Argemi, J. et al. Defective HNF4alpha-dependent gene expression as a driver of hepatocellular failure in alcoholic hepatitis. *Nat Commun* (in press).
3. Perry, A., **Rusyn, I.**, and Threadgill, D.W. Long-term combinatorial exposure to trichloroethylene and inorganic arsenic in genetically heterogeneous mice results in renal tubular damage and cancer-associated molecular changes. *G3 (Bethesda)* (in press).
4. *Lewis, L., *Chappell, G.A., #Kobets, T., #O'Brian, B.E., Sangaraju, D., Kosyk, O., Bodnar, W., Tretyakova, N.Y., Pogribny, I.P., and **Rusyn, I.** Sex-specific differences in genotoxic and epigenetic effects of 1,3-butadiene among mouse tissues. *Arch Toxicol* (in press).
5. *Blanchette, A.D., &Grimm, F.A., &Dalaijamts, C., &Hsieh, N.H., #Ferguson, K., *Luo, Y.S., Anson, B., **Rusyn, I.**, and Chiu, W.A. Thorough QT/QTc in a dish: An *in vitro* human model that accurately predicts clinical concentration-QTc relationships. *Clin Pharmacol Ther* (in press).
6. &Cichocki, J.A., *Luo, Y.S., &Furuya, S., *Venkatratnam, A., Konganti, K., Chiu, W.A., Threadgill, D.W., Pogribny, I.P., and **Rusyn, I.** Modulation of tetrachloroethylene-associated kidney effects by nonalcoholic fatty liver or steatohepatitis in male C57BL/6J mice. *Toxicol Sci* 167:126-137, 2019.
7. Alves, V.M., Borba, J., Capuzzia, S.J., Muratov, E., Andradi, C.H., **Rusyn, I.**, and Tropsha, A. Oy Vey! A comment on "Machine Learning of Toxicological Big Data Enables Read-Across Structure Activity Relationships (RASAR) Outperforming Animal Test Reproducibility." *Toxicol Sci* 167:3-4, 2019.
8. &Grimm, F.A., House, J.S., #Wilson, M.R., Sirenko, O., &Iwata, Y., Wright, F.A., Ball, N., and **Rusyn, I.** Multi-dimensional *in vitro* bioactivity profiling for grouping of glycol ethers. *Reg Tox Pharm* 101:91-102, 2019.
9. *Low, Y.S., Alves, V.M., Fourches, D., Sedykh, A., Andrade, C.H., Muratov, E.N., **Rusyn, I.** and Tropsha, A. Chemistry-Wide Association Studies (CWAS): A novel framework for identifying and interpreting structure-activity relationships. *J Chem Inf Model* 58:2203-2213, 2018.
10. Shapiro, A.J., Antoni, S., Guyton, K.Z., Lunn, R.M., Loomis, D., **Rusyn, I.**, Jahnke, G.D., Schwingl, P.J., Mehta, S.S., Addington, J., and Guha, N. Software tools to facilitate systematic review used for cancer hazard identification. *Environ Health Perspect* 126:104501, 2018.
11. &Grimm, F.A., *Blanchette, A., House, J.S., #Ferguson, K., &Hsieh, N.H., &Dalaijamts, C., Wright, A.A., Anson, B., Wright, F.A., Chiu, W.A., and **Rusyn, I.** A human population-based organotypic *in vitro* model for cardiotoxicity screening. *ALTEX* 35:441-452, 2018.
12. &Sakolish, C., Weber, E.J., Kelly, E.J., Himmelfarb, J., Mouneimne, R., &Grimm, F.A., House, J.S., Wade, T., Han, A., Chiu, W.A., and **Rusyn, I.** Technology transfer of the microphysiological systems: A case study of the human proximal tubule tissue chip. *Sci Rep* 8:14882, 2018.
13. Guyton, K.Z., **Rusyn, I.**, Chiu, W.A., Corpet, D.E., van den Berg, M., Ross, M.K., Christiani, D.C., Beland, F.A., and Smith, M.T. Re: 'Application of the key characteristics of carcinogens

- in cancer hazard evaluation': response to Goodman, Lynch and Rhomberg. **Carcinogenesis** 39:1091–1093, 2018.
14. [&]Klaren, W.D., and **Rusyn, I.** High-content assay multiplexing for muscle toxicity screening in human-induced pluripotent stem cell-derived skeletal myoblasts. **Assay Drug Dev Technol** 16:333-342, 2018.
 15. Onel, M., Beycal, B., Wang, M., [&]Grimm, F., Zhou, L., Wright, F.A., Phillips, T., **Rusyn, I.**, and Pistikopoulos, E.N. Optimal chemical grouping and sorbent material design by data analysis, modeling and dimensionality reduction techniques. **Comput Aided Chem Eng** 43:421-426, 2018.
 16. ^{*}Luo, Y.S., [&]Hsieh, N.H., [#]Soldatov, V.Y., Chiu, W.A., and **Rusyn, I.** Comparative analysis of metabolism of trichloroethylene and tetrachloroethylene among mouse tissues and strains. **Toxicology**. 409:33-43, 2018.
 17. ^{*}Luo, Y.S., [&]Furuya, S., [#]Soldatov, V.Y., Kosyk, O., ^{*}Yoo, H.S., [&]Fukushima, H., ^{*}Lewis, L., [&]Iwata, Y., and **Rusyn, I.** Metabolism and toxicity of trichloroethylene and tetrachloroethylene in cytochrome P450 2E1 knockout and humanized transgenic mice. **Toxicol Sci** 164(2):489-500, 2018.
 18. Konganti, K., Ehrlich, A., **Rusyn, I.**, Threadgill, D.W. gQTL: A Web application for QTL analysis using the Collaborative Cross mouse genetic reference population. **G3 (Bethesda)** 8(8):2559-2562, 2018.
 19. [&]Dalaijamts, C., [&]Cichocki, J.A., ^{*}Luo, Y.S., **Rusyn, I.**, and Chiu, W.A. Incorporation of the glutathione conjugation pathway in an updated physiologically-based pharmacokinetic model for perchloroethylene in mice **Toxicol Appl Pharmacol** 352:142-152, 2018.
 20. Li, G., Shabalín, A.A., **Rusyn, I.**, Wright, F.A., and Nobel, A.B. An empirical Bayes approach for multiple tissue eQTL analysis. **Biostatistics** 19:391-406, 2018.
 21. Wignall, J.A., Muratov, E., Sedykh, A., Guyton, K.Z., Tropsha, A., **Rusyn, I.**, and Chiu, W.A. Conditional Toxicity Value (CTV) predictor: An in silico approach for generating quantitative risk estimates for chemicals. **Environ Health Perspect** 126:057008, 2018.
 22. Guyton, K.Z., **Rusyn, I.**, Chiu, W.A., Corpet, D.E., van den Berg, M., Ross, M.K., Christiani, D.C., Beland, F.A., and Smith, M.T. Application of the key characteristics of carcinogens in cancer hazard identification. **Carcinogenesis** 39:614-622, 2018.
 23. **Rusyn, I.**, Kleeberger, S.R., McAllister, K.A., French, J.E., and Svenson, K.L. Introduction to Mammalian Genome special issue: The combined role of genetics and environment relevant to human disease outcomes. **Mamm Genome** 29:1-4, 2018.
 24. Israel, J.W., [&]Chappell, G.A., Simon, J.M., Pott, S., Safi, A., ^{*}Lewis, L., Cotney, P., Boulos, H.S., Bodnar, W., Lieb, J.D., Crawford, G.E., Furey, T.S., and **Rusyn, I.** Tissue- and strain-specific effects of a genotoxic carcinogen 1,3-butadiene on chromatin and transcription. **Mamm Genome** 29:153-167, 2018.
 25. ^{*}Venkatratnam, A., House, J.S., Konganti, K., McKenney, C., Threadgill, D.W., Chiu, W.A., Aylor, D.L., Wright, F.A., and **Rusyn, I.** Population-based dose-response analysis of liver transcriptional response to trichloroethylene in mouse. **Mamm Genome** 29:168-181, 2018.
 26. Chiu, W.A., and **Rusyn, I.** Advancing chemical risk assessment decision-making with population variability data: challenges and opportunities. **Mamm Genome** 29:182-189, 2018.
 27. Pogribny, I.P., Dreval, K., Kindrat, I., Melnyk, S., Jimenez, L., de Conti, A., Tryndyak, V., Pogribna, M., Ortega, J.F., James, J.S., **Rusyn, I.**, and Beland, F. Epigenetically mediated inhibition of S-adenosylhomocysteine hydrolase and the associated dysregulation of one-

- carbon metabolism in non-alcoholic steatohepatitis and hepatocellular carcinoma. **FASEB J** 32:1591-1601, 2018.
28. Marvel, S.W., To, K., Grimm, F.A., Wright, F.A., **Rusyn, I.**, and Reif, D.M. ToxPi Graphical User Interface 2.0: Dynamic exploration, visualization, and sharing of integrated data models. **Bioinformatics** 19:80, 2018.
 29. **Rusyn, I.**, and Greene, N. The impact of novel assessment methodologies in toxicology on green chemistry and chemical alternatives. **Toxicol Sci** 161:276-284, 2018.
 30. Chiu, W.A., Guyton, K.Z., Martin, M.T., Reif, D.M., and **Rusyn, I.** Use of high-throughput *in vitro* toxicity screening data in cancer hazard evaluations by IARC Monograph Working Groups. **ALTEX** 35:51-64, 2018.
 31. *Luo, Y.S., &Furuya, S., Chiu, W., and **Rusyn, I.** Characterization of inter-tissue and inter-strain variability of TCE glutathione conjugation metabolites DCVG, DCVC, and NAcDCVC in the mouse. **J Toxicol Environ Health A** 81:37-52, 2018.
 32. #Seniutkin, O., &Furuya, S., *Luo, Y.S., &Cichocki, J.A., Fukushima, H., Kato, Y., Sugimoto, H., Matsumoto, T., Uehara, T., and **Rusyn, I.** Effects of pirfenidone in acute and sub-chronic liver fibrosis, and an initiation-promotion cancer model in the mouse. **Toxicol Appl Pharmacol** 339:1-9, 2018.
 33. **Rusyn, I.**, Pogribny, I.P. Editorial overview of the special issue on genomic toxicology epigenetics. **Curr Opin Toxicol** 6:i-iii, 2017.
 34. *Lewis, L., Crawford, G.E., Furey, T.S., and **Rusyn, I.** Genetic and epigenetic determinants of inter-individual variability in responses to toxicants. **Curr Opin Toxicol** 6:50–59, 2017.
 35. House, J.S., &Grimm, F.A., Jima, D.D., Zhou, Y.-H., **Rusyn, I.**, and Wright, F.A. A pipeline for high throughput concentration response modeling of gene expression for toxicogenomics. **Front Genet** 8:168, 2017.
 36. de Conti, A., Ortega, J.F., Tryndyak, V., Dreval, K., Moreno, F.S., **Rusyn, I.**, Beland, F.A., and Pogribny, I.P. MicroRNA deregulation in nonalcoholic steatohepatitis-associated liver carcinogenesis. **Oncotarget** 8:88517-88528, 2017.
 37. Zhou, Y.-H., &Cichocki, J.A., #Soldatow, V.Y., Scholl, E., Gallins, P., Jima, D., *Yoo, H.-S., Chiu, W.A., Wright, F.A., and **Rusyn, I.** Comparative dose-response analysis of liver and kidney transcriptomic effects of trichloroethylene and tetrachloroethylene in B6C3F1 mouse. **Toxicol Sci** 160(1):95-110, 2017.
 38. *Chappell, G., Israel, J.W., Simon, J.M., Pott, S., Safi, A., Eklund, K., Sexton, K.G., Bodnar, W., Lieb, J.D., Crawford, G.E., **Rusyn, I.**, and Furey, T.S. Variation in DNA-Damage Responses to an Inhalational Carcinogen (1,3-Butadiene) in Relation to Strain-Specific Differences in Chromatin Accessibility and Gene Transcription Profiles in C57BL/6J and CAST/EiJ Mice. **Environ Health Perspect** 125(10):107006, 2017.
 39. *Luo, Y.-S., &Cichocki, J., McDonald, T.J., and **Rusyn, I.** Simultaneous detection of the tetrachloroethylene metabolites S-(1,2,2-trichlorovinyl) glutathione, S-(1,2,2-trichlorovinyl)-L-cysteine, and N-acetyl-S-(1,2,2-trichlorovinyl)-L-cysteine in multiple mouse tissues via ultra-high performance liquid chromatography electrospray ionization tandem mass spectrometry. **J Toxicol Environ Health A** 80:513-524, 2017.
 40. &Cichocki, J.A., &Furuya, S., *Luo, Y.-S., &Iwata, Y., Konganti, K., Chiu, W.A., Threadgill, D.W., Pogribny, I.P., and **Rusyn, I.** Nonalcoholic fatty liver disease is a susceptibility factor for perchloroethylene-induced liver effects in mice. **Toxicol Sci** 159:102-113, 2017.

41. [&]Iwata, Y., [&]Klaren, W.D., Lebakken, C.S., [&]Grimm, F.A., and **Rusyn, I.** High-content assay multiplexing for vascular toxicity screening in induced pluripotent stem cell-derived endothelial cells and human umbilical vein endothelial cells. *Assay Drug Dev Technol* 15:267-279, 2017.
42. *Venkatratnam, A., [&]Furuya, S., Kosyk, O., Gold, A., Bodnar, W., Konganti, K., Threadgill, D.W., Gillespie, K.M., Aylor, D.L., Wright, F.A., Chiu, W.A., and **Rusyn, I.** Collaborative Cross mouse population enables refinements to characterization of the variability in toxicokinetics of trichloroethylene and provides genetic evidence for the role of PPAR pathway in its oxidative metabolism. *Toxicol Sci* 158:48–62, 2017.
43. Chiu, W.A., Wright, F.A., and **Rusyn, I.** A tiered, Bayesian approach to estimating of population variability for regulatory decision-making. *ALTEX* 34:377-388, 2017.
44. [&]Grimm, F.A., Russell, W.K., *Luo, Y.S., [&]Iwata, Y., Chiu, W.A., Roy, T., Boogaard, P.J., Ketelslegers, H.B., and **Rusyn, I.** Grouping of petroleum substances as example UVCBs by ion mobility-mass spectrometry to enable chemical composition-based read-across. *Environ Sci Technol* 51:7197-7207, 2017.
45. [&]Cichocki, J.A., [&]Furuya, J., *Venkatratnam, A., McDonald, T.J., Knap, A.H., Wade, T., Sweet, S., Chiu, W.A., Threadgill, D.W., and **Rusyn, I.** Characterization of variability in toxicokinetics and toxicodynamics of tetrachloroethylene using the Collaborative Cross mouse population. *Environ Health Perspect* 125:057006, 2017.
46. Dreval, K., de Conti, A., [&]Furuya, S., Beland, F.A., **Rusyn, I.**, and Pogribny, I.P. miR-1247 blocks SOX9-mediated regeneration in alcohol- and fibrosis-associated acute kidney injury in mice. *Toxicology* 384:40-49, 2017.
47. Sirenko, O., [&]Grimm, F.A., Ryan, K.R., [&]Iwata, Y., Chiu, W.A., Parham, F., Wignall, J.A., Anson, B., Cromwell, E.F., Behl, M., **Rusyn, I.**, and Tice, R.R. *In vitro* cardiotoxicity assessment of environmental chemicals using an organotypic human induced pluripotent stem cell-derived model. *Toxicol Appl Pharmacol* 322:60–74, 2017.
48. [&]Cichocki, J., [&]Furuya, J., Konganti, K., *Luo, Y.-S., McDonald, T.J., Iwata, Y., Chiu, W.A., Threadgill, D.W., Pogribny, I.P., and **Rusyn, I.** Impact of nonalcoholic fatty liver disease on toxicokinetics of tetrachloroethylene in mice. *J Pharmacol Exp Ther* 361:17-28, 2017.
49. Ibrahim, Y.M., Garimella, S.V.B., Prost, S.A., Wojcik, R., Norheim, R.V., Baker, E.S., **Rusyn, I.**, and Smith, R.D. Development of an Ion Mobility Spectrometry-Orbitrap Mass Spectrometer platform. *Anal Chem* 88:12152-12160, 2016.
50. Pogribny, I.P., Beland, F.A., and **Rusyn, I.** The role of microRNAs in the development and progression of chemical-associated cancers. *Toxicol Appl Pharmacol* 312:3-10, 2016.
51. Cote, I., Andersen, M.E., Ankley, G.T., Barone, S., Birnbaum, L.S., ..., **Rusyn, I.**, ... and DeWoskin, R. The next generation of risk assessment multiyear study - highlights of findings, applications to risk assessment and future directions. *Environ Health Perspect* 124:1671-1682, 2016.
52. [&]Furuya, S., *Chappell, G.A., [&]Iwata, Y., Uehara, T., Kato, Y., Kono, H., Bataller, R., and **Rusyn, I.** A mouse model of alcoholic liver fibrosis-associated acute kidney injury identifies key molecular pathways. *Toxicol Appl Pharmacol* 310:129-139, 2016.
53. [&]Cichocki, J.A., Guyton, K.Z., Guha, N., Chiu, W.A., **Rusyn, I.**, and Lash, L.H. Target organ metabolism, toxicity, and mechanisms of trichloroethylene and perchloroethylene: Key similarities, differences, and data gaps. *J Pharmacol Exp Ther* 359:110-123, 2016.
54. [&]Grimm, F.A., [&]Iwata, Y., Sirenko, O., *Chappell, G.A., Wright, F.A., Reif, D.M., Braisted, J., Gerhold, D.L., Yeakley, J.M., Shepard, P., Seligmann, B., Roy, T., Boogaard, P.J., Ketelslegers, H., Rohde, A., and **Rusyn, I.** A chemical-biological similarity-based grouping of

- complex substances as a prototype approach for evaluating chemical alternatives. **Green Chem** 18:4407–4419, 2016.
55. *Low, Y., Caster, O., Bergvall, T., Fourches, D., Zang, X., Noren, G.N., **Rusyn, I.**, Edwards, R., and Tropsha, A. Cheminformatics-aided pharmacovigilance: Application to Stevens Johnson syndrome. **J Am Med Inform Assoc** 23:968-978, 2016.
 56. Portier, C.J., Armstrong, B.K., ..., **Rusyn, I.**, ..., and Zhou, S.F. Differences in the carcinogenic evaluation of glyphosate between the International Agency for Research on Cancer (IARC) and the European Food Safety Authority (EFSA). **J Epidemiol Community Health** 70:741-745, 2016.
 57. Loomis, D., Guyton, K.Z., Grosse, Y., Lauby-Secretan, B., El Ghissassi, F., Bouvard, V., Benbrahim-Tallaa, L., Guha, N., Mattock, H., Straif, K.; International Agency for Research on Cancer Monograph Working Group. Carcinogenicity of drinking coffee, mate, and very hot beverages. **Lancet Oncol** 17:877-878, 2016.
 58. Smith, M.T., Guyton, K.Z., Gibbons, C.F., Fritz, J.M., Portier, C.J., **Rusyn, I.**, DeMarini, D.M., Caldwell, J.C., Kavlock, R.J., Lambert, P., Hecht, S., Bucher, J.R., Stewart, B.W., Baan, R., Coglianò, V., and Straif, K. Key characteristics of carcinogens as a basis for organizing data on mechanisms of carcinogenesis. **Environ Health Perspect** 124:713–721, 2016.
 59. *Chappell, G., Pogribny, I., Guyton, K., and **Rusyn, I.** Epigenetic alterations induced by genotoxic occupational and environmental human chemical carcinogens: A systematic literature review. **Mutat Res** 768:27–45, 2016.
 60. Zavala, J., #O'Brien, B., Lichtveld, K., Sexton, K.G., **Rusyn, I.**, Jaspers, I., and Vizuete, W. Assessment of biological responses of EpiAirway 3-D cell constructs versus A549 cells for determining toxicity of ambient air pollution. **Inhal Toxicol** 28:251-259, 2016.
 61. Knap, A.H., and **Rusyn, I.** Environmental exposures due to natural disasters. **Rev Environ Health** 31:89-92, 2016.
 62. *Chappell, G., Silva, G.O., &Uehara, T., Pogribny, I.P., and **Rusyn, I.** Characterization of copy number alterations in a mouse model of fibrosis-associated hepatocellular carcinoma reveals concordance with human disease. **Cancer Med** 5:574-585, 2016.
 63. Marrone, A.K., Shpyleva, S., Chappell, G., Uehara, T., Beland, F.A., **Rusyn, I.** and Pogribny, I.P. Differentially expressed microRNAs provide mechanistic insight into fibrosis-associated liver carcinogenesis in mice. **Mol Carcinog** 55:808–817, 2016.
 64. *Abdo, N., Wetmore, B.A., *Chappell, G.A., Shea, D., Wright, F.A., and **Rusyn, I.** *In vitro* screening for population variability in toxicity of pesticide-containing mixtures. **Environ Int** 85:147-155, 2015.
 65. Eduati, F., Mangravite, L.M., Wang, T., Tang, H., Bare, J.C., Huang, R., Norman, T., Kellen, M., Menden, M.P., Yang, J., Zhan, X., Zhong, R., Xiao, G., Xia, M., *Abdo, N., Kosyk, O.; NIEHS-NCATS-UNC DREAM Toxicogenetics Collaboration, Friend, S., Dearry, A., Simeonov, A., Tice, R.R., Rusyn, I., Wright, F.A., Stolovitzky, G., Xie, Y., Saez-Rodriguez J. Opportunities and limitations in the prediction of population responses to toxic compounds assessed through a collaborative competition. **Nat Biotechnol** 33:933-940, 2015.
 66. Berggren, E., Amcoff, P., Benigni, R., Blackburn, K., Carney, E., Cronin, M., Deluyker, H., Gautier, F., Judson, R.S., Kass, G.E., Keller, D., Knight, D., Lilienblum, W., Mahony, C., **Rusyn, I.**, Schultz, T., Schwarz, M., Schüürmann, G., White, A., Burton, J., Lostia, A.M., Munn, S., Worth, A. Chemical safety assessment using read-across: Assessing the use of novel testing methods to strengthen the evidence base for decision making. **Environ Health Perspect** 123:1232–1240, 2015.

67. &Grimm, F., &Iwata, Y., Sirenko, O., Bittner, M., and **Rusyn, I.** High-content assay multiplexing for toxicity screening in induced pluripotent stem cell-derived cardiomyocytes and hepatocytes. *Assay Drug Dev Technol* 13:529-546, 2015.
68. Yang J, Huang T, Petralia F, Long Q, Zhang B, Argmann C, Zhao Y, Mobbs CV, Schadt EE, Zhu J, Tu Z; GTEx Consortium. Synchronized age-related gene expression changes across multiple tissues in human and the link to complex diseases. *Sci Rep* 5:15145, 2015.
69. *Yoo, H.S., &Cichocki, J.A., Kim, S., *Venkatratnam, A., &Iwata, Y., Kosyk, O., Bodnar, W., Sweet, S., Knap, A., Wade, T., Campbell, J., Clewell, H.J., Melnyk, S.B., Chiu, W.A., and **Rusyn, I.** The contribution of peroxisome proliferator-activated receptor alpha to the relationship between toxicokinetics and toxicodynamics of trichloroethylene. *Toxicol Sci* 147:339-49, 2015.
70. Pearce, N.E., Blair, A., Vineis, P., ... **Rusyn, I.**,... IARC monographs: 40 years of evaluating carcinogenic hazards to humans. *Environ Health Persp* 123:507-514, 2015.
71. GTEx Consortium. The Genotype-Tissue Expression (GTEx) pilot analysis: Multi-tissue gene regulation in humans. *Science* 348:648-660, 2015.
72. Rivas, M.A., Pirinen, M., Conrad, D.F., Lek, M., Tsang, E.K., Karczewski, K.J., Maller, J.B., Kukurba, K.R., DeLuca, D.S., Fromer, M., Ferreira, P.G., Smith, K.S., Zhang, R., Zhao, F., Banks, E., Poplin, R., Ruderfer, D.M., Purcell, S.M., Tukiainen, T., Minikel, E.V., Stenson, P.D., Cooper, D.N., Huang, K.H., Sullivan, T.J., Nedzel, J.; GTEx Consortium; Geuvadis Consortium, Bustamante, C.D., Li, J.B., Daly, M.J., Guigo, R., Donnelly, P., Ardlie, K., Sammeth, M., Dermitzakis, E.T., McCarthy, M.I., Montgomery, S.B., Lappalainen, T., MacArthur, D.G. Effect of predicted protein-truncating genetic variants on the human transcriptome. *Science* 348:666-669, 2015.
73. Pierson, E.; GTEx Consortium, Koller, D., Battle, A., Mostafavi, S., Ardlie, K.G., Getz, G., Wright, F.A., Kellis, M., Volpi, S., Dermitzakis, E.T. Sharing and Specificity of Co-expression Networks across 35 Human Tissues. *PLoS Comput Biol* 11:e1004220, 2015.
74. *Abdo, N., Xia, M., Brown, C.C., Kosyk, O., Huang, R., Sakamuru, S., Zhou, Y.H., Jack, J., Gallins, P., Xia, K., Li, Y., Chiu, W., Motsinger-Reif, A., Austin, C.P., Tice, R.R., ^**Rusyn, I.** and ^Wright, F.A. Population-based *in vitro* hazard and concentration-response assessment of chemicals: The 1000 genomes high throughput screening study. *Environ Health Persp* 123:458-466, 2015. ^*Corresponding authors.*
75. Guyton, K.Z., Loomis, D., Grosse, Y., El Ghissassi, F., Benbrahim-Tallaa, L., Guha, N., Scoccianti, C., Mattock, H., Straif, K.; International Agency for Research on Cancer Monograph Working Group. Carcinogenicity of tetrachlorvinphos, parathion, malathion, diazinon, and glyphosate. *Lancet Oncol* 16:490-491, 2015.
76. Linkov, I., Massey, O., Keisler, J., **Rusyn, I.**, and Hartung, T. From "weight of evidence" to quantitative data integration using multicriteria decision analysis and Bayesian methods. *ALTEX* 32:3-8, 2015.
77. *Yoo, H.S., Bradford, B.U., Kosyk, O., Shymonyak, S., &Uehara, T., Collins, L.B., Bodnar, W.M., Ball, L.M., Gold, A., and **Rusyn I.** Comparative analysis of the relationship between trichloroethylene metabolism and tissue-specific toxicity among inbred mouse strains: Liver effects. *J Toxicol Environ Health A* 78:15-31, 2015.
78. *Yoo, H.S., Bradford, B.U., Kosyk, O., Shymonyak, S., &Uehara, T., Collins, L.B., Bodnar, W.M., Ball, L.M., Gold, A., and **Rusyn I.** Comparative analysis of the relationship between trichloroethylene metabolism and tissue-specific toxicity among inbred mouse strains: Kidney effects. *J Toxicol Environ Health A* 78:32-49, 2015.

