CURRICULUM VITAE

CONTACT INFORMATION

Name: David M. Reif
Office: Keystone 2018,
530 Davis Drive,
Morrisville, NC 27560
Email: david.reif@nih.gov
Websites: NIH https://www.niehs.nih.gov/research/atniehs/labs/ptb/staff/reif/index.cfm
Reif Lab http://reif-lab.org/
ToxPi https://toxpi.org/
Google Scholar https://scholar.google.com/citations?hl=en&user=5OwEySoAAAAJ
ORCID 0000-0001-7815-6767

EDUCATION AND TRAINING

2006-2008 U.S. Environmental Protection Agency (Research Triangle Park, NC)
Post-doc in Computational Toxicology
2002-2006 Vanderbilt University (Nashville, TN)
Ph.D. in Human Genetics
2003-2005 Vanderbilt University (Nashville, TN)
M.S. in Applied Statistics
1998-2002 College of William & Mary (Williamsburg, VA)
Monroe Scholar Honors Program
B.S. in Biology (Major) & Finance (Minor)

POSITIONS AND PROFESSIONAL EXPERIENCE

2022-Current Branch Chief & Senior Scientist,
Predictive Toxicology Branch,
Division of Translational Toxicology,
National Institute of Environmental Health Sciences, RTP, NC
2020-2022 Professor,
Department of Biological Sciences (Primary Appointment),
Bioinformatics Research Center (Resident Member),
Department of Statistics (Associate Faculty),
NC Agromedicine Institute (Member),
Chancellor's Faculty Excellence Program (Bioinformatics Cluster),
Director, Bioinformatics Consulting and Service Center,
Director, Environmental Health Bioinformatics Training Program
Director, Data Management and Analysis Core (DMAC), Superfund Center for Environmental and Health Effects of PFAS,
Co-Director, Integrated Health Science Facility Core (IHSFC), Center for Human Health and the Environment
North Carolina State University, Raleigh, NC
2013-2020 Associate Professor,
Department of Biological Sciences (Primary Appointment),
Bioinformatics Research Center (Resident Member),
Department of Statistics (Associate Faculty),
NC Agromedicine Institute (Member),
Chancellor's Faculty Excellence Program (Bioinformatics Cluster),
Director, Bioinformatics Consulting and Service Center,
Lead, Bioinformatics Team, Center for Human Health and the Environment
North Carolina State University, Raleigh, NC
2013-current Affiliate Member,

	Center for Pharmacogenomics and Individualized Therapy, University of North Carolina, Chapel Hill, NC
2008-2012	Principal Investigator (Statistician), National Center for Computational Toxicology, U.S. Environmental Protection Agency, Research Triangle Park, NC
2009-2012	Adjunct Assistant Professor, Department of Statistics, North Carolina State University, Raleigh, NC
2008	Visiting Scholar, Department of Statistics, North Carolina State University, Raleigh, NC
2006-2008	Federal post-doc (Biologist), National Center for Computational Toxicology, U.S. Environmental Protection Agency, Research Triangle Park, NC (advisor: Elaine Cohen Hubal)
2002-2006	Graduate Research Assistant, Center for Human Genetics Research, Vanderbilt University, Nashville, TN (advisors: Jason Moore and Jonathan Haines)
1999-2001	Research Assistant, Department of Biology, College of William & Mary, Williamsburg, VA (advisor: Patty Zwollo)
2001	Summer Associate, Navigant Consulting, Washington, DC

SELECTED HONORS, AWARDS, AND APPOINTMENTS

2024	National Institute of Environmental Health Sciences Merit Award, “For advancing understanding of the complex interactions between climate change and health by establishing a data infrastructure purpose-built with diverse user communities and needs in mind”
2024	Director’s Challenge Innovation Award, “Prediction of drug-induced liver injury using 3D liver tissue models”
2024	NIEHS Paper of the Month, “Guided optimization of ToxPi model weights using a Semi-Automated approach”
2023-current	NIEHS Lead, Committee to Plan Multi-Modal AI for the NIH, National Institutes of Health
2023-current	Member, OECD Advisory Group on Emerging Science in Chemicals Assessment (AG ESCA), Organization for Economic Cooperation and Development
2023-current	Lead NIEHS Rep, Tox21 Program, Joint NIEHS + NCATS + EPA + FDA Consortium
2023-current	Representative (Alt. Rep for NIEHS), Interagency Coordinating Committee for the Validation of Alternative Methods (ICCVAM)
2022-current	Sponsor (Management Lead), Scientific Cyberinfrastructure Program Management Team, National Institute of Environmental Health Sciences
2021-current	Member, Toxic Substances Control Act (TSCA) Science Advisory Committee on Chemicals (SACC), U.S. Environmental Protection Agency
2021-current	Member, Carcinogenicity Gene Signature Development, HESI eSTAR Consortium
2020-current	Co-Chair, Data Working Group, U.S. FDA Botanical Safety Consortium
2020-current	Advisory Committee, Pacific Northwest Center for Translational Environmental Health Research, Oregon State University
2020-2022	Advisory Board, College of Sciences Mentorship Program, North Carolina State University
2020	Panelist, DR2 Work Group SARS-CoV-2/COVID-19 Environmental Health Research Needs Panel (NIEHS)

2019 Invited Expert, “Implementing a Class Approach to Hazard Assessment of Organohalogen Flame Retardants”, National Academy of Sciences (NAS)

2018 Committee Member, “Committee on a Scoping Plan to Assess the Hazards of Organohalogen Flame Retardants”, National Academy of Sciences (NAS)

2018 Planning Committee & Session Moderator, “Informing Environmental Health Decisions Through Data Integration”, National Academy of Sciences (NAS)

2018 NIEHS Paper of the Month, “Elucidating Gene-by-Environment (GxE) Interactions Associated with Differential Susceptibility to Chemical Exposure”

2017 Working Group, IARC Monographs on the Evaluation of Carcinogenic Risks to Humans – “Benzene”, World Health Organization (WHO) International Agency for Research on Cancer (IARC)

2015 Working Group, IARC Monographs on the Evaluation of Carcinogenic Risks to Humans – “Some Organochlorine Insecticides and Some Chlorphenoxy Herbicides”, World Health Organization (WHO) International Agency for Research on Cancer (IARC)

2014 Committee Member & Chapter Lead, “Predictive Toxicology Approaches for Military Assessments of Acute Exposures”, National Academy of Sciences (NAS)

2014 STAA Level II Award, for the Expocast project, Office of Research and Development, U.S. EPA

2013 STAA Level I Award, for Advancing Chemical Safety Assessment via the Development of Predictive Reproductive and Developmental Toxicity Models, Office of Research and Development, U.S. EPA

2012 Impact Award, for Comptox Chemical Toxicity Databases, Office of Research and Development, U.S. EPA

2012 Honor Award (Bronze Medal), for Development of Reproductive, Developmental, Vascular Disruption and Cancer Predictive Models, Office of Research and Development, U.S. EPA

2012 STAA Level III Award, for the Analysis of Eight Oil Spill Dispersants Using Rapid, In Vitro Tests for Endocrine and Other Biological Activity,
Office of Research and Development, U.S. EPA

2012 STAA Level III Award, for the Endocrine Profiling and Prioritization of Environmental Chemicals Using ToxCast Data,
Office of Research and Development, U.S. EPA

2011 Presidential Early Career Award for Scientists and Engineers (PECASE), Executive Office of the President
**The first time an EPA scientist won a PECASE, which is “The highest honor bestowed by the United States government on science and engineering professionals in the early stages of their independent research careers”*

2011 Science Achievement Award in Health Sciences,
Office of Research and Development, U.S. EPA
**An Agency-level award selected by an external peer panel to recognize significant advances in health sciences and impact on regulatory programs*

2011 EPA Gold Coin Award,
Office of the Administrator, U.S. EPA
**A special award to recognize the rapid scientific response to the Deep Water Horizon oil spill emergency*

2011 Honor Award (Bronze Medal), for the Mechanistic Indicators of Childhood Asthma (MICA) study,
Office of Research and Development, U.S. EPA

2011 STAA Level II Award, for the Toxicity Reference Database (ToxRefDB),
Office of Research and Development, U.S. EPA

2011 Quality Step Increase (QSI) Award,
Office of Research and Development, U.S. EPA

2010 OTS Award,
Office of Public Affairs, U.S. EPA

2010 S (Superior Accomplishment) Award,
National Center for Computational Toxicology, U.S. EPA

2010	S (Superior Accomplishment) Award, National Health and Environmental Effects Research Laboratory, U.S. EPA
2009	OTS Award, National Center for Computational Toxicology, U.S. EPA
2007	OTS Award, Human Studies Division, U.S. EPA
2005	International Travel Grant, Vanderbilt University
2003-2005	NIH Training Grant in Human Genetics, Vanderbilt University
2002	Phi Sigma Biology Honors Fraternity, College of William & Mary
2001	Omicron Delta Kappa Leadership Fraternity, College of William & Mary
2001	Monroe Scholarship Supplemental Award for International Research, College of William & Mary
2000-2001	Howard Hughes Medical Institute Undergraduate Research Grant, College of William & Mary
1998-2002	Monroe Scholar, College of William and Mary

RESEARCH INTERESTS (KEYWORDS)

***Predictive Toxicology**; ***Environmental Statistics**; ***Computational Toxicology**; ***GxE**; Translational Toxicology; Bioinformatics; Artificial Intelligence (AI); Machine Learning (ML); Data Integration; Environmental Health Sciences; Statistical Genetics; Epidemiology; Translational Research; Computational Modeling; Environmental Exposure; Risk Assessment; Gene-Environment Interactions; Visual Analytics and Statistical Graphics; Aquatic Model Organisms (Zebrafish); High Throughput Screening; Bioassay Development; Software Development; New Approach Methodologies (NAMs); Geographic Information Systems (GIS)

****Global top-10 citations for this Google Scholar keyword***

PROFESSIONAL SOCIETIES (ACTIVE)

Society of Toxicology (SOT), Full Member, 2008 – current
Federation of American Scientists (FAS), Board of Sponsors, 2012 – current
International Society of Exposure Science (ISES), Member, 2016 – current
American Society of Human Genetics (ASHG), Member, 2017 – current

