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Education

- UNIVERSITY OF CALIFORNIA** Berkeley, CA
5/90 – 12/93 Ph.D. in Mechanical Engineering awarded December 1993. Major in bioengineering with minors in statistics and heat transfer. Dissertation title: Mathematical Modeling of Benzene Disposition in Humans: A Population Perspective. Committee members: Drs. David M. Auslander and Robert C. Spear, UC Berkeley; and Thomas N. Tozer, Emeritus Professor UC San Francisco.
- UNIVERSITY OF CALIFORNIA** Berkeley, CA
8/88 – 5/90 Master of Science in Mechanical Engineering awarded May 1990. Concentration in heat transfer and transport in porous media.
- NORTHWESTERN UNIVERSITY** Evanston, IL
9/82 – 6/86 Bachelor of Science in Chemical Engineering awarded June 1986. Specialization in biomedical engineering.

Professional Experience

- 8/16 – present Associate Professor, School of Mathematical and Natural Sciences, Arizona State University
- 7/19 – 6/22 Interim Director of the Biological Data Science MS program, Arizona State University
- 7/18 – 6/22 Program Lead for the Pharmacology and Toxicology BS degree, Arizona State University
- 7/15 – 9/16 Associate Professor, OHSU-PSU School of Public Health and Institute of Environment Health (by joint appointment), Oregon Health & Science University
- 7/14 – 6/15 Associate Research Professor, Division of Environmental and Biomolecular Systems, Institute of Environmental Health, Oregon Health & Science University
- 7/10 – 6/14 Assistant Professor, Division of Environmental and Biomolecular Systems, Institute of Environmental Health, Oregon Health & Science University
- 1/12 - 3/12 Adjunct Associate Professor, Materials and Mechanical Engineering, Portland State University
- 7/08 - 6/10 Assistant Professor, Division of Environmental and Biomolecular Systems, Department of Science and Engineering, School of Medicine, Oregon Health & Science University
- 7/05 - 6/08 Assistant Professor, Department of Environmental and Biomolecular Systems, OGI School of Science & Engineering, Oregon Health & Science University
- 7/06 - 6/09 Adjunct Assistant Professor, Department of Environmental Health Sciences, Tulane University
- 9/03 - 6/05 Research Assistant Professor, Department of Environmental and Biomolecular Systems, Oregon Health & Science University
- 9/03 - 8/05 Adjunct Assistant Professor, Department of Environmental Health Sciences, Tulane University
- 8/95 - 8/03 Research Assistant Professor, Department of Environmental Health Sciences, Tulane University
- 7/01 - 6/02 Adjunct Professor of Civil and Environmental Engineering, Tulane University.
- 2/94 - 8/95 Senior Research Assistant, Risk Analysis Section, Oak Ridge National Laboratory
- 9/91 - 12/93 Research Assistant, University of California, Berkeley

3/90 - 8/91	Graduate Student Researcher, California Environmental Protection Agency
9/88 - 3/90	Research Assistant, University of California, Berkeley
3/87 - 8/88	Hazardous Waste Manager, Day-Glo Color Corporation

Honors & Awards

2024	School of Mathematical and Natural Sciences Exemplary Service Award for developing an industry capstone course for Applied Computing majors (ACO 494 – for more information see Teaching: Curriculum Development).
2022	New College of Interdisciplinary Arts and Sciences (NCIAS) Social Impact Award to the New College Antiracism Council (NewARC). Member since its inception in 2020.
2019 – 2020	Participant, ASU Peer Leadership Academy (peerLA) Cohort VII. Received leadership training over the academic year. Participants must be nominated by an administrator and are then selected by peerLA leadership. Participation requires commitment to work on a leadership project of relevance to the participant’s organization unit, and attendance at three retreats throughout the academic year.
2015	U.S. Environmental Protection Agency Scientific and Technological Achievement Award (Level III) for the <i>Integration of Experimental and Computational Research to Develop Predictive Models of Endocrine Disruption</i> .
2013	U.S. Environmental Protection Agency Scientific and Technological Achievement Award Honorable Mention for being a co-author on a publication entitled, “A graphical systems model and tissue-specific functional gene sets to aid transcriptomic analysis of chemical impacts on the female teleost reproductive axis.”
2010	U.S. Environmental Protection Agency Scientific and Technological Achievement Award (Level III) for applying mechanistic toxicology to ecological risk assessment of endocrine-active chemicals.
2008	NATO/SPS Support Grant: Support travel expenses to attend the Advanced Cancer Risk Assessment Pilot Study meeting in Zaragoza, Spain.
2004	NATO/CCMS Study Visit Grant: Supported travel expenses to attend the Pilot Study meeting on Advanced Cancer Risk Assessment in Lyon, France.
1998	NATO/CCMS Fellowship: Supported international travel and miscellaneous expenses related to participation in the Advanced Cancer Risk Assessment Pilot Study. Participants are invited from the NATO countries and the Cooperation Partner countries.
1995	NATO/CCMS Study Visit Grants: Travel expenses to two meetings in Washington, D.C. for the pilot study on Dose-Response Analysis and Biologically-Based Risk Assessment for Initiator and Promoter Carcinogens.
1992	NCR award for innovation in research
1985	Dow Corning scholarship for outstanding achievement in Chemical Engineering Tau Beta Pi. Engineering honor society. Omega Chi Epsilon. Chemical engineering honor society.

Professional Memberships

Present	Member, American Association for the Advancement of Science (AAAS) since 2021 Member, Society of Environmental Toxicology and Chemistry (SETAC) since 2012 SETAC Desert Southwest Regional Chapter. Served as President from 2019 to 2021; Past-president 2021 to 2022. Member, Society for the Study of Reproduction since 2016. Public Affairs Committee member since 9/24. Full member, Society of Toxicology, since 2020 Member, Sigma Xi, Scientific Research Honor Society since 2021
2013 - 2016	Member, OHSU Center for Spatial Systems Biomedicine

2006 - 2008 Pacific Northwest SETAC Board of Directors, Academia-at-Large
Past member, Society for Risk Analysis

Teaching

Spring 2024 LSC 519 Applied Learning Lab. Workshop-style course where students learned to use ASU's
Spring 2022 High Performance Computing Cluster, wrote Unix shell scripts and R scripts to perform data
analyses through computer lab assignments. Students gave oral presentations about their
analyses and wrote a graduate-level project proposal in preparation for their culminating
experience (research thesis or applied project) proposals. Textbook: Computing Skills for
Biologists: a toolbox by Allesina and Wilmes (2019). Princeton, NJ, Princeton University
Press.