79. Sirenko, O., Hesley, J., **Rusyn, I.**, and Cromwell, E. High-content high-throughput assays for characterizing the viability and morphology of human iPSC-derived neuronal cultures. **Assay Drug Dev Technol** 12:536-547, 2014.
80. Lash, L.H., Chiu, W.A., Guyton, K.Z., and **Rusyn, I.** Trichloroethylene biotransformation and its role in mutagenicity, carcinogenicity and target organ toxicity. **Mutat Res** 762:22-36, 2014.
81. *Chappell, G.A., #Kobets, T., #O'Brien, B., Tretyakova, N., Sangaraju, D., Kosyk, O., Sexton, K.G., Bodnar, W., Pogribny, I.P., and **Rusyn, I.** Epigenetic events determine tissue-specific toxicity of inhalational exposure to the genotoxic chemical 1,3-butadiene in male C57BL/6J mice. **Toxicol Sci** 142:375-384, 2014.
82. Benbrahim-Tallaa, L., Lauby-Secretan, B., Loomis, D., Guyton, K.Z., Grosse, Y., El Ghissassi, F., Bouvard, V., Guha, N., Mattock, H., Straif, K.; International Agency for Research on Cancer Monograph Working Group. Carcinogenicity of perfluorooctanoic acid, tetrafluoroethylene, dichloromethane, 1,2-dichloropropane, and 1,3-propane sultone. **Lancet Oncol** 15:924-925, 2014.
83. &Uehara, T., Pogribny, I.P., and **Rusyn, I.** The DEN and CCl₄-induced mouse model of fibrosis and inflammation-associated hepatocellular carcinoma. **Curr Protoc Pharmacol** 66:14.30.1-14.30.10, 2014.
84. &Politi, R., **Rusyn, I.** and Tropsha, A. Prediction of binding affinity and efficacy of thyroid hormone receptor ligands using QSAR and structure based modeling methods. **Toxicol Appl Pharmacol** 280:177–189, 2014.
85. *Low, Y., Sedykh, A., **Rusyn, I.**, and Tropsha, A. Integrative approaches for predicting *in vivo* effects of chemicals from their structural descriptors and the results of short-term biological assays. **Curr Top Med Chem** 14:1356-1364, 2014.
86. Chiu, W.A., Campbell, J.L., Clewell, H.J., Zhou, Y-H., Wright, F.A., Guyton, K.Z., and **Rusyn, I.** Physiologically-based pharmacokinetic (PBPK) modeling of interstrain variability in trichloroethylene metabolism in the mouse. **Environ Health Persp** 122:456–463, 2014.
87. #Wignall, J.A., #Shapiro, A.J., Wright, F.A., Woodruff, T. J., Chiu, W.A., Guyton, K.Z., and **Rusyn, I.** Standardizing benchmark dose calculations to improve science-based decisions in human health assessments. **Environ Health Persp** 122:499–505, 2014.
88. *Chappell, G., Kutanzi, K., &Uehara, T., Tryndyak, V., Hong, H.H., Hoenerhoff, M., Beland, F.A., ***Rusyn, I.**, and *Pogribny, I. P. Genetic and epigenetic changes in fibrosis-associated hepatocarcinogenesis in mice. **Int J Cancer** 134:2778-2788, 2014. *Corresponding authors.
89. Buck, L.D., Inman, S.W., **Rusyn, I.**, and Griffith, L.G. Co-regulation of primary mouse hepatocyte viability and function by oxygen and matrix. **Biotechnol Bioeng** 111:1018-1027, 2014.
90. **Rusyn, I.**, and Lemon, S.M. Mechanisms of HCV-induced liver cancer: What did we learn from *in vitro* and animal studies? **Cancer Lett** 345:210-215, 2014.
91. Sirenko, O., Hesley, J., **Rusyn, I.**, and Cromwell, E. High-content assays for hepatotoxicity using induced pluripotent stem cell (iPSC)-derived cells. **Assay Drug Dev Technol** 12:43-54, 2014.
92. **Rusyn, I.**, Chiu, W.A., Lash, L.H., Kromhout, H., Hansen, J., and Guyton, K.Z. Trichloroethylene: Mechanistic, epidemiologic and other supporting evidence of carcinogenic hazard. **Pharmacol Ther** 141:55-68, 2014.
93. Pogribny, I.P., and **Rusyn, I.** Role of epigenetic aberrations in the development and progression of human hepatocellular carcinoma. **Cancer Lett** 342:223–230, 2014.

94. Sirenko, O., Cromwell, E.F., Crittenden, C., #Wignall, J.A., Wright, F.A., and **Rusyn, I.** Assessment of beating parameters in human induced pluripotent stem cells enables quantitative in vitro screening for cardiotoxicity. **Toxicol Appl Pharmacol** 273:500-507, 2013.
95. #Kushman, M.E., Kraft, A.D., Guyton, K.Z., Chiu, W.A., Makris, S.L., and **Rusyn, I.** A systematic approach for identifying, evaluating, and presenting mechanistic evidence in human health assessments. **Regul Toxicol Pharmacol** 67:266–277, 2013.
96. *Low, Y., Sedykh, A., Fourches, D., Golbraikh, A., Whelan, M., ^**Rusyn, I.** and ^Tropsha, A. Integrative chemical-biological read-across approach for chemical hazard classification. **Chem Res Toxicol** 26:1199-1208, 2013. ^Corresponding authors
97. Zhang, L., Sedykh, A., Tripathi, A., Zhu, H., Afantitis, A., Mouchlis, V.D., Melagraki, G., ^**Rusyn, I.**, and ^Tropsha, A. Identification of putative estrogen receptor-mediated endocrine disrupting chemicals using QSAR and structure-based virtual screening approaches. **Toxicol Appl Pharmacol** 272:67-76, 2013. ^Corresponding authors
98. **Rusyn, I.**, and Bataller, R. Alcohol and toxicity. **J Hepatol** 59:387-388, 2013.
99. **Rusyn, I.**, and Bataller, R. Reply to: “The autophagic response to alcohol toxicity: The missing layer.” **J Hepatol** 59:399-400, 2013.
100. Hakenewerth, A.M., Millikan, R.C., **Rusyn, I.**, Herring, A.H., Weissler, M.C., Funkhouser, W.F., North, K.E., Barnholtz-Sloan, J.S., and Olshan, A.F. Effects of polymorphisms in alcohol metabolism and oxidative stress genes on survival from head and neck cancer. **Cancer Epidemiol** 37:479-491, 2013.
101. GTEx Consortium. The Genotype-Tissue Expression (GTEx) project. **Nat Genet** 45:580-585, 2013.
102. Reif, D.M., Sypa, M., Lock, E.F., Wright, F.A., Wilson, A., Cathey, T., Judson, R.R., and **Rusyn, I.** ToxPi GUI: An interactive visualization tool for transparent integration of data from diverse sources of evidence. **Bioinformatics** 29:402–403, 2013.
103. Pogribny, I.P., Kutanzi, K., Melnyk, S., de Conti, A., Tryndyak, V., Montgomery, B., Pogribna, M., Muskhelishvili, L., Latendresse, J.R., James, S.J., Beland, F.A., and **Rusyn, I.** Strain-dependent dysregulation of one-carbon metabolism is associated with choline- and folate-deficient diet-induced liver injury in the mouse. **FASEB J** 27:2233–2243, 2013.
104. &Uehara, T., Ainslie, G.R., Kutanzi, K., Pogribny, I.P., Mushkelishvili, L., Izawa, T., Yamata, J., Kosyk, O., Shymonyak, S., Bradford, B.U., Boorman, G.A., Bataller, R., and **Rusyn, I.** Molecular mechanisms of fibrosis-associated promotion of liver carcinogenesis. **Toxicol Sci** 132:53-63, 2013.
105. &Uehara, T., Kosyk, O., &Jeannot, E., Bradford, B.U., Tech, K., Macdonald, J.M., Boorman, G.A., Chatterjee, S., Mason, R.P., Melnyk, S.B., Tryndyak, V.P., Pogribny, I.P., and **Rusyn, I.** Acetaminophen-induced acute liver injury in HCV transgenic mice. **Toxicol Appl Pharmacol** 266:224-232, 2013.
106. Zeise, L., Bois, F.Y., Chiu, W.A., Hattis, D., **Rusyn, I.** and Guyton, K.Z. Addressing human variability in next-generation human health risk assessments of environmental chemicals. **Environ Health Persp** 121:23–31, 2013.
107. Sirenko, O., Crittenden, C., Callamaras, N., Hesley, J., Chen, Y.W., Funes, C., **Rusyn, I.**, Anson, B., and Cromwell, E. Multiparameter *in vitro* assessment of compound effects on cardiomyocyte physiology using iPSC cells. **J Biomol Screen** 18:39-53, 2013.
108. #Soldatow, V.Y., LeCluyse, E.L., Griffith, L.G., and **Rusyn, I.** *In vitro* models for liver toxicity testing. **Toxicol Res** 2:23–39, 2013.

109. Pogribny, I.P., and **Rusyn, I.** Environmental toxicants, epigenetics, and cancer. *Adv Exp Med Biol* 754:215-32, 2013.
110. Guha, N., Loomis, D., Grosse, Y., Lauby-Secretan, B., El Ghissassi, F., Bouvard, V., Benbrahim-Tallaa, L., Baan, R., Mattock, H., Straif, K.; International Agency for Research on Cancer Monograph Working Group. Carcinogenicity of trichloroethylene, tetrachloroethylene, some other chlorinated solvents, and their metabolites. *Lancet Oncol* 13:1192-1193, 2012.
111. Tryndyak, V., de Conti, A., #Kobets, T., Kutanzi, K., Koturbash, I., Han, T., Fuscoe, J.C., Latendresse, J.R., Melnyk, S., Shymonyak, S., Collins, L., Ross, S.A., **Rusyn, I.**, Beland, F.A., and Pogribny, I.P. Inter-strain differences in the severity of liver injury induced by a choline- and folate-deficient diet in mice are associated with dysregulation of genes involved in lipid metabolism. *FASEB J* 26:4592–4602, 2012.
112. &Tsuchiya, M., Ji, C., Kosyk, O., Shymonyak, S., Melnyk, S., Kono, H., Tryndyak, V., Muskhelishvili, L., Pogribny, I.P., Kaplowitz, N., and **Rusyn, I.** Inter-strain differences in liver injury and one-carbon metabolism in alcohol-fed mice. *Hepatology* 56:130-139, 2012.
113. Tryndyak, V.P., Latendresse, J.R., Montgomery, B., Ross, S.A., Beland, F.A., **Rusyn, I.**, and Pogribny, I.P. Plasma microRNAs are sensitive indicators of inter-strain differences in the severity of liver injury induced in mice by a choline- and folate-deficient diet. *Toxicol Appl Pharmacol* 262:52-59, 2012.
114. **Rusyn, I.**, Sedykh, A., *Low, Y., Guyton, K.Z. and Tropsha, A. Predictive modeling of chemical hazard by integrating numerical descriptors of chemical structures and short-term toxicity assay data. *Toxicol Sci* 127:1-9, 2012.
115. Lock, E.F., *Abdo, N. Huang, R., Xia, M., Kosyk, O., #O'Shea, S.H., Zhou, Y.H., Sedykh, A., Tropsha, A., Austin, C.P., Tice, R.R., Wright, F.A., and **Rusyn, I.** Quantitative high-throughput screening for chemical toxicity in a population-based *in vitro* model. *Toxicol Sci* 126:578-588, 2012.
116. **Rusyn, I.** and Corton, J.C. Mechanistic considerations for human relevance of cancer hazard of di(2-ethylhexyl) phthalate. *Mutat Res* 750:141–158, 2012.
117. Yeatts, K.B., El-Sadig, M., Leith, D., Kalsbeek, W., Al-Maskari, F., Couper, D., Fink, W.E., Zoubeidi, T., Chan, R.L., Trent, C.B., Davidson, C.A., Boundy, M.G., Kassab, M.M., Hasan, M.Y., **Rusyn, I.**, MacDonald Gibson, J., and Olshan, A.F. Indoor air pollutants and health in the United Arab Emirates (UAE). *Environ Health Persp* 120:687-694, 2012.
118. Yeatts, K.B., El-Sadig, M., Ali, H.I., Al-Maskari, F., Campbell, A., Ng, S.W., Reeves, L., Chan, R.L., Davidson, C.A., Funk, W.E., Boundy, M.G., Leith, D., Popkin, B., MacDonald Gibson, J., **Rusyn, I.**, and Olshan, A.F. Conducting environmental health research in the Arabian Middle East: Lessons and opportunities. *Environ Health Persp* 120:632-636, 2012.
119. Wright, F.A., Shabalina, A., and **Rusyn, I.** Computational tools for discovery and interpretation of expression quantitative trait loci. *Pharmacogenomics* 13:343-352, 2012.
120. &Jeannot, E., Boorman, G., Kosyk, O., Bradford, B., Shymonyak, S., Tumurbaatar, B., Weinman, S., Melnyk, S., Tryndyak, V., Pogribny, I., and **Rusyn, I.** Increased incidence of aflatoxin B1-induced liver tumors in hepatitis virus C transgenic mice. *Int J Cancer* 130: 1347-1356, 2012.
121. Hakenewerth, A.M., Millikan, R.C., **Rusyn, I.**, Herring, A.H., North, K.E., Barnholtz-Sloan, J.S., Funkhouser, W., Weissler, M.C., Olshan, A.F. Joint effects of alcohol consumption and polymorphisms in alcohol and oxidative stress metabolism genes on risk of head and neck cancer. *Cancer Epidemiol Biomarkers Prev* 20:2438-2449, 2011.
122. *Low, Y., &Uehara, T., Minowa, Y., Yamada, H., Ohno, Y., Urushidani, T., Sedykh, A., Muratov, E., Kuz'min, V., Fourches, D., Zhu, H., ***Rusyn, I.**, and Tropsha, A. Predicting drug-

- induced hepatotoxicity using QSAR and toxicogenomics approaches. **Chem Res Toxicol** 24:1251-1262, 2011.
*Corresponding author
123. Koturbash, I., Scherhag, A., Sorrentino, J., Sexton, K., Bodnar, W., Tryndyak, V., Latendresse, J.R., Swenberg, J.A., Beland, F.A., Pogribny, I.P., and **Rusyn, I.** Epigenetic alterations in liver of C57BL/6J mice after short-term inhalational exposure to 1,3-butadiene. **Environ Health Persp** 119:635-640, 2011.
 124. Koturbash, I., Scherhag, A., Sorrentino, J., Sexton, K., Bodnar, W., Swenberg, J.A., Beland, F.A., Pardo-Manuel deVillena, F., ***Rusyn, I.**, and Pogribny, I.P. Epigenetic mechanisms of mouse inter-strain variability in genotoxicity of the environmental toxicant 1,3-butadiene. **Toxicol Sci** 122:448-456, 2011.
*Equally contributing senior author
 125. *Gatti, D.M., Lu, L., Williams, R.W., Sun, W., Wright, F.A., Threadgill, D.W., and **Rusyn, I.** MicroRNA expression in the livers of inbred mice. **Mutat Res** 714:126-133, 2011.
 126. Grosse, Y., Baan, R., Secretan-Lauby, B., El Ghissassi, F., Bouvard, V., Benbrahim-Tallaa, L., Guha, N., Islami, F., Galichet, L., Straif, K.; WHO International Agency for Research on Cancer Monograph Working Group. Carcinogenicity of chemicals in industrial and consumer products, food contaminants and flavourings, and water chlorination byproducts. **Lancet Oncol** 12:328-329, 2011.
 127. Sedykh, A., Zhu, H., Tang, H., Zhang, L., Richard, A., ^**Rusyn I.**, and ^Tropsha A. Use of *in vitro* HTS-derived concentration-response data as biological descriptors improves the accuracy of QSAR models of *in vivo* toxicity. **Environ Health Persp** 119:364-370, 2011.
^Equally contributing senior authors
 128. #O'Shea, S.H., Schwarz, J., Kosyk, O., #Ross, P.K., Ha, M.J., Wright, F.A., and **Rusyn, I.** *In vitro* screening for population variability in chemical toxicity. **Toxicol Sci** 119:398-407, 2011.
 129. Bradford, B.U., Lock, E.F., Kosyk, O., &Kim, S.K., &Uehara, T., Harbourt, D., DeSimone, M., Threadgill, D.W., Tryndyak, V., Pogribny, I.P., Bleyl, L., Koop, D.R. and **Rusyn, I.** Inter-strain differences in the liver effects of trichloroethylene in a multi-strain panel of inbred mice. **Toxicol Sci** 120:206-217, 2011.
 130. &Jeannot, E., Pogribny, I.P., Beland, F.A., and **Rusyn, I.** Chronic administration of ethanol leads to an increased incidence of hepatocellular adenoma by promoting H-ras-mutated cells. **Cancer Lett** 301:161-167, 2011.
 131. #Martinez, S.M., Bradford, B.U., #Soldatow, V.Y., Kosyk, O., Sandot, A., Witek, R., Kaiser, R., Stewart, T., Amaral, K., Freeman, K., Black, C., LeCluyse, E.L., Ferguson, S.S., and **Rusyn, I.** Evaluation of an *in vitro* toxicogenetic mouse model for hepatotoxicity. **Toxicol Appl Pharmacol** 249:208-216, 2010.
 132. *Gatti, D.M., Barry, W.T., Nobel, A.B., **Rusyn, I.**, and Wright, F.A. Heading down the wrong pathway: On the influence of correlation within gene sets. **BMC Genomics** 11:574, 2010.
 133. Bryan, R.P., Asmar, M.M., Alderman, J.M., Alderman, E.A., Garland, A.L., Busby, W.H., Bodnar, W.M., **Rusyn, I.**, Medoff, B.D., Tisch, R., Swenberg, J.A., Zeisel, S.H., and Combs, T.P. Adiponectin lowers glucose production by increasing SOGA. **Am J Pathol** 177:1936-1945, 2010.
 134. Pogribny, I.P., Starlard-Davenport, A., Tryndyak, V., Han, T., Ross, S.A., **Rusyn, I.**, and Beland, F.A., Difference in expression of hepatic microRNAs is associated with strain-specific susceptibility to dietary nonalcoholic steatohepatitis in mice. **Lab Invest** 90:1437-1446, 2010.

135. #Formeister, E.J., &Tsuchiya, M., Fujii, H., Shpyleva, S., Pogribny, I., and **Rusyn, I.** Comparative analysis of promoter methylation and gene expression endpoints between tumorous and non-tumorous tissues from HCV-positive patients with hepatocellular carcinoma. *Mutat Res* 692:26–33, 2010.
136. *Gatti, D.M., Zhao, N., Chesler, E.J., Bradford, B.U., Shabalin, A., Yordanova, R., Lu, L., and **Rusyn, I.** Sex-specific gene expression in BXD mouse liver. *Physiol Genomics* 42:456-468, 2010.
137. **Rusyn, I.**, and Daston, G.P. Computational Toxicology: Realizing the Promise of the Toxicity Testing in the 21st Century. *Environ Health Persp* 118:1047-1050, 2010.
138. **Rusyn, I.**, *Gatti, D.M., Wiltshire, T., Kleeberger, S.R., and Threadgill, D.W. Toxicogenetics: population-based testing of drug and chemical safety in mouse models. *Pharmacogenomics* 11:1127-1136, 2010.
139. &Jeannot, E., Mellottee, L., Bioulac-Sage, P., Balabaud, C., Scoazec, J.Y., Van Nhieu, J.T., Bacq, Y., Michalak, S., Buob, D., Genthep (Inserm network), Laurent-Puig, P., **Rusyn, I.**, and Zucman-Rossi, J. Spectrum of HNF1A somatic mutations in hepatocellular adenoma differs from that in MODY3 patients and suggests genotoxic damage. *Diabetes* 59:1836-1844, 2010.
140. *Powell, C.L., Bradford, B.U., #Craig, C.P., &Tsuchiya, M., &Uehara, T., O'Connell, T.M., Pogribny, I.P., Melnyk, S., Koop, D.R., Bleye, L., Threadgill, D.W., and **Rusyn, I.** Mechanism for prevention of alcohol-induced liver injury by dietary methyl donors. *Toxicol Sci* 115:131-139, 2010.
141. &Tsuchiya, M., Parker, J., Kono, H., Matsuda, M., Fujii, H., and **Rusyn, I.** Gene expression in nontumoral liver tissue and recurrence-free survival in hepatitis C virus-positive hepatocellular carcinoma. *Mol Cancer* 9:74, 2010.
142. #Rodgers, A.D., Zhu, H., Fourches, D., ^**Rusyn, I.**, and ^Tropsha, A. Modeling liver-related adverse effects of drugs using kNN QSAR method. *Chem Res Toxicol* 23:724-732, 2010.
^Equally contributing senior authors
143. Starlard-Davenport, A., Tryndyak, V., Kosyk, O., Ross, S.A., **Rusyn, I.**, Beland, F.A., and Pogribny, I.P. Dietary methyl deficiency, microRNA expression and susceptibility to liver carcinogenesis. *World Rev Nutr Diet* 101:123–130, 2010.
144. *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., Paigen, K., Harris, C., Contractor, T., Wiltshire, T., ^**Rusyn, I.**, and ^Threadgill, D.W. Mouse population-guided resequencing reveals that variants in *CD44* contribute to acetaminophen-induced liver injury in humans. *Genome Res* 19:1507-1515, 2009.
^Equally contributing senior authors
145. *Gatti, D.M., *Harrill, A.H., Wright, F.A., Threadgill, D.W., and **Rusyn, I.** Replication and narrowing of gene expression quantitative trait loci using inbred mice. *Mamm Genome* 20:437-446, 2009.
146. &Kim, S., Collins, L.B., Boysen, G., Swenberg, J.A., Gold, A., Ball, L.M., Bradford, B.U., and **Rusyn, I.** Liquid chromatography electrospray ionization tandem mass spectrometry analysis method for simultaneous detection of trichloroacetic acid, dichloroacetic acid, S-(1,2-dichlorovinyl)glutathione and S-(1,2-dichlorovinyl)-L-cysteine. *Toxicology* 262:230-238, 2009.
147. &Kim, S., Kim, D., Pollack, G.M., Collins, L.B., and **Rusyn, I.** Pharmacokinetic analysis of trichloroethylene metabolism in male B6C3F1 mice: Formation and disposition of

- trichloroacetic acid, dichloroacetic acid, S-(1,2-dichlorovinyl)glutathione and S-(1,2-dichlorovinyl)-L-cysteine. **Toxicol Appl Pharmacol** 238: 90-99, 2009.
148. Zhu, H., Ye, L., Richard, A., Golbraikh, A., **^Rusyn, I.**, and **^Tropsha, A.** A novel two-step hierarchical quantitative structure activity relationship modeling workflow for predicting acute toxicity of chemicals in rodents. **Envr Health Persp** 117:1257-1264, 2009.
^Equally contributing senior authors
149. *Harrill, A.H., Ross, P.K., Threadgill, D.W., and **Rusyn, I.** Population-based discovery of toxicogenomics biomarkers for hepatotoxicity using a laboratory strain diversity panel. **Toxicol Sci** 110:235-243, 2009.
150. Pogribny, I.P., Tryndyak, V.P., Bagnyukova, T.V., Melnyk, S., Montgomery, B., Ross, S.A., Latendresse, J.R., **Rusyn, I.**, and Beland, F.A. Hepatic epigenetic phenotype predetermines individual susceptibility to hepatic steatosis in mice fed a lipogenic methyl-deficient diet. **J Hepatol** 51: 176-186, 2009.
151. #Ross, P.K., *Woods, C.G., Bradford, B.U., Kosyk, O., *Gatti, D.M., Cunningham, M.L., and **Rusyn, I.** Time-course comparison of xenobiotic activators of CAR and PPARalpha in mouse liver. **Toxicol Appl Pharmacol** 235:199-207, 2009.
152. *Gatti, D.M., Sypa, M., **Rusyn, I.**, Wright, F.A., and Barry, W.T. SAFEGUI: Resampling-based tests of categorical significance in gene expression data made easy. **Bioinformatics** 25:541-542, 2009.
153. *Gatti, D.M., Shabalina, A.A., Lam, T.C., Wright, F.A., **^Rusyn, I.**, and **^Nobel, A.B.** FastMap: Fast eQTL mapping in homozygous populations. **Bioinformatics** 25: 482-489, 2009.
^Equally contributing senior authors
154. *Harrill, A.H., and **Rusyn, I.** Systems biology and functional genomics approaches for the identification of cellular responses to drug toxicity. **Expert Opin Drug Metab Toxicol** 4:1379-1389, 2008.
155. &Tsuchiya, M., Kono, H., Matsuda, M., Fujii, H., and **Rusyn, I.** Protective effect of Juzen-taiho-to on hepatocarcinogenesis is mediated through the inhibition of Kupffer cell-induced oxidative stress. **Int J Cancer** 123:2503-2511, 2008.
156. Bradford, B.U., O'Connell, T.M., &Han, J., Kosyk, O., Shymonyak, S., #Ross, P.K., Winnike, J., Kono, H., and **Rusyn, I.** Metabolomic profiling of a modified alcohol liquid diet model for liver injury in the mouse uncovers new markers of disease. **Toxicol Appl Pharmacol** 232: 236-243, 2008.
157. Pogribny, I.P., Tryndyak, V.P., Boureiko, A., Melnyk, S., Bagnyukova, T.V., Montgomery, B., and **Rusyn, I.** Mechanisms of peroxisome proliferator-induced DNA hypomethylation in rat liver. **Mutat Res** 644:17-23, 2008.
158. &Han, J., Danell, R.M., Patel, J.R., Gumerov, D.R., Scarlett, C.O., Speir, J.P., Parker, C.E., **Rusyn, I.**, Zeisel, S., and Borchers, C.H. Towards high throughput metabolomics using ultrahigh field Fourier transform ion cyclotron resonance mass spectrometry. **Metabolomics** 4:128-140, 2008.
159. Zhu, H., **Rusyn, I.**, Richard, A., and Tropsha A. Use of cell viability assay data improves the prediction accuracy of conventional quantitative structure activity relationship models of animal carcinogenicity. **Envr Health Persp** 116:506-513, 2008.
160. Pogribny, I.P., **Rusyn, I.** and Beland, F.A. Epigenetic aspects of genotoxic and non-genotoxic hepatocarcinogenesis: Studies in rodents. **Environ Mol Mutagen** 49:9-15, 2008.