EDITORIAL AND REVIEWER SERVICE

Publications

Editorial Board, *Frontiers in Toxicology*, 2019 – current
Associate Editor, *Environmental Health Perspectives (EHP)*, 2016 – 2023
Editorial Board, *Journal of Exposure Science and Environmental Epidemiology (JESEE)*, 2016 – current
Associate Editor, *BioData Mining*, 2018 – current
Managing Editor, *BioData Mining*, 2015 – 2018
Journal Reviewer for:
Bioinformatics; Biotechniques; BMC Bioinformatics; Environmental Health Perspectives; Environmental Pollution; Environmental Toxicology and Chemistry; Frontiers in Environmental Science; Genetic Epidemiology; Human Genetics; IEEE/ACM Transactions on Computational Biology and Bioinformatics; Journal of Agricultural, Biological, and Environmental Statistics; Journal of Exposure Science and Environmental Epidemiology; ALTEX; Journal of Infectious Disease; Journal of Statistical Software; Journal of the American Statistical Association; Medical Science

Monitor; Neuropsychiatric Genetics; Nucleic Acids Research; Pharmacogenomics; PLoS Genetics; PLoS One; Toxicological Sciences; Science of the Total Environment

Grants

Grant Reviewer, Superfund Research Program (P42),
National Institutes of Health
Grant Reviewer, Medical Research Council (MRC),
Research Councils UK
Study Section *ad hoc* Member, Systemic Injury and Environmental Exposure (SIEE),
National Institutes of Health
Study Section *ad hoc* Member, Digestive, Kidney and Urological Systems (DKUS),
National Institutes of Health
Study Section *ad hoc* Member, Bioengineering Sciences and Technologies (BST),
National Institutes of Health
Grant Reviewer, National Center for Environmental Research (NCER),
U.S. Environmental Protection Agency
Study Section *ad hoc* Member, Biomedical Computing and Health Informatics (BCHI),
National Institutes of Health
Grant Reviewer, Division of Information and Intelligent Systems (IIS),
National Science Foundation

Professional and Fellowships

External Tenure Evaluator,
City University of New Year (CUNY)
University of Indiana
Promotion Committee,
National Institutes of Environmental Health Sciences
Graduate Fellowship Reviewer, Science to Achieve Results (STAR),
U.S. Environmental Protection Agency

Translational and Regulatory

Expert Reviewer,
CalEPA's Proposed Toxicological Priority (ToxPi) Framework
Office of Environmental Health Hazard Assessment (OEHHA), State of California
Peer Reviewer,
National Academy of Sciences (NAS)
Peer Reviewer,
International Agency for Research on Cancer (IARC)

TEACHING

Discussion / Journal Clubs

2023-current Originator & Lead,
AI/ML Applications in Toxicology and Environmental Health,
National Institute of Environmental Health Sciences, RTP, NC, USA [Biweekly, Cross-Divisional Journal Club]

Full Semester Courses

2019-2022 Course Co-Director & Lecturer,
Computational Environmental Health Sciences (BIO 592),
North Carolina State University, Raleigh, NC, USA [Spring Session]

2014-2021 Course Director & Lecturer,
Introduction to Bioinformatics (GN 427),
North Carolina State University, Raleigh, NC, USA [Fall Session]

2011 Lab Course Director & Lecturer,
Statistical Genetics Practicum (STAT 489, STAT 498),
North Carolina State University, Raleigh, NC, USA [Summer Session]

2010 Lab Course Director & Lecturer,
Statistical Genetics Practicum (STAT 489, STAT 498),
North Carolina State University, Raleigh, NC, USA [Summer Session]

2010 Course Director & Lecturer,
Introduction to R (*STAT 610*),
North Carolina State University, Raleigh, NC, USA [Spring Session]

2008 Course Director & Lecturer,
Introduction to R (*STAT 610*),
North Carolina State University, Raleigh, NC, USA [Spring Session]

2006 Teaching Assistant & Guest Lecturer,
Statistics for Biomedical Researchers (IGP 304),
Vanderbilt University, Nashville, TN, USA [Spring Session].

Short Courses

2019 *Introduction to R and Biostatistics* (with Ken Rice),
Winter Institute in Statistical Genetics,
NYU - Abu Dhabi, Abu Dhabi, United Arab Emirates [Short Course]

2016 *Bioinformatics* (with Nadia Singh and Dahlia Nielsen),
Research Initiative for Scientific Enhancement (RISE) program,
Fayetteville State University, Fayetteville, NC, USA [Short Course]

2015-2016 *Practical Bioinformatics: Introduction to R*,
North Carolina State University, Raleigh, NC, USA [Short Course].

Lectures

2022-2024 *Computational Toxicology and Exposure Science (ENVR 730)*
University of North Carolina at Chapel Hill, Chapel Hill, NC, USA.

2022-2024 *Computational Environmental Health Sciences (BIO 592)*,
North Carolina State University, Raleigh, NC, USA

2021-2022 *Computational Toxicology and Exposure Science (ENVR 890)*,
University of North Carolina at Chapel Hill, Chapel Hill, NC, USA.

2016-2022 *Responsible Conduct in Science (GN 850 / TOX 820)*
North Carolina State University, Raleigh, NC, USA.

2015-2017 *Biochemical and Molecular Toxicology (TOXC / ENVR 442)*,
University of North Carolina at Chapel Hill, Chapel Hill, NC, USA.

2015-2022 *Principles of Toxicology (TOX 710)*,
North Carolina State University, Raleigh, NC, USA.

2015-2018 *Advanced Toxicology (TOXC / ENVR 707)*,
University of North Carolina at Chapel Hill, Chapel Hill, NC, USA.

2013 *Genetic Algorithms (CSC 530)*,
North Carolina State University, Raleigh, NC, USA.

2011 *Analytics Methods and Applications (Institute for Advanced Analytics)*,
North Carolina State University, Raleigh, NC, USA.

2006 *General Biology I & II*,
Nashville State Technical College, Nashville, TN, USA.

Research & Academic Program Participation and Direction

2019-2022 Associate Director

Environmental Health Bioinformatics (T32 Training Grant) Program
North Carolina State University

2015-current Training Faculty
Environmental Science and Engineering
University of North Carolina at Chapel Hill

2014-current Training Faculty
Toxicology
North Carolina State University

2013-current Training Faculty
Genetics
North Carolina State University

2013-current Training Faculty
Statistics
North Carolina State University

2013-current Training Faculty
Bioinformatics
North Carolina State University

2013-current Training Faculty
Functional Genomics
North Carolina State University

2011-2012 Faculty Mentor & Computational Lab Director
Computation for Undergraduates in Statistics Program
National Science Foundation (PI: Sujit Ghosh)

2010-2011 Faculty Mentor & Computational Lab Director
Computation for Undergraduates in Statistics Program
National Science Foundation (PI: Sujit Ghosh)

MENTORING AND MANAGEMENT

Students Mentored (As Primary Supervisor)

2024-current Minoli Fernando
NIH Postbac

2024-current Kirk Porter
NIH SIP (undergraduate)
North Carolina State University

2021-2024 Jessie Chappel (joint with Erin Baker, UNC Chapel Hill)
Bioinformatics PhD (graduated)
North Carolina State University

2020-2024 Nnamdi Osakwe
Bioinformatics PhD (graduated)
North Carolina State University

2020-2024 Jonathan Fleming
Bioinformatics PhD (graduated)
North Carolina State University

2019-2022 Preethi Thunga
Bioinformatics PhD (graduated)
North Carolina State University

2019-2022 Dylan Wallis
Toxicology PhD (graduated)
North Carolina State University

2019-2021 Melody Hancock
Bioinformatics MS (graduated; currently Bioinformatics PhD student)
North Carolina State University

2017-2022 Aldo Carmona-Baez (joint with Reade Roberts)
Genetics PhD (graduated)

North Carolina State University

2016-2019 Marissa Kosnik
Toxicology PhD (graduated)
North Carolina State University

2015-2019 Kimberly To
Bioinformatics PhD (graduated)
North Carolina State University

2014-2018 Kyle Roell
Bioinformatics PhD (graduated)
North Carolina State University

2014-2017 Michele Balik-Meisner
Bioinformatics PhD (graduated)
North Carolina State University

2013-2016 Guozhu Zhang
Bioinformatics PhD (graduated)
North Carolina State University

2013 Ankita Kalantri
Department of Computer Science MS (graduated)
North Carolina State University

Postdoctoral Scholars Mentored (As Primary Supervisor)

2019-2022 Adrian Green, PhD
Bioinformatics Research Center
North Carolina State University

2012 Lisa Truong, PhD
National Center for Computational Toxicology
U.S. Environmental Protection Agency

2012 Cory Strope, PhD
National Center for Computational Toxicology
U.S. Environmental Protection Agency

Scientific Staff Management (As Direct Supervisor)

2022-current Scientists and Staff,
Predictive Toxicology Branch, Division of Translational Toxicology
National Institute of Environmental Health Sciences
https://www.niehs.nih.gov/research/atniehs/labs/ptb/staff/index.cfm

2018-2022 Alison Dickey (PhD, Research Associate)
Bioinformatics Consulting and Service Core
North Carolina State University

2018-2021 Elizabeth Scholl (PhD, Research Scholar)
Bioinformatics Consulting and Service Core
North Carolina State University

2014-2022 Skylar Marvel (PhD, Research Associate)
Department of Biological Sciences
North Carolina State University

2015-2016 Galen Collier (PhD, Research Scholar)
Department of Biological Sciences
North Carolina State University

2012 Sean Watford (BS, Research Fellow)
National Center for Computational Toxicology
US EPA

2011-2012 Dayne Filer (BS, Research Fellow)
National Center for Computational Toxicology
US EPA

2011-2012 Parth Kothiya (MS, Research Fellow)
National Center for Computational Toxicology
US EPA

Graduate Student Committees (*Chair or Co-Chair)