Fall 2024 LSC 519 Applied Learning Lab online. Developed an online (7.5 week) version of the full
Fall 2023 immersion course. Instead of a project proposal, students analyzed a dataset of their choice
from Computing Skills for Biologists and wrote a final project report. Textbook: Computing
Skills for Biologists: a toolbox by Allesina and Wilmes (2019). Princeton, NJ, Princeton
University Press.

Fall 2023 MAT 251 Calculus for the Life Sciences. Textbook: Calculus and Its Applications: Brief
Fall 2021 version. 12th Ed by Bittinger, Ellenbogen, Sargent and Kramer. Pearson Education, Inc.

Spring 2021 LSC 519 Applied Learning Lab. Revised this workshop-style course and added instruction on
how to use ASU's High Performance Computing Cluster and the Unix shell, R for statistical
computing, and reproduce analyses and figures from published data science papers. Students
wrote a graduate-level project proposal in preparation for their culminating experience
(research thesis or applied project) proposals.

MAT 451 Mathematical Modeling. Textbook: Dynamic Systems Biology Modeling and
Simulation by DiStefano (2015). Amsterdam, Elsevier, Acad. Press.

Fall 2020 PTX 301 Basics of Pharmacology and Toxicology. Textbook: none. Course materials
developed by K.H. Watanabe based upon past and current research and other relevant
reference materials. A flipped classroom model was used to be able to pivot to synchronous
remote learning if needed due to the COVID-19 pandemic. Students were required to watch
video lectures and take a Canvas quiz before class. Class periods included discussions, in-
class assignments, and guest speakers via Zoom.

Fall 2019 MAT 251 Calculus for the Life Sciences. Textbook: Calculus for the Life Sciences. Custom
edition for Arizona State University by Bittinger, Brand, and Quintanilla.

PTX 301 Basics of Pharmacology and Toxicology. Textbook: none. Course materials
developed by K.H. Watanabe based upon past and current research and other relevant
reference materials.

Spring 2019 MAT 210 Brief Calculus. Textbook: Brief Calculus and Mathematics for Business Analysis.
7th Ed. by Waner and Costenoble.

MAT 451 Mathematical Modeling. Textbook: none required. Recommended: Dynamic
Models in Biology by Ellner and Guckenheimer.

Fall 2018 MAT 210 Brief Calculus. Textbook: Brief Calculus and Mathematics for Business Analysis.
7th Ed. by Waner and Costenoble.

PTX 301 Basics of Pharmacology and Toxicology. Textbook: none. Course materials
developed by K.H. Watanabe based upon past and current research and other relevant
reference materials.

Spring 2018 MAT 275 Modern Differential Equations. Textbook: A Course in Differential Equations with
Boundary Value Problems, 2nd Ed., by Wirkus, Swift, and Szypowski

MAT 451 Mathematical Modeling. Textbook: Dynamic Models in Biology by Ellner and
Guckenheimer.

Fall 2017 MAT 210 Brief Calculus. Textbook: Brief Calculus and Mathematics for Business Analysis.
7th Ed. by Waner and Costenoble.

- Spring 2017 MAT 275 Modern Differential Equations.
 MAT 210 Brief Calculus. Textbook: Brief Calculus and Mathematics for Business Analysis. 6th Ed by Waner and Costenoble.
 MAT 451 Mathematical Modeling. Textbook: Dynamic Models in Biology by Ellner and Guckenheimer.

Courses taught at Oregon Health & Science University (unless specified otherwise)

- Winter 2016 ESHH 529/629 Environmental Toxicology and Risk Assessment. Four-credit course covering the health effects of chemicals in the environment and regulatory risk assessment including hazard identification, exposure assessment, dose-response relationships, risk communication, toxicity testing and computational models in toxicology. Required textbook: Casarett and Doull's Essentials of Toxicology, 3rd ed.
- Winter 2015 EBS 529/629 Environmental Toxicology and Risk Assessment. Four-credit course covering the health effects of chemicals in the environment and regulatory risk assessment including hazard identification, exposure assessment, dose-response relationships, risk communication, toxicity testing and computational models in toxicology. Required textbooks: Casarett and Doull's Essentials of Toxicology 2nd ed.; and Risk Assessment for Environmental Health.
- Spring 2014 EBS 502: Mouse Ovarian Development. One-credit independent study to construct a conceptual model of murine ovarian development from conception to the primordial follicle stage based on information in the open literature.
- Winter 2007 - 2014 EBS 507B/607B: EBS Student Presentation Seminar (formerly EBS 505A/605A, Student Presentation Reading Group). This seminar course provides a supportive, interdisciplinary scientific environment where students improve their oral presentation skills through instruction and practice. Each week a platform or poster presentation is given by students, a discussion of each presentation follows, and anonymously written comments are provided by the class. Students' research advisors are invited to attend and provide feedback to students.
- Fall 2013 EBS 505A/605A: Environmental and Biomolecular Systems Reading Group. This reading group includes the presentation and discussion of journal articles from the recent literature in environmental and biomolecular systems. Topic for fall 2013: Evaluation of data quality in biological and environmental science.
- Spring 2013 EBS 502: Fate of Pyrethroids in the Environment. This course was a 2-credit independent study focused on the use, occurrence and fate of selected pyrethroids in the environment.
- Winter 2013 EBS 502: Modeling Endocrine Disrupting Chemicals (EDCs) in the Environment. This was a 2-credit independent study focused EDCs in the environment and surface water transport modeling.
- Winter 2012 ME 442/542 Advanced Heat Transfer Portland State University
 This course covered principles of heat transfer by conduction, convection and radiation with a primary focus on convective heat transfer. Textbook: Convective Heat and Mass Transfer by Kays, Crawford and Wiegand, 5th Ed.
- Spring 2009 EBS 506-EDA/606-EDA Environmental Data Analysis. (co-developed by Drs. Tratnyek and Watanabe). This course focused on data analysis methods needed by students for their research. Students applied methods covered in class to their own data and presented their findings to the class for discussion. Topics included linear regression analysis and principal components analysis.
- Spring 2008 EBS 517/617 Environmental Systems and Human Health. (co-developed by Drs. Simon and Watanabe). This course covered the carbon cycle and climate change. The first half of the course covered carbon cycling in the ocean, atmosphere, and terrestrial ecosystems (Dr. Simon). The second half focused on time series analysis of two greenhouse gases, atmospheric carbon and methane (Dr. Watanabe). Matlab[®] was used for data analysis.
- Spring 2007 EBS506/606: Topics in Environmental Systems and Human Health. (co-developed by Drs. Watanabe and Simon). This course covered the origin, transmission and impacts of mercury and cholera from molecular to global scales.