161. **Rusyn, I.**, Fry, R.C., Begley, T.J., Klapacz, J., Svensson, J.P., Ambrose, M., and Samson, L.D. Transcriptional networks in *S. cerevisiae* linked to an accumulation of base excision repair intermediates. *PLoS ONE* 2:e1252, 2007.
162. *Woods, C.G., Kosyk, O., Bradford, B.U., #Ross, P.K., #Burns, A.M., Cunningham, M.L., Qu, P., Ibrahim, J.G. and **Rusyn I.** Time course investigation of PPAR α - and Kupffer cell-dependent effects of WY-14,643 in mouse liver using microarray gene expression. *Toxicol Appl Pharmacol* 225:267-277, 2007.
163. Pogribny, I.P., Tryndyak, V.P., *Woods, C.G., Witt, S.E., and **Rusyn, I.** Epigenetic effects of the continuous exposure to peroxisome proliferator WY-14,643 in mouse liver are dependent upon peroxisome proliferator activated receptor α . *Mutat Res* 625:62-71, 2007.
164. Pepper, R., Moggs, J.G., Pastoor, T., Currie, R.A., Wright, J., Millburn, G., Waechter, F., and **Rusyn, I.** Mouse liver effects of Cyproconazole, a triazole fungicide: Role of the constitutive androstane receptor. *Toxicol Sci* 99:315-325, 2007.
165. *Woods, C.G., #Burns, A.M., Bradford, B.U., #Ross, P.K., Kosyk, O., Swenberg, J.A., Cunningham, M.L., and **Rusyn I.** WY-14,643-induced cell proliferation and oxidative stress in mouse liver are independent of NADPH oxidase. *Toxicol Sci* 98:366-374, 2007.
166. *Gatti, D., &Maki, A., Chesler, E.J., Kirova, R., Lu, L., Wang, J., Williams, R.W., Perkins, A., Langston, M.A., Threadgill, D.W., and **Rusyn, I.** Genome-level analysis of genetic regulation of liver gene expression networks. *Hepatology* 46:548-557, 2007.
167. Roberts, A., McMillan, L., Wang, W., Parker, J., **Rusyn, I.**, and Threadgill, D. Inferring missing genotypes in large SNP panels using fast nearest-neighbor searches over sliding windows. *Bioinformatics* 23:i401-i407, 2007.
168. Beyer, R.P., Fry, R.C., Lasarev, M.R., McConnachie, L.A., Meira, L.B., Palmer, V.S., Powell, C.L., Ross, P.K., Bammler, T.K., Bradford, B.U., Cranson, A., Cunningham, M.L., Fannin, R.D., Higgins, G.M., Hurban, P., Kayton, R.J., Kerr, K.F., Kosyk, O., Lobenhofer, E.K., Sieber, S., Vliet, P.A., Weis, B.K., Wolfinger, R., *Woods, C., Freedman, J.H., Linney, E., Kaufmann, W.K., Kavanagh, T.J., Paules, R.S., **Rusyn, I.**, Samson, L.D., Spencer, P.S., Suk, W., Tennant, R.J., Zarbl, H.; Members of the Toxicogenomics Research Consortium. Multi-center study of acetaminophen hepatotoxicity reveals the critical importance of biological endpoints in genomic analyses. *Toxicol Sci* 99:326-337, 2007.
^Corresponding author
169. *Woods, C.G., Vanden Heuvel, J.P., and **Rusyn, I.** Genomic profiling in nuclear receptor-mediated toxicity. *Toxicol Pathol* 35:474-494, 2007.
170. &Maki, A., Kono, H., Gupta, M., Asakawa, M., Suzuki, T., Matsuda, M., Fujii, H., and **Rusyn, I.** Predictive power of biomarkers of oxidative stress and inflammation in patients with hepatitis C virus-associated hepatocellular carcinoma. *Ann Surg Oncol* 14:1182-90, 2007.
171. Hammond, L.E., Albright, C.D., He, L., **Rusyn, I.**, Watkins, S.M., Doughman, S.D., Lemasters, J.J., and Coleman, R.A. Increased oxidative stress is associated with balanced increases in hepatocyte apoptosis and proliferation in glycerol-3-phosphate acyltransferase-1 deficient mice. *Exp Mol Pathol* 82:210-219, 2007.
172. Pogribny, I.P., Tryndyak, V.P., Muskhelishvili, L., **Rusyn, I.**, and Ross, S.A. Methyl deficiency, alterations in global histone modifications and carcinogenesis. *J Nutr* 137:216S-222S, 2007.
173. Yamashina, S., Ikejima, K., **Rusyn, I.**, and Sato, N. Glycine as a potent anti-angiogenic nutrient for tumor growth *J Gastroenterol Hepatol* 22:S62-S64, 2007.
174. Roberts, R.A., Ganey, P.E., Ju, C., Kamendulis, L.M., **Rusyn, I.**, and Klaunig, J.E. Role of the Kupffer cell in mediating hepatic toxicity and carcinogenesis. *Toxicol Sci* 96:2-15, 2007.

175. *Woods, C.G., #Burns, A.M., &Maki, A., Bradford, B.U., Cunningham, M.L., Connor, H.D., Kadiiska, M., Mason, R.P., Peters, J.M., and **Rusyn, I.** Sustained formation of α -(4-pyridyl-1-oxide)-*N-tert*-butylnitron radical adducts in mouse liver by peroxisome proliferators is dependent upon peroxisome proliferator-activated receptor- α , but not NADPH oxidase. **Free Radic Biol Med** 42:335-342, 2007.
176. *Powell, C.L., Kosyk, O., #Ross, P.K., Schoonhoven, R., Boysen, G., Swenberg, J.A., Heinloth, A.N., Boorman, G.A., Cunningham, M.L., Paules, R.S., and **Rusyn, I.** Phenotypic anchoring of acetaminophen-induced oxidative stress with gene expression profiles in rat liver. **Toxicol Sci** 93:213-222, 2006.
177. **Rusyn, I.**, Peters, J.M., and Cunningham, M.L. Modes of action and species-specific effects of di-(2-ethylhexyl)phthalate in the liver. **Crit Rev Toxicol** 36:459-479, 2006.
178. Kono, H., *Woods, C.G., &Maki, A., Connor, H.D., Mason, R.P., **Rusyn, I.**, and Fujii, H. Electron spin resonance and spin trapping technique provide direct evidence that edaravone prevents acute ischemia-reperfusion injury of the liver by scavenging free radicals. **Free Radic Res** 40:579-588, 2006.
179. *Powell, C.P., Kosyk, O., Bradford, B.U., Parker, J.S., Lobenhofer, E.K., Denda, A., Uematsu, F., Nakae, D., and **Rusyn, I.** Temporal correlation of pathology and DNA damage with gene expression in a choline deficient model of rat liver injury. **Hepatology** 42:1137-1147, 2005.
180. *Powell, C.P., Swenberg, J.A., and **Rusyn, I.** Expression of base excision DNA repair genes as a biomarker of oxidative DNA damage. **Cancer Lett** 229:1-11, 2005.
181. **Rusyn, I.**, Asakura, S., Li, Y., Kosyk, O., Koc, H., Nakamura, J., Upton, P.B., and Swenberg, J.A. Effects of ethylene oxide and ethylene inhalation on DNA adducts, apurinic/apyrimidinic sites and expression of base excision DNA repair genes in rat brain, spleen, and liver. **DNA Repair** 4:1099-1110, 2005.
182. Uematsu, F., Takahashi, M., Yoshida, M., Igarashi, M., Watanabe, N., Suzuki, N., Abe, M., **Rusyn, I.**, Floyd, R.A., and Nakae, D. Distinct patterns of gene expression in hepatocellular carcinomas and adjacent non-cancerous, cirrhotic liver tissues in rats fed a choline-deficient, L-amino acid-defined diet. **Cancer Sci** 96:414-424, 2005.
183. Bradford, B.U., and **Rusyn, I.** Swift increase in alcohol metabolism (SIAM) – understanding the phenomenon of hypermetabolism in liver. **Alcohol** 35:13-17, 2005.
184. Bammler, T., Beyer, R.P., Bhattacharya, S., Boorman, G.A., Boyles, A., Bradford, B.U., Bumgarner, R.E., Bushel, P.R., Chaturvedi, K., Choi, D., Cunningham, M.L., Deng, S., Dressman, H.K., Fannin, R.D., Farin, F.M., Freedman, J.F., Fry, R.C., Harper, A., Humble, M.C., Hurban, P., Kavanagh, T.J., Kaufmann, W.K., Kerr, K.F., Jing, L., Lapidus, J.A., Lasarev, M.R., Li, J., Li, Y.J., Lobenhofer, E.K., Lu, X., Malek, R.L., Milton, S., Nagalla, S.R., O'Malley, J.P., Palmer, V.S., Pattee, P., Paules, R.S., Perou, C.M., Phillips, K., Qin, L., Qiu, Y., Quigley, S.D., Rodland, M., **Rusyn, I.**, Samson, L.D., Schwartz, D.A., Shi, Y., Shin, J.L., Sieber, S.O., Slifer, S., Speer, M.C., Spencer, P.S., Sproles, D.I., Swenberg, J.A., Suk, W.A., Sullivan, R.C., Tian, R., Tennant, R.W., Todd, S.A., Tucker, C.J., Van Houten, B., Weis, B.K., Xuan, S., Zarbl, H., and Members of the Toxicogenomics Research Consortium. Standardizing global gene expression analysis between laboratories and across platforms. **Nat Methods** 2:351-356, 2005.
185. Bradford, B.U., Kono, H., Isayama, F., Kosyk, O., Wheeler, M.D., Akiyama, T.E., Bleye, L., Krausz, K.W., Gonzalez, F.J., Koop, D.R., and **Rusyn, I.** Cytochrome P450 CYP2E1, but not NADPH oxidase is required for ethanol-induced oxidative DNA damage in rodent liver. **Hepatology** 41:336-344, 2005.

186. Hays, T., **Rusyn, I.**, Burns, A.M., Kennett, M.J., Ward, J.M., Gonzalez, F.J., and Peters, J.M. Role of peroxisome proliferator-activated receptor-alpha (PPAR α) in bezafibrate-induced hepatocarcinogenesis and cholestasis. *Carcinogenesis* 26:219-227, 2005.
187. **Rusyn, I.**, Asakura, S., Pachkowski, B., Bradford, B.U., Denissenko, M.F., Peters, J.M., Holland, S.M., Reddy, J.K., Cunningham, M.L., and Swenberg J.A. Expression of base excision DNA repair genes is a sensitive biomarker for *in vivo* detection of chemical-induced chronic oxidative stress: Identification of the molecular source of radicals responsible for DNA damage by peroxisome proliferators. *Cancer Res* 64:1050-1057, 2004.
188. Wheeler, M.D., Smutney, O.M., Check, J.F., **Rusyn, I.**, Schulte-Hermann, R., and Thurman, R.G. Impaired Ras membrane-association and activation in PPAR(alpha) knockout mice following partial hepatectomy. *Am J Physiol* 284:G302-312, 2003.
189. Yin, M., Zhong, Z., Connor, H.D., Bunzendahl, H., Finn, W.F., **Rusyn, I.**, Li, X., Raleigh, J.A., Mason, R.P., and Thurman, R.G. Protective effect of glycine on renal injury induced by ischemia-reperfusion *in vivo*. *Am J Physiol* 282:F417-F423, 2002.
190. Kono, H., Fujii, H., Asakawa, M., Yamamoto, M., Maki, A., Matsuda, M., **Rusyn, I.**, and Matsumoto, Y. Functional heterogeneity of the Kupffer cell population is involved in the mechanism of gadolinium chloride in rats administered endotoxin. *J Surg Res* 106:179-87, 2002.
191. **Rusyn, I.** In memoriam: Ronald G. Thurman (1941-2001). *Carcinogenesis* 22:1899-1901, 2001.
192. **Rusyn, I.**, Kadiiska, M.B., Dikalova, A., Kono, H., Yin, M., Tsuchiya, K., Mason, R.P., Peters, J.M., Gonzales, F.J., Segal, B.H., Holland, S.M., and Thurman, R.G. Phthalates rapidly increase production of reactive oxygen species *in vivo*: Role of Kupffer cells. *Mol Pharmacol* 59:744-750, 2001.
193. Kono, H., **Rusyn, I.**, Uesugi, T., Connor, H.D., Dikalova, A., Mason, R.P., and Thurman, R.G. Diphenyliodonium sulfate, an NADPH oxidase inhibitor, prevents early alcohol-induced liver injury in the rat. *Am J Physiol* 280:G1005-G1012, 2001.
194. Kono, H., Arteel, G.E., **Rusyn, I.**, Sies, H., and Thurman, R.G. Ebselen prevents early alcohol-induced liver injury in rats. *Free Radic Biol Med* 30:403-412, 2001.
195. Kono, H., Nakagami, M., **Rusyn, I.**, Connor, H.D., Stefanovic, B., Brenner, D.A., Mason, R.P., Arteel, G.E., and Thurman, R.G. Development of an animal model of chronic alcohol-induced pancreatitis in the rat. *Am J Physiol* 280:G1289-1295, 2001.
196. Xu, S., Zhu, B.T., Turan, V., **Rusyn, I.**, Thurman, R.G., Peters, J.M., Gonzalez, F.J., and Conney, A.H. PPAR alpha-dependent induction of liver microsomal esterification of estradiol and testosterone by a prototypical peroxisome proliferator. *Endocrinology* 142:3554-3557, 2001.
197. Wheeler, M.D., Kono, H., Yin, M., **Rusyn, I.**, Connor, H.D., Mason, R.P., Samulski, R.J., and Thurman, R.G. Delivery of the Cu/Zn-superoxide dismutase gene with adenovirus reduces early alcohol-induced liver injury in rats. *Gastroenterology* 120:1241-50, 2001.
198. Yamashina, S., Konno, A., Wheeler, M., **Rusyn, I.**, Rusyn, E., Cox, A., and Thurman, R.G. Endothelial cells contain a glycine-gated chloride channel. *Nutr Cancer* 40:197-204, 2001.
199. Wheeler, M.D., Yamashina, S., Froh, M., **Rusyn, I.**, and Thurman, R.G. Adenoviral gene delivery can inactivate Kupffer cells: role of oxidants in NF-kappaB activation and cytokine production. *J Leukoc Biol* 69:622-630, 2001.

200. Kono, H., Uesugi, T., Froh, M., **Rusyn, I.**, Bradford, B.U., and Thurman, R.G. ICAM-1 is involved in the mechanism of alcohol-induced liver injury: Studies with knockout mice. **Am J Physiol** 280:G1178-1186, 2001.
201. Yin, M., Gabele, E., Wheeler, M.D., Connor, H., Bradford, B.U., Dikalova, A., **Rusyn, I.**, Mason, R., and Thurman, R.G. Alcohol-induced free radicals in mice: Direct toxicants or signaling molecules? **Hepatology** 34:935-942, 2001.
202. Wheeler, M.D., Kono, H., Yin, M., Nakagami, M., Uesugi, T., Arteel, G.E., Gabele, E., **Rusyn, I.**, Yamashina, S., Froh, M., Adachi, Y., Iimuro, Y., Bradford, B.U., Smutney, O.M., Connor, H.D., Mason, R.P., Goyert, S.M., Peters, J.M., Gonzalez, F.J., Samulski, R.J., and Thurman, R.G. The role of Kupffer cell oxidant production in early ethanol-induced liver disease. **Free Radic Biol Med** 31:1544-1549, 2001.
203. **Rusyn, I.**, Denissenko, M.F., Wong, V.A., Butterworth, B.E., Cunningham, M.L., Upton, P.B., Thurman, R.G., and Swenberg, J.A. Expression of base excision repair enzymes in rat and mouse liver is induced by peroxisome proliferators and is dependent upon carcinogenic potency. **Carcinogenesis** 21:2141-2145, 2000.
204. **Rusyn, I.**, Yamashina, S., Segal B.H., Schoonhoven, R., Holland, S.M., Cattley, R.C., Swenberg, J.A., and Thurman, R.G. Oxidants from NADPH oxidase are involved in triggering cell proliferation in the liver due to peroxisome proliferators. **Cancer Res** 60:4798-4803, 2000.
205. **Rusyn, I.**, Rose, M.L., Bojes, H.K., and Thurman, R.G. Novel role of oxidants in the molecular mechanism of action of peroxisome proliferators. **Antioxid Redox Signal** 2:607-621, 2000.
206. Peters, J.M., [§]**Rusyn, I.**, Rose, M.L., Gonzales, F.J., and Thurman, R.G. Peroxisome proliferator activated receptor α is restricted to hepatic parenchymal cells, not Kupffer cells: Implications for the mechanism of action of peroxisome proliferators in hepatocarcinogenesis. **Carcinogenesis** 21:823-826, 2000.
- [§]*equally contributing first author*
207. Kono, H., **Rusyn, I.**, Yin, M., Gabele, E., Yamashina, S., Dikalova, A., Kadiiska, M.B., Connor, H.D., Mason, R.P., Segal, B.H., Bradford, B.U., Holland, S.M., and Thurman, R.G. NADPH oxidase-derived free radicals are key oxidants in alcohol-induced liver disease. **J Clin Invest** 106:867-872, 2000.
208. Yin, M., **Rusyn, I.**, Schoonhoven, R., Graves, L.M., Rusyn, E.V., Li, X., Li, F., Cox, A.D., Harding, T.W., Bunzendahl, H., Swenberg, J.A., and Thurman, R.G. Inhibition of chronic rejection of aortic allografts by dietary glycine. **Transplantation** 69:773-780, 2000.
209. Kono, H., **Rusyn, I.**, Bradford, B.U., Dikalova, A., Kadiiska, M.B., Mason, R.P., and Thurman, R.G. Allopurinol prevents early alcohol-induced liver injury in rats. **J Pharmacol Exp Ther** 293:296-303, 2000.
210. Rose, M.L., **Rusyn, I.**, Bojes, H.K., Graves, L.M., Rivera, C.A., Germolec, D.R., Luster, M.I., and Thurman, R.G. Peroxisome proliferators directly stimulate mitogenic cytokine production by Kupffer cells. **Mutation Res** 448:179-192, 2000.
211. Kono, H., Bradford, B.U., **Rusyn, I.**, Fujii, H., Matsumoto, Y., Yin, M., and Thurman, R.G. Development of an intragastric enteral model in the mouse: studies of alcohol-induced liver disease using knockout technology. **J Hepatobiliary Pancreat Surg** 7:395-400, 2000.
212. Wheeler, M.D., Kono, H., **Rusyn, I.**, Arteel, G.E., McCarty, D., Samulski, R.J., and Thurman, R.G. Chronic ethanol increases adeno-associated viral transgene expression in rat liver via oxidant and NF- κ B-dependent mechanisms. **Hepatology** 32:1050-1059, 2000.

213. Kono, H., Wheeler, M.D., **Rusyn, I.**, Lin, M., Seabra, V., Rivera C.A., Bradford B.U., Forman, D.T., and Thurman, R.G. Gender differences in early alcohol-induced liver injury: Role of CD14, NF- κ B and TNF- α . *Am J Physiol* 278:G652-G666, 2000.
214. Yamashina, S., Wheeler, M., **Rusyn, I.**, Ikejima, K., Sato, N., and Thurman, R.G. Tolerance and sensitization to endotoxin in Kupffer cells caused by acute ethanol involve interleukin-1 receptor-associated kinase. *Biochem Biophys Res Commun* 277:686-690, 2000.
215. Iimuro, Y., Bradford, B.U., Yamashina, S., **Rusyn, I.**, Nakagami, M., Enomoto, N., Kono, H., Frey, W., Forman, D., Brenner, D., and Thurman, R.G. The glutathione precursor L-2-oxothiazolidine-4-carboxylic acid protects against liver injury due to chronic ethanol exposure in the rat. *Hepatology* 31:391-398, 2000.
216. **Rusyn, I.**, Bradham, C.A., Cohn, L., Schoonhoven, R., Swenberg, J.A., Brenner, D.A., and Thurman, R.G. Corn oil rapidly activates nuclear factor κ B in hepatic Kupffer cells by oxidant-dependent mechanisms. *Carcinogenesis* 20:2096-2100, 1999.
217. Rose, M.L., **Rusyn, I.**, Bojes, H.K., Germolec, D.R., Luster, M.I. and Thurman, R.G. Role of Kupffer Cells in Peroxisome Proliferation-Induced Hepatocyte Proliferation, *Drug Metab Rev* 31:87-116, 1999.
218. Arteel, G.E., Kadiiska, M.B., **Rusyn, I.**, Bradford, B.U., Mason, R.P., Raleigh, J.A., and Thurman, R.G. Oxidative stress occurs in perfused rat liver at low oxygen tension by mechanisms involving peroxynitrite. *Mol Pharmacol* 55:708-715, 1999.
219. Stachlewitz, R.F., Seabra, V., Bradford, B.U., Bradham, C.A., **Rusyn, I.**, Germolec, D., and Thurman, R.G. Glycine and uridine prevent D-galactosamine hepatotoxicity in the rat: role of Kupffer cells. *Hepatology* 29:737-745, 1999.
220. Wheeler, M.D., Ikejima, K., Enomoto, N., Stachlewitz, R.F., Seabra, V., Zhong, Z., Schemmer, P., Rose, M.L., **Rusyn, I.**, Bradford, B.U., and Thurman R.G. Glycine: a new anti-inflammatory immunonutrient. *Cell Mol Life Sci* 56:843-856, 1999.
221. **Rusyn, I.**, Tsukamoto, H., and Thurman, R. G. WY-14,643 rapidly activates nuclear factor κ B in Kupffer cells before hepatocytes. *Carcinogenesis* 19:1217-1222, 1998.
222. Yin, M., Ikejima, K., Arteel, G.E., Seabra, V., Bradford, B.U., Kono, H., **Rusyn, I.**, and Thurman, R.G. Glycine accelerates recovery from alcohol-induced liver injury. *J Pharmacol Exp Ther* 286:1014-1019, 1998.
223. **Roussyn, I.**, Briviba, K., Masumoto, H., and Sies, H. Selenium-containing compounds protect DNA from single-strand breaks caused by peroxynitrite. *Arch Biochem Biophys* 330:216-218, 1996.
224. Briviba, K., **Roussyn, I.**, Sharov, V.S., and Sies, H. Attenuation of oxidation and nitration reactions of peroxynitrite by selenomethionine, selenocystine and ebselen. *Biochem J* 319:13-15, 1996.
225. Epe, B., Ballmaier, D., **Roussyn, I.**, Briviba, K., and Sies, H. DNA damage by peroxynitrite characterized with DNA repair enzymes. *Nucleic Acids Res* 24:4105-4110, 1996.

Book chapters:

1. Stotts, D., Lee, K., and **Rusyn, I.** Supporting Computational Systems Science: Genomic Analysis Tool Federations Using Aspects and AOP. In: Măndoiu, I., Sunderraman, R., and Zelikovsky A. (Eds.): Bioinformatics Research and Applications, Proceedings of the 4th

International Symposium ISBRA 2008, Springer Berlin/Heidelberg, LNBI 4983, pp. 457–468, 2008.

2. **Rusyn, I.**, Kadiiska, M., Dikalova, A., Kono, H., Yin, M., Tsuchiya, K., Mason, R., Peters, J., Gonzales, F., Holland, S., and Thurman, R. Phthalates rapidly increase production of reactive oxygen species *in vivo*: Role of Kupffer cells. In: Wisse, E., Knook, D.L., de Zanger, R., and Arthur, M.J.P. (eds) Cells of the Hepatic Sinusoid. Leiden, The Netherlands. The Kupffer Cell Foundation, 8, 34-36, 2000.
3. Yin, M., Wheeler, M., Kono, H., **Rusyn, I.**, Bradford, B., Gallucci, R., Luster, M., Goyert, S., Holland, S., Peters, J., Gonzalez, F., and Thurman, R. Role of Kupffer cells, endotoxin and tumor necrosis factor α in alcohol-induced liver injury: studies with knockout mice. In: Wisse, E., Knook, D.L., de Zanger, R., and Arthur, M.J.P. (eds) Cells of the Hepatic Sinusoid. Leiden, The Netherlands. The Kupffer Cell Foundation, 8, 71-75, 2000.
4. Wheeler, M., Yamashina, S., **Rusyn, I.**, and Thurman, R. Adenoviral gene delivery can inactivate Kupffer cells: role of oxidants in NF- κ B activation and cytokine production. In: Wisse, E., Knook, D.L., de Zanger, R., and Arthur, M.J.P. (eds) Cells of the Hepatic Sinusoid. Leiden, The Netherlands. The Kupffer Cell Foundation, 8, 148-151, 2000.
5. Rose, M.L., **Rusyn, I.**, Graves, L.M., Rivera, C.A., and Thurman, R.G. The peroxisome proliferator WY-14,643 triggers an increase in parenchymal cell proliferation: role of Kupffer Cell and NF- κ B. In: Wisse, E., Knook, D.L., de Zanger, R., and Frasier, R. (eds) Cells of the Hepatic Sinusoid. Leiden, The Netherlands. The Kupffer Cell Foundation, 7, 270-271, 1999.

Refereed oral presentations (since 2002):

1. “Mouse vs. Machine...Are Animal Studies Being Supplanted by Computers?” Society of Toxicology Annual Meeting, Baltimore, MD. 2019.
2. “Tissue Chips: Building Confidence through Independent Experimental Testing.” Laboratory Animal Sciences Virtual Conference. 2019.
3. “Categorization of Real-life Mixtures Using Chemical-Biological Grouping: Applying New Approach Methodologies to Complex Challenges.” Superfund Research Program Annual Meeting, Sacramento, CA. 2018.
4. “High content bioactivity profiling of 141 petroleum substances.” EuroTox2018 Satellite Meeting – Cat-App Project Results Presentation, Brussels, Belgium. 2018.
5. “Categorization of UVCBs using chemical-biological read-across.” Society of Toxicology Annual Meeting, San Antonio, TX. 2018.
6. “Grouping of UVCBs using chemical-biological read-across: Case study of petroleum substances.” The Toxicology Forum, Washington, DC. 2018.
7. “Tissue Chip Validation Center at Texas A&M University (Tex-Val Center).” Keystone Symposium: Organs- and Tissues-on-Chips, Big Sky, MT. 2018.
8. “Toxicogenetics of PERC Metabolism and Toxicity: Collaborative Cross Mouse Population Approach to Address Remaining Gaps in Human Health Assessments.” ISES 2017 - International Society of Exposure Science. Research Triangle Park, NC. 2017.
9. “Read-across and grouping of complex substances using bioactivity data from human induced pluripotent stem cell (iPSC)-derived models.” 10th Congress on Alternatives and Animal Use in the Life Sciences. Seattle, WA. 2017.
10. “A population-based organotypic human *in vitro* model for cardiotoxicity testing.” 10th Congress on Alternatives and Animal Use in the Life Sciences. Seattle, WA. 2017.