* Guozhu Zhang, Bioinformatics PhD; North Carolina State University
* Michele Balik-Meisner, Bioinformatics PhD; North Carolina State University
Rachel Spreng, Bioinformatics, PhD; North Carolina State University
Ryan Lougee, Toxicology, MS; North Carolina State University
* Kyle Roell, Bioinformatics PhD; North Carolina State University
* Kimberly To, Bioinformatics PhD; North Carolina State University
Sarah Wisotsky, Bioinformatics, PhD; North Carolina State University
Hsieh (Larry) Wu, Bioinformatics, MS; North Carolina State University
William Kohlway, Bioinformatics PhD; North Carolina State University
Ander Wilson, Statistics PhD; North Carolina State University
Ravi Mathur, Bioinformatics PhD; North Carolina State University
Baljinder Kaur, Crop Sciences PhD; North Carolina State University
Sean Watford, Environmental Science and Engineering PhD; University of North Carolina
* Tao Jiang, Bioinformatics PhD; North Carolina State University
Patrick Perkins, Bioinformatics PhD; North Carolina State University
Erin Peterson Genetics PhD; North Carolina State University
* Jun Ma, Bioinformatics PhD; North Carolina State University
Brandon Baker, Genetics PhD; North Carolina State University
Hayden Brochu, Bioinformatics MS; North Carolina State University
Bethany Cook, Chemistry MS; North Carolina State University
* Aldo Carmona-Baez, Genetics PhD; North Carolina State University
Shuping Ryan, Bioinformatics MS; North Carolina State University
* Marissa Kosnik, Toxicology PhD; North Carolina State University
Desiree Unselt, Genetics PhD; North Carolina State University
Yaxu Wang, Bioinformatics PhD; North Carolina State University
Drake Phelps, Veterinary School PhD; North Carolina State University
Matthew Nethery, Functional Genomics PhD; North Carolina State University
Brian Ting, Statistics PhD; North Carolina State University
* Melody Hancock, Bioinformatics MS; North Carolina State University
Mark Simmers, Toxicology PhD; North Carolina State University
Sagi Guillerra, Toxicology PhD; North Carolina State University
Melanie Odenkirk, Chemistry PhD; North Carolina State University
* Preethi Thunga, Bioinformatics PhD; North Carolina State University
* Dylan Wallis, Toxicology PhD; North Carolina State University
* Jonathon Fleming, Bioinformatics PhD; North Carolina State University
* Nnamdi Osakwe, Bioinformatics PhD; North Carolina State University
Yueyang Huang, Statistics PhD; North Carolina State University
Thomas Howard, Bioinformatics MS; North Carolina State University
Jacob Freudenberg, Bioinformatics MS; North Carolina State University
William Marinello, Toxicology PhD; North Carolina State University
Michael Doyle, Chemistry PhD; North Carolina State University
Hannah Starnes, Toxicology PhD; North Carolina State University
Amanda Brucker, Statistics PhD; North Carolina State University
Megan Dillon, Comparative Biomedical Sciences PhD; North Carolina State University
* Jessie Chappel, Bioinformatics PhD; North Carolina State University
Melody Hancock, Bioinformatics PhD; North Carolina State University

FUNDING AND BUDGET MANAGEMENT

External (Competitive Grant) Research Support

NIH/NIEHS R01 R01ES033243 07/01/2022 – 04/30/2027
Characterizing gene-environment interactions that affect individual susceptibility to an expanding chemical exposome
Role: PI

NIH/NIEHS P42 Diversity Supplement 01/01/2022 – 12/31/2023
Gene-environment interactions causing differential susceptibility to chemical stressors in an expanding chemical exposome
Role: PI

NIH/NIEHS P30 ES-025128 04/1/2015 – 03/31/2026
Center for Human Health and the Environment (CHHE)
Role: Co-Director of Integrative Health Science Facility Core & Co-I (PI: Jane Hoppin, NCSU)

NIH/NIEHS U01 Supplement 10/01/2021 – 08/31/2022
Integrative Machine Learning for Synthesis of Cross-Consortium ENM Data
Role: PI

NIH/NIEHS U01 ES-027294 09/01/2016 – 08/31/2022
Multidimensional in vivo Assessments of Engineered Nanomaterials and Biological Interactions
Role: PI of Sub-contract (PI: Robyn Tanguay, Oregon State University)

EPA R83948101 01/01/2019 – 12/31/2022
System toxicological approaches to define and predict the toxicity of Per and Polyfluoroalkyl Substances
Role: PI of Sub-contract (PI: Robyn Tanguay, Oregon State University)

NIH/NCI R01 CA-161608 04/01/2019 – 03/31/2023
Genetic Etiology of Cancer Drug Response
Role: PI

NIH/EPA P42 ES-031009 04/1/2020 – 03/31/2024
Superfund Center for Environmental and Health Effects of PFAS
Role: Director of Data Management and Analysis Core & Co-I (PI: Carolyn Mattingly, NCSU)

NIH RIVER R35 ES-031709 04/1/2021 – 03/31/2029
Discovering Chemical Activity Networks – Predicting Bioactivity Based on Structure
Role: PI of Sub-contract (PI: Robyn Tanguay, Oregon State University)

<u>Completed Research Support</u>

NIH R01 ES-19604 10/01/2014 – 09/30/2015
Integrating Big Data and curated literature to advance discoveries about disease
Role: Co-Investigator (PI: Carolyn Mattingly, NCSU)

University Global Partnership Network (UPGN) 07/01/2016 -- 06/30/2017
An international alliance for Population, Wellbeing and Environment Research
Role: Co-Investigator (PI: Jane Hoppin, North Carolina State University)

NIH P42 ES-005948 10/01/2014 – 09/30/2017
Elucidating Risks: From Exposure and Mechanism to Outcome
Role: Co-Investigator (PI: James Swenberg, University of North Carolina at Chapel Hill)

EPA EPA-G2014-STAR-E1 06/01/2015 – 06/30/2018
System toxicological approaches to define flame retardant adverse outcome pathways
Role: PI of Sub-contract (PI: Robyn Tanguay, Oregon State University)

EPA G2013-STAR-L1 09/01/2014 – 08/31/2018
Cardiotoxicity Adverse Outcome Pathway: organotypic culture model and in vitro/in vivo extrapolation for high-throughput hazard, dose-response and variability assessments
Role: Co-Investigator (PIs: Ivan Rusyn and David Threadgill, Texas A&M University; Fred Wright, NCSU)

NIH R01 ES-023788 01/01/2015 – 12/31/2019
Advancing mechanism-based studies with cross-species chemical-phenotype data
Role: Co-Investigator (PI: Carolyn Mattingly, NCSU)

NIH/NICEATM Contract 07/01/2018 – 06/30/2019
Integrated Data Analysis for Systematic Evaluation of the Application of Zebrafish in Toxicology
Role: PI

CalEPA Contract 09/01/2018 – 02/28/2019
Bioinformatic and cheminformatic modeling of perfluorinated compounds
Role: PI

Texas A&M Superfund Research Program, Pilot Project 10/31/2018 – 10/31/2019
Translation of multi-stream data into interactive visual profiles
Role: PI

NIH/NIEHS R56 ES-0300007 06/15/2019 – 06/14/2021
Gene-environment interactions causing differential susceptibility to chemical stressors in high-throughput data
Role: PI

NIH/NIEHS R15 06/01/2018 – 03/31/2021
Prenatal Supplementation Reduces the Severity of Toxicant-Induced Birth Defects
Role: Co-Investigator (PI: Krista McCoy, East Carolina University)

Federal Budget and Contracts Management

Predictive Toxicology Branch (R&D/contracts + Intramural Research funds) 2022 – current
Division of Translational Toxicology,
National Institute of Environmental Health Sciences

Cooperative Research and Development Agreement (CRADA) 2012 – 2013
L'Oréal – U.S. Environmental Protection Agency
Role: PI

Presidential Early Career Award for Scientists and Engineers (PECASE) 2011 – 2012
Office of The White House
Role: PI

ToxCast *in vitro* assay contracts (multiple external vendors) 2009 – 2012
U.S. Environmental Protection Agency
Role: Contract Officer Representative (COR) / Task Order Contract Officer (TOCOR)

DISTRIBUTED SOFTWARE (as PI/Lead)

COVID19 Pandemic Vulnerability Index (PVI) Dashboard: Web application for analytics of data streams related to COVID-19
(Public web application and open source data repository)
https://covid19pvi.niehs.nih.gov
https://github.com/COVID19PVI/data

ToxPipe: AI integration of diverse toxicological data streams
(LLM interface, model builder, and custom agent repository for translational toxicology applications)
https://github.com/NIEHS/ToxPipe

GeoTox: open-source R software package for characterizing the risk of perturbing molecular targets involved in adverse human health outcomes based on exposure to spatially-referenced stressor mixtures via the GeoTox framework (source-to-outcome continuum modeling)
https://github.com/NIEHS/GeoTox/tree/main

optiPi: Open-source module for automated ToxPi weight optimization
(Public software and Github documentation)
https://github.com/ToxPi/ToxPi-Weight-Optimization

NIEHS Sandbox Portfolio App: Bespoke web application for coordinating, sorting, and promoting nimble application development
(Internal portion requires login; Public-facing version currently on staging server)
https://gitlab.niehs.nih.gov/ods/dtt_landing/activity

toxpiR: Open-source R package for ToxPi
(Public software and Github documentation)
https://cran.r-project.org/package=toxpiR
https://toxpi.github.io/toxpiR/

*ToxPi*GIS Toolkit*: Software suite to create customized ToxPi interactive layers within ArcGIS
(Public software toolkit and Github documentation)
https://github.com/Jonathon-Fleming/ToxPi-GIS

*ToxPi*GIS*: Dashboard for ToxPi built atop geographic information system (GIS) layers
(Public web application)
https://toxpi.org/covid-19/map/

ToxPi GUI: Stand-alone Java application for building ToxPi models
(Free download)
https://toxpi.org/

MDR R: R implementation of Multifactor Dimensionality Reduction (MDR) modeling and internal validation
(Free download)
http://cran.r-project.org/web/packages/MDR/index.html

zfish GUI: Graphical User Interface (GUI) implementation of analysis and graphics pipeline for high-throughput, zebrafish experimental data
(Shiny package for collaborators)

zfish DB: Web-enabled browser interface for access to results and meta-analysis for high-throughput, zebrafish experimental data from multiple labs
(Password-limited to collaborators)

BIBLIOGRAPHY

Peer-Reviewed Publications (link to Google Scholar profile)

1. Starnes HM, Green AJ, Reif DM, Belcher SM. An in vitro and machine learning framework for quantifying serum albumin binding of per- and polyfluoroalkyl substances. Toxicol Sci. 2024 Sep 19:kfae124. doi: 10.1093/toxsci/kfae124. Epub ahead of print. PMID: 39298512.