- Winter 2007 MATH 530/630: Probability and Statistical Inference for Scientists and Engineers. Taught four lectures on sampling and parameter estimation.
- Spring 2006 EBS 505D/605D: ESE Reading Group – Endocrine Disrupting Chemicals in the Environment (co-taught with J. Pankow). This reading group reviewed current literature on molecular biomarkers of endocrine disruption and quantitative structure activity relationships (QSARs) used to predict binding of estrogen and androgen receptors.
- Spring 2004 EBS 506/606: Current Topics in Environmental and Biomolecular Systems (co-developed by Drs. Watanabe and Sachs). This course examined issues impacting human health and welfare having substantial biological, informatic, and environmental components. It provided an integrated perspective on processes ranging from molecular to global scales. This offering focused on mercury in modern society.

Courses taught at Tulane University

- Spring 2001 ENHS 664 Chemical Fate and Transport Modeling.
This course taught the fundamental principles governing the transport of chemicals in the environment. Students learned to formulate mass balances (a foundation for model development) and used modeling software in computer laboratory projects. Environmental media included air, surface water, and groundwater.
- Fall 2000 ENHS 799 Independent Study on Bioaccumulation Modeling.
Reviewed current literature on mathematical models of contaminant bioaccumulation in aquatic food webs, analytical methods for obtaining model parameters and applications of Markov Chain Monte Carlo methods.
- Fall 1997 ENHS 690 Mathematical Modeling of Biological Systems.
This course taught the fundamental principles used in pharmacokinetic, bioaccumulation and physiologically based models. Students learned model formulation based on mass balances, analytical and numerical solution techniques through lectures and a computer lab. The course used Mathematica[®] as a tool to develop and evaluate models.

Teaching: Curriculum Development

- 1/22 – 12/23 ACO 494 Industry Capstone. This course was developed in collaboration with Suzanne Dietrich (ACO Program Lead). To serve the needs of ACO students who need internship credits in order to graduate, we created ACO 494 based upon two AZNext trainings (Cybersecurity Hands On Problem Solving (CHOPS) and Career Leadership Fellows (CLF)) and an industry-led cybersecurity project. Online content for the CHOPS and CLF trainings are accessed by registering to be a participant of AZNext and are offered through ASU Learning Enterprise. The industry-based project has students working in teams with a industry mentor. I contributed to the course design as a co-PI of the AZNext program grant, arranged the industry-based project, and contributed to the syllabus development. This course was offered for the first time in Spring 2024 with Dr. Dietrich as the instructor of record.
- 2/21 – 6/22 Online Biological Data Science MS. ASU's EdPlus approved this degree program in February 2021. Since then, I contributed to designing/modifying the course rotation to accommodate the online mode of learning, responded to EdPlus inquiries (e.g., providing career outcomes and other information needed for the web site, revising the program application and evaluation rubric), and identifying faculty to teach the courses online.

Teaching: Other Activities

- 5/22 – present ASU Learning Enterprise, Cybersecurity Hands-On Problem Solving (CHOPS), The CHOPS training is an 8 to 9-week workforce development program offered by the AZNext Workforce Training Accelerator Partnership with funding from the U.S. Department of Labor. The goal of CHOPS is to address the current and future needs in the cybersecurity workforce. This is run in a hybrid mode with weekly online (asynchronous) material provided by cybersecurity professionals followed by a three-hour in-person Saturday workshop. I co-lead the design of this program, managed the process of getting instructors' materials into Canvas for online instruction, and coordinated and attended the Saturday workshops. Cohort enrollment dates and participants served (total 235): Cohort 1 (7/22 to 9/22) – 8; Cohort 2 (1/23 to 3/23) – 12; Cohort 3 (5/23 to 8/23) – 22; Cohort 4 (8/23 to 10/23) – 23; Cohort 5 (1/24 to 3/24) – 35; Cohort 6 (5/24 to 7/24) – 27; Cohort 7 (9/24 to 11/24) – 33; Cohort 8 (1/25 to 3/25) – 25; Cohort 9 (5/25 to 8/25) – 23; and Cohort 10 (9/25 to 11/25) – 27.
- 1/22 – 4/22 ASU Prep Academy, ASU West Experience. I prepared to a module (2 sessions for a total of ~2.5 hrs of instruction) on fish consumption advisories for high student students in the ASU Prep Academy. The module introduced students to mercury toxicology, how fish consumption advisories are determined, and programming a macro in Excel to calculate fish consumption limits. Number of Participants: 20.

Publications*Peer-reviewed Publications (* undergraduate co-author)*

- Dietrich, S. W., Ma, W., Ding, Y., **Watanabe, K. H.**, Zelinski, M. and Sluka, J. (2024). MOTHER-DB: A database for sharing nonhuman ovarian histology images. *IEEE/ACM Transactions on Computational Biology and Bioinformatics* **21**(6): 2598-2603. DOI: 10.1109/TCBB.2024.3426999.
- Watanabe, K. H.**, Dietrich, S. W., Ding, Y., Ma, W., Sluka, J. P. and Zelinski, M. B. (2024). Overview of the multispecies ovary tissue histology electronic repository (MOTHER). *Biology of Reproduction* **ioae101**. DOI: 10.1093/biolre/ioae101.
- Morshead, M. L., Jensen, K. M., Ankley, G. T., Vliet, S., LaLone, C. A., Aller*, A. V., **Watanabe, K. H.** and Villeneuve, D. L. (2023). Putative adverse outcome pathway development based on physiological responses of female fathead minnows to model estrogen versus androgen receptor agonists. *Aquatic Toxicology* **261**: 106607. DOI: 10.1016/j.aquatox.2023.106607. Published online 9 June 2023.
- Cuddington, K., Aydeniz, M., Adler, F. R., Abbott, K. C., Dale, R., Gross, L. J., Hastings, A., Hobson, E., Karatayev, V., Killion, A., Madamanchi, B., Marraffini, M., McCombs, A., Samyono, W., Shiu, S.-H., **Watanabe, K. H.** and White, E. R. (2023). Challenges and opportunities to build quantitative self-confidence in biologists. *BioScience* **73**: 364-375. DOI: <https://doi.org/10.1093/biosci/biad015>.
- Villeneuve, D. L., Blackwell, B. R., Blanksma, C. A., Cavallin, J. E., Cheng, W.-Y., Conolly, R. B., Conrow, K., Feifarek, D. J., Heinis, L. J., Jensen, K. M., Kahl, M. D., Milsk, R. Y., Poole, S. T., Randolph, E. C., Saari, T. W., **Watanabe, K. H.** and Ankley, G. T. (2023). Case study in 21st century ecotoxicology: Using in vitro aromatase inhibition data to predict reproductive outcomes in fish, in vivo. *Environmental Toxicology and Chemistry* **42**(1): 100-116. DOI: 10.1002/etc.5504. Published online 28 Nov 2022.
- Sinitsyn, D., Garcia-Reyero, N. and **Watanabe, K. H.** (2022). From Qualitative to Quantitative AOP: A Case Study of Neurodegeneration. *Frontiers in Toxicology* **4**.
- Tice, R. R., Bassan, A., Amberg, A., Anger, L. T., Beal, M. A., Bellion, P., Benigni, R., Birmingham, J., Brigo, A., Bringezu, F., Ceriani, L., Crooks, I., Cross, K. P., Elespuru, R., Faulkner, D. M., Fortin, M. C., Fowler, P., Frericks, M., Gerets, H. H. J., Jahnke, G. D., Jones, D. R., Kruhlak, N. L., Piparo, E. L., Lopez-Belmonte, J., Luniwal, A., Luu, A., Madia, F., Manganelli, S., Manickam, B., Mestres, J., Mihalchik-Burhans, A. L., Neilson, L., Pandiri, A., Pavan, M., Rider, C. V., Rooney, J. P., Trejo-Martin, A., **Watanabe-Sailor, K. H.**, White, A. T., Woolley, D. and Myatt, G. J. (2021). In silico approaches in carcinogenicity hazard assessment: Current status and future needs. *Computational Toxicology* **20**: 100191. DOI: <https://doi.org/10.1016/j.comtox.2021.100191>.