11. "Is Glyphosate a Probable Human Carcinogen? Yes!" Society of Toxicology Annual Meeting, Baltimore, MD. 2017.
12. "The Future of Human Health Assessments: Using New Methodologies for Better Understanding of the Health Impacts of Petroleum Substances." 12th Concawe Symposium, Antwerp, Belgium. 2017.
13. "Experimental animal studies of co-morbidity factors as a path for translational impact to human disease." International Congress of Toxicology, Merida, Mexico. 2016.
14. "Exploring the characterization of human variability with *in vitro* models." International Conference on Toxicity Testing Alternatives & Translational Toxicology, Hangzhou, China. 2016.
15. "Chemical safety assessment using read-across: Novel biological and chemical profiling methodologies." The International Council of Chemical Associations' Long-Range Research Initiative (ICCA-LRI) and Japan's National Institute of Health Sciences (NIHS) Workshop, "Meeting the Global Challenge of Applying New Scientific Methods to Improve Environmental and Human Health Risk Assessments," Awaji Island, Japan. 2016.
16. "A chemical-biological similarity-based grouping of complex substances using multi-dimensional high-content screening of human induced pluripotent stem cell (iPSC)-derived models." Environmental Mutagenesis and Genomics Society Annual Meeting, Kansas City, MO. 2016.
17. "Epigenetic Mechanisms of Genotoxicity and Carcinogenesis." SOT CCT meeting "Toxicoepigenerics: The Interface of Epigenetics and Risk Assessment," Tysons Corner, VA. 2016.
18. "Genetics for Toxicologists: Why Should We Care?" Society of Toxicology Annual Meeting, New Orleans, LA. 2016.
19. "Multi-strain panels of inbred mice." American Association for Study of Liver Disease Annual Meeting, San Francisco, CA. 2015
20. "Advancing safety assessments of chemicals through biological read across using multi-dimensional *in vitro* toxicity testing." American Chemical Society Annual Meeting, Boston, MA, 2015.
21. "Exploring the characterization of human variability with *in vivo* and *in vitro* experimental models." ASIATOX, Jeju, Korea. 2015.
22. "miRNA as population variability-independent biomarkers of toxicity." EuroTOX Annual Meeting, Porto, Portugal, 2015.
23. "Hazard identification and toxicogenomics data: Read-across using high-dimensional biological data." Society of Toxicology Annual Meeting, San Diego, CA. 2015.
24. "Genetic mapping of *in vitro* susceptibility to cytotoxic compounds: The 1000 genomes high-throughput screening study." Society of Toxicology Annual Meeting, San Diego, CA. 2015.
25. "Genes, genomes, and genotoxicity: *In vivo* epigenetic toxicology of 1,3-butadiene." Society of Toxicology Annual Meeting, San Diego, CA. 2015.
26. "Assessment of inter-individual variability in chemical safety testing: Replacing defaults with scientific evidence." Society for Risk Analysis Annual Meeting, Denver, CO, 2014.
27. "Systems biology analysis of genetic and environmental determinants of toxicity." 19th North American ISSX/29th JSSX Meeting, San Francisco, CA, 2014.

28. "Toxicogenomics and Toxicogenetics: Genetic diversity and susceptibility to toxicity in Next-generation human health assessments of chemicals." Japanese Society of Toxicology Meeting, Kobe, Japan, 2014.
29. "HAWC: Health Assessments Workspace Collaborative." OpenTox USA 2013, RTP, NC. 2013.
30. "Testing for Population Variability in Responses to Chemical Toxicity." EuroTOX Annual Meeting, Interlaken, Switzerland. 2013.
31. "Genetic diversity and responses to chemical exposures." International Council of Chemical Association's (ICCA) Long-Range Research Initiative (LRI) and U.S. National Institutes of Health's National Center for Advancing Transitional Sciences (NCATS) workshop "What is Normal? Implications for Chemical Safety Assessment." Santa Fe, NM. 2013.
32. "Expanding the boundaries of toxicogenomics." Organization for Economic Cooperation and Development, Paris, France. 2013.
33. "1000 Genomes *in vitro* toxicology project: Quantitative high-throughput screening for chemical toxicity in a population-based *in vitro* model." Society of Toxicology Annual Meeting, San Antonio, TX. 2013.
34. "Utilizing new technologies and approaches to understand individual and population susceptibility." FutureTox: Building the Road for 21st Century Toxicology and Risk Assessment Practices. Arlington, VA. 2012.
35. "Bridging computational modeling and wet-bench toxicology: Inter-disciplinary approach to move the field forward." 3rd International Symposium on New Horizons in Toxicity Prediction. Cambridge, UK. 2012.
36. "Expanding the boundaries of toxicogenomics." 12th European ISSX Meeting, Noordwijk, the Netherlands. 2012.
37. "Using the power of human genome variation for population-scale *in vitro* testing." Toxicology and Risk Assessment Conference, Cincinnati, OH. 2012.
38. "Mechanisms of liver carcinogenesis: Studies of co-morbidity factors using animal models." Environmental Mutagens in Human Populations: 6th International Conference, Doha, Qatar. 2012.
39. "Probing mechanisms of inter-individual susceptibility to toxicants with population-based experimental approaches." Experimental Biology 2011, Washington, DC. 2011.
40. "Genetic background-independent and -dependent pathways in alcohol-induced liver injury." Research Society on Alcoholism Annual Meeting, Atlanta, GA. 2011.
41. "Integrating emerging science: Computational toxicology." Society of Toxicology Annual Meeting, Washington, DC. 2011.
42. "Assessing the impact of inter-individual genetic variability on toxicity through toxicogenomic data." Society of Toxicology Annual Meeting, Washington, DC. 2011.
43. "Population-based discovery of toxicogenomics biomarkers for hepatotoxicity." Society of Toxicology Annual Meeting, Washington, DC. 2011.
44. "*In vitro* screening for population variability in chemical toxicity: chemical prioritization and mode of action analysis." Society of Biomolecular Sciences Conference "Biomolecular Screening: Advanced Applications Across Academia, Government & Industry." RTP, NC. 2010.
45. "Gene expression and epigenetic changes in nontumoral liver tissue and recurrence-free survival in hepatitis C virus-positive hepatocellular carcinoma." International Conference

- "Tumor and host: Novel aspects of old problem," National Academy of Sciences of Ukraine, Kiev, Ukraine. 2010.
46. "Computational Toxicology: From data, to analyses, to applications". 2010 Annual Meeting of the Teratology Society, Louisville, KY. 2010.
 47. "The Role of Genomics in Mode-of-Action Based Risk Assessment." 2010 Annual Meeting of the American Association for the Advancement of Science (AAAS), San Diego, CA. 2010.
 48. "Modeling Toxicity in the Population Using Experimental Models." 2010 Annual Meeting of the American Association for the Advancement of Science (AAAS), San Diego, CA. 2010.
 49. "Carolina Center for Computational Toxicology." The STAR Centers review meeting, EPA, RTP, NC. 2009.
 50. "Probing the mechanisms of inter-individual susceptibility to environmental agents with population-based experimental approaches." The Annual Meeting of the Superfund Basic Research Program, Columbia University, New York, NY. 2009.
 51. "Exploring inter-individual differences in toxicity responses using *in vitro* and *in vivo* approaches." The International Council of Chemical Associations' Long-Range Research Initiative Workshop, Charleston, SC. 2009.
 52. "Modeling chemical toxicity in the population: Mouse to the rescue!" Society of Toxicology Annual Meeting, Baltimore, MD. 2009.
 53. "Pathway mapping of chemical-perturbed regulatory networks." Society of Toxicology Annual Meeting, Baltimore, MD. 2009.
 54. "Use of inbred mouse strains to model genetic variation in susceptibility to drug-induced liver injury." The Hepatotoxicity Summit, Philadelphia, PA. 2008.
 55. "Mechanisms of alcohol-related liver carcinogenesis." Research Society on Alcoholism Annual Meeting, Washington, DC. 2008.
 56. "Experimental pharmacogenetic approaches to understanding toxic responses in populations." Environmental Mutagenesis Society Annual Meeting, San Juan, Puerto Rico. 2008.
 57. "Genetical genomics and liver toxicology." Society of Toxicology Annual Meeting, Seattle, WA. 2008.
 58. "Predictive power of biomarkers of oxidative stress and inflammation in patients with hepatitis C virus-associated hepatocellular carcinoma." Biomarkers of Oxidative Stress in Health and Disease (BOHSD 2008). Osaka, Japan. 2008.
 59. "Epigenetic aspects of peroxisome proliferator-induced rodent liver carcinogenesis." Risk 007: Agents and Analysis. 2007 Annual Meeting of the Society for Risk Analysis. San Antonio, TX. 2007
 60. "Bridging investigative toxicology and disease-oriented research by building a mouse-to-human paradigm." 4th International Symposium on Computational Methods in Toxicology and Pharmacology: Integrating Internet Resources. Moscow, Russia. 2007.
 61. "Multi-center study of acetaminophen hepatotoxicity reveals the importance of biological endpoints in genomic analyses." Empowering environmental health sciences research with new technologies: A conference on omics applications in the environmental health sciences. Chapel Hill, NC. 2006.
 62. "Genomic profiling in nuclear receptor-mediated toxicity." Empowering environmental health sciences research with new technologies: A conference on omics applications in the environmental health sciences. Chapel Hill, NC. 2006.

63. "Metabolomic and Toxicogenetic Study of Ethanol Toxicity." Empowering environmental health sciences research with new technologies: A conference on omics applications in the environmental health sciences. Chapel Hill, NC. 2006.
64. "Bridging basic sciences and disease-oriented research by building a mouse-to-human paradigm." 2nd Central and Eastern European Conference on Health and the Environment, Bratislava, Slovakia. 2006.
65. "Kupffer cell activation by non-genotoxic chemicals: Does it play a role in hepatocarcinogenesis?" 13th International Symposium on Cells of the Hepatic Sinusoid, Niigata, Japan. 2006.
66. "Toxicogenetic dimension in studies of the mechanisms of liver injury." 5th Annual Meeting of the Complex Traits Consortium, Chapel Hill, NC. 2006.
67. "Advancing toxicology by improving linkage of traditional toxicity and pathology endpoints with toxicogenomics." Society of Toxicology Annual Meeting, San Diego, CA. 2006.
68. "Temporal correlation of pathology and markers of oxidative stress with gene expression in rat liver carcinogenesis." Society of Toxicology Annual Meeting, San Diego, CA. 2006.
69. "Kupffer cell activation by non-genotoxic chemicals: Does it play a role in hepatocarcinogenesis?" Society of Toxicology Annual Meeting, San Diego, CA. 2006.
70. "Oxidative stress in alcohol-induced hepatic carcinogenesis." International Symposium on Energy Metabolism and Oxidative Stress in Liver Patho-physiology. Juntendo Medical University, Tokyo, Japan. 2005.
71. "Toxicogenomics as a new area in toxicology: Technology, promises and challenges." Ukrainian Toxicology Society. 6th International Scientific and Practical Conference "Actual Problems of Toxicology: Safety of Human Living" Kiev, Ukraine. 2005.
72. "The elusive role of oxidant-induced DNA damage in the mechanisms of non-genotoxic liver carcinogenesis: Did not we figure it out a decade ago?" 6th International Conference of the Society for Free Radical Research – Africa, Tetouan, Morocco. 2005.
73. "Toxicogenetic and toxicogenomic analysis of alcohol-induced liver injury." Society of Toxicology Annual Meeting, New Orleans, LA. 2005.
74. "Gene expression profiling of rat liver fibrosis, cirrhosis, and cancer induced by choline-deficient, L-amino acid-defined diet." Japanese Society of Toxicologic Pathologists Meeting, Kobe, Japan. 2004.
75. "Toxicogenetic and toxicogenomic analysis of susceptibility to liver injury." Central and Eastern European Environmental Health Conf., Prague, Czech Republic, 2004.
76. "Studying liver carcinogenesis and liver injury in animal models: Lessons learned from considering cell-cell interactions." Tissue Engineering Society International Annual Meeting, Orlando, FL. 2003.

Refereed poster presentations (since 2002):

1. Luo, Y.S., Cichocki, J.A., Lewis, L., Threadgill, D.W., Chiu, W.A., **and Rusyn, I.** Population-based Analysis of Toxicokinetics and Kidney Toxicodynamics of Tetrachloroethylene in the Mouse. Society of Toxicology Annual Meeting, Baltimore, MD. 2019.
2. Burnett, S., Blanchette, A., Grimm, F., Wright, F., Chiu, W. and **Rusyn, I.** Enabling Assessment of Cardiotoxicity Hazard for Environmental Chemicals Using An *In Vitro* Human Population Model. Society of Toxicology Annual Meeting, Baltimore, MD. 2019.

3. Sakolish, C., Liu, Y., Reese, C., DeBiasio, R., Verneti, L., Taylor, L., and **Rusyn, I.** The cross-laboratory testing and comparison of a liver microphysiological system. Society of Toxicology Annual Meeting, Baltimore, MD. 2019.
4. Chen, Z., Yanagisawa, L., Liu, Y., Camargo, K., Casillas, G., McDonald, T., Horney, J., Chiu, W.A., and **Rusyn, I.** A multi-tissue organotypic human *in vitro* model for rapid hazard identification of environmental chemicals and mixtures. Society of Toxicology Annual Meeting, Baltimore, MD. 2019.
5. Lewis, L., Borowa-Mazgaj, B., de Conti, A., Chappell, G., Bodnar, W., Pogribny, I.P., and **Rusyn, I.** Tissue-Specific Epigenetic Effects of 1,3-Butadiene In A Collaborative Cross Mouse Population. Society of Toxicology Annual Meeting, Baltimore, MD. 2019.
6. Liu, Y., Sakolish, C., Chen, Z., Zushin, P.J., Lee, C., Healy, K., and **Rusyn, I.** Evaluation of Chemical Effects on Adipogenesis Using a Physiologically-Relevant Microfluidic System. Society of Toxicology Annual Meeting, Baltimore, MD. 2019.
7. Danforth, C., Craft, E., Bolden, A., Schultz, K., Kwiatkowski, C., **Rusyn, I.**, and Chiu, W. Evidence integration across multiple toxicity endpoints to prioritize constituents of potential concern in oil and gas produced water. Society of Toxicology Annual Meeting, Baltimore, MD. 2019.
8. Aly, N.A., Luo, Y.S., Roman-Hubers, A.T., Liu, Y., Zhang, X., Baker, E.S., Chiu, W.A. and **Rusyn, I.** A library of 4,000+ Environmental chemicals for high throughput exposomic measurements. Superfund Research Program Annual Meeting, Sacramento, CA. 2018.
9. Roman-Hubers, A., Aly, N., Sweet, S., Wade, T., Bushang, S., Baker, E., Chiu, W., and **Rusyn, I.** The application of Ion Mobility-Mass Spectrometry technique as a rapid analytical method for identification of the origin of oil spills. Lone Star SOT Annual Meeting, Austin, TX. 2018.
10. Blanchette, A., Grimm, F., Dalajamts, C., Hsieh, N.H., Ferguson, K., Luo, Y.S., Anson, B., **Rusyn, I.**, and Chiu, W.A. Thorough QT/QTc in a dish: An *in vitro* human model that accurately predicts clinical concentration-QTc relationships. Lone Star SOT Annual Meeting, Austin, TX. 2018.
11. Burnett, S., Grimm, F., Anson, B., Wright, F.A., Chiu, W, and **Rusyn, I.** An *in vitro* human population model for assessment of inter-individual variability in cardiotoxicity. Lone Star SOT Annual Meeting, Austin, TX. 2018.
12. Aly, N., Luo, Y.S., Roman-Hubers, A., Liu, Y., Zhang, X., Baker, E., Chiu, W., and **Rusyn, I.** Enabling high-throughput Exposomics by developing a library of 4,000+ environmental chemicals for solid phase extraction-ion mobility spectrometry-mass spectrometry. Lone Star SOT Annual Meeting, Austin, TX. 2018.
13. Luo, Y.S., Cichocki, J., Lewis, L., Threadgill, D., and **Rusyn, I.** Population-based analysis of toxicokinetics and kidney toxicodynamics of tetrachloroethylene in the mouse. Lone Star SOT Annual Meeting, Austin, TX. 2018.
14. Liu, Y., Sakolish, C., Chen, Z., Zushin, P.J., Lee, C., Healy, K., and **Rusyn, I.** Evaluation of chemical effects on adipogenesis using a physiologically-relevant microfluidic system. Lone Star SOT Annual Meeting, Austin, TX. 2018.
15. Chen, Z., Yanagisawa, L., Chiu, W.A., and **Rusyn, I.** A multi-tissue organotypic human *in vitro* model for rapid hazard identification of environmental chemicals and mixtures. The Harvey Research Symposium, Corpus Christie, TX. 2018.
16. Chen, Z., Yanagisawa, L., Chiu, W.A., and **Rusyn, I.** A multi-tissue organotypic human *in vitro* model for rapid hazard identification of environmental chemicals and mixtures. Lone Star SOT Annual Meeting, Austin, TX. 2018.
17. Lewis, L., de Conti, A., Borowa-Mazgaj, B., Chappell, G., Bodnar, W., Pogribny, I.P., and **Rusyn, I.** Investigating inter-individual variability in epigenotoxicity and genotoxicity in

- response to 1,3-butadiene in a population-based mouse model. Lone Star SOT Annual Meeting, Austin, TX. 2018.
18. Sakolish, C., Liu, Y., Reese, C., DeBiasio, R., Verneti, L., Taylor, L., and **Rusyn, I.** The Cross-laboratory testing and comparison of two liver microphysiological systems. Lone Star SOT Annual Meeting, Austin, TX. 2018.
 19. Dalaijamts, C., Cichocki, J.A., Luo, Y.S., **Rusyn, I.**, and Chiu, W.A. Physiologically-Based Pharmacokinetic (PBPK) Modeling of Variability in Perchloroethylene Metabolism Across Multiple Mouse Strains. Lone Star SOT Annual Meeting, Austin, TX. 2018.
 20. **Rusyn, I.**, Sakolish, C., Bell, C., Chramiec, A., Yeager, K., Halligan, S., Mouneimne, R., Wade, T., Han, A., Burghardt, R., Chiu, W., Vunjak-Novakovic, G. The cross-laboratory testing of the tissue-engineered Ewing's sarcoma bone model. Keystone Symposium: Organs- and Tissues-on-Chips, Big Sky, MT. 2018.
 21. Furuya, S., Cichocki, J.A., Kono, H., Bataller, R., and **Rusyn, I.** Comprehensive analysis of alcohol treatment in mouse model of acute-on-chronic liver injury. The International Liver Congress, Paris, France. 2018.
 22. Ouyang, X., Furuya, S., Fukushima, H., Chen, J., Yousef, M., Bataller, R., **Rusyn, I.**, and Mehal, W. Digoxin protects from alcoholic hepatitis and inhibits tgf-b induced fibrotic response. Digestive Disease Week, Washington, DC. 2018.
 23. Sakolish, C., Bell, C., Weber, E.J., Kelly, E.J., Himmelfarb, J., Mouneimne, R., Wade, T., Han, A., Burghardt, R., Chiu, W., and **Rusyn, I.** The cross-laboratory testing of the human proximal tubule chip. Keystone Symposium: Organs- and Tissues-on-Chips, Big Sky, MT. 2018.
 24. Klaren, W.D., Grimm, F.A., Shen, H., and **Rusyn, I.** *In vitro* approaches to grouping of complex substances and UVCBs: A case study of olefin streams. Society of Toxicology Annual Meeting, San Antonio, TX. 2018.
 25. Grimm, F.A., Klaren, W.K., Li, X., House, J.S., Chiu, W., Lehmler, H.J., Robertson, L.W., and **Rusyn, I.** Cardiotoxicity Screening of Polychlorinated Biphenyls and Their Major Metabolites. Society of Toxicology Annual Meeting, San Antonio, TX. 2018.
 26. Lewis, L., Borowa-Mazgaj, B., de Conti, A., Chappell, G., Bodnar, W., Pogribny, I.P., and **Rusyn, I.** Inter-individual variability in epigenetic and genotoxic responses to 1,3-butadiene in a population-based Collaborative Cross mouse model. Society of Toxicology Annual Meeting, San Antonio, TX. 2018.
 27. Luo, Y.S., Furuya, S., Yoo, H.S., and **Rusyn, I.** Comparative Analysis of Toxicokinetics and Toxicodynamics of Perchloroethylene in Cytochrome P450 2E1 Knockout and Humanized Transgenic Mice. Society of Toxicology Annual Meeting, San Antonio, TX. 2018.
 28. Sakolish, C., Bell, C., Weber, E., Kelly, E., Himmelfarb, J., Mouneimne, R., Wade, T., Han, A., Burghardt, R., Chiu, W., and **Rusyn, I.** The Cross-Laboratory Testing of the Human Proximal Tubule Chip. Society of Toxicology Annual Meeting, San Antonio, TX. 2018.
 29. Venkatratnam, A., House, J.S., Konganti, K., McKenney, C., Threadgill, D.W., Chiu, W.A., Aylor, D.L., Wright, F.A., and **Rusyn, I.** Collaborative Cross (CC) mouse population-based dose-response analysis of liver transcriptomic responses to trichloroethylene (TCE) at the level of genes and pathways. Society of Toxicology Annual Meeting, San Antonio, TX. 2018.
 30. Dalaijams, C., Cichocki, J.A., Luo, Y., Rusyn, I., and Chiu, W.A. Physiologically-Based Pharmacokinetic (PBPK) modeling of interstrain variability in perchloroethylene metabolism in mice. Society of Toxicology Annual Meeting, San Antonio, TX. 2018.
 31. Ferguson, K., Sericano, J., Luo, Y., **Rusyn, I.**, and Chiu, W. Utility of rapid equilibrium dialysis (RED) for high-throughput screening of environmental chemicals. Society of Toxicology Annual Meeting, San Antonio, TX. 2018.

32. Onel, M., Beykal, B., Grimm, F.A., Zhou, L., Wright, F.A., **Rusyn, I.**, and Pistikopoulos EN. Optimization of Clustering Algorithms for Grouping of Complex Chemical Substances Based on Chemical and Biological Characteristics. Superfund Program Annual Meeting, Philadelphia, PA. 2017.
33. **Rusyn, I.**, and Knap, A.H. Texas A&M University Superfund Research Center: Comprehensive tools and models for addressing exposure to mixtures during environmental emergency-related contamination events. Superfund Program Annual Meeting, Philadelphia, PA. 2017.
34. Camargo, K., Jun, M., Horney, J., **Rusyn, I.**, Chiu, W., McDonald, T.J., and Knap, A. Environmental Sampling Strategies for Disasters: Lessons Learned from Hurricane Harvey Response. Superfund Program Annual Meeting, Philadelphia, PA. 2017.
35. Furuya, S., Cichocki, J., Konganti, K., Dreval, K., Uehara, T., Katou, Y., Kono, H., Pogribny, I., Bataller, R., and **Rusyn, I.** Relationship between alcohol treatment and transcriptome in mouse model of acute-on-chronic alcoholic liver injury. American Association for Studies of Liver Disease Annual Meeting, Washington, DC, 2017.
36. Cichocki, J., Furuya, S., Luo, Y.-S., Pogribny, I., Chiu, W.A., Threadgill, D.W., and **Rusyn, I.** Non-alcoholic fatty liver disease as a modifier of perchloroethylene-induced toxicity. Society of Toxicology Annual Meeting, Baltimore, MD. 2017.
37. Luo, Y.-S., Cichocki, J., McDonald, T.J., and **Rusyn, I.** Simultaneous detection of the tetrachloroethylene metabolites S-(1,2,2-trichlorovinyl) glutathione, S-(1,2,2-trichlorovinyl)-L-cysteine, and N-acetyl-S-(1,2,2-trichlorovinyl)-L-cysteine in multiple mouse tissues via ultra-high performance liquid chromatography electrospray ionization tandem mass spectrometry. Society of Toxicology Annual Meeting, Baltimore, MD. 2017.
38. Venkatratnam, A., Furuya, S., Kosyk, O., Konganti, K., Aylor, D., Hillhouse, A., Chiu, W.A., Threadgill, D.W., and **Rusyn, I.** A population-wide study of metabolism and toxicodynamics of trichloroethylene using Collaborative Cross mouse panel provides critical insights into the mechanisms of inter-individual variability. Society of Toxicology Annual Meeting, Baltimore, MD. 2017.
39. Grimm, F.A., Chiu, W., Hsieh, N.H., Dalaijants, C., Burnett, S., Anson, B., Wright, A., Wright, F., and **Rusyn I.** A population-based organotypic human *in vitro* model for cardiotoxicity testing. Society of Toxicology Annual Meeting, Baltimore, MD. 2017.
40. Iwata, Y., Klaren, W., Grimm, F.A., and **Rusyn, I.** A Multi-dimensional high-throughput approach for toxicity evaluation of environmental chemicals in induced pluripotent stem cell-derived endothelial cells. Society of Toxicology Annual Meeting, Baltimore, MD. 2017.
41. Lewis, L., Chappell, G., O'Brien, B., Kobets, T., Tretyakova, N., Sangaraju, D., Kosyk, O., Sexton, K., Bodnar, W., Pogribny, I. and **Rusyn, I.** Sex differences in genotoxic and epigenotoxic effects of 1,3-Butadiene in mice. Society of Toxicology Annual Meeting, Baltimore, MD. 2017.
42. Klaren, W.D., Iwata, Y., Grimm, F. and **Rusyn, I.** Development of a high-throughput multiplexed assay for determining chemical effects on macrophage function. Society of Toxicology Annual Meeting, Baltimore, MD. 2017.
43. Israel, J., Lewis, L., Chappell, G., Safi, A., Simon, J., Cotney, P., Bodner, W., Pott, S., Crawford, G., **Rusyn, I.**, and Furey, T. Strain-specific epigenetic programs determine susceptibility to 1,3-butadiene induced DNA damage. Society of Toxicology Annual Meeting, Baltimore, MD. 2017.
44. Chappell, G., Pogribny, I., Guyton, K., and **Rusyn, I.** Epigenetic alterations induced by genotoxic occupational and environmental human chemical carcinogens: A systematic literature review. Epigenetics and Environmental Origins of Cancer Meeting, Lyon, France, 2016.