2. Messier KP, Reif DM, Marvel SW. The GeoTox Package: Open-source software for connecting spatiotemporal exposure to individual and population-level risk. medRxiv [Preprint]. 2024 Sep 24:2024.09.23.24314096. doi: 10.1101/2024.09.23.24314096. PMID: 39399012; PMCID: PMC11469396.
3. Chappel JR, Kirkwood-Donelson KI, Dodds JN, Fleming J, Reif DM, Baker ES. Streamlining Phenotype Classification and Highlighting Feature Candidates: A Screening Method for Non-Targeted Ion Mobility Spectrometry-Mass Spectrometry (IMS-MS) Data. Anal Chem. 2024 Oct 8;96(40):15970-15979. doi: 10.1021/acs.analchem.4c03256. Epub 2024 Sep 18. PMID: 39292613; PMCID: PMC11480931.
4. Green AJ, Truong L, Thunga P, Leong C, Hancock M, Tanguay RL, Reif DM. Deep autoencoder-based behavioral pattern recognition outperforms standard statistical methods in high-dimensional zebrafish studies. PLoS Comput Biol. 2024 Sep 10;20(9):e1012423. doi: 10.1371/journal.pcbi.1012423. PMID: 39255309; PMCID: PMC11414989.
5. Nnamdi C. Osakwe, Alison A. Motsinger-Reif, Reif DM. Environmental Health and Justice Screening Tools: A Critical Examination and Path Forward. Frontiers in Environmental Health 3, 1427495.
6. Clark LP, Zilber D, Schmitt C, Fargo DC, Reif DM, Motsinger-Reif AA, Messier KP. A review of geospatial exposure models and approaches for health data integration. J Expo Sci Environ Epidemiol. 2024 Sep 6. doi: 10.1038/s41370-024-00712-8. Epub ahead of print. PMID: 39251872.
7. Ooka M, Sakamuru S, Zhao J, Qu Y, Fang Y, Tao D, Huang R, Ferguson S, Reif D, Simeonov A, Xia M. Use of Tox21 screening data to profile PFAS bioactivities on nuclear receptors, cellular stress pathways, and cytochrome p450 enzymes. J Hazard Mater. 2024 Jul 15;473:134642. doi: 10.1016/j.jhazmat.2024.134642. Epub 2024 May 17. PMID: 38776814; PMCID: PMC11181952.
8. Motsinger-Reif AA, Reif DM, Akhtari FS, House JS, Campbell CR, Messier KP, Fargo DC, Bowen TA, Nadadur SS, Schmitt CP, Pettibone KG, Balshaw DM, Lawler CP, Newton SA, Collman GW, Miller AK, Merrick BA, Cui Y, Anchang B, Harmon QE, McAllister KA, Woychik R. Gene-environment interactions within a precision environmental health framework. Cell Genom. 2024 Jun 19:100591. doi: 10.1016/j.xgen.2024.100591. PMID: 38925123.
9. Fleming JF, House JS, Chappel JR, Motsinger-Reif AA, Reif DM. Guided optimization of ToxPi model weights using a Semi-Automated approach. Comput Toxicol. 2024 Mar;29:100294. doi: 10.1016/j.comtox.2023.100294. PMID: 38872937; PMCID: PMC11175362.
10. Chappel JR, Kirkwood-Donelson KI, Reif DM, Baker ES. From big data to big insights: statistical and bioinformatic approaches for exploring the lipidome. Anal Bioanal Chem. 2024 Apr;416(9):2189-2202. doi: 10.1007/s00216-023-04991-2. PMID: 37875675; PMCID: PMC10954412.
11. Kirkwood-Donelson KI, Chappel J, Tobin E, Dodds JN, Reif DM, DeWitt JC, Baker ES. Investigating mouse hepatic lipidome dysregulation following exposure to emerging per- and polyfluoroalkyl substances (PFAS). Chemosphere. 2024 Apr;354:141654. doi: 10.1016/j.chemosphere.2024.141654. Epub 2024 Mar 8. PMID: 38462188; PMCID: PMC10995748.
12. Marinello WP, Gillera SEA, Huang L, Rollman J, Reif D, Patisaul HB. Uncovering the Common Factors of Chemical Exposure and Behavior: Evaluating Behavioral Effects Across a Testing Battery Using Factor Analysis. Neurotoxicology. 2023 Oct 30:S0161-813X(23)00138-9. doi: 10.1016/j.neuro.2023.10.012. Epub ahead of print. PMID: 37914043.
13. Wallis DJ, Kotlarz N, Knappe DRU, Collier DN, Lea CS, Reif D, McCord J, Strynar M, DeWitt JC, Hoppin JA. Estimation of the Half-Lives of Recently Detected Per- and Polyfluorinated Alkyl Ethers in an Exposed Community. Environ Sci Technol. 2023 Oct 6. doi: 10.1021/acs.est.2c08241. PMID: 37801709.
14. Ogletree SS, Huang JH, Reif D, Yang L, Dunstan C, Osakwe N, Oh JI, Hipp JA. The relationship between greenspace exposure and telomere length in the National Health and Nutrition Examination Survey. Sci Total Environ. 2023 Sep 28;905:167452. doi: 10.1016/j.scitotenv.2023.167452. PMID: 37777139.
15. Green AJ, Truong L, Thunga P, Leong C, Hancock M, Tanguay RL, Reif DM. Deep autoencoder-based behavioral pattern recognition outperforms standard statistical methods in high-dimensional zebrafish studies. bioRxiv [Preprint]. 2023 Sep 17:2023.09.13.557544. doi: 10.1101/2023.09.13.557544. PMID: 37745446; PMCID: PMC10515950.
16. Chappel JR, King ME, Fleming J, Eberlin LS, Reif DM, Baker ES. Aggregated Molecular Phenotype Scores: Enhancing Assessment and Visualization of Mass Spectrometry Imaging Data for Tissue-

Based Diagnostics. Anal Chem. 2023 Aug 29;95(34):12913-12922. doi: 10.1021/acs.analchem.3c02389. Epub 2023 Aug 14. PMID: 37579019; PMCID: PMC10561690.
17. Small GW, Akhtari FS, Green AJ, Havener TM, Sikes M, Quintanhila J, Gonzalez RD, Reif DM, Motsinger-Reif AA, McLeod HL, Wiltshire T. Pharmacogenomic Analyses Implicate B Cell Developmental Status and *MKL1* as Determinants of Sensitivity toward Anti-CD20 Monoclonal Antibody Therapy. Cells. 2023 Jun 7;12(12):1574. doi: 10.3390/cells12121574. PMID: 37371044; PMCID: PMC10297299.
18. Gonzalez RD, Small GW, Green AJ, Akhtari FS, Motsinger-Reif AA, Quintanilha JCF, Havener TM, Reif DM, McLeod HL, Wiltshire T. *MKX-AS1* Gene Expression Associated with Variation in Drug Response to Oxaliplatin and Clinical Outcomes in Colorectal Cancer Patients. Pharmaceuticals (Basel). 2023 May 17;16(5):757. doi: 10.3390/ph16050757. PMID: 37242540; PMCID: PMC10222429.
19. Gonzalez RD, Small GW, Green AJ, Akhtari FS, Havener TM, Quintanilha JCF, Cipriani AB, Reif DM, McLeod HL, Motsinger-Reif AA, Wiltshire T. *RYK* Gene Expression Associated with Drug Response Variation of Temozolomide and Clinical Outcomes in Glioma Patients. Pharmaceuticals (Basel). 2023 May 10;16(5):726. doi: 10.3390/ph16050726. PMID: 37242509; PMCID: PMC10220703.
20. Jin B, Dunson DB, Rager JE, Reif DM, Engel SM, Herring AH. Bayesian matrix completion for hypothesis testing, Journal of the Royal Statistical Society Series C: Applied Statistics, 2023; https://doi.org/10.1093/jrsssc/qlac005.
21. Phelps DW, Palekar AI, Conley HE, Ferrero G, Driggers JH, Linder KE, Kullman SW, Reif DM, Sheats MK, DeWitt JC, Yoder JA. Legacy and emerging per-and polyfluoroalkyl substances suppress the neutrophil respiratory burst. Journal of Immunotoxicology. 2022 Dec 31;20(1). doi: 10.1080/1547691X.2023.2176953.
22. Thunga P, Truong L, Rericha Y, Du J, Morshead M, Tanguay RL, Reif DM. Utilizing a Population-Genetic Framework to Test for Gene-Environment Interactions between Zebrafish Behavior and Chemical Exposure. Toxics. 2022 Dec 9;10(12):769. doi: 10.3390/toxics10120769. PMID: 36548602; PMCID: PMC9781692.
23. Watson ATD, Carmona Baez A, Jima D, Reif D, Ding J, Roberts R, Kullman SW. TCDD alters essential transcriptional regulators of osteogenic differentiation in multipotent mesenchymal stem cells. Toxicol Sci. 2022 Nov 12:kfac120. doi: 10.1093/toxsci/kfac120. Epub ahead of print. PMID: 36370075.
24. Carberry CK, Koval LE, Payton A, Hartwell H, Ho Kim Y, Smith GJ, Reif DM, Jaspers I, Ian Gilmour M, Rager JE. Wildfires and extracellular vesicles: Exosomal MicroRNAs as mediators of cross-tissue cardiopulmonary responses to biomass smoke. Environ Int. 2022 Sep;167:107419. doi: 10.1016/j.envint.2022.107419. Epub 2022 Jul 16. PMID: 35863239; PMCID: PMC9389917.
25. Wolkin A, Collier S, House JS, Reif D, Motsinger-Reif A, Duca L, Sharpe JD. Comparison of National Vulnerability Indices Used by the Centers for Disease Control and Prevention for the COVID-19 Response. Public Health Rep. 2022 Jul-Aug;137(4):803-812. doi: 10.1177/00333549221090262. Epub 2022 May 5. Erratum in: Public Health Rep. 2022 Sep-Oct;137(5):1041. PMID: 35514159; PMCID: PMC9257512.
26. Roell K, Koval LE, Boyles R, Patlewicz G, Ring C, Rider CV, Ward-Caviness C, Reif DM, Jaspers I, Fry RC, Rager JE. Development of the InTelligence And Machine LEarning (TAME) Toolkit for Introductory Data Science, Chemical-Biological Analyses, Predictive Modeling, and Database Mining for Environmental Health Research. Front Toxicol. 2022 Jun 22;4:893924. doi: 10.3389/ftox.2022.893924. PMID: 35812168; PMCID: PMC9257219.
27. Wallis DJ, La Du J, Thunga P, Elson D, Truong L, Kolluri SK, Tanguay RL, Reif DM. Leveraging a High-Throughput Screening Method to Identify Mechanisms of Individual Susceptibility Differences in a Genetically Diverse Zebrafish Model. Front Toxicol. 2022 Apr 29;4:846221. doi: 10.3389/ftox.2022.846221. PMID: 35573279; PMCID: PMC9098949.
28. Thessen AE, Marvel S, Achenbach JC, Fischer S, Haendel MA, Hayward K, Klüver N, Könemann S, Legradi J, Lein P, Leong C, Mylroie JE, Padilla S, Perone D, Planchart A, Prieto RM, Muriana A, Quevedo C, Reif D, Ryan K, Stinckens E, Truong L, Vergauwen L, Vom Berg C, Wilbanks M, Yaghoobi B, Hamm J. Implementation of Zebrafish Ontologies for Toxicology Screening. Front Toxicol. 2022 Mar 11;4:817999. doi: 10.3389/ftox.2022.817999. PMID: 35387429; PMCID: PMC8979167.