- King, R. *, Polidoro, B., **Watanabe, K.** and Avery, T. (2021). Fish consumption advisory programs: Opportunities and challenges for the protection of human health in Canada and the US. *Journal of Science Policy & Governance* **19**(01). DOI: <https://doi.org/10.38126/JSPG190105>.
- Muller, E. B., Lika, K., Nisbet, R. M., Schultz, I. R., Casas, J., Gergs, A., Murphy, C. A., Nacci, D. and **Watanabe, K. H.** (2019). Regulation of reproductive processes with dynamic energy budgets. *Functional Ecology* **33**(5): 819-832. DOI: [10.1111/1365-2435.13298](https://doi.org/10.1111/1365-2435.13298).
- Galic, N., Hindle, A. G., DeLong, J. P., **Watanabe, K.** and Forbes, V. (2019). Modeling genomes to phenomes to populations in a changing climate: the need for collaborative networks. *Ecological Modelling* **406**: 80-83. DOI: [10.1016/j.ecolmodel.2019.05.014](https://doi.org/10.1016/j.ecolmodel.2019.05.014).
- Rowland, M. A., Wear, H., **Watanabe, K. H.**, Gust, K. A. and Mayo, M. L. (2018). Statistical relationship between metabolic decomposition and chemical uptake predicts bioconcentration factor data for diverse chemical exposures. *BMC Systems Biology* **12**(1): 81. DOI: [10.1186/s12918-018-0601-y](https://doi.org/10.1186/s12918-018-0601-y).
- Murphy, C. A., Nisbet, R. M., Antczak, P., Garcia-Reyero, N., Gergs, A., Lika, K., Mathews, T., Muller, E. B., Nacci, D., Peace, A., Remien, C. H., Schultz, I. R., Stevenson, L. M. and **Watanabe, K. H.** (2018). Incorporating Suborganismal Processes into Dynamic Energy Budget Models for Ecological Risk Assessment. *Integrated Environmental Assessment and Management* **14**(5): 615-624. DOI: [10.1002/ieam.4063](https://doi.org/10.1002/ieam.4063).
- Wear, H. M., Eriksson, A., Yao, H. H.-C. and **Watanabe, K. H.** (2017). Cell-based computational model of early ovarian development in mice. *Biology of Reproduction* **97**(3): 365-377. DOI: [10.1093/biolre/i0x089](https://doi.org/10.1093/biolre/i0x089).
- Nishimura, J., Smith, R. *, Jensen, K., Ankley, G. and **Watanabe, K.** (2017). Estimating Intermittent Individual Spawning Behavior via Disaggregating Group Data. *Bulletin of Mathematical Biology*: 1-14. DOI: [10.1007/s11538-017-0379-x](https://doi.org/10.1007/s11538-017-0379-x).
- Conolly, R. B., Ankley, G. T., Cheng, W. Y., Mayo, M. L., Miller, D. H., Perkins, E. J., Villeneuve, D. L. and **Watanabe, K. H.** (2017). Quantitative adverse outcome pathways and their application to predictive toxicology. *Environmental Science & Technology* **51**(8): 4661-4672. DOI: [10.1021/acs.est.6b06230](https://doi.org/10.1021/acs.est.6b06230).
- Wear, H. M., McPike, M. J. and **Watanabe, K. H.** (2016). From primordial germ cells to primordial follicles: a review and visual representation of early ovarian development in mice. *Journal of Ovarian Research* **9**(1): 1-11. DOI: [10.1186/s13048-016-0246-7](https://doi.org/10.1186/s13048-016-0246-7).
- Watanabe, K. H.**, M. Mayo, K. M. Jensen, D. L. Villeneuve, G. T. Ankley and E. J. Perkins (2016). "Predicting fecundity of fathead minnows (*Pimephales promelas*) exposed to endocrine-disrupting chemicals using a Matlab®-based model of oocyte growth dynamics." *PLoS One*. DOI: [10.1371/journal.pone.0146594](https://doi.org/10.1371/journal.pone.0146594).
- Groh, K. J., Carvalho, R. N., Chipman, J. K., Denslow, N. D., Halder, M., Murphy, C. A., Roelofs, D., Rolaki, A., Schirmer, K. and **Watanabe, K. H.** (2015). Development and application of the adverse outcome pathway framework for understanding and predicting chronic toxicity: II. A focus on growth impairment in fish. *Chemosphere* **120**: 778-792. DOI: [10.1016/j.chemosphere.2014.10.006](https://doi.org/10.1016/j.chemosphere.2014.10.006).
- Groh, K. J., Carvalho, R. N., Chipman, J. K., Denslow, N. D., Halder, M., Murphy, C. A., Roelofs, D., Rolaki, A., Schirmer, K. and **Watanabe, K. H.** (2015). Development and application of the adverse outcome pathway framework for understanding and predicting chronic toxicity: I. Challenges and research needs in ecotoxicology. *Chemosphere* **120**: 764-777. DOI: [10.1016/j.chemosphere.2014.09.068](https://doi.org/10.1016/j.chemosphere.2014.09.068).
- Breen, M., Villeneuve, D. L., Ankley, G. T., Bencic, D. C., Breen, M. S., **Watanabe, K. H.**, Lloyd, A. L. and Conolly, R. B. (2013). Developing predictive approaches to characterize adaptive responses of the reproductive endocrine axis to aromatase inhibition: II. Computational modeling. *Toxicological Sciences* **133**(2): 234-247. DOI: [10.1093/toxsci/ktf067](https://doi.org/10.1093/toxsci/ktf067).
- Villeneuve, D. L., Garcia-Reyero, N., Martinovic-Weigelt, D., Li, Z., **Watanabe, K. H.**, Orlando, E. F., Lalone, C. A., Edwards, S. W., Burgoon, L. D., Denslow, N. D., Perkins, E. J. and Ankley, G. T. (2012). A graphical systems model and tissue-specific functional gene sets to aid transcriptomic analysis of chemical impacts on the female teleost reproductive axis. *Mutation Research - Genetic Toxicology and Environmental Mutagenesis* **746**(2): 151-162. DOI: [10.1016/j.mrgentox.2011.12.016](https://doi.org/10.1016/j.mrgentox.2011.12.016).