45. Furuya, S., Iwata, Y., Chappell, G., Bataller, R. and **Rusyn, I.** Transcriptomic analysis of a novel mouse model of fibrosis- and alcohol-associated acute kidney injury (AKI) reveals key deregulated pathways. Research Society on Alcoholism Annual Meeting. New Orleans, LA. 2016.
46. Ibrahim, Y.M., Wojcik, R., Prost, S.A., Garimella, S.V.B., Norheim, R.V., Baker, E.S., Aly, N.A., Ketelslegers, H., Grimm, F., **Rusyn, I.**, and Smith, R.D. Petroleomic characterization using an Ion Mobility-Orbitrap Platform. 64th American Society for Mass Spectrometry Conference, San Antonio, TX. 2016.
47. Grimm, F.A., Iwata, Y., Sirenko, O., Russell, W.K., Luo, Y., Crittenden, C., Wright, F.A., Reif, D.M., Yeakley, J., Seligmann, B., Shepard, P., Roy, T., Boogaard, P.J., Ketelslegers, H., Rohde, A.M., and **Rusyn, I.** Categorization of UVCBs using chemical-biological read across. Society of Toxicology Annual Meeting, New Orleans, LA. 2016.
48. **Rusyn, I.**, Chiu, W., Guyton, K., Martin, M., and Reif, D. Use of high throughput screening data in IARC monograph evaluations. Society of Toxicology Annual Meeting, New Orleans, LA. 2016.
49. Chappell, G., Simon, J., Peck, B., Eklund, K., Furey, T., and **Rusyn, I.** Exposure to the genotoxic chemical 1,3-butadiene confers tissue- and strain-specific alterations in microRNA expression. Society of Toxicology Annual Meeting, New Orleans, LA. 2016.
50. Iwata, Y., Grimm, F., Wilson, M., Bittner, M., Sirenko, O., Rowlands, J.C., Ball, N., and **Rusyn, I.** Toxicological categorization of P- and E-series glycol ethers using high-content screening of human induced pluripotent stem cell (iPSC)-derived cells. Society of Toxicology Annual Meeting, New Orleans, LA. 2016.
51. Venkatratnam, A., Furuya, S., Kosyk, O., Soldatow, V., Sweet, S., Wade, T., Knap, A., Gold, A., Bodnar, W., Chiu, W., and **Rusyn, I.** Using the Collaborative Cross mouse model to investigate population-level variability in trichloroethylene toxicity. Society of Toxicology Annual Meeting, New Orleans, LA. 2016.
52. Cichocki, J.A., Furuya, S., Venkatratnam, A., Knap, A., Wade, T., Sweet, S., McDonald, T., Chiu, W., Threadgill, D., and **Rusyn, I.** Inter-individual variability in the relationship between toxicokinetics and toxicodynamics of tetrachloroethylene. Society of Toxicology Annual Meeting, New Orleans, LA. 2016.
53. Wilson, M.R., Rowlands, J.C., Ball, N., Wignall, J.A., Fourches, D., and **Rusyn, I.** Data integration and visualization for transparent communication of the category read across: Glycol ethers case study. ICCA-LRI Workshop, New Orleans, LA, 2015.
54. Grimm, F., Iwata, Y., Sirenko, O., Bittner, M., and **Rusyn, I.** High-content assay multiplexing for toxicity screening in induced pluripotent stem cell-derived cardiomyocytes and hepatocytes. The Society for Biomolecular Imaging & Informatics Annual Meeting, Boston, MA, 2015.
55. Venkatratnam, A., Cichocki, J., Furuya, S., Chappell, G.A., Grimm, F.A., Sweet, S., Wade, T., Knap, A., Kosyk, O., Yoo, H.S., Vorpahl, A., Lynch, R., Hillhouse, A., Threadgill, D.W., and **Rusyn, I.** Investigation of inter-individual variability in response to trichloroethylene (TCE) or tetrachloroethylene (PCE) exposure using the Collaborative Cross mouse population model. Complex Traits Consortium Annual Meeting, Portland, OR, 2015.
56. Furuya, S., Iwata, Y., Bataller, R. and **Rusyn, I.** Transcriptomic analysis of the mouse model of fibrosis and alcohol-associated acute kidney injury. American Association for Studies of Liver Disease Annual Meeting, San Francisco, CA, 2015.
57. Cichocki, J., Yoo, H.S., Kim, S., Venkatratnam, A., Kosyk, O., Bodnar, W., Sweet, S., Knapp, A., Chiu, W., Campbell, J., Clewell, H., Melnyk, S., and **Rusyn, I.** The role of peroxisome proliferator-activated receptor alpha in the relationship between trichloroethylene

- toxicokinetics and toxicodynamics. Society of Toxicology Annual Meeting, San Diego, CA. 2015.
58. Grimm, F.A., Iwata, Y., Sirenko, O., Crittenden, C., Roy, T., Boogaard, P., Ketelslegers, H., Rohde, A., and **Rusyn, I.** Toxicological categorization of petroleum substances through high-content screening of induced pluripotent stem cell (iPSC) derived cardiomyocytes and hepatocytes. Society of Toxicology Annual Meeting, San Diego, CA. 2015.
 59. Wilson, M.R., Ball, N., Carney, E.W., Rowlands, J.C., and **Rusyn, I.** Data integration and visualization for transparent communication of the category read across using ToxPi (Toxicological Priority Index) tool: P-series glycol ethers case study. Society of Toxicology Annual Meeting, San Diego, CA. 2015.
 60. Scoville, D.K., Carosino, C.M., McMahan, R.S., White, C.C., Schmuck, S.C., Cartwright, M.M., Gao, X., Kelada, S.N., Kosyk, O., **Rusyn, I.**, and Kavanagh, T.J. Heterogeneity in quantum dot induced lung inflammation and toxicity in recombinant inbred mouse strains of the Collaborative Cross. Society of Toxicology Annual Meeting, San Diego, CA. 2015.
 61. Chappell, G., Simon, J., Pott, S., Sexton, K., Safi, A., Kotenko, I., Lieb, J., Crawford, G., Furey, T., and **Rusyn, I.** Exposure to the genotoxic chemical 1,3-butadiene confers tissue-specific alterations in chromatin organization and gene expression. Society of Toxicology Annual Meeting, San Diego, CA. 2015.
 62. Yeakley, J., Abdo, N., Chappell, G., Shepard, P., **Rusyn, I.**, and Seligmann, B. A cost effective targeted sequencing method for monitoring gene expression. Society of Toxicology Annual Meeting, San Diego, CA. 2015.
 63. Watford, S., Jeff, E., Rusyn, I., Reif, D., Judson, R., and Martin, M.T. Integration into Big Data: First steps to support reuse of comprehensive toxicology modules. Society of Toxicology Annual Meeting, San Diego, CA. 2015.
 64. Furuya, S., Uehara, T., Katou, Y., Kosyk, O., Odena, G., Kono, H., Bataller, R., and **Rusyn, I.** Severe liver and kidney injury in mouse models of acute-on-chronic alcoholic hepatitis. American Association for the Study of Liver Diseases: The Liver Meeting, Boston, MA. 2014.
 65. Yoo, H.S. Venkatratnam, A., Soldatow, V., Kosyk, O., Shin, M.H., Bodnar, W., Kim, S.K., Melnyk, S., and **Rusyn, I.** Toxicokinetics and toxicodynamics of trichloroethylene in wild type, PPARalpha-null and PPARalpha-humanized mice. Annual meeting of the Superfund Research Program, San Jose, CA. 2014.
 66. Marrone, A.K., Tryndyak, V., Chappell, G., Beland, F.A., **Rusyn, I.**, and Pogribny, I.P. The microRNA profile is altered in fibrosis-associated hepatocarcinogenesis in mice. American Association for Cancer Research annual meeting, San Diego, CA. 2014.
 67. Furuya, S., Kosyk, O., Uehara, T., Odena, G., Kato, Y., Kono, H., Bataller, R., and **Rusyn, I.** Acute-on-chronic model of alcoholic hepatitis in the mouse. 2014 International Liver Congress, London, UK. 2014.
 68. Odena, G., Morales-Ibanez, O., Affo, S., Furuya, S., **Rusyn, I.**, Altamirano, J., Sancho--Bru, P., Arroyo, V., Gines, P., Caballeria, J., and Bataller, R., Translational study identifies neutrophil gelatinase-associated lipocalin (NGAL) as a potential mediator of liver injury and fibrogenesis in alcoholic hepatitis. 2014 International Liver Congress, London, UK. 2014.
 69. Abdo, N., Marlot, P., Pirmohamed, M., Shea, D., Wright, F., and **Rusyn, I.** Utilizing human population based in vitro model to investigate pesticide mixtures and drug/metabolite pairs. Society of Toxicology Annual Meeting, Phoenix, AZ. 2014.
 70. Yoo, H.S., Soldatow, V., Kosyk, O., Bodnar, W., and **Rusyn, I.** Effects of PPAR-alpha activation on liver toxicity in mice exposed to trichloroethylene. Society of Toxicology Annual Meeting, Phoenix, AZ. 2014.

71. Wignall, J., Shapiro, A., Wright, F.A., Woodruff, T., Chiu, W.A., Guyton, K.Z., and **Rusyn, I.** Standardized benchmark dose calculation: Opportunities to inform science-based decisions in human health assessments. Society of Toxicology Annual Meeting, Phoenix, AZ. 2014.
72. Chappell, G., O'Brien, B., Kobets, T., Tretyakova, N., Sangaraju, D., Kosyk, O., Sexton, K., Bodnar, W., **Rusyn, I.**, and Pogribny, I. Genotoxic and epigenotoxic effects of 1,3-butadiene: Putative mechanisms of tissue specificity in adverse health outcomes. Society of Toxicology Annual Meeting, Phoenix, AZ. 2014.
73. Silva, G., Chappell, G., Uehara, T., Pogribny, I., and **Rusyn, I.** Assessment of DNA copy number alterations in fibrosis-associated mouse liver tumors. Society of Toxicology Annual Meeting, Phoenix, AZ. 2014.
74. Yoo, H.S., Collins, L.B., Kobets, T., Kosyk, O., Bradford, B.U., Shymonyak, S., Bodnar, W.M., Ball, L.M., Gold, A., and **Rusyn, I.** Time-course analysis of trichloroethylene metabolism and its association with subchronic toxicity in liver. The XIII International Congress of Toxicology. Seoul, Korea. 2013.
75. Ahn, Y., Lee, S., Kosyk, O., **Rusyn, I.**, and Kim, S.K. Gene expression profiling on liver effects in a multistrain panel of inbred mouse model after trichloroethylene exposure. The XIII International Congress of Toxicology. Seoul, Korea. 2013.
76. Yang, X., Ma, Z., Blackwelder, A., Li, X., and **Rusyn I.** *In utero* exposure to alcohol induces reprogramming of mammary development and tumor risk in MMTV-ERBB-2 transgenic mice. Research Society on Alcoholism annual meeting. Orlando, FL. 2013.
77. Chappell, G.A., Kutanzi, K., Uehara, T., Tryndyak, V., Hong, H.H., Hoenerhoff, M., Beland, F.A., **Rusyn, I.**, and Pogribny, I. Epigenetic Aberrations Are Predominant To Gene Mutations In The Development And Progression Of Fibrosis-Associated Hepatocarcinogenesis In Mice. International Liver Cancer Association 7th Annual Conference, Washington, DC. 2013.
78. Wignall, J., Muratov, E., Fourches, D., Tropsha, A., Woodruff, T., Zeise, L., Wang, N., Reif, D., Cogliano, V., Chiu, W., Guyton, K., and **Rusyn, I.** Conditional toxicity value (CTV) predictor for generating toxicity values for data sparse chemicals. Society of Toxicology Annual Meeting, San Antonio, TX. 2013.
79. Abdo, N., Xia, M., Kosyk, O., Huang, R., Sakamuru, S., Brown, C., Jack, J., Gallins, P., Zhou, Y.H., Motsinger-Reif, A., Austin, C., Tice, R., Wright, F.A., and **Rusyn, I.** The 1000 genomes toxicity screening project: Utilizing the power of human genome variation for population-scale in vitro testing. Society of Toxicology Annual Meeting, San Antonio, TX. 2013.
80. Soldatow, V., Yoo, H.S., Bodnar, W., Collins, L., Kim, S., Xia, K., Sun, W., Wright, F., Chiu, W., Guyton, K., and **Rusyn, I.** Comparative toxicokinetic and toxicodynamic analysis of the effects of trichloroethylene and tetrachloroethylene in the mouse. Society of Toxicology Annual Meeting, San Antonio, TX. 2013.
81. Yoo, H.S., Bradford, B., Collins, L.B., Kosyk, O., Shymonyak, S., Bodnar, W.M., Ball, L.M., Gold, A., and **Rusyn, I.** The role of inter-strain differences in trichloroethylene metabolism in kidney effects in mice. Society of Toxicology Annual Meeting, San Antonio, TX. 2013.
82. Shapiro, A.J., Cook, N., Ross, P., Fox, J., Cogliano, V., Chiu, W., Wang, N., Zeise, L., Guyton, K., and **Rusyn, I.** Web-based benchmark dose modeling module as a prototype component of an informatics-based system for human health assessments of chemicals. Society of Toxicology Annual Meeting, San Antonio, TX. 2013.
83. Kushman, M.E., Kraft, A., Guyton, K., Sonawane, B., Chiu, W., Makris, S., and **Rusyn, I.** A systematic approach for identifying, evaluating, and presenting mode of action evidence in IRIS toxicological reviews. Society of Toxicology Annual Meeting, San Antonio, TX. 2013.
84. Foreman, J.E., Koga, T., Kosyk, O., Kramer, L.R., Gonzalez, F.J., **Rusyn, I.**, and Peters, J.M. Hepatocarcinogenesis induced by a potent, high affinity human PPAR α agonist is diminished in PPAR α -humanized mice. Society of Toxicology Annual Meeting, San Antonio, TX. 2013.

85. Sirenko, O., Crittenden, C., Anson, B., **Rusyn, I.**, and Cromwell, E.F. Multi-parameter *in vitro* assessment of drug effects on cardiomyocyte physiology using iPSC cells. Society of Toxicology Annual Meeting, San Antonio, TX. 2013.
86. Cromwell, E.F., Hesley, J., Einhorn, S., **Rusyn, I.**, Ott, V., and Sirenko, O. Predictive high-content/high-throughput assays for hepatotoxicity using induced pluripotent stem cell (iPSC)-derived hepatocytes. Society of Toxicology Annual Meeting, San Antonio, TX. 2013.
87. Yoo, H.S., Bradford, B.U., Collins, L.B., Kosyk, O., Shymonyak, S., Bodnar, W.M., Ball, L.M., Gold, A., and **Rusyn, I.** Improving mechanistic basis for health assessment of trichloroethylene via development of analytical methods for quantification of S-(1,2-dichlorovinyl)glutathione and S-(1,2-dichlorovinyl)-L-cysteine in blood, liver and kidney samples. Connecting Research and Practice: A Dialogue between ATSDR and the NIEHS Superfund Research Program, Atlanta, GA. 2012.
88. Abdo, N., Xia, M., Kosyk, O., Huang, R., Sakamuru, S., Austin, C., Tice, R., Wright, F., and **Rusyn, I.** The 1000 genomes toxicity screening project: Utilizing the power of human genome variation for population-scale *in vitro* testing. Society of Toxicology Annual Meeting, San Francisco, CA. 2012.
89. Yoo, H.S., Bradford, B.U., Collins, L.B., Kosyk, O., Shymonyak, S., Bodnar, W.M., Gold, A., **Rusyn, I.** Inter-strain Variability in Trichloroethylene (TCE) Metabolism: Role in Liver Toxicity. Society of Toxicology Annual Meeting, San Francisco, CA. 2012.
90. Uehara, T., Kutanzi, K., Koturbash, I., Pogribny, I. and **Rusyn, I.** Epigenetic alterations underlie the mechanism of N,N-diethylnitrosamine and carbon tetrachloride carcinogenesis in the mouse liver. Society of Toxicology Annual Meeting, San Francisco, CA. 2012.
91. Zavala, J., O'Brien, B., Sexton, K., Vizuite, W., **Rusyn, I.**, and Jaspers, I. Comparison of Human Tracheal/Bronchial Epithelial Cells and A549 Cells Exposed to Ozone or a Photochemically Aged Gas Mixture Using the UNC Outdoor Smog Chamber. Society of Toxicology Annual Meeting, San Francisco, CA. 2012.
92. Low, Y., Fourches, D., Sedykh, A., **Rusyn, I.**, and Tropsha, A. Multi-space *k*-Nearest Neighbors as a Novel Hybrid Approach Integrating Chemical and Toxicogenomic Descriptors for Improved Toxicity Prediction. Society of Toxicology Annual Meeting, San Francisco, CA. 2012.
93. Sedykh, A., Low, Y., Lock, E., **Rusyn, I.**, and Tropsha, A. Using population-based dose-response cytotoxicity data in computational modeling of *in vivo* rat acute toxicity. Society of Toxicology Annual Meeting, San Francisco, CA. 2012.
94. Koturbash, I., Melnyk, S., Montgomery, B., Shymonyak, S., Collins, L., **Rusyn, I.**, Beland, F. and Pogribny, I. Inter-strain differences in oxidative stress induced by a lipotrope methyl-deficient diet in mice. Society of Toxicology Annual Meeting, San Francisco, CA. 2012.
95. Wignall, J., Sedykh, A., Tropsha, A., Woodruff, T., Zeise, L., **Rusyn, I.**, Cogliano, V., Chiu, W., and Guyton, K. Modeling toxicity values using chemical structure, *in vitro* screening, and *in vivo* toxicity data. Society of Toxicology Annual Meeting, San Francisco, CA. 2012.
96. Inman, W., Weissinger, M., **Rusyn, I.**, Tannenbaum, S.R., Hunter, I.W., and Griffith, L.G. Non-invasive real-time measurement of oxidative metabolism *in vitro* allows sensitive dynamic readout of drug response. Society of Toxicology Annual Meeting, San Francisco, CA. 2012.
97. O'Shea, S., Kosyk, O., Abdo, N., Lock, E., Wright, F., Huang, R., Xia, M., Austin, C., Tice, R., and **Rusyn, I.** Population-based quantitative high throughput screening (qHTS) for chemical toxicity. Society of Toxicology Annual Meeting, Washington, DC. 2011.
98. Ainslie, G., Uehara, T., Kosyk, O., Bradford, B. Boorman, G., and **Rusyn, I.** Co-carcinogenesis of N,N-diethylnitrosamine and carbon tetrachloride in mouse liver. Society of Toxicology Annual Meeting, Washington, DC. 2011.

99. Uehara, T., Kosyk, O., Jeannot, E., Bradford, B., Grimes, J., O'Connell, T., Boorman, G., Melnyk, S., Weinman, S., and **Rusyn, I.** Acute liver toxicity of acetaminophen is not potentiated in HCV transgenic mice. Society of Toxicology Annual Meeting, Washington, DC. 2011.
100. Kutanzi, K., Koturbash, I., Uehara, T., Kosyk, O., Pogribny, I., and **Rusyn, I.** Epigenetic changes during co-carcinogenesis of N,N-diethylnitrosamine and carbon tetrachloride in mouse liver. Society of Toxicology Annual Meeting, Washington, DC. 2011.
101. Pogribny, I., Koturbash, I., Scherhag, A., Sorrentino, J., Sexton, K., Bodnar, W., James, S., Beland, F., **Rusyn, I.** Inter-strain differences in susceptibility to 1,3-butadiene-induced DNA damage, epigenetic effects and hepatotoxicity. Society of Toxicology Annual Meeting, Washington, DC. 2011.
102. Koturbash, I., Scherhag, A., Sorrentino, J., Bodnar, W., James, S., Beland, F., Pogribny, I., and **Rusyn, I.** DNA methylation and histone modification changes in the livers of C57BL/6J mice exposed to 1,3-butadiene by inhalation. Society of Toxicology Annual Meeting, Washington, DC. 2011.
103. Low, Y., Uehara, T., Minowa, Y., Yamada, H., Ohno, Y., Urushidani, T., Sedykh, A., Fourches, D., Zhu, H., **Rusyn, I.**, and Tropsha, A. Predictive value of chemical and toxicogenomic descriptors for drug-induced hepatotoxicity. Society of Toxicology Annual Meeting, Washington, DC. 2011.
104. Zhu, H., Zhang, L., Staab, J., Sedykh, A., Tang, H., Gomez, S., **Rusyn, I.**, and Tropsha, A. Incorporation of TOXCAST *in vitro* assay data and relevant toxicity pathway information improves the external prediction accuracy of QSAR models of chemical hepatotoxicity. Society of Toxicology Annual Meeting, Washington, DC. 2011.
105. Zhang, L., Zhu, H., Afantitis, A., Melagraki, G., Sarimveis, H., **Rusyn, I.**, and Tropsha, A. QSAR modeling of estrogen receptor binding affinity and virtual screening for potential endocrine disrupting compounds. Society of Toxicology Annual Meeting, Washington, DC. 2011.
106. Yeatts, K.B., Olshan, A.F., El-Sadig, M., Funk, W.E., Leith, D., Ng, S., Zoubeidi, T., Al-Maskari, F., Chan, R., Couper, D., **Rusyn, I.**, and MacDonald, J. Indoor Air Exposures and Health in the United Arab Emirates (UAE). 3rd North American Congress of Epidemiology, Montreal, Quebec, Canada. 2011.
107. O'Shea, S.H., Schwarz, J., Kosyk, O., Ross, P.K., Wright, F.A., Tice, R.R., Dix, D.J., and **Rusyn, I.** *In vitro* screening for population variability in chemical toxicity. Society of Toxicology Annual Meeting, Salt Lake City, UT. 2010.
108. Tryndyak, V.P., Gatti, D.M., **Rusyn, I.**, Beland, F.A., and Pogribny, I.P. Basal differences in DNA methylation impact susceptibility to nonalcoholic steatohepatitis (NASH)-induced liver injury in mice. Society of Toxicology Annual Meeting, Salt Lake City, UT. 2010.
109. Campbell, J., Clewell, H., Kim, S., Collins, L., Kosyk, O., and **Rusyn, I.** Monte Carlo analysis of TCE metabolism across a panel of inbred mouse strains. Society of Toxicology Annual Meeting, Salt Lake City, UT. 2010.
110. Sedykh, A., Zhu, H., Tang, H., Zhang, L., Richard, A., **Rusyn, I.**, and Tropsha, A. Using *in vitro* Dose-Response Profiles to Enhance QSAR Modeling of *in vivo* Toxicity. Society of Toxicology Annual Meeting, Salt Lake City, UT. 2010.
111. Li, Z., **Rusyn, I.**, and Wright, F.A. Pathway-based dose-response analysis of toxicogenomics data. Society of Toxicology Annual Meeting, Salt Lake City, UT. 2010.
112. Bradford, B.U., Kim, S., Kosyk, O., Grimes, J., O'Connell, T., and **Rusyn, I.** NMR and microarray based analysis of mouse liver following exposure to trichloroethylene. Society of Toxicology Annual Meeting, Salt Lake City, UT. 2010.

113. Grimes, J., Kim, S., O'Connell, T., Bradford, B., and **Rusyn, I.** Analysis of trichloroethylene metabolism in a genetically diverse panel of inbred mouse strains. 5th Annual Metabolomics Society Meeting, Edmonton, Alberta, Canada. 2009.
114. Formeister, E.J., Tsuchiya, M., Pogribny, I., and **Rusyn, I.** Methylation frequency of *p16*, *SOCS-1*, *RASSF1A*, *APC* and *GSTP1* promoters in tumorous, non-tumorous and metastatic liver tumor samples from HCV-positive patients with HCC in Japan. The 60th Annual Meeting of the American Association of the Study of Liver Disease, Boston, MA. 2009.
115. Jeannot, E., Boorman, G., Kosyk, O., Shymoniak, S., and **Rusyn, I.** Incidence of aflatoxin B1-induced hepatic tumors is increased in Hepatitis Virus C transgenic mice as compared to wild type C57BL/6J strain. The 60th Annual Meeting of the American Association of the Study of Liver Disease, Boston, MA. 2009.
116. Tsuchiya, M., Parker, J.S., Kono, H., Matsuda, M., Fujii, H., and **Rusyn, I.** Gene expression in non-tumoral liver tissue and risk of recurrence of hepatocellular carcinoma in hepatitis C virus-positive subjects. The 60th Annual Meeting of the American Association of the Study of Liver Disease, Boston, MA. 2009.
117. Hatcher S, Kosyk O, Ross P, Wright F, Schwartz J, Dix D, and **Rusyn I.** *In vitro* screening for chemical toxicity in a genetically-diverse human model system. EPA ToxCast Data Analysis Summit, RTP, NC. 2009.
118. Martinez S, Bradford B, Kaiser R, Soldatow V, Amaral K, Ferguson S, Black C, LecLuyse E, and **Rusyn I.** Development of *in vitro* toxicogenetic models for hepatotoxicity. EPA ToxCast Data Analysis Summit, RTP, NC. 2009.
119. Wright FA, Li Z, Huang H, Ghosh A, Sun W, Zou F, and **Rusyn I.** Prediction of *in vivo* toxicity endpoints from ToxCast Phase I data using a variety of machine learning approaches. EPA ToxCast Data Analysis Summit, RTP, NC. 2009.
120. Zhu H, Sedykh A, Zhang L, **Rusyn I,** and Tropsha A. Using ToxCast cell-viability and gene-expression assays as biological descriptors in QSAR modeling of animal toxicity endpoints. EPA ToxCast Data Analysis Summit, RTP, NC. 2009.
121. Li Z, **Rusyn I,** and Wright FA. Dose-response pathway analysis for gene expression microarrays. Symposium on Toxicity Pathway- Based Risk Assessment. National Academy of Sciences, Washington, DC. 2009.
122. Martinez, S., Bradford, B., Kaiser, R., Soldatow, V., Amaral, K., Ferguson, S., Black, C., LecLuyse, E. and **Rusyn, I.** Development of the *in vitro* toxicogenetic models for hepatotoxicity. Society of Toxicology Annual Meeting, Baltimore, MD. 2009.
123. Romanov, S., Gatti, D., Tsuchiya, M., Zeng, M., Medvedev, A., and **Rusyn, I.** Profiling of multiple transcription factors activity in mouse liver. Society of Toxicology Annual Meeting, Baltimore, MD. 2009.
124. Zhao, N., Gatti, D.M., and **Rusyn, I.** Genome-level analysis of genetic regulation of sex-specific gene expression in mouse liver. Society of Toxicology Annual Meeting, Baltimore, MD. 2009.
125. Zhang, L., Zhu, H., **Rusyn, I.,** Judson, R., Dix, D., Houck, K., Martin, M., Richard, A., Kavlock, R., and Tropsha, A. Cheminformatics Analysis of EPA ToxCast Chemical Libraries to Identify Domains of Applicability for Predictive Toxicity Models and Prioritize Compounds for Toxicity Testing. Society of Toxicology Annual Meeting, Baltimore, MD. 2009.
126. Kim, S., Collins, L.B., Pollack, G., and **Rusyn, I.** Pharmacokinetic modeling of trichloroethylene metabolism in B6C3F1 mice: Formation and disposition of trichloroacetic acid, dichloroacetic acid, S-(1,2-dichlorovinyl)glutathione and S-(1,2-dichlorovinyl)-L-cysteine. NIEHS Superfund Basic Research & Training Program 2008 Annual Meeting. Pacific Grove, CA.