29. Fleming J, Marvel SW, Supak S, Motsinger-Reif AA, Reif DM. ToxPi*GIS Toolkit: creating, viewing, and sharing integrative visualizations for geospatial data using ArcGIS. J Expo Sci Environ Epidemiol. 2022 Apr 26:1–8. doi: 10.1038/s41370-022-00433-w. Epub ahead of print. PMID: 35474345; PMCID: PMC9039976.
30. Shankar P, Garcia GR, La Du JK, Sullivan CM, Dunham CL, Goodale BC, Waters KM, Stanisheuski S, Maier CS, Thunga P, Reif DM, Tanguay RL. The Ahr2-Dependent wfikkn1 Gene Influences Zebrafish Transcriptome, Proteome, and Behavior. Toxicol Sci. 2022 May 26;187(2):325-344. doi: 10.1093/toxsci/kfac037. PMID: 35377459; PMCID: PMC9308396.
31. Truong L, Rericha Y, Thunga P, Marvel S, Wallis D, Simonich MT, Field JA, Cao D, Reif DM, Tanguay RL. Systematic developmental toxicity assessment of a structurally diverse library of PFAS in zebrafish. J Hazard Mater. 2022 Jun 5;431:128615. doi: 10.1016/j.jhazmat.2022.128615. Epub 2022 Mar 2. PMID: 35263707; PMCID: PMC8970529.
32. Kirkwood KI, Fleming J, Nguyen H, Reif DM, Baker ES, Belcher SM. Utilizing Pine Needles to Temporally and Spatially Profile Per- and Polyfluoroalkyl Substances (PFAS). Environ Sci Technol. 2022 Mar 15;56(6):3441-3451. doi: 10.1021/acs.est.1c06483. Epub 2022 Feb 17. PMID: 35175744; PMCID: PMC9199521.
33. Hubal EAC, DeLuca NM, Mullikin A, Slover R, Little JC, Reif DM. Demonstrating a systems approach for integrating disparate data streams to inform decisions on children's environmental health. BMC Public Health. 2022 Feb 15;22(1):313. doi: 10.1186/s12889-022-12682-3. PMID: 35168583; PMCID: PMC8845296.
34. Akhtari FS, Green AJ, Small GW, Havener TM, House JS, Roell KR, Reif DM, McLeod HL, Wiltshire T, Motsinger-Reif AA. High-throughput screening and genome-wide analyses of 44 anticancer drugs in the 1000 Genomes cell lines reveals an association of the NQO1 gene with the response of multiple anticancer drugs. *PLoS Genet*. 2021 Aug 26;17(8):e1009732.
35. Green AJ, Mohlenkamp MJ, Das J, Chaudhari M, Truong L, Tanguay RL, Reif DM. Leveraging high-throughput screening data, deep neural networks, and conditional generative adversarial networks to advance predictive toxicology. *PLoS Comput Biol.* 2021 July 02; 17(7): e1009135.
36. Thunga P, Truong L, Tanguay RL, Reif DM. Concurrent evaluation of mortality and behavioral responses: A fast and efficient testing approach for high-throughput chemical hazard identification. *Frontiers in Toxicology.* 2021 Jun 15; 3.
37. Odenkirk MT, Reif DM, Baker ES. Multiomic big data analysis challenges: Increasing confidence in the interpretation of artificial intelligence assessments. *Anal Chem.* 2021 June 08; 93(22): 7763-7773.
38. Green AJ, Anchang B, Akhtari FS, Reif DM, Motsinger-Reif A. Extending the lymphoblastoid cell line model for drug combination pharmacogenomics. *Pharmacogenomics.* 2021 June 01; 22(9): 543-551.
39. Marvel SW, House JS, Wheeler M, Song K, Zhou Y, Wright FA, Chiu WA, Rusyn I, Motsinger-Reif A, Reif DM. The COVID-19 pandemic vulnerability index (PVI) dashboard: Monitoring county-level vulnerability using visualization, statistical modeling, and machine learning. *Environ Health Perspect.* 2021 jan; 129(1): 17701.
40. Gilchrist PO, Alexander AB, Green AJ, Sanders FE, Hooker AQ, Reif DM. Development of a pandemic awareness STEM outreach curriculum: Utilizing a computational thinking taxonomy framework. *Education Sciences.* 2021; 11(3).
41. Wallis DJ, Truong L, La Du Jane, Tanguay RL, Reif DM. Uncovering evidence for endocrine-disrupting chemicals that elicit differential susceptibility through gene-environment interactions. *Toxics.* 2021; 9(4).
42. Cohen Hubal Elaine A, Reif DM, Slover R, Mullikin A, Little JC. Children's environmental health: A systems approach for anticipating impacts from chemicals. *International journal of environmental research and public health.* 2020 nov; 17(22): 8337.
43. Odenkirk MT, Zin PPK, Ash JR, Reif DM, Fourches D, Baker ES. Structural-based connectivity and omic phenotype evaluations (SCOPE): A cheminformatics toolbox for investigating lipidomic changes in complex systems. *Analyst.* 2020 nov; 145(22): 7197-7209.
44. Reif DM, Chanock SJ, Edwards KM, Crowe JE. Inappropriate citation of vaccine article. *The Journal of infectious diseases.* 2020 sep; 222(8): 1413-1414.
45. Truong L, Marvel S, Reif DM, Thomas DG, Pande P, Dasgupta S, Simonich MT, Waters KM, Tanguay RL. The multi-dimensional embryonic zebrafish platform predicts flame retardant bioactivity. *Reprod Toxicol.* 2020 aug; 96: 359-369.

46. Kosnik MB, Strickland JD, Marvel SW, Wallis DJ, Wallace K, Richard AM, Reif DM, Shafer TJ. Concentration–response evaluation of ToxCast compounds for multivariate activity patterns of neural network function. *Arch Toxicol.* 2020 feb; 94(2): 469-484.
47. Bhandari S, Lewis PGT, Craft E, Marvel SW, Reif DM, Chiu WA. HGBEnviroScreen: Enabling community action through data integration in the Houston–Galveston–Brazoria region. *International Journal of Environmental Research and Public Health.* 2020 feb; 17(4): 1130.
48. Phelps DW, Fletcher AA, Rodriguez-Nunez I, Balik-Meisner MR, Tokarz DA, Reif DM, Germolec DR, Yoder JA. In vivo assessment of respiratory burst inhibition by xenobiotic exposure using larval zebrafish. *Journal of Immunotoxicology.* 2020 jan; 17(1): 94-104.
49. Gillera SEA, Marinello WP, Horman BM, Phillips AL, Ruis MT, Stapleton HM, Reif DM, Patisaul HB. Sex-specific effects of perinatal FireMaster\textregistered 550 (FM 550) exposure on socioemotional behavior in prairie voles. *Neurotoxicol Teratol.* 2019 nov: 106840.
50. Roell KR, Havener TM, Reif DM, Jack J, McLeod HL, Wiltshire T, Motsinger-Reif AA. Synergistic chemotherapy drug response is a genetic trait in lymphoblastoid cell lines. *Frontiers in Genetics.* 2019 oct; 10.
51. Burnett SD, Blanchette AD, Grimm FA, House JS, Reif DM, Wright FA, Chiu WA, Rusyn I. Population-based toxicity screening in human induced pluripotent stem cell-derived cardiomyocytes. *Toxicol Appl Pharmacol.* 2019 oct; 381: 114711.
52. Kosnik MB, Reif DM. Determination of chemical-disease risk values to prioritize connections between environmental factors, genetic variants, and human diseases. *Toxicol Appl Pharmacol.* 2019 sep; 379: 114674.
53. To KT, Truong L, Edwards S, Tanguay RL, Reif DM. Multivariate modeling of engineered nanomaterial features associated with developmental toxicity. *NanoImpact.* 2019 apr; 16: 100185.
54. Truong L, Zaikova T, Baldock BL, Balik-Meisner M, To K, Reif DM, Kennedy ZC, Hutchison JE, Tanguay RL. Systematic determination of the relationship between nanoparticle core diameter and toxicity for a series of structurally analogous gold nanoparticles in zebrafish. *Nanotoxicology.* 2019.
55. Reif DM, Chanock SJ, Edwards KM, Crowe JE. Inappropriate citation of vaccine article. *J Infect Dis.* 2019.
56. Kosnik MB, Planchart A, Marvel SW, Reif DM, Mattingly CJ. Integration of curated and high-throughput screening data to elucidate environmental influences on disease pathways. *Computational Toxicology.* 2019.
57. Kosnik MB, Reif DM, Lobdell DT, Astell-Burt T, Feng X, Hader JD, Hoppin JA. Associations between access to healthcare, environmental quality, and end-stage renal disease survival time: Proportional-hazards models of over 1,000,000 people over 14 years. *PLoS ONE.* 2019; 14(3).
58. To KT, Fry RC, Reif DM. Characterizing the effects of missing data and evaluating imputation methods for chemical prioritization applications using ToxPi. *BioData Mining.* 2018 dec; 11(1): 10.
59. Chiu WA, Guyton KZ, Martin MT, Reif DM, Rusyn I. Use of high-throughput in vitro toxicity screening data in cancer hazard evaluations by IARC monograph working groups. *ALTEX.* 2018.
60. Mahapatra D, Franzosa JA, Roell K, Kuenemann MA, Houck KA, Reif DM, Fourches D, Kullman SW. Confirmation of high-throughput screening data and novel mechanistic insights into VDR-xenobiotic interactions by orthogonal assays. *Scientific Reports.* 2018; 8(1).
61. Baptissart M, Lamb HE, To K, Bradish C, Tehrani J, Reif D, Cowley M. Neonatal mice exposed to a high-fat diet in utero influence the behaviour of their nursing dam. *Proceedings of the Royal Society B: Biological Sciences.* 2018; 285(1891).
62. Marvel SW, To K, Grimm FA, Wright FA, Rusyn I, Reif DM. ToxPi graphical user interface 2.0: Dynamic exploration, visualization, and sharing of integrated data models. *BMC Bioinformatics.* 2018; 19(1).
63. Balik-Meisner M, Truong L, Scholl EH, La Du JK, Tanguay RL, Reif DM. Elucidating gene-by-environment interactions associated with differential susceptibility to chemical exposure. *Environ Health Perspect.* 2018; 126(6).
64. Balik-Meisner M, Truong L, Scholl EH, Tanguay RL, Reif DM. Population genetic diversity in zebrafish lines. *Mammalian Genome.* 2018; 29(1-2).
65. Chiu WA, Guyton KZ, Martin MT, Reif DM, Rusyn I. Use of high-throughput in vitro toxicity screening data in cancer hazard evaluations by IARC monograph working groups. *ALTEX.* 2018; 35(1).
66. To KT, Fry RC, Reif DM. Characterizing the effects of missing data and evaluating imputation methods for chemical prioritization applications using ToxPi. *BioData Mining.* 2018; 11(1).