- Li, Z., Villeneuve, D. L., Jensen, K. M., Ankley, G. T. and **Watanabe, K. H.** (2011). A computational model for asynchronous oocyte growth dynamics in a batch-spawning fish. *Canadian Journal of Fisheries and Aquatic Sciences* **68**(9): 1528-1538. DOI: 10.1139/f2011-066.
- Li, Z., Kroll, K., Jensen, K. M., Villeneuve, D. L., Ankley, G. T., Brian, J. V., Sepulveda, M. S., Orlando, E. F., Lazorchak, J. M., Kostich, M., Armstrong, B., Denslow, N. D. and **Watanabe, K. H.** (2011). A computational model of the hypothalamic-pituitary-gonadal axis in female fathead minnows (*Pimephales promelas*) exposed to 17 α -ethinylestradiol and 17 β -trenbolone. *BMC Systems Biology* **5**: 63. DOI: 10.1186/1752-0509-5-63.
- Watanabe, K. H.**, Andersen, M. E., Basu, N., Carvan III, M. J., Crofton, K. M., King, K. A., Suñol, C., Tiffany-Castiglioni, E. and Schultz, I. R. (2011). Defining and modeling known adverse outcome pathways: Domoic acid and neuronal signaling as a case study. *Environmental Toxicology and Chemistry* **30**(1): 9-21.
- Johns, S. M., Denslow, N. D., Kane, M. D., **Watanabe, K. H.**, Orlando, E. F. and Sepúlveda, M. S. (2011). Effects of estrogens and antiestrogens on gene expression of fathead minnow (*Pimephales promelas*) early life stages. *Environmental Toxicology* **26**(2): 195-206. DOI: 10.1002/tox.20545. Published online November 3, 2009.
- Watanabe, K. H.**, Djordjevic, M. V., Stellman, S. D., Toccalino, P. L., Austin, D. and Pankow, J. F. (2009). Incremental lifetime lung cancer risks computed for benzo[a]pyrene and two tobacco-specific N-nitrosamines in mainstream cigarette smoke compared with lung cancer risks derived from epidemiologic data. *Regulatory Toxicology and Pharmacology* **55**: 123-133. DOI: 10.1016/j.yrtph.2009.06.007.
- Watanabe, K. H.**, Li, Z., Kroll, K., Villeneuve, D. L., Garcia-Reyero, N., Orlando, E. F., Sepúlveda, M. S., Collette, T. W., Ekman, D. R., Ankley, G. T. and Denslow, N. D. (2009). A computational model of the hypothalamic-pituitary-gonadal axis in male fathead minnows exposed to 17 α -ethinylestradiol and 17 β -estradiol. *Toxicological Sciences* **109**(2): 180-192. DOI:10.1093/toxsci/kfp069.
- Garcia-Reyero, N., Kroll, K. J., Liu, L., Orlando, E. F., **Watanabe, K. H.**, Sepúlveda, M. S., Villeneuve, D. L., Perkins, E. J., Ankley, G. T. and Denslow, N. D. (2009). Gene expression responses in male fathead minnows exposed to binary mixtures of an estrogen and antiestrogen. *BMC Genomics* **10**:308.
- Ankley, G. T., Bencic, D. C., Breen, M. S., Collette, T. W., Conolly, R. B., Denslow, N. D., Edwards, S. W., Ekman, D. R., Garcia-Reyero, N., Jensen, K. M., Lazorchak, J. M., Martinovic, D., Miller, D. H., Perkins, E. J., Orlando, E. F., Villeneuve, D. L., Wang, R. and **Watanabe, K. H.** (2009). Endocrine disrupting chemicals in fish: Developing exposure indicators and predictive models of effects based on mechanism of action. *Aquatic Toxicology* **92**(3): 168-178. DOI: 10.1016/j.aquatox.2009.01.013.
- Garcia-Reyero, N., Villeneuve, D. L., Kroll, K., Liu, L., Orlando, E. F., **Watanabe, K. H.**, Sepúlveda, M. S., Ankley, G. T. and Denslow, N. D. (2009). Expression signatures for a model androgen and antiandrogen in the fathead minnow (*Pimephales promelas*) ovary. *Environmental Science and Technology* **43**(7): 2614-2619.
- Johns, S. M., Kane, M. D., Denslow, N. D., **Watanabe, K. H.**, Orlando, E. F., Villeneuve, D. L., Ankley, G. T. and Sepulveda, M. S. (2009). Characterization of ontogenetic changes in gene expression in the fathead minnow (*Pimephales promelas*). *Environmental Toxicology and Chemistry* **28**(4): 873-880. DOI: 10.1897/08-213R.1.
- Watanabe, K. H.**, Jensen, K. M., Orlando, E. F. and Ankley, G. T. (2007). What is normal? A characterization of the values and variability in reproductive endpoints of the fathead minnow, *Pimephales promelas*. *Comparative Biochemistry and Physiology, Part C* **146**(3): 348-356. DOI: 10.1016/j.cbpc.2007.04.015.
- Pankow, J. F., **Watanabe, K. H.**, Toccalino, P. L., Luo, W. and Austin, D. F. (2007). Calculated cancer risks for conventional and "potentially reduced exposure product" cigarettes. *Cancer Epidemiology Biomarkers and Prevention* **16**(3): 584 - 592.
- Luna, R. L., **Watanabe, K. H.** and Wilding, A. (2006). Spatial bioaccumulation modeling in a network of bayous. *Environmental Modelling and Software* **21**(12): 1674-1683.