127. Jeannot, E., Mellottee, E., Bioulac-Sage, P., Genthép (Inserm network), **Rusyn, I.**, and Zucman-Rossi, J. Investigation of the mechanism of mutagenesis in HNF1 α gene in hepatocellular adenoma. International Liver Cancer Association Meeting, Chicago, IL. 2008.
128. Tsuchiya, M., Kono, H., Asakawa, M., Matsuda, M., Fujii, H., and **Rusyn, I.** Protective effect of Juzen-taiho-to on hepatocarcinogenesis is mediated through the inhibition of Kupffer cell-induced oxidative stress. International Liver Cancer Association Meeting, Chicago, IL. 2008.
129. Gatti, D.M., Shabalín, A.A., **Rusyn, I.**, Wright, F.A., Nobel, A.B. Fast association mapping using summation trees. 7th Annual Meeting of the Complex Traits Consortium, Montreal, Canada. 2008.
130. Hege, A., Ross, P.K., Threadgill, D.W., and **Rusyn, I.** Phenotypic anchoring of gene expression data from acetaminophen hepatotoxicity studies in the mouse model of the human population reveals biomarkers of response. Society of Toxicology Annual Meeting, Seattle, WA. 2008.
131. Ross, P.L., Woods, C.G., Bradford, B.U., Kosyk, O., and **Rusyn, I.** Time-course comparison of gene expression signatures of xenobiotic activators of Car and Ppar- α in mouse liver. Society of Toxicology Annual Meeting, Seattle, WA. 2008.
132. Bradford, B.U., Kosyk, O., Kono, H., Shymonyak, S., Ross, P.K. and **Rusyn, I.** Modified alcohol liquid diet model for liver injury in mice. Society of Toxicology Annual Meeting, Seattle, WA. 2008.
133. Craig, C.P., Powell, C.L., Tsuchiya, M., Pogribny, I.P., Melnyk, S., Bradford, B.U., Threadgill, D.W., and **Rusyn, I.** Methyl-donor enrichment attenuates alcohol-induced liver injury: Mechanisms of protective action. Society of Toxicology Annual Meeting, Seattle, WA. 2008.
134. Kim, S.-K., DeSimone, M.C., Harbourt, D., Boysen, G., Collins, L., Waidyanatha, S., Bradford, B.U., Threadgill, D.W., and **Rusyn, I.** Analysis of trichloroethylene metabolism in a genetically diverse panel of mouse inbred strains. Society of Toxicology Annual Meeting, Seattle, WA. 2008.
135. Tryndyak, V., Boureiko, A., Melnyk, S., **Rusyn, I.**, and Pogribny, I.P. Mechanism of genomic hypomethylation during hepatocarcinogenesis induced by peroxisome proliferators in rats. Society of Toxicology Annual Meeting, Seattle, WA. 2008.
136. Rodgers, A., Zhu, H., **Rusyn, I.**, and Tropsha, A. QSAR modeling of Human Liver Adverse Effects Database using *k*NN method. Society of Toxicology Annual Meeting, Seattle, WA. 2008.
137. Zhu, H., Ye, L., **Rusyn, I.**, Richard, A., Golbraikh, A., and Tropsha, A. Two-step Quantitative Structure Activity Relationship modeling of *in vivo* toxicity using *in vitro* cytotoxicity data. Society of Toxicology Annual Meeting, Seattle, WA. 2008.
138. Tsuchiya, M., Kono, H., Asakawa, M., Matsuda, M., Fujii, H., and **Rusyn, I.** Protective effect of Juzen-taiho-to on hepatocarcinogenesis is mediated through the inhibition of Kupffer cell-induced oxidative stress. Digestive Disease Week 2008.
139. Roberts, A., McMillan, L., Wang, W., Parker, J., **Rusyn, I.**, and Threadgill, D. Inferring missing genotypes in large SNP panels using fast nearest-neighbor searches over sliding windows. 15th Annual International Conference on Intelligent Systems for Molecular Biology (ISMB) & 6th European Conference on Computational Biology (ECCB) Vienna, Austria. 2007.
140. Bradford, B.U., Han, J., Kosyk, O., Shymonyak, S., Winnike, J., Kono, H., O'Connell, T., and **Rusyn, I.** Metabolomic analysis of urine and liver after chronic alcohol treatment in C57BL/6J mice. American Association for Studies of Liver Disease Annual Meeting, Boston, MA. 2007.

141. Burns, A.M., Woods, C.G., and **Rusyn, I.** Regulation of the mevalonate pathway influences proliferative effects of WY-14,643 in mouse liver. Society of Toxicology Annual Meeting, Charlotte, NC. 2007.
142. Gatti, D., Maki, A., Chesler, E.J., Kirova, R., Lu, L., Wang, J., Qu, Y., Williams, R.W., Perkins, A., Langston, M.A., Threadgill, D.W., and **Rusyn, I.** Examination of genetic networks that regulate gene expression in liver using complex trait analysis. Society of Toxicology Annual Meeting, Charlotte, NC. 2007.
143. Hege, A., Ross, P., Balletta, L., Bradford, B., Boorman, G., Tennant, R., Bogue, M., Paigen, K., Wiltshire, T., Watkins, P.B., **Rusyn, I.**, and Threadgill, D.W. Cross-species association mapping identifies genetic risk factors for liver toxicity. Society of Toxicology Annual Meeting, Charlotte, NC. 2007.
144. Peffer, R., Milburn, G., Wright, J., Dow, J., Currie, R., Harris, J., Davis, J., Pastoor, T., and **Rusyn, I.** Liver-specific effects of cyproconazole, a triazole fungicide, are dependent upon the CAR nuclear receptor. Society of Toxicology Annual Meeting, Charlotte, NC. 2007.
145. Powell, C.L., Ross, P.K., Woods, C.G., Bradford, B.U., and **Rusyn, I.** PPAR α -regulated molecular networks are responsible for the differential effects of dietary fatty acids on oxidative stress and DNA damage in mouse liver. Society of Toxicology Annual Meeting, Charlotte, NC. 2007.
146. Tryndyak, V.P., Woods, C.G., Witt, S.E., Pogribny, I.P., and **Rusyn, I.** Epigenetic effects of the peroxisome proliferator WY-14,643 in mouse liver. Society of Toxicology Annual Meeting, Charlotte, NC. 2007.
147. Wang, K., Richard, A., **Rusyn, I.**, and Tropsha, A. Combined toxico-cheminformatics and QSPR modeling of the carcinogenic potency database. Society of Toxicology Annual Meeting, Charlotte, NC. 2007.
148. Zhu, H., Wang, K., **Rusyn, I.**, Richard, A., and Tropsha, A. The use of NTP-HTS data for predictive ADME/TOX modeling. Society of Toxicology Annual Meeting, Charlotte, NC. 2007.
149. Woods, C.G., Burns, A.M., Bradford, B.U., Threadgill, D.W., Cunningham, M.L., and **Rusyn, I.** The role of differences in expression of PPAR α between mouse strains in pleiotropic response to peroxisome proliferators. Society of Toxicology Annual Meeting, Charlotte, NC. 2007.
150. Lee, M.H., **Rusyn, I.**, Threadgill, D., and Marron, J.S. Visualization of features in curve estimates and application to genetic loci mapping. Joint Statistical Meeting of the American Statistical Association. Seattle, WA, 2006.
151. DeSimone, M.C., Harbourt, D., Boysen, G., Collins, L., Bradford, B., Han, J., Swenberg, J.A., Threadgill, D., and **Rusyn, I.** Multi-strain study of trichloroethylene toxicity in mice. Superfund Basic Research Program Annual Meeting: New Technologies to Assess Environmental Exposure. San Diego, CA. 2006.
152. Han, J., Harbourt, D., Danell, R.M., Borchers, C.H., Threadgill, D.W. and **Rusyn, I.** High throughput metabolite profiling of serum from trichloroethylene-exposed mice by direct infusion FTICR-MS. Superfund Basic Research Program Annual Meeting: New Technologies to Assess Environmental Exposure. San Diego, CA. 2006.
153. Hege, A., Ross, P., Su, S., Stylianou, I., Bradford, B., Boorman, G.A., Tennant, R., Bogue, M., Paigen, K., Threadgill, D., **Rusyn, I.** Toxicogenetic dimension in studies of the mechanisms of liver injury. EPA Science Forum, Washington, DC. 2006.
154. Shah, I., **Rusyn, I.**, Cai, J., Maki, A., Kim, D., Qin, L., Corbell, J., Crews, F.T., and Higgins, A. Metabolomic analysis of alcohol toxicity in rat brain and liver. Society of Toxicology Annual Meeting, San Diego, CA. 2006.
155. Hege, A., Russo, M., Su, S., Ross, P.K., Stylianou, I., Bradford, B., Boorman, G., Tennant, R., Bogue, M., Paigen, K., Threadgill, D., **Rusyn, I.** Time- and dose- dependent factors in

- genetic susceptibility to acetaminophen hepatotoxicity. Society of Toxicology Annual Meeting, San Diego, CA. 2006.
156. Powell, C., Kosyk, O., Showalter, L., Weinman, S., and **Rusyn, I.** Effect of alcohol on oxidative stress and DNA damage in mouse liver expressing hepatitis C viral core protein. Society of Toxicology Annual Meeting, San Diego, CA. 2006.
 157. Woods, C.G., Burns, A.M., Maki, A., Bradford, B.U., Threadgill, D.W., Cunningham, M.L., and **Rusyn, I.** Variation in biological responses to peroxisome proliferators between mouse strains. Society of Toxicology Annual Meeting, San Diego, CA. 2006.
 158. Hege, A.I., Ross, P., Lodestro, C., Bradford, B.U., Tennant, R., Boorman, G., Bogue, M.A., Paigen, K., Threadgill, D.W., and **Rusyn, I.** Toxicogenetic analysis of susceptibility to acetaminophen-induced liver injury. Meeting of the International Society for Studies of Xenobiotics (ISSX), Maui, HA. 2005.
 159. Parker, J.S., Lee, M.H., Marron, J.S., Raheja, V., **Rusyn, I.**, and Threadgill, D.W. Software for missing data estimation in high throughput typing studies. American Public Health Association 133rd Annual Meeting, New Orleans, LA. 2005
 160. Parker, J.S., Lee, M.H., Marron, J.S., Raheja, V., **Rusyn, I.**, and Threadgill, D.W. *In silico* estimation of missing data for high throughput genotyping experiments. 13th Annual international conference on intelligent systems for molecular biology (ISMB), Detroit, MI. 2005.
 161. Powell, C., Ross, P., Heinloth, A., Paules, R., and **Rusyn, I.** Phenotypic anchoring of acetaminophen-induced oxidative stress and gene expression profiles in rat liver. Society of Toxicology Annual Meeting, New Orleans, LA. 2005.
 162. 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.** Toxicogenetic analysis of susceptibility to acetaminophen-induced liver injury. Society of Toxicology Annual Meeting, New Orleans, LA. 2005.
 163. Woods, C.G., Bradford, B.U., Cunningham, M.L., Kadiiska, M., Mason, R.P., Burns, A. M., Peters, J. M., and **Rusyn, I.** Toxicogenomic Analysis of Nuclear Receptor-Mediated and -Independent Responses to Peroxisome Proliferators. Society of Toxicology Annual Meeting, New Orleans, LA. 2005.
 164. **Rusyn, I.**, Lee, M.H., Tak, W., Milton, J., Bradford, B.U., Maki, A., Wheeler, M.D., Threadgill, D.W., Marron, J.S. Toxicogenetic and toxicogenomic analysis of alcohol-induced liver injury. Society of Toxicology Annual Meeting, New Orleans, LA. 2005.
 165. Hammond, L.E., Albright, C.D., He, L., **Rusyn, I.**, Watkins, S.M., Lemasters, J.J., and Coleman, R.A. Mitochondrial glycerol-3-phosphate acyltransferase 1 deficient mice have altered mitochondrial phospholipid fatty acid composition and mitochondrial dysfunction, and increased reactive oxygen species production, cell proliferation, and apoptosis. Experimental Biology 2005, San Diego, CA. 2005.
 166. Powell, C.L., Ross, P.K., Kosyk, O., Bradford, B.U., and **Rusyn, I.** Dietary fat rich in ω -6 polyunsaturated fatty acids modulates oxidative DNA damage and repair. Society of Toxicology Annual Meeting, Baltimore, MD. 2004.
 167. Bradford, B. U., Kosyk, O., and **Rusyn, I.** The effect of DNA damaging agents on gene expression of DNA repair glycosylases in human and mouse fibroblasts. Society for Free Radical Biology and Medicine Annual Meeting, St. Thomas, VI. 2004.
 168. Woods, C.G., Tak, W., Maki, A., Kadiiska, M.B., Mason, R.P., Cunningham, M.L., and **Rusyn, I.** The role of hepatocyte and Kupffer cell-derived free radicals in peroxisome proliferator induced carcinogenesis. Society for Free Radical Biology and Medicine Annual Meeting, St. Thomas, VI. 2004.
 169. Powell, C., Kosyk, O., Bradford, B., Denda, A., Konishi, Y., Uematsu, F., Nakae, D., and **Rusyn, I.** Temporal correlation of histopathological changes and markers of oxidative DNA

- damage with gene expression in a choline deficient model of rodent hepatocellular carcinoma. Soc. for Free Radical Biology and Med. Annual Meeting, St. Thomas, VI. 2004.
170. Maki, A., Kono, H., Asakawa, M., Matsuda, M., Fujii, H., and **Rusyn, I.** Predictive power of oxidative stress biomarkers in patients with HCV-associated hepatocellular carcinoma. Society for Free Radical Biology and Medicine Annual Meeting, St. Thomas, VI. 2004.
171. Uematsu, F., Takahashi, M., Yoshida, M., Maekawa, Y., **Rusyn, I.**, and Nakae, D. Comprehensive expression analysis of hepatocellular carcinomas induced in rats fed a choline-deficient, L-amino acid-defined diet. American Association for Cancer Research Annual Meeting, San Francisco, CA. 2004.
172. **Rusyn, I.**, Asakura, S., and Swenberg, J.A. Expression of base excision DNA repair genes is a sensitive biomarker for *in vivo* detection of chemical-induced chronic oxidative stress. Aspen Cancer Conference, Aspen, CO. 2003.
173. **Rusyn, I.**, Begley, T.J., and Samson, L.D. Imbalanced expression of DNA base excision repair genes leads to accumulation of apurinic/aprimidinic sites and changes in transcriptional profile in yeast. Gordon Research Conference on Toxicogenomics, Bates College, Lewiston, ME. 2003.
174. **Rusyn, I.**, Kono, H., Kosyk, O., Bradford, B.U. Cytochrome P450 2E1, but not NADPH oxidase is required for ethanol-induced DNA damage and upregulation of DNA repair genes in mouse liver. American Association for the Study of Liver Diseases Annual Meeting, Boston, MA. 2003.

Research and Educational Presentations (since 2002):

- 2019 National Center for Advancement of Translational Sciences, NIH, Rockville, MD.
- 2019 Bristol-Myers Squibb, Princeton, NJ.
- 2019 Takeda Pharmaceuticals, Boston, MA.
- 2019 Sanofi-Aventis, Boston, MA.
- 2019 Novartis Pharmaceuticals, Boston, MA.
- 2018 Texas A&M University Energy Institute, College Station, TX.
- 2018 GlaxoSmithKline Pharmaceuticals, King of Prussia, PA.
- 2018 National Institutes of Health, NIH, Bethesda, MD.
- 2018 Kansas University Medical Center, Kansas City, MO.
- 2018 University of Arizona, Tucson, AZ.
- 2018 Northeastern University, Boston, MA.
- 2018 Theravance Biopharma, South San Francisco, CA.
- 2018 Food and Drug Administration, White Oak, MD.
- 2018 TAMU-Galveston, Galveston, TX.
- 2018 US Army Public Health Command, Aberdeen Proving Ground, MD.
- 2018 National Toxicology Program, RTP, NC.
- 2018 AstraZeneca Pharmaceuticals, Boston, MA.
- 2018 Novartis Pharmaceuticals, Boston, MA.
- 2018 Roche Pharmaceuticals, Basel, Switzerland.
- 2018 European Commission, Directorate General Research & Innovation, Brussels, Belgium.
- 2018 National Institutes of Health, NIH, Bethesda, MD.

- 2017 TX Department of State Health Services, Austin, TX.
- 2017 Food and Drug Administration, White Oak, MD.
- 2017 National Institutes of Health, NIH, Bethesda, MD.
- 2017 Massachusetts Institute of Technology, Boston, MA.
- 2017 National Center for Advancement of Translational Sciences, NIH, Rockville, MD.
- 2017 National Center for Environmental Research, US EPA, Washington, DC.
- 2017 Concawe Toxicology Working Group, Antwerp, Belgium.
- 2016 National Center for Toxicological Research, Food & Drug Administration, Jefferson, AR.
- 2016 School of Medicine, Yamanashi University, Chuo, Japan.
- 2016 ICCA-LRI and NIHS Workshop on New Scientific Methods to Improve Environmental and Human health Risk Assessments, Awaji, Japan.
- 2016 Shell, Houston, TX.
- 2016 Procter & Gamble, Cincinnati, OH.
- 2016 European Chemicals Agency, Helsinki, Finland.
- 2015 National Center for Environmental Research, US EPA, Washington, DC.
- 2015 Food and Drug Administration, College Park, MD
- 2015 Institute for Health and Consumer Protection, Joint Research Centre, European Commission, Ispra, Italy.
- 2015 Michigan State University, East Lansing, MI.
- 2015 Emory University, Atlanta, GA.
- 2015 Texas Commission on Environmental Quality, Austin, TX.
- 2015 California EPA, Oakland, CA.
- 2015 American Chemistry Council, Washington, DC.
- 2014 Total Petroleum, Paris, France.
- 2014 Roche Pharmaceuticals, Basel, Switzerland.
- 2014 National Center for Computational Toxicology, US EPA, RTP, NC.
- 2014 University of North Carolina-Greensboro, Greensboro, NC.
- 2014 National Center for Environmental Research, US EPA, Washington, DC.
- 2014 School of Medicine, Yamanashi University, Chuo, Japan.
- 2014 UNILEVER, Colworth, UK (webinar).
- 2014 CONCAWE, Brussels, Belgium.
- 2014 Institute for Health and Consumer Protection, Joint Research Center, Ispra, Italy.
- 2014 Texas Commission on Environmental Quality, Austin, TX.
- 2013 North Carolina State University, Raleigh, NC.
- 2013 University of Pittsburg, Pittsburg, PA.
- 2013 CONCAWE, Brussels, Belgium.
- 2013 National Institute of Alcohol Abuse and Alcoholism, Bethesda, MD.
- 2013 Novartis Pharmaceuticals, Basel, Switzerland.
- 2013 Seoul National University, Seoul, Korea.
- 2013 Health Canada, Ottawa, ON.
- 2013 The Hamner Institutes, RTP, NC.

- 2013 Université Paris Descartes, Paris, France.
- 2013 University of Ottawa, Ottawa, ON.
- 2013 University of Connecticut, Storrs, CT.
- 2013 Duke University, Durham, NC.
- 2013 Office of Pollution Prevention and Toxics, US EPA, Washington, DC.
- 2013 Texas A&M University, College Station, TX.
- 2013 National Center for Environmental Research, US EPA, Washington, DC.
- 2012 National Toxicology Program/NIEHS, RTP, NC.
- 2012 Roche Pharmaceuticals, Basel, Switzerland.
- 2012 ExxonMobil Biomedical Sciences, Annandale, NJ.
- 2012 American Chemistry Council, Washington, DC.
- 2012 Shionogi Pharmaceuticals, Osaka, Japan.
- 2012 National Center for Computational Toxicology (EPA), RTP, NC.
- 2012 Department of Surgery, School of Medicine, Yamanashi University, Chuo, Japan.
- 2012 European Chemicals Agency, Helsinki, Finland.
- 2012 Roche Pharmaceuticals, Nutley, NJ.
- 2012 National Human and Environmental Effects Research Laboratory (EPA), RTP, NC.
- 2012 California EPA, Sacramento, CA.
- 2012 California EPA, Oakland, CA.
- 2012 National Center for Environmental Assessment (EPA), Washington, DC.
- 2012 Office of Solid Waste and Emergency Response (EPA), Washington, DC.
- 2012 Dow Chemicals Company, Midland, MI.
- 2011 Department of Environmental Health, Harvard School of Public Health, Boston, MA.
- 2011 Comprehensive Cancer Center, Ohio State University, Columbus, OH.
- 2011 European Chemicals Agency, Helsinki, Finland.
- 2011 Institute for Health and Consumer Protection, Joint Research Centre, European Commission, Ispra, Italy.
- 2011 National Center for Environmental Assessment (EPA), Washington, DC.
- 2011 Gordon Research Conference: Cellular and Molecular Mechanisms of Toxicity, Andover, NH.
- 2011 NC Chapter of the Environmental Mutagenesis Society, EPA, RTP, NC.
- 2010 Center for Liver Diseases, Keck School of Medicine, University of Southern California, Los Angeles, CA.
- 2010 Board of Scientific Counselors, National Toxicology Program, NIEHS, RTP, NC.
- 2010 Institute for Health and Consumer Protection, Joint Research Centre, European Commission, Ispra, Italy.
- 2010 Epigenetics of Health and Disease, Symposium of the Alberta Epigenetics Network, University of Lethbridge, Alberta, Canada.
- 2010 9th Annual World Pharmaceutical Congress, Philadelphia, PA.
- 2010 Mouthwash Use and Oral Cancer Risk, International expert workshop, Lyon, France.
- 2010 Boston Area Pharmaceutical Toxicology Group annual meeting, Boston, MA.
- 2010 North Carolina Chapter of the Society of Toxicology, Spring meeting, RTP, NC.

- 2009 Faculty of Medicine and Health Sciences, United Arab Emirates University, Al Ain, UAE.
- 2009 Workshop "Computational Toxicology: From Data to Analyses to Applications." Board on Environmental Sciences and Toxicology, National Research Council, National Academies of Sciences, Washington, DC.
- 2009 Risk eLearning: "Computational Toxicology: New Approaches for the 21st Century" webinar. NIEHS Superfund Basic Research Program in collaboration with the US Environmental Protection Agency's Office of Superfund Remediation and Technology Innovation, Research Triangle Park, NC.
- 2009 Symposium "Toxicity Pathway-Based Risk Assessment." Board on Environmental Sciences and Toxicology, National Research Council, National Academies of Sciences, Washington, DC.
- 2009 GlaxoSmithKline Pharmaceuticals, Research Trinagle Park, NC.
- 2009 Novartis Pharmaceuticals, New Haven, NJ.
- 2009 AASLD/FDA/PhRMA Hepatotoxicity Special Interest Group Meeting, Silver Spring, MD.
- 2009 Institute for Cancer Research, Medical University of Vienna, Austria.
- 2008 Boehringer-Ingelheim Pharmaceuticals, Ridgefield, CT.
- 2008 Workshop "Global variability in response to air pollution: Approaches to translation of cardiopulmonary disease models." NIEHS, RTP, NC.
- 2008 McNeil Consumer Healthcare Hepatology Meeting, Denver, CO.
- 2008 Department of Gastroenterology and Hepatology, Mie University, Tsu, Japan.
- 2008 Department of Surgery, Yamanashi University Medical School, Tamaho, Nakakoma, Japan.
- 2007 TIES-2007 Conference: Toxicogenomics Integrated with Environmental Sciences, Raleigh, NC
- 2007 Workshop "Mouse liver tumors: Benefits and Constraints on Use in Human Health Risk Assessment, Qualitative and Quantitative Aspects." Board on Environmental Sciences and Toxicology, National Research Council, National Academies, Washington, DC
- 2007 Environmental and Occupational Health Institute, Rutgers University, Piscataway, NJ
- 2007 Department of Pathology and Laboratory Medicine, UNC-Chapel Hill
- 2007 Gordon Research Conf. on Toxicogenomics, Colby-Sawyer College, New London, NH
- 2007 Department of Pathology and Laboratory Medicine, Brown University, Providence, RI
- 2007 Boehringer-Ingelheim Pharmaceuticals, Ridgefield, CT
- 2006 Department of Environmental and Occupational Health Sciences, University of Washington, Seattle, WA.
- 2006 Merck Research Laboratories, West Point, PA.
- 2006 Northeast Chapter of the Society of Toxicology Annual Meeting, Worchester, MA.
- 2006 L.I. Medved's Institute of Ecohygiene and Toxicology, Kiev, Ukraine.
- 2006 North Carolina Department of Environment and Natural Resources, Raleigh, NC.
- 2006 Center for Environmental Health and Susceptibility, UNC-Chapel Hill.
- 2006 National Center for Toxicological Research, Food & Drug Administration, Jefferson, AR.
- 2005 Department of Surgery, Yamanashi University Medical School, Tamaho, Nakakoma, Japan.
- 2005 Department of Pharmacology, Toxicology, and Therapeutics, Kansas University Medical Center, Kansas City, KS.