67. Loomis D, Guyton KZ, Grosse Y, El Ghissassi Fatiha, Bouvard V', Benbrahim-Tallaa L, Guha N, Vilahur N, Mattock H, Straif K. Carcinogenicity of benzene. *The Lancet.Oncology.* 2017.
68. Knecht AL, Truong L, Marvel SW, Reif DM, Garcia A, Lu C, Simonich MT, Teeguarden JG, Tanguay RL. Transgenerational inheritance of neurobehavioral and physiological deficits from developmental exposure to benzo[a]pyrene in zebrafish. *Toxicol Appl Pharmacol.* 2017; 329.
69. Watson ATD, Planchart A, Mattingly CJ, Winkler C, Reif DM, Kullman SW. Embryonic exposure to TCDD impacts osteogenesis of the axial skeleton in japanese medaka, oryzias latipes. *Toxicological Sciences.* 2017; 155(2).
70. Zhang G, Roell KR, Truong L, Tanguay RL, Reif DM. A data-driven weighting scheme for multivariate phenotypic endpoints recapitulates zebrafish developmental cascades. *Toxicol Appl Pharmacol.* 2017; 314.
71. Zhang G, Truong L, Tanguay RL, Reif DM. A new statistical approach to characterize chemical-elicited behavioral effects in high-throughput studies using zebrafish. *PLoS ONE.* 2017; 12(1).
72. Tilley SK, Reif DM, Fry RC. Incorporating ToxCast and Tox21 datasets to rank biological activity of chemicals at superfund sites in north carolina. *Environ Int.* 2017; 101.
73. Roell KR, Reif DM, Motsinger-Reif AA. An introduction to terminology and methodology of chemical synergy-perspectives from across disciplines. *Frontiers in Pharmacology.* 2017; 8(APR).
74. Judson R, Houck K, Martin M, Richard AM, Knudsen TB, Shah I, Little S, Wambaugh J, Setzer RW, Kothya P, Phuong J, Filer D, Smith D, Reif D, Rotroff D, Kleinstreuer N, Sipes N, Xia M, Huang R, Crofton K, Thomas RS. Analysis of the effects of cell stress and cytotoxicity on in vitro assay activity across a diverse chemical and assay space. *Toxicological Sciences.* 2016; 152(2).
75. Judson R, Houck K, Martin M, Richard AM, Knudsen TB, Shah I, Little S, Wambaugh J, Setzer RW, Kothiya P, Phuong J, Filer D, Smith D, Reif D, Rotroff D, Kleinstreuer N, Sipes N, Xia M, Huang R, Crofton K, Thomas RS. Corrigendum: Analysis of the effects of cell stress and cytotoxicity on in vitro assay activity across a diverse chemical and assay space [toxicological sciences, 152, (2016) (323-339)] doi: 10.1093/toxsci/kfw092. *Toxicological Sciences.* 2016; 153(2).
76. Planchart A, Mattingly CJ, Allen D, Ceger P, Casey W, Hinton D, Kanungo J, Kullman SW, Tal T, Bondesson M, Burgess SM, Sullivan C, Kim C, Behl M, Padilla S, Reif DM, Tanguay RL, Hamm J. Advancing toxicology research using in vivo high throughput toxicology with small fish models. *ALTEX.* 2016; 33(4).
77. Grimm FA, Iwata Y, Sirenko O, Chappell GA, Wright FA, Reif DM, Braisted J, Gerhold DL, Yeakley JM, Shepard P, Seligmann B, Roy T, Boogaard PJ, Ketelslegers HB, Rohde AM, Rusyn I. A chemical-biological similarity-based grouping of complex substances as a prototype approach for evaluating chemical alternatives. *Green Chem.* 2016; 18(16).
78. Shah I, Woodrow Setzer R, Jack J, Houck KA, Judson RS, Knudsen TB, Liu J, Martin MT, Reif DM, Richard AM, Thomas RS, Crofton KM, Dix DJ, Kavlock RJ. Using toxcast™ data to reconstruct dynamic cell state trajectories and estimate toxicological points of departure. *Environ Health Perspect.* 2016; 124(7).
79. Auerbach S, Filer D, Reif D, Walker V, Holloway AC, Schlezinger J, Srinivasan S, Svoboda D, Judson R, Bucher JR, Thayer KA. Prioritizing environmental chemicals for obesity and diabetes outcomes research: A screening approach using ToxCast™ high-throughput data. *Environ Health Perspect.* 2016; 124(8).
80. Grondin CJ, Davis AP, Wiegers TC, King BL, Wiegers JA, Reif DM, Hoppin JA, Mattingly CJ. Advancing exposure science through chemical data curation and integration in the comparative toxicogenomics database. *Environ Health Perspect.* 2016; 124(10).
81. Reif DM, Truong L, Mandrell D, Marvel S, Zhang G, Tanguay RL. High-throughput characterization of chemical-associated embryonic behavioral changes predicts teratogenic outcomes. *Arch Toxicol.* 2016; 90(6).
82. Kollitz EM, Zhang G, Hawkins MB, Whitfield GK, Reif DM, Kullman SW. Evolutionary and functional diversification of the vitamin D receptor-lithocholic acid partnership. *PLoS ONE.* 2016; 11(12).
83. Zhang G, Marvel S, Truong L, Tanguay RL, Reif DM. Aggregate entropy scoring for quantifying activity across endpoints with irregular correlation structure. *Reproductive Toxicology.* 2016; 62.
84. Scott Chialvo CH, Che R, Reif D, Motsinger-Reif A, Reed LK. Eigenvector metabolite analysis reveals dietary effects on the association among metabolite correlation patterns, gene expression, and phenotypes. *Metabolomics.* 2016; 12(11).