- Watanabe, K. H.**, Lin, H., Bart Jr., H. L., Martinat, P., Means, J. C., Kunas, M. L. and Grimm, D. A. (2005). Bayesian estimation of kinetic rate constants in a food web model of polycyclic aromatic hydrocarbon bioaccumulation. *Ecological Modelling* **181**(2-3): 229-246.
- Lin, H., Berzins, D. W., Myers, L., George, W. J., Abdelghani, A. and **Watanabe, K. H.** (2004). A Bayesian approach to parameter estimation for a crayfish (*Procambarus Spp.*) bioaccumulation model. *Environmental Toxicology and Chemistry* **23**(9): 2259-2266.
- Watanabe, K. H.**, Desimone, F. W., Thiyagarajah, A., Hartley, W. R. and Hindrichs, A. E. (2003). Fish tissue quality in the lower Mississippi River and health risks from fish consumption. *The Science of the Total Environment* **302**(1-3): 109-126.
- Bollinger, J. E., L. J. Steinberg, A. J. Englande, J. P. Crews, J. M. Hughes, C. Velasco, **K. H. Watanabe**, M. J. Harrison, W. R. Hartley, J. M. Mendler and W. J. George (2000). Nutrient load characterization from integrated-source data for the Lower Mississippi River. *Journal of the American Water Resources Association* **36**(6): 1375.
- Watanabe, K. H.** and Travis, C.C. (1997). Mathematical modeling of skin papilloma data in SENCAR mice. *Toxicology and Applied Pharmacology* **147**: 419-430.
- Watanabe, K. H.** and Bois, F. Y. (1996). Interspecies extrapolation of physiological pharmacokinetic parameter distributions. *Risk Analysis* **16**(6): 741-754.
- Watanabe, K. H.**, Bois, F. Y., Daisey, J. M., Auslander, D. M. and Spear, R. C. (1994). Benzene toxicokinetics in humans - Bone marrow exposure to metabolites. *Occupational and Environmental Medicine* **51**(6): 414-420 and Lawrence Berkeley Laboratory Report LBL-34432/UC-607.
- Li, H., **Watanabe, K. H.**, Auslander, D. and Spear, R. C. (1994). Model parameter estimation: Understanding parametric structure. *Annals of Biomedical Engineering* **22**(1): 97-111.
- Watanabe, K. H.**, Bois, F. Y. and Zeise, L. (1992). Interspecies extrapolation: A reexamination of acute toxicity data. *Risk Analysis* **12**: 301-310.

Publications in Preparation or Review

- Chu, T.-Y., Mancenido, M., Zelinski, M. B. and **Watanabe, K. H.** (in preparation). Analysis of the variability in ovary follicle identification by human annotators.
- Sinityn, D., Garcia-Reyero, N., Conrow, K. and **Watanabe, K. H.** (in revision). AOP Report: Acetylcholinesterase inhibition leading to neurodegeneration. *Environmental Toxicology and Chemistry*.

Letter to the Editor/Editorials

- Watanabe, K. H.** and H. L. Bart Jr. (2001). Comments on model of biota-sediment accumulation factor for polycyclic aromatic hydrocarbons. *Environmental Toxicology and Chemistry* **20**(9): 1867-1869.

Book Chapters

- Watanabe-Sailor, K. H.**, Aladjov, H., Bell, S. M., Burgoon, L., Cheng, W.-Y., Conolly, R., Edwards, S. W., Garcia-Reyero, N., Mayo, M. L., Schroeder, A., Wittwehr, C. and Perkins, E. J. (2020). CHAPTER 9 Big Data Integration and Inference. In: *Big Data in Predictive Toxicology*. D. Neagu and A. Richarz, Eds. Cambridge, UK, The Royal Society of Chemistry: 264-306.
- Schultz, I.R. and **Watanabe, K. H.** (2018). The development of quantitative AOPs. In: *Systems Biology Approaches for Advancing Adverse Outcome Pathways for Risk Assessment*. N. Garcia-Reyero and C. A. Murphy, Eds. Springer: 263 – 280.
- Murphy, C. A., Nisbet, R. M., Antczak, P., Garcia-Reyero, N., Gergs, A., Lika, K., Mathews, T., Muller, E. B., Nacci, D., Peace, A., Remien, C. H., Schultz, I. R. and **Watanabe, K. H.** (2018). Linking adverse outcome pathways to dynamic energy budgets: A conceptual model. In: *A Systems Biology Approach to Advancing Adverse Outcome Pathways for Risk Assessment*. N. Garcia-Reyero and C. A. Murphy, Eds. Springer: 281-302.

- Watanabe, K. H.** and Lin, H. (2009). Bayesian approaches to characterise uncertainty and variability in biological and environmental models and risk assessment. In: *Modelling of Pollutants in Complex Environmental Systems*. G. Hanrahan, Ed. St. Albans, Hertfordshire, UK, ILM Publications. **I**: 219-238.
- Watanabe, K. H.** (2005). Modeling Exposure and Target Organ Concentrations. In: *Quantitative Methods in Cancer and Human Health Risk Assessment*. L. Edler and C. Kitsos, Eds. Chichester, West Sussex, United Kingdom, John Wiley & Sons: 115-124.
- Kappas, A., Cogliano, V. J., **Watanabe, K.** and Zapponi, G. A. (1999). Sources of data for cancer risk assessment. In: *Perspectives on Biologically Based Cancer Risk Assessment*. V. J. Cogliano, E. G. Luebeck and G. A. Zapponi, Eds. New York, Kluwer Academic/Plenum Publishers: 49-80.
- Luebeck, E. G., Travis, C. and **Watanabe, K.** (1999). Informative case studies. In: *Perspectives on Biologically Based Cancer Risk Assessment*. V. J. Cogliano, E. G. Luebeck and G. A. Zapponi, Eds. New York, Kluwer Academic/Plenum Publishers: 275-308.
- Wosniok, W., Kitsos, C. and **Watanabe, K.** (1999). Statistical issues in the application of multistage and biologically based models. In: *Perspectives on Biologically Based Cancer Risk Assessment*. V. J. Cogliano, E. G. Luebeck and G. A. Zapponi, Eds. New York, Kluwer Academic/Plenum Publishers: 243-273.
- Amaral-Mendes, J.J., Cogliano, V.J., Kappas, A., Kitsos, C., Kroese, E.D., Luebeck, E.G., Pluygers, E., Travis, C., **Watanabe, K.**, Wosniok, W., and Zapponi, G.A. (1999). Conclusions and recommendations. In: *Perspectives on Biologically Based Cancer Risk Assessment*. V. J. Cogliano, E. G. Luebeck and G. A. Zapponi, Eds. New York, Kluwer Academic/Plenum Publishers: 309-314.

Published or Technical Reports

- Oregon Public Health Division (2016). Technical Report: Oregon Statewide Bass Fish Consumption Advisory Due to Mercury Contamination. Oregon Health Authority, Report: OHA 6610, pp. 17. Accessed: September 8, 2024 at <https://www.oregon.gov/oha/ph/HealthyEnvironments/Recreation/FishConsumption/Documents/TechnicalReport-StatewideBassFishConsumptionAdvisory.pdf>. Research by my summer undergraduate intern and Portland State University honors thesis student, Alyssa Clayton served as the basis for this report. She and I are listed in the acknowledgements though my affiliation is incorrectly stated as Portland State University and should be Oregon Health & Science University. I supervised Alyssa as she compiled data and performed the fish consumption advisory calculations with data provided by Rebecca Hillwig and David Farrer at the Oregon Health Authority.