- 2005 Annual Meeting of the Netherlands Society of Toxicology, Ph.D. Student's Days, Oss, the Netherlands.
- 2005 Laboratory of Pharmacology and Chemistry, National Institute of Environmental Health Sciences, Research Triangle Park, NC.
- 2005 Oak Ridge National Laboratory, Oak Ridge, TN.
- 2005 Department of Nutrition, University of North Carolina, Chapel Hill, NC.
- 2004 Department of Veterinary Science, Pennsylvania State University, University Park, PA.
- 2004 Department of Health Risk Analysis and Toxicology, University of Maastricht, the Netherlands.
- 2003 Bowles Center for Alcohol Studies, School of Medicine, UNC-Chapel Hill, NC
- 2003 Division of Pulmonology, EPA Human Studies Facility, Chapel Hill, NC
- 2003 Cedar Ridge High School, Hillsborough, NC
- 2002 Laboratory of Experimental Carcinogenesis, National Cancer Institute, Bethesda, MD
- 2002 Department of Epidemiology, School of Public Health, UNC-Chapel Hill, NC

Teaching Activities

Summary of Courses Taught at the University of North Carolina (2006-2014):

Term	Course ID	Course Title	Credit Hours	Role in the course	Number of students
Spring 2006	ENVR 132	Biochemical and Molecular Toxicology	3	Course Director	15
	ENVR 104	Unifying Concepts in Environmental Sciences	3	Module Director	3
	ENVR 234	Toxicology Seminar	1	Course Director	37
Fall 2006	ENVR 722	Toxicology Seminar	1	Course Director	39
	ENVR 430	Health Effects of Environmental Agents	3	Lecturer (3 lectures)	24
	EPID 745	Molecular Techniques for Public Health Research	2	Lecturer (2 lectures)	9
Spring 2007	ENVR 722	Toxicology Seminar	1	Course Director	36
	ENVR 442	Biochemical and Molecular Toxicology	3	Course Director	17
	ENVR 401	Unifying Concepts in Environmental Sciences	3	Module Director	11
Fall 2007	ENVR 722	Toxicology Seminar	1	Course Director	39
	ENVR 430	Health Effects of Environmental Agents	3	Lecturer (3 lectures)	21
Spring 2008	ENVR 722	Toxicology Seminar	1	Course Director	39
	ENVR 442	Biochemical and Molecular Toxicology	3	Course Director	10
	ENVR 401	Unifying Concepts in Environmental Sciences	3	Module Director	4
Fall 2008	ENVR 722	Toxicology Seminar	1	Course Director	31
	ENVR 430	Health Effects of Environmental Agents	3	Lecturer (3 lectures)	32
	EPID 745	Molecular Techniques for Public Health Research	2	Lecturer (1 lecture)	9
Spring 2009	ENVR 722	Toxicology Seminar	1	Course Director	30
	ENVR 401	Unifying Concepts in Environmental Sciences	3	Module Director	9
Fall 2009	ENVR 722	Toxicology Seminar	1	Course Director	30
	ENVR 442	Biochemical and Molecular Toxicology	3	Course Director	21
	ENVR 430	Health Effects of Environmental Agents	3	Lecturer (3 lectures)	44
Spring 2010	ENVR 722	Toxicology Seminar	1	Course Director	30
	ENVR 401	Unifying Concepts in Environmental Sciences	3	Module Director	8

	ENVR 722	Toxicology Seminar	1	Course Director	31
Fall 2010	ENVR 442	Biochemical and Molecular Toxicology	3	Course Director	9
	ENVR 430	Health Effects of Environmental Agents	3	Lecturer (3 lectures)	48
Spring 2011	ENVR 722	Toxicology Seminar	1	Course Director	27
	ENVR 722	Toxicology Seminar	1	Course Director	30
Fall 2011	ENVR 442	Biochemical and Molecular Toxicology	3	Course Director	16
	ENVR 430	Health Effects of Environmental Agents	3	Lecturer (3 lectures)	30
Spring 2012	ENVR 722	Toxicology Seminar	1	Course Director	29
	ENVR 722	Toxicology Seminar	1	Course Director	36
	ENVR 442	Biochemical and Molecular Toxicology	3	Course Director	13
Fall 2012	ENVR 742	Theory and Practice of Evaluating Human Health Risks of Chemicals	2	Course Director	6
	ENVR 430	Health Effects of Environmental Agents	3	Lecturer (3 lectures)	40
Spring 2013	ENVR 722	Toxicology Seminar	1	Course Director	29
	ENVR 722	Toxicology Seminar	1	Course Director	30
Fall 2013	ENVR 442	Biochemical and Molecular Toxicology	3	Course Director	10
	ENVR 430	Health Effects of Environmental Agents	3	Lecturer (3 lectures)	45
Spring 2014	ENVR 722	Toxicology Seminar	1	Course Director	26

Summary of Courses Taught at Texas A&M University (since 2015):

Fall 2015	VTPP 673	Metabolism-Dependent and – Independent Mechanisms of Toxicity	3	Course co-Director	7
Spring 2016	VIBS 689	Practice of Human Health Assessments of Chemicals	2	Course Director	9
Spring 2016	VIBS 670	Environmental Toxicology	3	Course Director	9
Fall 2016	VTPP 673	Metabolism-Dependent and – Independent Mechanisms of Toxicity	3	Course co-Director	15
Spring 2017	VIBS 689	Practice of Human Health Assessments of Chemicals	2	Course Director	10
Spring 2017	VIBS 670	Environmental Toxicology	3	Course Director	9
Fall 2017	VTPP 673	Metabolism-Dependent and – Independent Mechanisms of Toxicity	3	Course co-Director	11
Spring 2018	VIBS 645	Practice of Human Health Assessments of Chemicals	2	Course Director	8
Spring 2018	VIBS 670	Environmental Toxicology	3	Course Director	7
Fall 2018	VTPP 673	Metabolism-Dependent and – Independent Mechanisms of Toxicity	3	Course co-Director	11

Spring 2019	VIBS 645	Practice of Human Health Assessments of Chemicals	2	Course Director	11
Spring 2019	VIBS 670	Environmental Toxicology	3	Course Director	10

Advising:

Undergraduate:

Pamela Ross	2002-2005
Elin Glomnes (visiting student, Norway)	2004 (3-week research project)
Devin Pastoor	2007-2009
Travis Book	2009-2010
Bridget O'Brien	2010-2011
Emeraghi David	2011
Samantha Tulenko	2011
Kathryn Singsank	2011
Sangeeta Kumar	2012
Alexandra Hamilton	2013

Masters (M.S. or M.S.P.H.):

Eric Money (UNC ESE, M.S.) <i>An Analysis of Inter-Agency Perspectives on the Integration of Genomics Into Risk Assessment</i>	2002-2003 (committee member)
Lauren Fleishman (UNC ESE, M.S.) <i>Application of a Generalized State-Vector Model for Radiation-Induced Cellular Transformation to In Vitro Irradiation of Cells by Acute Doses of X-Rays</i>	2003-2004 (committee member)
Mahesh Shetty (UNC ESE, M.S.) <i>The Effect of Race on Determining the Treatment Response to Serotonergic Antidepressant Drugs in Intellectually Disabled Adults</i>	2003-2004 (committee member)
Aksay Raizada (UNC ESE, M.S.) <i>Laparoscopic Radiofrequency Ablation in Patients with Small Hepatocellular Carcinoma Awaiting Orthotopic Liver Transplantation</i>	2005 (committee member)
Amanda Burns (UNC ESE, M.S.P.H.) <i>Regulation of the Cholesterol-Biosynthesis Pathway Influences Effects of Peroxisome Proliferators in Mouse Liver</i>	2005-2007 (advisor)
Daniel Gatti (UNC ESE, M.S.) <i>Genome-level analysis of genetic regulation of liver gene expression networks</i>	2005-2007 (advisor)
Matthew Martin (UNC ESE, M.S.)	2006-2008 (academic advisor)

Classification of Chemicals Based on Structured Toxicity Information

- Patrick Craig (UNC ESE, M.S.P.H.) 2006-2008 (advisor)
Methyl-donor Enrichment Attenuates Alcohol-induced Liver Injury: Mechanisms of Protective Action
- Pamela Ross (UNC ESE, M.S.P.H.) 2006-2008 (advisor)
Time-course Comparison of Xenobiotic Activators of CAR and PPAR α in Mouse Liver
Awards:
- North Carolina Chapter of the Society of Toxicology 2008 Spring Meeting graduate student poster competition 3rd place award
- April Luke (UNC Toxicology, M.S.) 2007-2009 (committee member)
DNA Damage and Repair Responses to the Quinoid Metabolites of Naphthalene
- Amie Rodgers (UNC Toxicology, M.S.) 2007-2009 (advisor)
Modeling Adverse Liver Effects of Drugs using kNN QSAR method
- Ni Zhao (UNC ESE, M.S.) 2007-2009 (advisor)
Genetic regulation of sex-specific gene expression in mouse liver
- Eric Formeister (UNC ESE, M.S.P.H.) 2008-2010 (advisor)
Comparative analysis of promoter methylation and gene expression endpoints between tumorous and non-tumorous tissues from HCV-positive patients with hepatocellular carcinoma
- Shannon O'Shea (UNC ESE, M.S.P.H.) 2008-2010 (advisor)
In vitro screening for population variability in chemical toxicity
Awards:
- Travel award from the National Research Council to present posters on their work at the Symposium on Toxicity Pathway-Based Risk Assessment (2009)
 - North Carolina Chapter of the Society of Toxicology 2010 Spring Meeting graduate student poster competition 2nd place award
 - UNC ESE Environmental Sciences Achievement Award (2010)
- Daniel Rotroff (UNC ESE, M.S.) 2008-2010 (academic advisor)
Incorporating human dosimetry and exposure into the utilization of ToxCast in vitro screening data for chemical prioritization
- Stephanie Martinez (UNC ESE, M.S.P.H.) 2008-2010 (advisor)
Evaluation of an in vitro Toxicogenetic Model for Hepatotoxicity
Awards:
- Travel award from the National Research Council to present posters on their work at the Symposium on Toxicity Pathway-Based Risk Assessment (2009)
- Valerie Soldatow (UNC ESE, M.S.) 2009-2011 (advisor)
Evaluation of a Multi-well Perfused Bioreactor System for the Long-term Culture of Mouse Hepatocytes
- Travis Book (UNC ESE, M.S.P.H.) 2010-2012 (advisor)

Interstrain Differences in Transcription Factor Activity in Mouse Liver

Awards:

- University Research Day award for “Best Undergraduate Oral Presentation in Biological Sciences (2010)

Bridget O'Brien (UNC ESE, M.S.P.H.) 2011-2012 (advisor)
Interstrain Variability in Genotoxicity of 1,3-Butadiene May be a Result of Epigenetic and DNA Repair Mechanisms

Mary Kushman (UNC ESE, M.P.H.) 2012 (advisor)
A Systematic Approach for Identifying, Evaluating, and Presenting Mechanistic Evidence in Human health Risk Assessment

Jessica Wignall (UNC ESE, M.S.P.H.) 2011-2013 (advisor)

Awards:

- UNC Graduate School Masters Merit Scholarship (2011)
- Society of Toxicology Regulatory and Safety Evaluation Specialty Section student award (2012)
- North Carolina Chapter of the Society of Toxicology 2012 Spring Meeting graduate student poster competition 2nd place award
- North Carolina Chapter of the Society of Toxicology 2013 Spring Meeting graduate student poster competition 3rd place award

Standardized Benchmark Dose Calculation: Opportunities to Inform Science-Based Decisions in Human Health Assessments

Tetyana Kobetz (UNC ESE, M.S.P.H.) 2011-2013 (advisor)
Modeling Alcoholic Hepatitis in Mice: Modified Acute-on-Chronic Binge Ethanol Feeding and Alcohol Liquid Diet Models

Kenda Freeman (UNC ESE, M.P.H.) 2011-2013 (academic advisor)
Communicating Breast Cancer Awareness Information to African-American Women: Implications for Effective Communication by Health Professionals

Andy Shapiro (UNC ESE, M.S.P.H.) 2012-2014 (advisor)
HAWC (Health Assessment Workspace Collaborative): a modular web-based interface to facilitate development of human health assessments of chemicals

Awards:

- UNC Graduate School Masters Merit Scholarship (2012)
- Society of Toxicology Regulatory and Safety Evaluation Specialty Section student award (2013)
- OpenTox USA meeting best poster award (2013)

Grace Chappell (UNC ESE, M.S.P.H.) 2012-2014 (advisor)
Assessment of DNA copy number alterations in mouse and human hepatocellular carcinoma

Awards:

- North Carolina Chapter of the Society of Toxicology 2014 Spring Meeting graduate student poster competition 1st place award

- North Carolina Chapter of the Society of Toxicology 2014 Spring Meeting graduate student poster competition 3rd place award
- Leon Golberg travel award (2014)

Jimmy Phuong (UNC ESE, M.S.P.H.) 2012-2014 (academic advisor)
Structured Application of Biological Ontologies to Annotate High-Throughput Screening Assays and their Targets of Activity

Sean Watford (UNC ESE, M.S.P.H.) 2012-2014 (academic advisor)
Building Bridges Between Toxicity Testing in the 21st Century and Regulatory Decision-making Through Interactive Web Applications

Melinda Wilson (TAMU IFT, M.S.) 2014-2016 (advisor)
Data integration and visualization for transparent communication in read-across: a glycol ether case study

Awards:

- Concawe research studentship (2014-2015)

Oleksii Seniutkin, MD (TAMU IFT, M.S.) 2015-2017 (advisor)
Effects of Pirfenidone in a mouse liver fibrosis model

Awards:

- Texas A&M University Walter W. Lechner Estate Scholarship (2016)
- Texas A&M University 20th Annual Student Research Week: First Place Poster Award for Veterinary Medicine & Biomedical Sciences (2017)
- Texas A&M University 20th Annual Student Research Week: Sigma Xi Scientific Research Society Interdisciplinary Research Award (2017)

Kyle Ferguson (TAMU IFT, M.S.) 2016-2018 (committee member)
Characterization of complex substances used in biological profiling through determination of the free concentration within in vitro assays

Doctoral (Ph.D.):

Jiannan Song (UNC Nutrition) 2003-2005 (committee member)
PEMT Gene Polymorphism and Human Choline Requirement

Danitsja van Leeuwen (UNC visiting, U. Maast.) 2004 (3-month research project)
Toxicogenomic Investigation of DNA Damage Responses in Cultured Cell Models

Christine Powell (UNC Toxicology) 2003-2006 (advisor)
Improving Linkage of Hepatic Toxicity and Pathology Endpoints with Toxicogenomics

Courtney Woods (UNC ESE) 2003-2006 (advisor)
Role of Nuclear Receptor –Dependent and –Independent Pathways in the Effects of Peroxisome Proliferators

Awards:

- NIH Ruth L. Kirchstein National Research Service Award (2004-2007)
- NIEHS Toxicogenomics Research Consortium Best Poster Award (2004)

- Minority Trainee Research Forum (MTRF) Travel Award (2004)
- NSF-Sponsored Alliances for Graduate Education and the Professoriate (AGEP) Fellowship (2003)

Thomas Long (UNC ESE) 2006-2007 (committee member)
Mammalian and Bacterial Toxicity of Nanoparticles Used in Hazardous Waste Treatment and Environmental Remediation

Myung Hee Lee (UNC Statist. & Oper. Res.) 2004-2007 (committee member)
Continuum Direction Vectors in High Dimensional Low Sample Size Data

Jonathan Sobus (UNC ESE) 2005-2008 (committee member)
Assessing Polycyclic Aromatic Hydrocarbon Exposure Surrogates

Alison Harrill (UNC Toxicology) 2004-2008 (advisor)
Toxicogenetic analysis of factors associated with sensitivity to acetaminophen-induced liver injury using a Mouse Model of the Human Population

Awards:

- U.S. Environmental Protection Agency “Science to Achieve Results (STAR)” pre-doctoral fellowship
- UNC Curriculum in Toxicology Annual Retreat 1st place poster competition merit award (2008)
- Leon Golberg travel award (2008)
- North Carolina Chapter of the Society of Toxicology 2008 Spring Meeting graduate student poster competition 1st place award

Rebecca Clewell (UNC ESE) 2006-2009 (committee member)
Mode of Action Studies with Phthalate Acid Monoesters: Pharmacokinetic and Pharmacodynamic Factors Affecting Steroidogenesis

Jason Winnike (UNC Biomedical Engineering) 2008-2010 (committee member)
Metabolomics of Human Biofluids and Cultured Hepatocytes

Daniel Gatti (UNC ESE) 2007-2010 (advisor)
Genome-wide Analysis of Transcriptional Regulation in the Murine Liver

Awards:

- UNC ESE Environmental Sciences Achievement Award (2007)
- UNC ESE Interdisciplinary Research Fellowship (2007)
- U.S. Environmental Protection Agency “Science to Achieve Results (STAR)” pre-doctoral fellowship
- UNC Lineberger Comprehensive Cancer Center’s Graduate Fellow Award (2010)

Andrey Shabalin (UNC Statist. and Oper. Res.) 2008-2010 (committee member)
Detection of Low Rank Signals in Noise and Fast Correlation Mining with Applications to Large Biological Data

Kristy Kutanzi (Univ. of Lethbridge, AB) 2010 (external reviewer/examiner)
The Role of Epigenetics in the Rat Mammary Gland

Matthew Martin (UNC ESE) 2009-2011 (academic advisor)

Using high-throughput screening for predictive modeling of reproductive toxicity

- Anne Hakenewerth (UNC Epidemiology) 2010-2011 (committee member)
Joint effects of alcohol consumption and polymorphisms in alcohol and oxidative stress metabolism genes on risk and survival from head and neck cancer
- Liyang Zhang (UNC Med. Chem. & Nat. Prod.) 2009-2012 (committee member)
Development and Application of Cheminformatics Approaches to Facilitate Drug Discovery and Environmental Toxicity Assessment
- Erick Lock (UNC Statist. and Oper. Res.) 2010-2012 (committee member)
Vertical Integration of Multiple High-Dimensional Datasets
- Daniel Rotroff (UNC ESE) 2010-2013 (academic advisor)
Endocrine Disrupting Potential of Environmental Chemicals Characterized by High-Throughput Screening
- Raju Prasad (UNC ESE) 2011-2013 (committee member)
Effect of the Nano-Bio Interface on the Genotoxicity of Titanium Dioxide Nanoparticles and Associated Cellular Responses
- Yen Low (UNC ESE) 2009-2013 (co-advisor)
Toxicity Prediction Using Multi-disciplinary Data Integration and Novel Computational Approaches
- Hong Sik Yoo (UNC ESE) 2009-2014 (advisor)
Effects of Inter-Strain Differences in the Metabolism of Trichloroethylene on Liver and Kidney Toxicity
Awards:
- Astra-Zeneca Merit Student fellowship award (2011-2014)
 - Society of Toxicology Student Travel Award (2012)
- Nour Abdo (UNC ESE) 2010-2014 (advisor)
The 1000 Genomes Toxicity Screening Project: Utilizing the Power of Human Genome Variation for Population-scale In Vitro Testing
Awards:
- North Carolina Chapter of the Society of Toxicology 2012 Spring Meeting graduate student poster competition 2nd place award
 - North Carolina Chapter of the Society of Toxicology 2013 Spring Meeting graduate student poster competition 1st place award
 - 2013 Gillings Poster Award (UNC School of Public Health)
 - 2013 Koch Travel Award (UNC School of Public Health)
- Grace Silva (UNC Bioinf. & Comp. Biology) 2011-2015 (committee member)
Comprehensive Characterization of DNA Copy Number Alterations in Mouse and Human Breast Tumors
- Andrew Fant (UNC Med. Chem. & Nat. Prod.) 2011-2015 (committee member)
The Effect of data Curation on the Accuracy of Quantitative Structure-Activity Relationship Models

Grace Chappell (UNC ESE) 2014-2015 (advisor)
Alterations to the Epigenome Represent Critical Mechanisms of Chemically-Induced Carcinogenesis

Awards:

- Leon Golberg travel award, UNC Chapel Hill Curriculum in Toxicology (2015)
- Lone Star SOT Regional Chapter, Fall Meeting graduate student poster competition 2nd place award (2015)
- miRNA Biomarkers for Toxicology CCT Meeting travel award (2016)
- Society of Toxicology Student Travel Award (2016)
- Society of Toxicology Carcinogenesis Specialty Section Graduate Student Award (2016)
- Best Poster Prize, Epigenetics and Environmental Origins of cancer Meeting, Lyon, France (2016)

Abhishek Venkatratnam (UNC ESE) 2013-2018 (advisor)
Population-level variability in trichloroethylene toxicokinetics and toxicodynamics

- Leon Golberg travel award, UNC Chapel Hill Curriculum in Toxicology (2016)
- SOT Risk Assessment Specialty Section Perry J. Gehring Best Graduate Student Abstract Award (2017)
- Society of Toxicology Student Travel Award (2018)
- SOT Molecular and Systems Biology Specialty Section (MSBSS) Graduate Student Research Award (2018)
- SOT Association of Scientists of Indian Origin (ASIO) Graduate Student Best Abstract award (2018)
- *Toxicological Sciences* Paper of the Year Award, Venkatratnam et al. *Toxicol Sci* 158:48-62, 2017 (2019)

Yu-Syuan Luo (TAMU IFT) 2015-2018 (advisor)
Inter-individual variability in metabolism and toxicity of trichloroethylene and tetrachloroethylene

Awards:

- Texas A&M University Walter W. Lechner Estate Scholarship (2015)
- Lone Star SOT Regional Chapter, 2nd Best Student Poster Award (2016)
- SOT Graduate Student Travel Support Award (2017)
- SOT Ronald G. Thurman Student Travel Award (2017)
- Lone Star SOT Regional Chapter, 2nd place Platform Presentation Award (2017)
- SOT Regulatory and Safety Evaluation Specialty Section (RSESS) Graduate Student Excellence Award (2018)
- SOT American Association of Chinese in Toxicology Special Interest Group and Charles River Best Abstract Award – 2nd prize (2018)
- Texas A&M College of Veterinary Medicine and Biomedical Sciences High Impact Achievement Award (2018)
- Texas A&M College of Veterinary Medicine and Biomedical Sciences George T. Edds Award (2018)

Lauren Lewis (TAMU IFT) since 2016 (advisor)

- Texas A&M University Interdisciplinary Faculty of Toxicology annual meeting Best Student Poster Travel Award (2016)

- Texas A&M University College of Veterinary Medicine Advanced Developmental Training Award (2017)
- Colgate-Palmolive/SOT Award for Student Research Training in Alternative Methods (2018)
- SOT Women in Toxicology Special Interest Group Student representative (2018)
- Texas A&M University College of Veterinary Medicine Graduate Student Association Travel Award (2018)
- International Mammalian Genome Society Student Travel Award (2018)
- SOT 58th Annual Meeting Graduate Student Travel Award (2019)
- SOT-Syngenta Fellowship Award in Human Health Applications of New Technologies (2019)
- SOT Supplemental Training for Education Program (STEP) Award (2019)
- SOT Celebrating Women in Toxicology Graduate Student Award (2019)
- SOT Drug Discovery Toxicology (DDT) Specialty Section Best Poster Presentation Award, 2nd place (2019)
- Texas A&M University College of Veterinary Medicine Graduate Student and Postdoc Research Symposium, Graduate Student Platform Presentation Award, 2nd Place (2019)
- Texas A&M University College of Veterinary Medicine Graduate Student and Postdoc Research Symposium, High Impact Achievement Award – Small External Research Grant (2019)

Sarah Schneider (TAMU BIMS) 2016-2019 (committee member)

Julia Popp (TAMU BIMS) since 2016 (committee member)

Sarah Burnett (TAMU IFT) since 2016 (advisor)

- Texas A&M University Interdisciplinary Faculty of Toxicology Annual Meeting Best Student Poster Presentation (2018)
- Texas A&M University College of Veterinary Medicine Graduate Student Association Travel Award (2019)
- Texas A&M University College of Veterinary Medicine Graduate Student and Postdoc Research Symposium, 2nd Place Graduate Student Poster Presentation (2019)
- SOT Regulatory and Safety Evaluation Specialty Section (RSESS) Graduate Student Excellence Award (2019)
- American Society for Cellular and Computational Toxicology (ASCCT) Poster Award (2019)

Zunwei Chen (TAMU IFT) since 2017 (advisor)

- SOT Stem Cells Specialty Section Excellence in Research Award, 1st place (2019)
- SOT Mixtures Specialty Section, Top 5 Best Abstracts (2019)

Noor Aly (TAMU IFT) since 2018 (advisor)

Alina Roman-Hubers (TAMU IFT, M.S.) since 2018 (advisor)

Post Doctoral:

Won Young Tak, M.D.	2003-2004
Akira Maki, M.D., Ph.D.	2004-2006
Jun Han, Ph.D.	2006-2007
Sungkyoon Kim, Ph.D.	2007-2008
Kenichi Ishii, M.D., Ph.D.	2009
Masato Tsuchiya, M.D., Ph.D.	2006-2009
Emmanuelle Jeannot, Ph.D.	2007-2010
Takeki Uehara, Ph.D., D.V.M.	2009-2010
Yasuhiro Iwata, D.V.M.	2014-2016
Shinji Furuya, M.D., Ph.D.	2013-2017
Joseph Cichocki, Ph.D.	2014-2017

Awards:

- NIEHS F32 Individual Postdoctoral Fellowship (2015-2018)
- Lone Star SOT Regional Chapter, Fall Meeting overall best trainee presentation award (2015)
- Texas A&M CVM Postdoc High Impact Achievement Award (2016)
- Texas A&M Honors Convocation for distinguished academic achievement (2016)
- Lone Star SOT Regional Chapter, Fall Meeting best postdoctoral trainee presentation award (2016)
- Texas A&M Division of Research Postdoctoral Scholar Travel Award (2016)
- SOT Regulatory and Safety Evaluation Specialty Section travel award (2017)
- SOT Gabriel L. Plaa Education Award, 3rd place (2017)
- SOT Risk Assessment Specialty Section Trainee Award (2017)

Fabian Grimm, Ph.D.	2014-2017
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Awards:

- Colgate-Palmolive/SOT Postdoctoral Fellowship in *In Vitro* Toxicology (2015)
- Texas A&M CVM Postdoc High Impact Achievement Award (2016)
- Syngenta Fellowship Award in Human Health Applications of New Technologies (2017)
- Best Postdoctoral Publication Award from Society of Toxicology for publication “A chemical–biological similarity-based grouping of complex substances as a prototype approach for evaluating chemical alternatives” (2017)
- SOT In Vitro and Alternative Methods Specialty Section (IVAM) Postdoctoral Travel Award (2017)
- SOT Risk Assessment Specialty Section Perry J. Gehring Best Postdoctoral Fellow Abstract Award (2017)
- Texas A&M College of Veterinary Medicine and Biomedical Sciences Honors Convocation Outstanding Postdoctoral Research Associate Award (2017)

William Klaren, Ph.D.	2016-2017
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Awards:

- NIEHS T32 Postdoctoral Fellowship (2016-2017)

Courtney Sakolish, Ph.D. 2016-2018

- NIEHS T32 Postdoctoral Fellowship (2016-2017)
- Texas A&M University Interdisciplinary Faculty of Toxicology annual meeting: Best Postdoctoral Platform Presentation (2018)
- Lone Star Society of Toxicology Regional Chapter annual meeting: 2nd place platform presentation (2018)

Hisataka Fukushima, M.D., Ph.D. 2017-2019

Yizhong Liu, Ph.D. since 2018

- AACT and InnoStar Best SOT Abstract Award by American Association of Chinese in Toxicology (2019)

Yu-Syung Luo, Ph.D. since 2018

- SOT Mechanisms Specialty Section Renal Toxicology Award, 1st Place (2019)

Research Grants

Active:

P42 ES027704 (Rusyn) 04/01/17-03/31/22 1.8 calendar months
NIH

Comprehensive tools and models for addressing exposure to mixtures during environmental emergency-related contamination events

Role: PI

Total Award Amount: \$9,747,566

This Center brings together a team of scientists from biomedical, geosciences, data science and engineering disciplines to design comprehensive solutions for complex exposure- and hazard-related challenges. Our overall theme is to characterize and manage both existing and environmental emergency-created hazardous waste sites through the development of the tools that can be used by first responders, the impacted communities, and the government bodies involved in site management and cleanup.

T32 ES026568 (Rusyn) 04/01/16-03/31/21 2.4 cal. months (cost share)
NIH

Regulatory Science in Environmental Health and Toxicology

Role: PI

Total Award Amount: \$1,301,445

This training program aims to strengthen training and research base at Texas A&M Interdisciplinary Faculty of Toxicology program and also to provide unique focus on regulatory science, a scientific discipline consisting of the development and application of scientific methods, tools, and approaches that are used to support regulatory and other policy objectives.

RD83580201 (Rusyn) 06/01/15-05/31/19 2.4 calendar months
US EPA

Cardiotoxicity Adverse Outcome Pathway: organotypic culture model and in vitro-to-in vivo extrapolation for high-throughput hazard, dose-response and variability assessments

Role: PI (overall and Project 1)

Total Award Amount: \$6,000,000

The long-term objective of the Center is to advance the regulatory decision making by establishing and validating effective, accurate and fiscally responsible means for identifying/characterizing cardiac chemical hazards.

U24 TR001950 (Rusyn) 09/23/16-08/31/19 (NCE) 1.8 calendar months

NIH

TEX-VAL: Texas A&M Tissue Chip Validation Center

Role: PI

Total Award Amount: \$4,224,733

This award supports a Tissue Chip Validation Center at Texas A&M University (TEX-VAL) which conducts testing of the microphysiological systems developed by NIH grantees. It supports the resources, personnel and infrastructure for establishing functionality, reproducibility, robustness and reliability of tissue chip models that represent a wide array of human organs.