85. Loomis D, Guyton K, Grosse Y, El Ghissasi Fatiha, Bouvard V', Benbrahim-Tallaa L, Guha N, Mattock H, Straif K. Carcinogenicity of lindane, DDT, and 2,4-dichlorophenoxyacetic acid. *The Lancet. Oncology.* 2015.
86. Rovida C, Asakura S, Daneshian M, Hofman-Huether H, Leist M, Meunier L, Reif D, Rossi A, Schmutz M, Valentin J-, Zurlo J, Hartung T. Food for thought...: Toxicity testing in the 21st century beyond environmental chemicals. *ALTEX.* 2015; 32(3).
87. George BJ, Reif DM, Gallagher JE, Williams-DeVane CR, Heidenfelder BL, Hudgens EE, Jones W, Neas L, Cohen Hubal EA, Edwards SW. Data-driven asthma endotypes defined from blood biomarker and gene expression data. *PLoS ONE.* 2015; 10(2).
88. Kollitz EM, Zhang G, Hawkins MB, Whitfield GK, Reif DM, Kullman SW. Molecular cloning, functional characterization, and evolutionary analysis of vitamin D receptors isolated from basal vertebrates. *PLoS ONE.* 2015; 10(4).
89. Rebuli ME, Camacho L, Adonay ME, Reif DM, Aylor DL, Patisaul HB. Impact of low-dose oral exposure to bisphenol A (BPA) on juvenile and adult rat exploratory and anxiety behavior: A CLARITY-BPA consortium study. *Toxicological Sciences.* 2015; 148(2).
90. Huang R, Sakamuru S, Martin MT, Reif DM, Judson RS, Houck KA, Casey W, Hsieh J-, Shockley KR, Ceger P, Fostel J, Witt KL, Tong W, Rotroff DM, Zhao T, Shinn P, Simeonov A, Dix DJ, Austin CP, Kavlock RJ, Tice RR, Xia M. Profiling of the Tox21 10K compound library for agonists and antagonists of the estrogen receptor alpha signaling pathway. *Scientific Reports.* 2014; 4.
91. Rotroff DM, Wetmore BA, Dix DJ, Ferguson SS, Clewell HJ, Houck KA, LeCluyse EL, Andersen ME, Judson RS, Smith CM, Sochaski MA, Kavlock RJ, Boellmann F, Martin MT, Reif DM, Wambaugh JF, Thomas RS. Erratum to incorporating human dosimetry and exposure into high-throughput in vitro toxicity screening [toxicological sciences 137, 2, (2014), 499]. *Toxicological Sciences.* 2014; 137(2).
92. Kleinstreuer NC, Yang J, Berg EL, Knudsen TB, Richard AM, Martin MT, Reif DM, Judson RS, Polokoff M, Dix DJ, Kavlock RJ, Houck KA. Phenotypic screening of the ToxCast chemical library to classify toxic and therapeutic mechanisms. *Nat Biotechnol.* 2014; 32(6).
93. Motsinger-Reif AA, Zhu H, Kling MA, Matson W, Sharma S, Fiehn O, Reif DM, Appleby DH, Doraiswamy PM, Trojanowski JQ, Kaddurah-Daouk R, Arnold SE. Comparing metabolomic and pathologic biomarkers alone and in combination for discriminating alzheimer's disease from normal cognitive aging. *Acta Neuropathologica Communications.* 2014; 2(1).
94. Rotroff DM, Martin MT, Dix DJ, Filer DL, Houck KA, Knudsen TB, Sipes NS, Reif DM, Xia M, Huang R, Judson RS. Predictive endocrine testing in the 21st century using in vitro assays of estrogen receptor signaling responses. *Environmental Science and Technology.* 2014; 48(15).
95. Truong L, Reif DM, Mary LS, Geier MC, Truong HD, Tanguay RL. Multidimensional in vivo hazard assessment using zebrafish. *Toxicological Sciences.* 2014; 137(1).
96. Filer D, Patisaul HB, Schug T, Reif D, Thayer K. Test driving ToxCast: Endocrine profiling for 1858 chemicals included in phase II. *Current Opinion in Pharmacology.* 2014; 19.
97. Ducharme NA, Reif DM, Gustafsson J-, Bondesson M. Comparison of toxicity values across zebrafish early life stages and mammalian studies: Implications for chemical testing. *Reproductive Toxicology.* 2014; 55.
98. Wilson A, Reif DM, Reich BJ. Hierarchical dose-response modeling for high-throughput toxicity screening of environmental chemicals. *Biometrics.* 2014; 70(1).
99. Judson R, Kavlock R, Martin M, Reif D, Houck K, Knudsen T, Richard A, Tice RR, Whelan M, Xia M, Huang R, Austin C, Daston G, Hartung T, Fowle JR, Wooge W, Tong W, Dix D. Perspectives on validation of high-throughput assays supporting 21st century toxicity testing. *ALTEX.* 2013; 30(1).
100. Wambaugh JF, Setzer RW, Pitruzzello AM, Liu J, Reif DM, Kleinstreuer NC, Wang NCY, Sipes N, Martin M, Das K, DeWitt JC, Strynar M, Judson R, Houck KA, Lau C. Dosimetric anchoring of in vivo and in vitro studies for perfluorooctanoate and perfluorooctanesulfonate. *Toxicological Sciences.* 2013; 136(2).
101. Wambaugh JF, Setzer RW, Reif DM, Gangwal S, Mitchell-Blackwood J, Arnot JA, Joliet O, Frame A, Rabinowitz J, Knudsen TB, Judson RS, Egeghy P, Vallero D, Cohen Hubal EA. High-throughput models for exposure-based chemical prioritization in the ExpoCast project. *Environmental Science and Technology.* 2013; 47(15).
102. Kleinstreuer NC, Dix DJ, Houck KA, Kavlock RJ, Knudsen TB, Martin MT, Paul KB, Reif DM, Crofton KM, Hamilton K, Hunter R, Shah I, Judson RS. In vitro perturbations of targets in cancer hallmark processes predict rodent chemical carcinogenesis. *Toxicological Sciences.* 2013; 131(1).

103. Rotroff DM, Dix DJ, Houck KA, Kavlock RJ, Knudsen TB, Martin MT, Reif DM, Richard AM, Sipes NS, Abassi YA, Jin C, Stampfl M, Judson RS. Real-time growth kinetics measuring hormone mimicry for ToxCast chemicals in T-47D human ductal carcinoma cells. *Chem Res Toxicol.* 2013; 26(7).
104. Rotroff DM, Dix DJ, Houck KA, Knudsen TB, Martin MT, McLaurin KW, Reif DM, Crofton KM, Singh AV, Xia M, Huang R, Judson RS. Using in vitro high throughput screening assays to identify potential endocrine-disrupting chemicals. *Environ Health Perspect.* 2013; 121(1).
105. Sipes NS, Martin MT, Kothiya P, Reif DM, Judson RS, Richard AM, Houck KA, Dix DJ, Kavlock RJ, Knudsen TB. Profiling 976 ToxCast chemicals across 331 enzymatic and receptor signaling assays. *Chem Res Toxicol.* 2013; 26(6).
106. Reif DM, Sypa M, Lock EF, Wright FA, Wilson A, Cathey T, Judson RR, Rusyn I. ToxPi GUI: An interactive visualization tool for transparent integration of data from diverse sources of evidence. *Bioinformatics.* 2013; 29(3).
107. Kleinstreuer N, Dix D, Rountree M, Baker N, Sipes N, Reif D, Spencer R, Knudsen T. A computational model predicting disruption of blood vessel development. *PLoS Computational Biology.* 2013; 9(4).
108. Ducharme NA, Peterson LE, Benfenati E, Reif D, McCollum CW, Gustafsson J-, Bondesson M. Meta-analysis of toxicity and teratogenicity of 133 chemicals from zebrafish developmental toxicity studies. *Reproductive Toxicology.* 2013; 41.
109. Williams-DeVane CR, Reif DM, Cohen Hubal E, Bushel PR, Hudgens EE, Gallagher JE, Edwards SW. Decision tree-based method for integrating gene expression, demographic, and clinical data to determine disease endotypes. *BMC Systems Biology.* 2013; 7.
110. Judson RS, Martin MT, Egeghy P, Gangwal S, Reif DM, Kothiya P, Wolf M, Cathey T, Transue T, Smith D, Vail J, Frame A, Mosher S, Cohen Hubal EA, Richard AM. Aggregating data for computational toxicology applications: The U.S. environmental protection agency (EPA) aggregated computational toxicology resource (ACToR) system. *International Journal of Molecular Sciences.* 2012; 13(2).
111. Kavlock R, Chandler K, Houck K, Hunter S, Judson R, Kleinstreuer N, Knudsen T, Martin M, Padilla S, Reif D, Richard A, Rotroff D, Sipes N, Dix D. Update on EPA's ToxCast program: Providing high throughput decision support tools for chemical risk management. *Chem Res Toxicol.* 2012; 25(7).
112. Padilla S, Corum D, Padnos B, Hunter DL, Beam A, Houck KA, Sipes N, Kleinstreuer N, Knudsen T, Dix DJ, Reif DM. Zebrafish developmental screening of the ToxCast™ phase I chemical library. *Reproductive Toxicology.* 2012; 33(2).
113. Dix DJ, Houck KA, Judson RS, Kleinstreuer NC, Knudsen TB, Martin MT, Reif DM, Richard AM, Shah I, Sipes NS, Kavlock RJ. Incorporating biological, chemical, and toxicological knowledge into predictive models of toxicity. *Toxicological Sciences.* 2012; 130(2).
114. Gangwal S, Reif DM, Mosher S, Egeghy PP, Wambaugh JF, Judson RS, Hubal EAC. Incorporating exposure information into the toxicological prioritization index decision support framework. *Sci Total Environ.* 2012; 435-436.
115. Hoover K, Reif D, Marceau R, Harris T, Motsinger-Reif A. A comparison of GE optimized neural networks and decision trees. Proceedings of the 14th international conference on genetic and evolutionary computation. 2012.
116. Gory JJ, Sweeney HC, Reif DM, Motsinger-Reif AA. A comparison of internal model validation methods for multifactor dimensionality reduction in the case of genetic heterogeneity. *BMC research notes.* 2012; 5.
117. Knudsen TB, Houck KA, Sipes NS, Singh AV, Judson RS, Martin MT, Weissman A, Kleinstreuer NC, Mortensen HM, Reif DM, Rabinowitz JR, Setzer RW, Richard AM, Dix DJ, Kavlock RJ. Activity profiles of 309 ToxCast™ chemicals evaluated across 292 biochemical targets. *Toxicology.* 2011; 282(1-2).
118. Gallagher J, Hudgens E, Williams A, Inmon J, Rhoney S, Andrews G, Reif D, Heidenfelder B, Neas L, Williams R, Johnson M, Zkaynak H, Edwards S, Hubal EC. Mechanistic indicators of childhood asthma (MICA) study: Piloting an integrative design for evaluating environmental health. *BMC Public Health.* 2011; 11.
119. Chandler KJ, Barrier M, Jeffay S, Nichols HP, Kleinstreuer NC, Singh AV, Reif DM, Sipes NS, Judson RS, Dix DJ, Kavlock R, Hunter ES, Knudsen TB. Evaluation of 309 environmental chemicals using a mouse embryonic stem cell adherent cell differentiation and cytotoxicity assay. *PLoS ONE.* 2011; 6(6).