*Published Abstracts and Proceedings of National/International Meetings (presenter underlined; * undergraduate co-author)*

- Bonus, M. L., Wolf, S. N., Stanley, J. E., Azooz, M., Hennebold, J. D., Krieg, A. J., Shah, G., **Watanabe, K.** and Zelinski, M. B. (2024). Does Rapamycin Delay Ovarian Aging and Decrease Senescence? A First-ever analysis in a Non-human Primate Model. Presented at the American Society for Reproductive Medicine 2024 Scientific Congress & Expo, Denver, CO. In *Fertility and Sterility*, **122**(4): p. e344.
- Watanabe, K. H., Dietrich, S. W., Juve, J., Fernandez, G., Azooz, M., Shah, G., Chu, T.-Y., Daniele, A., Austin, K., Sluka, J. P. and Zelinski, M. B. (2024). The Multispecies Ovary Tissue Histology Electronic Repository (MOTHER): A resource for evaluating adverse effects. Presented at the SETAC North America 45th Annual Meeting, Fort Worth, TX, October 20-24. In *SETAC North America 45th Annual Meeting Abstract Book*. Society of Environmental Toxicology and Chemistry: pp. 50-51.
- Watanabe, K. H., Dietrich, S. W., Sluka, J. P. and Zelinski, M. B. (2024). The Multispecies Ovary Tissue Histology Electronic Repository (MOTHER): Contribute images with a new web-based tool, ezEML+MOTHER. Presented at the Society of Toxicology 63rd Annual Meeting, Salt Lake City, UT, March 10-14. In *The Toxicologist: Late-Breaking Supplement, a Supplement to Toxicological Sciences*. Society of Toxicology, **192**(S2): p. 100.

- Watanabe, K. H.**, Gutierrez, A.* , Egusquiza, E.* , Hackney, J. and Marshall, P. A. (2024). New College Environmental Health Science Scholars: Summer research experience for place-bound undergraduates interested in Environmental Health Science. Presented at the Society of Toxicology 63rd Annual Meeting, Salt Lake City, UT, March 10-14. In *The Toxicologist: Supplement to Toxicological Sciences*. Oxford University Press, **198**(S1): p. 183.
- Shah, G.* , **Azooz, M.*** , Zelinski, M., Dietrich, S., Sluka, J. P. and **Watanabe, K. H.** (2023). New Techniques for Ovary Histology: Follicle identification and Quantification using Shared Digital Images. Presented at the Society for the Study of Reproduction 56th Annual Meeting, Ottawa, Canada, July 11-14. Society for the Study of Reproduction: p. 177. G. Shah and M. Azooz share first authorship.
- Shah, G.*** , **Azooz, M.*** , Dietrich, S., **Watanabe, K. H.**, Zelinski, M. B. and Sluka, J. (2023). Rapamycin's Role in Prolonging Ovarian Reproductive Lifespan: A Nonhuman Primate Study. Presented at the Arizona-Nevada Academy of Science 64th Annual Meeting, Mesa, AZ, April 15. In *Proceedings of the Arizona-Nevada Academy of Science Sixty Fourth Annual Meeting*, **55**: pp. 7-8. G. Shah and M. Azooz share first authorship.
- Watanabe, K. H.** (2023). Quantitative AOPs: A Case Study of Neurodegeneration. Presented at the Society of Toxicology 62nd Annual Meeting & ToxExpo, Nashville, TN, March 19-23. In *The Toxicologist: Supplement to Toxicological Sciences*. Oxford University Press, **192**(S1): p. 46.
- Griffith, S.*** , **Dote, M. K.*** , Cahill, T. and **Watanabe, K. H.** (2022). Pesticide Residue Analysis of Jalapeño Produce. Presented at the Society of Toxicology 61st Annual Meeting, San Diego, CA, March 27-31. In *The Toxicologist*. Oxford University Press, **186**(S1): p. 161. SG and MKD share first authorship and contributed equally to the research and this presentation.
- Watanabe, K. H.**, Ding, Y., Ma, W., Dietrich, S. W., Sluka, J. P. and Zelinski, M. B. (2022). The Multispecies Ovary Tissue Histology Electronic Repository (MOTHER): Share your ovary histology slides with the world. Presented at the 55th Annual Meeting of the Society for the Study of Reproduction, Spokane, WA, July 26-29. In *Reproduction: Odyssey of Discovery*: p. 73.
- Conrow, K., Raldua, D., Garcia-Reyero, N. and **Watanabe, K. H.** (2020). An Adverse Outcome Pathway of Acetylcholinesterase Inhibition Leading to Neurodegeneration for Chemical Toxicity Assessment. Presented at the SETAC North America 41st Annual Meeting, Virtual, November 15-19. In *SETAC North America 41st Annual Meeting Abstract Book*. SETAC: p. 10.
- Conrow, K.**, Garcia-Martin, Y., Garcia-Reyero, N. and **Watanabe, K. H.** (2019). Using the AOP Wiki for the development of an acetylcholinesterase inhibition adverse outcome pathway. Presented at the SETAC North America 40th Annual Meeting, Toronto, Ontario, CA, November 3-7. In *SETAC North America 40th Annual Meeting Abstract Book*. SETAC: p. 310.
- Conrow, K.**, Garcia-Reyero, N. and **Watanabe, K. H.** (2018). Adverse Outcome Network Development for Acetylcholinesterase Inhibition in Zebrafish (*Danio rerio*). Presented at the SETAC North America 39th Annual Meeting, Sacramento, CA, November 4-8. In *SETAC North America 39th Annual Meeting Abstract Book*. SETAC: p. 382.
- Watanabe, K. H.** and Conrow, K. D. (2018). Computational modeling of reproduction in fathead minnows (*Pimephales promelas*): the hypothalamic-pituitary-gonadal axis and oocyte growth dynamics. Presented at the 51st Annual Meeting of the Society for the Study of Reproduction, New Orleans, LA, July 10-13. In *Pathways to Discovery: Signals for Reproduction, Development & Longevity Abstracts*: p. 416.
- Watanabe, K. H.**, Mikhail, A.* , Conrow, K. and Vinas, N. (2018). Development of an adverse outcome pathway for acetylcholinesterase inhibition in zebrafish (*Danio rerio*). Presented at the SETAC Europe 28th Annual Meeting, Rome, Italy, May 13-17, 2018. In *SETAC Europe 28th Annual Meeting Abstract Book*. SETAC: p. 284.
- Rowland, M.**, Wear, H., **Watanabe, K. H.**, Gust, K. A. and Mayo, M. L. (2017). Universal toxicokinetic constants for metabolic decomposition and chemical uptake predict bioconcentration factor data for diverse chemical exposures. Presented at the SETAC North America 38th Annual Meeting, Minneapolis, MN, USA, Nov 12-16. In *SETAC North America 38th Annual Meeting Abstract Book*: pp. 33-34.