U24 TR002633 (Rusyn) 09/19/18-07/30/20 2.4 calendar months

NIH/NCATS

TEX-VAL: Texas A&M Tissue Chip Validation Consortium

Role: PI

Total Award Amount: \$1,480,311

This award supports the transition of a Tissue Chip Validation Center at Texas A&M University (TEX-VAL) which conducts testing of the microphysiological systems developed by NIH grantees to the Consortium.

M1603310 (Rusyn) 08/01/16-06/30/19 1.2 calendar months

European Petroleum Refiners Association

New Technologies to Underpin Category Approaches and Read-across in Regulatory Programmes (CAT-APP)

Role: PI

Total Award Amount: \$985,045

The overall objective of this project is to develop a workflow for category read-across for substances characterized as UVCB (Unknown or Variable composition, Complex reaction products and Biological materials). We use petroleum substances as a case study and develop an integrated testing strategy using experimental and computational analyses to demonstrate how UVCB testing can meet the regulatory information requirements in the EU.

R01 ES029911 (Rusyn) 11/01/18-10/31/23 1.2 calendar months

NIH

Chromatin regions, genes and pathways that confer susceptibility to chemical-induced DNA damage

Role: PI

Total Award Amount: \$3,315,339

This study will use an example of butadiene, a toxic chemical that is present in cigarette smoke and to which people can also be exposed at work if they work with rubber, to study how our DNA sequence may determine who may be more susceptible to butadiene-induced damage to cells.

M1702165 (Chiu) 06/27/17-06/30/19 0.48 academic months

California EPA

Risk assessment support and training to the Office of Environmental Health Hazard Assessment (OEHHA)

Role: Co-I

Total Award Amount: \$145,000

This support contract aims to advance OEHHA risk assessment methods and applications through technical advice and training from Texas A&M University faculty.

P30 ES029067 (Threadgill) 04/01/19-03/31/24 0.4 calendar months

NIH/NIEHS

Texas A&M Center for Environmental Health Research – Integrated Health Sciences Facility Core (IHSFC)

Pole: PI of IHSFC

Total Award Amount (IHSFC only): \$1,082,905

The Integrated Health Sciences Facility Core will support bidirectional translation with a human translational studies component, a mouse translational studies component, and an *in vitro* translational studies component.

Pending:

T32 GM 135748 (Butler-Purry)

IMSD at Texas A&M University: Initiative for Maximizing Student Diversity in Biomedical Sciences

Pole: co-PI (MPI)

Total Requested Amount: \$1,330,881

This proposal is to establish a new T32 program at Texas A&M University and to maximize student diversity in biomedical sciences at Texas A&M by focusing on recruitment and retention of underrepresented minority populations of trainees seeking a PhD degree who have the skills to successfully transition into careers in the biomedical research workforce.

Completed:

M1603182 Rusyn (PI) 2016-2018

Foundation for Chemistry Research and Initiatives

Olefins Streams Biological Read-Across

Role: PI

Total Award Amount: \$288,894

This project applies a “biological read-across” principle to grouping complex substances for read across by using a case study of the low benzene naphthas and resin oils and cyclodiene dimer concentrates categories. We test the hypothesis that high-content screening and high-throughput genomic analysis using a panel of human iPSC-derived organotypic cultures (hepatocytes, cardiomyocytes, endothelial cells, macrophages, neurons, etc.) can effectively group substances in these categories for read-across.

U01 AA021908 Bataller (PI) 2013-2018

NIH/NIAAA

Molecular Subtypes for Targeted Therapies in Alcoholic Hepatitis: Mouse Models Core

Role: PI

Total Award Amount (Mouse Models Core): \$506,296

The proposed initiative "Integrated Approaches for Identifying Molecular Targets in Alcoholic Hepatitis" (InTeam) will coordinate a multidisciplinary group composed of clinicians, physician-scientists, basic scientists and bioinformatics experts. Because mouse models for alcoholic hepatitis are lacking making it impossible to evaluate promising targets in preclinical mouse studies in a meaningful manner. For this purpose, we will integrate data obtained from molecular pathology studies in humans by using animal models.

R01 ES023195 Rusyn (PI) 2013-2018
NIH/NIEHS

Genes, genomes, and genotoxicity: in vivo epigenetic toxicology of 1,3-butadiene

Role: PI (multiple PIs)

Total Award Amount: \$2,203,058

This project's overall objective is to uncover the mechanistic linkages between the genome (e.g., DNA sequence variants), epigenome (e.g., chromatin status), and molecular initiating events (e.g., DNA damage) elicited by a genotoxic carcinogen butadiene in an *in vivo* mouse model. Two Specific Aims will test the hypothesis that genetic variability-associated chromatin remodeling events affect the genotoxic potential of butadiene.

RD83516602 Rusyn (PI) 2012-2017
EPA STAR

Carolina Center for Computational Toxicology: Experimental and computational tools for NexGen safety assessments

Role: PI

Total Award Amount: \$1,200,000

This research supports Tox21 and NexGen by focusing on the following Objectives: (1) Develop a quantitative high-throughput screening (qHTS) approach to probe differential chemical effects in a population-based *in vitro* system; (2) Provide the computational toxicology solutions for risk characterization in NexGen assessments with a focus on point-of-departure and population variability; and (3) Develop cheminformatics-based, as well as enhanced chemical-biological, models of *in vivo* reproductive and developmental toxicity that rely on concomitant exploration of chemical descriptors and population-based screening data.

RD83561202 Rusyn (PI) 2014-2017
EPA STAR

Toxicogenetics of tetrachloroethylene metabolism and toxicity: Using Collaborative Cross mouse population approach to address remaining gaps in human health assessments

Role: PI

Total Award Amount: \$800,000

This project will pursue the following objectives: (1) to characterize variability in toxicokinetics of PERC by using the Collaborative Cross mouse model of the human population; (2) to characterize variability in toxicodynamics of PERC by evaluating inter-strain differences in dose-dependent effects on the liver and kidney in a sub-acute study; (3) to evaluate the effects of inter-strain variability in PERC metabolism on liver and kidney effects in a sub-chronic study.

P42 ES005948 Swenberg (PI) 2011-2017
NIH/NIEHS

Elucidating Risks: From Exposure and Mechanism to Outcome – Project 2

Role: PI Project 2

Project 2 investigates the role of inter-individual genetic variability in the toxicity of chlorinated solvents. We use an innovative mouse population resource, the Collaborative Cross, and sensitive analytical techniques to understand the role of genetic variability in metabolism of

trichloroethylene and Perchloroethylene, as well as the relationship between formation of certain metabolites and organ-specific toxic effects.

RD-83499901 Tropsha (PI) 2011–2014
EPA STAR

Development, Validation, and Delivery of Externally Predictive QSAR Models of Hepatotoxicity

Role: Investigator

The goal of the project was to develop and deliver novel and robust computational predictors of chemical hepatotoxicity in animals. Models resulting from this project enabled prioritization of chemicals for *in vivo* studies and support regulatory risk assessment decisions.

R01 ES15241 Rusyn (PI) 2007–2013

Bioengineering partnership to improve chemical hazard testing paradigms

Role: PI

This proposal applied an integrative systems approach to: (1) Develop a 3D microscale mouse liver tissue bioreactor that can be applied to high-throughput screening of chemicals; (2) Build, test and validate a quantitative structure-toxicity relationship model that takes into account genetic diversity among individuals; and (3) Validate a fiscally sensible *in vivo* and *in vitro* toxicity screening paradigm for a class of allylbenzene derivatives by producing knowledge anchored on the genetic variability present within the population.

R01 ES015241 Rusyn (PI) 2010-2013

Bioengineering partnership to improve chemical hazard testing paradigms

(Competitive supplement)

Role: PI

The supplement was designed to extend the Bioengineering research to inhalation exposure studies. Specifically, we took advantage of the innovative exposure systems for bronchial epithelial cells to modelled but real atmospheres. Human and mouse cells, as well as mice from different strains were exposed to fresh and aged diesel exhaust and atmospheric mixtures modeling urban exposures.

R01 MH090936 Rusyn (multiple PIs) 2010-2013

Facilitating GTE_x, Disease, and GxE Analyses via fast expression (e)QTL mapping

Role: PI

We tested the hypothesis that expression quantitative trait locus (eQTL) analysis is an effective and mechanistically-relevant approach to the discovery and validation of candidate genomic loci/genes that control biological pathways that may be responsible for environment-related human disease. In this project we developed new statistical tools and graphical user interface-enabled software to facilitate the analysis of data from studies in which high-content measurements are obtained on a common set of genetically-diverse individuals exposed to environmental agents. The primary goal of the analysis was to identify the interactions between genes, polymorphisms and phenotypes that may influence susceptibility to disease, but which would not be found using traditional GWAS.

R01 MH090936 Rusyn (multiple PIs) 2010-2013

Facilitating GTE_x, Disease, and GxE Analyses via fast expression (e)QTL mapping

(Administrative supplement)

Role: PI

STAR RD 83382501 Rusyn (PI) 2008-2013

Carolina Center for Computational Toxicology

Role: PI

The Center developed complex predictive modeling solutions that span from mechanistic- to discovery-based efforts.

R01 AA016258

Rusyn (PI)

2005–2010

Metabolomic and toxicogenetic study of ethanol toxicity

Role: PI

The aim of this proposal was to define a “liver toxicity susceptibility state” in mouse liver in response to ethanol by combining knowledge of toxicology, metabolomics, gene expression profiling and mouse genetics.

STAR RD 83272001

Wright (PI)

2005–2010

***Carolina Environmental Bioinformatics Research Center
Project 3: Computational Infrastructure for Systems Toxicology***

Role: PI and Center Scientific co-Director

The objective of this EPA-funded proposal was to develop novel analytic and computational methods, create user-friendly tools to disseminate the methods to the wide toxicology community, and enhance and advance the field of Computational Toxicology.

NIEHS (R01 ES12686)

Rusyn (PI)

2004–2009

Molecular Mechanisms of Phthalate-Induced Carcinogenesis

The long term goal of this project was to evaluate the peroxisome proliferator-induced molecular pathways that lead to production of oxidants, activation of Kupffer cells, and increased proliferation of rodent liver parenchymal cells.

NIGMS (R21 GM076059)

Tropsha (PI)

2006–2009

Robust Computational Framework for Predictive ADME-Tox Modeling

This proposal sought to establish a universally applicable and robust predictive ADME-Tox modeling framework based on rigorous Quantitative Structure Activity/Property Relationships.

Role: Co-I.

NIEHS (R01 ES012689)

Swenberg (PI)

2005–2010

Adducts as Quantitative Markers of Butadiene Mutagenesis

The aim of this project was to study mutagenesis of butadiene and its metabolites in rodents and humans. New biomarkers of butadiene exposure will be developed, and applied for research on the mechanisms of action.

Role: Co-I.

NIEHS (U19 ES11391)

Kaufmann (PI)

2001–2008

Profiles of Susceptibility to Toxicant Stress

Project 4: Genomic Profiling in Nuclear Receptor-Mediated Toxicity Rusyn (PI)

The major goal of the research project #4 of UNC-CH Toxicogenomics Research Consortium grant was to determine the profiles of altered gene expression *in vivo* in mouse livers and *in vitro* in mouse and human parenchymal cells following treatments with non-genotoxic carcinogens that act via activation of nuclear receptors PPAR α , CAR and AhR.

NIAAA (HHSN281200410004C)

Higgins (PI)

2004–2007

Metabolomics: Alcohol Induced Toxicity

In collaboration with UNC's Bowles Center for Alcohol Studies, the goal of this SBIR grant was to develop and employ metabolomic and computational methods to study mechanisms of alcohol-induced liver and brain injury in three rodent models. Role: Co-I.

NIEHS (K22 ES11660) Rusyn (PI) 2002–2006

DNA Repair and Susceptibility to Environmental Agents

This project was set to test a hypothesis that the extent of induction of DNA repair in response to oxidative and alkylation damage varies in different species and tissues, and that such variation contributes to species- and site-specific mutagenic and cytotoxic effects of environmental chemicals. The ultimate goal is to understand the cellular and molecular changes induced by xenobiotics that will provide a strong scientific basis for or against the extrapolation of animal findings to humans in risk assessment.

NIAAA (P60 AA11605) Crews (PI) 2004–2006

Genomic and Genetic Analysis of Liver Effects of Alcohol

This Pilot Project from Bowles Center for Alcohol Studies tested the hypothesis that genetic predisposition to liver damage due to alcohol can be predicted by a specific gene expression profile in normal liver. Six mouse inbred lines with varying degree of sensitivity to alcohol-induced liver injury will be compared (naïve, single bolus dose, sub-chronic intragastric administration of ethanol). Gene expression will be correlated with phenotypic signs of injury, haplotype differences, and or knowledge of the mechanisms of liver damage by ethanol.

Role: P.I.

NCI (1435-04-04-CT73980) Earp (PI) 2004 – 2006

Cancer Biomedical Informatics Grid (caBIG)

This NCI initiative funded support for working groups to participate in the data sharing and intellectual capital (DSIC) component of the Cancer Biomedical Informatics Grid know as caBIG. This funding allows for attendance at meetings, intellectual sharing through participation in conference calls and other methods of communication exchange.

Role: Working Group member

NIEHS (P30 ES10126) Swenberg (PI) 2004-2005

Genetic Analysis of Transcriptional Regulation in Liver

This pilot project from the UNC Center for Environmental Health and Susceptibility aimed to combine microarray-based assays of mRNA level with gene mapping methods to detect polymorphic loci that co-regulate extensive molecular networks in mouse liver. Our specific experimental approach was to analyze the variation in basal gene expression among genetically controlled mice by using a panel of BXD recombinant inbred (RI) strains derived from C57BL/6J and DBA/2J.

Role: P.I.

NIDDK (P30 DK56350) Zeisel (PI) 2002-2004

Molecular Mechanisms of Mitogen Production by Dietary Fat

This UNC Clinical Nutrition Research Center pilot project is to determine the role of Kupffer cells, the resident hepatic macrophages, in increased cell proliferation induced by polyunsaturated fat in rodent liver.

Role: P.I.

NIEHS (F32 ES 05920) Rusyn (PI) 2000-2002

Peroxisome Proliferator-Induced DNA Damage and Repair

The major goal of this Individual Postdoctoral National Research Service Award project was to delineate the mechanisms of DNA damage and repair following exposure to peroxisome proliferators, a class of non-genotoxic rodent liver carcinogens. In addition, this program was designed to broaden training in toxicology and provide specific research experience in the area of DNA damage and repair.

Professional Service

Texas A&M University:

2018-	College of Veterinary Medicine Research Advisory Council
2016-	Graduate Operations Committee
2016-	Chair, Interdisciplinary Faculty of Toxicology
2017	Search Committee for the director of Texas A&M Inst. for Data Science
2017	Search Committee for the Vice President for Research
2016	“Big Data” Task Force
2015-2016	“Democracy on Edge” Initiative Leadership Council

UNC Department of Environmental Sciences and Engineering:

2009-2012	Admissions Committee (Chair 2011-2012)
2010	1-Yr Master’s Degree Program Planning Committee
2009	Council for Education in Public Health Site Visit, ESE representative
2006-2009	Strategic Planning Committee
2007-2009	Academic Programs Committee
2006-2007	Faculty Search Committee
2004-2006	<i>Ad Hoc</i> Committee on the "Vision for the role of focus areas in ESE"

University of North Carolina at Chapel Hill:

2011-2012	Faculty Council
2011	SPH2020 Initiative of the UNC Gillings School of Global Public Health, taskforce on “Revenue generation for key priorities across the School”
2004-2011	Executive Committee, Curriculum in Toxicology School of Medicine, UNC-Chapel Hill
2005-2007	Admissions Committee, Curriculum in Toxicology School of Medicine, UNC-Chapel Hill
2004-2005	Steering Committee on Metabolomics
2004	Organizing Committee, <i>NC Metabolomics Initiative Symposium</i>

Within the Profession:

2018-present	Chair, Workshop Committee to Support Development of EPA’s IRIS Toxicological Reviews, Board on Environmental Studies & Toxicology, National Academies of Sciences, Engineering & Medicine, Washington, DC
2018-present	External Advisory Board, Southwest Environmental Health Sciences Center, University of Arizona, Tucson, AZ

2016-present	Chair, Scientific Program Committee, The International Congress on Toxicology, Honolulu, HI. July 2019.
2016-present	Health Assessment Comparison (HAC) Value Review Workgroup, Texas Department of State Health Services
2016-present	Associate Editor, <i>Environmental Health Perspectives</i>
2015-present	Board of Scientific Councilors, National Institute of Environmental Health Sciences, Research Triangle Park, NC
2015-present	Health Effects Institute, Research Committee, Boston, MA
2014-present	Editorial Board, <i>Environment International</i>
2008-present	Editorial Board, <i>Toxicological Sciences</i>
2008-present	Editorial Board, <i>Toxicology and Applied Pharmacology</i>
2017-2018	Chair, Committee to Review Report on Long-Term Health Effects on Army Test Subjects, Board on Environmental Studies & Toxicology, The National Academies, Washington, DC
2013-2017	Environmental Health Sciences Review Committee, NIEHS, RTP, NC
2015-2017	Chair, FDA-SOT Colloquia on Emerging Toxicological Science Challenges
2009-2017	Science Advisory Board, North Carolina Department of Environmental Quality
2012-2017	Committee on Toxicology, Board on Environmental Studies & Toxicology, National Research Council of the National Academies, Washington, DC
2019	NIH Scientific Review Group ZAI1 JTS-I (M1)1
2017	NIH Scientific Review Group ZES1 LAT-S (T1)1
2017	Chair, NIH Scientific Review Group ZES1 RAM-D (NT)1
2016	Chair, " <i>Mechanistic and other relevant data</i> " subgroup. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans. Volume 116: <i>Carcinogenicity of drinking coffee, mate, and very hot beverages</i> . International Agency for Research on Cancer (IARC), Lyon, France
2014-2016	Committee on Incorporating 21st Century Science in Risk-Based Evaluations, Board on Environmental Studies & Toxicology, National Research Council of the National Academies, Washington, DC
2009-2016	Committee on Use of Emerging Science for Environmental Health Decisions, Board on Life Sciences, Board on Environmental Studies & Toxicology, National Research Council of the National Academies, Washington, DC

2016	Global Health Engagement Research Program Proposal Review Panel, Defense Health Agency, Uniformed Services University of the Health Sciences, Bethesda, MD
2016	NIH Scientific Review Group ZES1 JAB-D (R1)
2016	NIH Scientific Review Group ZES1 LWJ-D (U01)
2015	Chair, " <i>Mechanistic and other relevant data</i> " subgroup. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans. Volume 112: <i>Some organophosphate insecticides and herbicides: Diazinon, Glyphosate, Malathion, Parathion, and Tetrachlorvinphos</i> . International Agency for Research on Cancer (IARC), Lyon, France
2015	Expert Taskforce on Diazinon, Glyphosate and Malathion. Joint FAO/WHO Meeting on Pesticide Residues (JMPR), Geneva, Switzerland
2015	NIH Scientific Review Group ZES1 RAM-J
2015	NIH Scientific Review Group ZES1 LWJ-J (SF)
2012-2015	Councilor, Society of Toxicology, Reston, VA
2014	Chair, IARC Monographs on the Evaluation of Carcinogenic Risks to Humans. Volume 110: <i>Perfluoro-octanoic acid, Tetrafluoroethylene, Dichloromethane, 1,2-Dichloropropane, and 1,3-Propane sultone</i> . International Agency for Research on Cancer (IARC), Lyon, France
2013-2014	Committee on Design and Evaluation of Safer Chemical Substitutions – A Framework to Inform Government and Industry Decisions, Board on Chemical Sciences and Technology, National Research Council of the National Academies, Washington, DC
2013-2014	Committee on Review of the Styrene Assessment in the National Toxicology Program 12 th Report on Carcinogens, Board on Environmental Studies & Toxicology, National Research Council of the National Academies, Washington, DC
2013-2014	Committee on Review of the Formaldehyde Assessment in the National Toxicology Program 12 th Report on Carcinogens, Board on Environmental Studies & Toxicology, National Research Council of the National Academies, Washington, DC
2014	Chair, NIH Scientific Review Group ZES1 RAM-J NM
2014	NIH Scientific Review Group ZRG1 HDM R50
2010-2014	NIH Xenobiotic and Nutrient Disposition and Action (XNDA) study section
2014	NIEHS Board of Scientific Counselors, <i>ad hoc</i> reviewer, RTP, NC
2014	NIH Scientific Review Group ZES1-JAB-J (AU)
2013	EPA STAR Grant Peer Review Meeting (G2013 K1)
2013	EPA STAR Grant Peer Review Meeting (G2012 F1)

2013	NIH Scientific Review Group ZES1 JAB-D (VT)
2012	Chair, " <i>Mechanistic and other relevant data</i> " subgroup. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans. Volume 106: <i>Trichloroethylene and other chlorinated agents</i> . International Agency for Research on Cancer (IARC), Lyon, France
2012	IARC Monographs on the Evaluation of Carcinogenic Risks to Humans "Tumour concordance and mechanisms of carcinogenesis: Lessons learned from Volume 100 of the IARC Monographs" International Agency for Research on Cancer (IARC), Lyon, France
2008-2012	Chair (2011-2012) and member, Board of Publications, Society of Toxicology, Reston, VA
2010-2012	Secretary/Treasurer, Carcinogenesis Specialty Section, Society of Toxicology, Reston, VA
2011	Chair, " <i>Mechanistic and other relevant data</i> " subgroup. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans. Volume 101: <i>Some Chemicals in Industrial and Consumer Products, Food Contaminants, and Water Chlorination By-Products</i> . International Agency for Research on Cancer (IARC), Lyon, France
2011	ILSI/EPA/NIEHS Workshop on distinguishing adverse from adaptive effects in the 21 st century, US EPA, RTP, NC
2011	NIH Study Section ZAA1 JJ(01)
2011	NIH Study Section ZRG1 BBBP-E (53) R
2011	Staff Scientist Review Committee, NIEHS, RTP, NC
2011	Conference Organizing Committee <i>TIES 2011: Toxicogenomics Integrated with Environmental Sciences</i> (September 15-16, 2011), Chapel Hill, North Carolina
2010-2011	Committee on Formaldehyde, Board on Environmental Studies and Toxicology, National Research Council of the National Academies, Washington, DC
2010	EPA Workshop: Advancing the Next generation (NexGen) of Risk Assessment: The Prototypes, US EPA, RTP, NC
2010	US EPA Science Advisory Board: Trichloroethylene Panel
2010	NIH Study Section ZES1 RAM V S8 (Chair)
2009	External peer reviewer of the draft IRIS assessment for Toxicological Review of Trichloroacetic Acid, US EPA, Washington, DC
2007-2009	Councilor, Carcinogenesis Specialty Section, Society of Toxicology, Reston, VA
2007-2009	Committee on Tetrachloroethylene,

- Board on Environmental Studies and Toxicology,
National Research Council of the National Academies, Washington, DC
- 2009 Conference Organizing Committee
ToxCast data Analysis Summit (May 14-15, 2009)
EPA, Research Triangle Park, North Carolina
- 2009 NIH Study Section XNDA (2 meetings)
- 2009 NIH Study Section ZDA1 GXM-A (03) "Gene-Environment Initiative"
- 2009 NIH Study Section AA-1
- 2009 NIH Study Section ZES1 LWJ-J-U1
- 2009 EPA STAR Grant Peer Review Meeting (G2008 W1)
"Computational Toxicology Research Centers: *in vitro* and *in silico* Models
of Developmental Toxicity Pathways"
- 2009 The Canada Foundation for Innovation, reviewer for the Leading Edge
Fund and New Initiatives Fund, Toronto, Canada
- 2005-2008 Expert consultant in support of the preparation of the Report on
Carcinogens, NTP/NIEHS, Research Triangle Park, NC
- 2006-2008 Scientific Program Committee, Society of Toxicology, Reston, VA
- 2003-2007 Bioinformatics/Biostatistics Working Group,
Toxicogenomics Research Consortium, NIEHS, RTP, NC
- 2003-2008 Steering Committee,
Toxicogenomics Research Consortium, NIEHS, RTP, NC
- 2007 NIH Study Section ZES1 LWJ-E(CG) "Comparative Biology"
- 2006-2007 Member, Working Group to develop IARC Monographs Volume 96 on
"Alcoholic beverage consumption, acetaldehyde and urethane"
International Agency for Research on Cancer (IARC), Lyon, France
- 2006 Conference Organizing Committee
*Empowering environmental health sciences research with new
technologies: A conference on omics applications in the environmental
health sciences* (December 4-6, 2006)
Chapel Hill, North Carolina
- 2004-2006 Toxicology Working Group, Toxicogenomics Research Consortium,
NIEHS, RTP, NC
- 2005-2006 NCI Cancer Biomedical Informatics Grid (caBIG):
Data Sharing and Intellectual Capital (DSIC) Working Group
- 2006 Conference Organizing Committee
5th Annual Meeting of the Complex Traits Consortium (May 6-10, 2006)
Chapel Hill, North Carolina
- 2006 Co-Chair, Conference Organizing Committee

- Current and Future Challenges in Environmental Health, Toxicology, and Food Safety in Eastern and Central Europe* (May 2-5, 2006)
L.I. Medved's Institute of Ecohygiene and Toxicology, Kiev, Ukraine
- 2005 NIEHS Strategic Planning Forum
- 2005 NIEHS Environmental Genetics/Genomics Working Group
- 2005 NIH Study Section ZRG1 ONC-L M
- 2005 NIH Study Section ZDK1 GRB-2 M3
- 2005 Conference Scientific Committee
Sixth International Conference of the Society for Free Radical Research – Africa (September 26 – 29, 2005)
Université Abdelmalek Essaadi, Tétouan, Morocco
- 2004-05 Staff Scientist Search Committee
National Center for Toxicogenomics, NIEHS, RTP, NC
- 2004 Conference Organizing Committee
Current and Future Issues in Toxicogenomics for Academia, Government and the Industry (December 6-8, 2004)
Friday Center, UNC-Chapel Hill

Reviewing manuscripts for professional journals:

Archives of Biochemistry and Biophysics
Basic & Clinical Pharmacology & Toxicology
BMC Medical Genomics
Cancer Letters
Cancer Research
Carcinogenesis
Chemical Research in Toxicology
Critical Reviews in Toxicology
Drug Discovery Today
Environmental Health Perspectives (Associate Editor)
Environment International (*Editorial Board* member)
Free Radical Biology and Medicine
Free Radical Research
Gastroenterology
Genetics
Genome Research
Hepatology
Journal of Toxicology and Environmental Health
Journal of Hepatology
Laboratory Investigation
Molecular Carcinogenesis
Nature Reviews Genetics
Physiological Genomics
Scientific Reports
Toxicological Sciences (*Editorial Board* member)
Toxicology
Toxicology & Applied Pharmacology (*Editorial Board* member)
Toxicology Letters
Toxicologic Pathology