120. Kleinstreuer NC, Judson RS, Reif DM, Sipes NS, Singh AV, Chandler KJ, DeWoskin R, Dix DJ, Kavlock RJ, Knudsen TB. Environmental impact on vascular development predicted by high-throughput screening. *Environ Health Perspect.* 2011; 119(11).
121. Sipes NS, Martin MT, Reif DM, Kleinstreuer NC, Judson RS, Singh AV, Chandler KJ, Dix DJ, Kavlock RJ, Knudsen TB. Predictive models of prenatal developmental toxicity from toxcast high-throughput screening data. *Toxicological Sciences.* 2011; 124(1).
122. Joubert BR, Reif DM, Edwards SW, Leiner KA, Hudgens EE, Egeghy P, Gallagher JE, Hubal EC. Evaluation of genetic susceptibility to childhood allergy and asthma in an african american urban population. *BMC Medical Genetics.* 2011; 12.
123. Shah I, Houck K, Judson RS, Kavlock RJ, Martin MT, Reif DM, Wambaugh J, Dix DJ. Using nuclear receptor activity to stratify hepatocarcinogens. *PLoS ONE.* 2011; 6(2).
124. Martin MT, Knudsen TB, Reif DM, Houck KA, Judson RS, Kavlock RJ, Dix DJ. Predictive model of rat reproductive toxicity from ToxCast high throughput screening. *Biol Reprod.* 2011; 85(2).
125. Hoover K, Marceau R, Harris T, Hardison N, Reif D, Motsinger-Reif A. Optimization of grammatical evolution decision trees. Genetic and evolutionary computation conference. 2011.
126. Rotroff DM, Wetmore BA, Dix DJ, Ferguson SS, Clewell HJ, Houck KA, LeCluyse EL, Andersen ME, Judson RS, Smith CM, Sochaski MA, Kavlock RJ, Boellmann F, Martin MT, Reif DM, Wambaugh JF, Thomas RS. Incorporating human dosimetry and exposure into high-throughput in vitro toxicity screening. *Toxicological Sciences.* 2010; 117(2).
127. Martin MT, Dix DJ, Judson RS, Kavlock RJ, Reif DM, Richard AM, Rotroff DM, Romanov S, Medvedev A, Poltoratskaya N, Gambarian M, Moeser M, Makarov SS, Houck KA. Impact of environmental chemicals on key transcription regulators and correlation to toxicity end points within EPA's toxcast program. *Chem Res Toxicol.* 2010; 23(3).
128. Judson RS, Martin MT, Reif DM, Houck KA, Knudsen TB, Rotroff DM, Xia M, Sakamuru S, Huang R, Shinn P, Austin CP, Kavlock RJ, Dix DJ. Analysis of eight oil spill dispersants using rapid, in vitro tests for endocrine and other biological activity. *Environmental Science and Technology.* 2010; 44(15).
129. Judson RS, Houck KA, Kavlock RJ, Knudsen TB, Martin MT, Mortensen HM, Reif DM, Rotroff DM, Shah I, Richard AM, Dix DJ. In vitro screening of environmental chemicals for targeted testing prioritization: The toxcast project. *Environ Health Perspect.* 2010; 118(4).
130. Rotroff DM, Beam AL, Dix DJ, Farmer A, Freeman KM, Houck KA, Judson RS, Lecluyse EL, Martin MT, Reif DM, Ferguson SS. Xenobiotic-metabolizing enzyme and transporter gene expression in primary cultures of human hepatocytes modulated by toxcast chemicals. *Journal of Toxicology and Environmental Health - Part B: Critical Reviews.* 2010; 13(2-4).
131. Reif DM, Martin MT, Tan SW, Houck KA, Judson RS, Richard AM, Knudsen TB, Dix DJ, Kavlock RJ. Endocrine profling and prioritization of environmental chemicals using toxcast data. *Environ Health Perspect.* 2010; 118(12).
132. Sanchez YA, Deener K, Hubal EC, Knowlton C, Reif D, Segal D. Research needs for community-based risk assessment: Findings from a multi-disciplinary workshop. *Journal of Exposure Science and Environmental Epidemiology.* 2010; 20(2).
133. Heidenfelder BL, Reif DM, Harkema JR, Cohen Hubal EA, Hudgens EE, Bramble LA, Wagner JG, Morishita M, Keeler GJ, Edwards SW, Gallagher JE. Comparative microarray analysis and pulmonary changes in brown norway rats exposed to ovalbumin and concentrated air particulates. *Toxicological Sciences.* 2009; 108(1).
134. Reif DM, Motsinger-Reif AA, McKinney BA, Rock MT, Crowe Jr. JE, Moore JH. Integrated analysis of genetic and proteomic data identifies biomarkers associated with adverse events following smallpox vaccination. *Genes Immun.* 2009; 10(2).
135. Martin MT, Judson RS, Reif DM, Kavlock RJ, Dix DJ. Profiling chemicals based on chronic toxicity results from the U.S. EPA ToxRef database. *Environ Health Perspect.* 2009; 117(3).
136. Motsinger-Reif AA, Reif DM, Fanelli TJ, Ritchie MD. A comparison of analytical methods for genetic association studies. *Genet Epidemiol.* 2009; 33(8): 767-78.
137. Reif DM, McKinney BA, Motsinger AA, Chanock SJ, Edwards KM, Rock MT, Moore JH, Crowe Jr. JE. Genetic basis for adverse events after smallpox vaccination. *J Infect Dis.* 2008; 198(1).
138. Hardison NE, Reif DM, Fanelli TJ, Ritchie MD, Dudek SM, Motsinger-Reif AA. A balanced accuracy fitness function leads to robust analysis using grammatical evolution neural networks in the case of

class imbalance. GECCO'08: Proceedings of the 10th annual conference on genetic and evolutionary computation. 2008. p. 353-4.
139. Motsinger-Reif AA, Reif DM, Fanelli TJ, Ritchie MD. A comparison of analytical methods for genetic association studies. *Genet Epidemiol.* 2008; 32(8).
140. Reif DM, McKinney BA, Motsinger AA. Genetic basis for adverse events after smallpox vaccination (journal of infectious diseases (2008) 198, (16-22)). *J Infect Dis.* 2008; 198(5).
141. McKinney BA, Reif DM, White BC, Crowe Jr. JE, Moore JH. Evaporative cooling feature selection for genotypic data involving interactions. *Bioinformatics.* 2007; 23(16).
142. Motsinger AA, Reif DM, Fanelli TJ, Davis AC, Ritchie MD. Linkage disequilibrium in genetic association studies improves the performance of grammatical evolution neural networks. IEEE symposium on computational intelligence and bioinformatics and computational biology. 2007. p. 1-8.
143. Motsinger AA, Ritchie MD, Reif DM. Novel methods for detecting epistasis in pharmacogenomics studies. *Pharmacogenomics.* 2007; 8(9): 1229-41.
144. Reif DM, Israel MA, Moore JH. Exploratory visual analysis of statistical results from microarray experiments comparing high and low grade glioma. *Cancer Informatics.* 2007; 5: 19-24.
145. McKinney BA, Reif DM, Rock MT, Edwards KM, Kingsmore SF, Moore JH, Crowe Jr. JE. Cytokine expression patterns associated with systemic adverse events following smallpox immunization. *J Infect Dis.* 2006; 194(4): 444-53.
146. Reif DM, Motsinger AA, McKinney BA, Crowe Jr. JE, Moore JH. Feature selection using a random forests classifier for the integrated analysis of multiple data types. Proceedings of the IEEE symposium on computational intelligence in bioinformatics and computational biology. 2006. p. 1-8.
147. McKinney BA, Reif DM, Ritchie MD, Moore JH. Machine learning for detecting gene-gene interactions: A review. *Applied Bioinformatics.* 2006; 5(2): 77-88.
148. Motsinger AA, Reif DM, Dudek SM, Ritchie MD. Understanding the evolutionary process of grammatical evolution neural networks for feature selection in genetic epidemiology. Proceedings of the IEEE symposium on computational intelligence in bioinformatics and computational biology. 2006. p. 1-8.
149. Reif DM, Moore JH. Visual analysis of statistical results from microarray studies of human breast cancer. *Oncol Rep.* 2006; 15(4): 1043-7.
150. Reif DM, Dudek SM, Shaffer CM, Wang J, Moore JH. In: Exploratory visual analysis of pharmacogenomic results. Proceedings of the pacific symposium on biocomputing. 2005. p. 296-307.
151. White BC, Gilbert JC, Reif DM, Moore JH. In: A statistical comparison of grammatical evolution strategies in the domain of human genetics. IEEE congress on evolutionary computation. 2005. p. 676-82.
152. Wilke RA, Reif DM, Moore JH. Combinatorial pharmacogenetics. *Nature Reviews Drug Discovery.* 2005; 4(11): 911-18.
153. Reif DM, White BC, Moore JH. Integrated analysis of genetic, genomic and proteomic data. *Expert Review of Proteomics.* 2004; 1(1): 67-75.
154. Reif DM, White BC, Olsen N, Aune T, Moore JH. Complex function sets improve symbolic discriminant analysis of microarray data. *Lecture Notes in Computer Science.* 2003; 2724: 2277-87.

Peer-Reviewed Books and Chapters

1. Judson RS, Reif DM, Houck KA, Knudsen TB, Harrill J, Friedman KP. Computational Toxicology. In: Principles of Toxicology: Environmental and Industrial Applications. 4rd ed. Hoboken, NJ: John Wiley and Sons; 2021.
2. Committee on A Class Approach to Hazard Assessment of Organohalogen Flame Retardants. A Class Approach to Hazard Assessment of Organohalogen Flame Retardants. Washington (DC): by the National Academy of Sciences; 2019.
3. Zhang G, Truong L, Tanguay RL, Reif DM. Integrating Morphological and Behavioral Phenotypes in Developing Zebrafish. In: Kalueff AV, editor. The rights and wrongs of zebrafish: Behavioral phenotyping of zebrafish. Switzerland: Springer International; 2017. p. 259-72.
4. Committee on Predictive-Toxicology Approaches for Military Assessments of Acute Exposures. Application of Modern Toxicology Approaches for Predicting Acute Toxicity for Chemical Defense. Washington (DC): by the National Academy of Sciences; 2015.

5. Meisner M, Reif DM. Computational methods used in systems biology. In: Fry RC, editor. Waltham, MA: Elsevier; 2015. p. 121-47.
6. Motsinger-Reif AA, Reif DM. Embracing Complexity: Searching for Gene-Gene and Gene-Environment Interactions in Genetic Epidemiology. In: Genomics and Proteomics: Concepts, Technologies, and Applications. Tamil Nadu, India: Bioscience Publications; 2014. p. 43-62.
7. Judson RS, Reif DM, Houck KA. Computational Toxicology. In: Principles of Toxicology: Environmental and Industrial Applications. 3rd ed. Hoboken, NJ: John Wiley and Sons; 2014. p. 373-90.
8. Houck KA, Richard AM, Judson RS, Martin MT, Reif DM, Shah I. ToxCast: Predicting Toxicity Potential Through High-Throughput Bioactivity Profiling. In: High-Throughput Screening Methods in Toxicity Testing. Hoboken, NJ: John Wiley and Sons; 2013. p. 3-31.