- Mayo, M. L., Watanabe, K. H. and Rowland, M. (2017). Forecasting Population-Level Impacts of Diverse Chemicals with a Quantitative Adverse Outcome Pathway Model for Aromatase Inhibition in Small Fish. Presented at the SETAC North America 38th Annual Meeting, Minneapolis, MN, USA, Nov 12-16. In *SETAC North America 38th Annual Meeting Abstract Book*: p. 146.
- Lika, K., Murphy, C. A., Muller, E. B., Nacci, D. E., Nisbet, R. M., Remien, C. H., Schultz, I. R. and **Watanabe, K. H.** (2017). Hormone-driven energy allocation for egg loading added to a dynamic energy budget model to predict the effects of endocrine disruption. Presented at the SETAC North America 38th Annual Meeting, Minneapolis, MN, USA, Nov 12-16. In *SETAC North America 38th Annual Meeting Abstract Book*: p. 49.
- Jensen, K. M., Ankley, G. T., Blackwell, B. R., Cavalin, J. E., Cheng, W. Y., Conolly, R. B., Feifarek, D., Kahl, M., Poole, S., Randolph, E. C., Saari, T., Villeneuve, D. and **Watanabe, K. H.** (2017). The use of adverse outcome pathway-based toxicity predictions - A case study evaluating the effects of imazalil on fathead minnow reproduction. Presented at the SETAC North America 38th Annual Meeting, Minneapolis, MN, USA, Nov 12-16. In *SETAC North America 38th Annual Meeting Abstract Book*: p. 313.
- Murphy, C. A., Antczak, P., Gergs, A., Lika, K., Mathews, T. J., Muller, E. B., Nacci, D. E., Peace, A., Remien, C. H., Vinas, N., Schultz, I. R. and **Watanabe, K. H.** (2016). Linking the Adverse Outcome Pathway to Dynamic Energy Budgets: A conceptual model. Presented at the SETAC North America 37th Annual Meeting, Orlando, FL, November 6-10: p. 88.
- Muller, E. B., Lika, K., Murphy, C. A., Nacci, D. E., Nisbet, R. M., Remien, C. H., Schultz, I. R. and **Watanabe, K. H.** (2016). Linking Adverse Outcome Pathway Analyses to Dynamic Energy Budgets: A Case Study with Endocrine Disruptors and Fish. Presented at the SETAC North America 37th Annual Meeting, Orlando, FL, November 6-10: p. 89.
- Villeneuve, D. L., Blackwell, B. R., Cavalin, J. E., Feifarek, D., Jensen, K. M., Kahl, M., Poole, S., Randolph, E. C., Saari, T., **Watanabe, K. H.** and Ankley, G. T. (2017). Developing Confidence in Adverse Outcome Pathway-Based Toxicity Predictions – Effects of the Fungicide Imazalil on Fathead Minnow Reproduction. Presented at the SETAC Europe 27th Annual Meeting, Brussels, Belgium, May 7-11. In *SETAC Europe 27th Annual Meeting Abstract Book*: p. 234.
- Downing, R., Clark, B. J., Nacci, D. E., Champlin, D., Bosker, T., **Watanabe, K. H.** and Nishimura, J. (2016). Development of a Mathematical Model for Fecundity in Mummichog (*Fundulus heteroclitus*). Presented at the SETAC North America 37th Annual Meeting, Orlando, FL, November 6-10: p. 318.
- Watanabe, K. H.**, Cheng, W. Y., Villeneuve, D. L., Conolly, R. B., Perkins, E. J. and Mayo, M. L. (2015). Evaluation of Toxicity Equivalent Calculations for Use with Data from In Vitro Aromatase Inhibition Assays. Presented at the SETAC North America 36th Annual Meeting, Salt Lake City, UT, Nov 1-5: p. 100.
- Perkins, E. J., Wilbanks, M., Gust, K. A., Stanley, J. K., Mayo, M. L., **Watanabe, K. H.**, Burgoon, L. D. and Vinas, N. (2015). Development of screening level hazard thresholds using in vitro to in vivo extrapolation of zebrafish embryo transcriptional points of departure. Presented at the SETAC North America 36th Annual Meeting, Salt Lake City, UT, USA, Nov. 1-5: pp. 159-160.
- Rowland, M., Mayo, M. L., Donohue, K. B., Wilbanks, M., **Watanabe, K. H.** and Perkins, E. J. (2015). Reverse toxicokinetic models of fathead minnow (*Pimephales promelas*) and zebrafish (*Danio rerio*) for in vitro to in vivo extrapolation. Presented at the SETAC North America 36th Annual Meeting, Salt Lake City, UT, USA, Nov. 1-5: p. 158.
- Watanabe, K. H.** and Schultz, I. R. (2015). Development of quantitative adverse outcome pathways for ecological risk assessment. Presented at the SETAC North America 36th Annual Meeting, Salt Lake City, Utah, USA, Nov. 1-5: p. 347.
- Watanabe, K. H.**, Mayo, M., Miller, D. H., Cheng, W. Y., Conolly, R. B., Villeneuve, D. L. and Perkins, E. J. (2014). Modeling a molecular initiating event to population effects. Presented at the SETAC North America 35th Annual Meeting, Vancouver, BC, Canada, Nov. 9-13. In *SETAC North America 35th Annual Meeting Abstract Book*: p. 111.

- Watanabe-Sailor, K.**, Mayo, M., Perkins, E. J., Villeneuve, D. L. and Ankley, G. T. (2012). A computational model linking oocyte growth and spawning to the hypothalamic-pituitary-gonadal axis in fathead minnow (*Pimephales promelas*). Presented at the SETAC North America 33rd Annual Meeting, Long Beach, CA, Nov. 11-15. In *SETAC North America 33rd Annual Meeting Abstract Book*.
- Mayo, M.**, Perkins, E. J. and **Watanabe, K.** (2012). Generalized modeling of the hypothalamic-pituitary-gonadal axis: Feedback signaling on steroid hormone production. Presented at the SETAC North America 33rd Annual Meeting, Long Beach, CA, Nov. 11-15. In *SETAC North America 33rd Annual Meeting Abstract Book*.
- Schultz, I. R.**, Woodruff, D., Timchalk, C., Minard, K. and **Watanabe, K.** (2012). New insights into the adverse outcome pathway for domoic acid in aquatic and terrestrial organisms. Presented at the SETAC North America 33rd Annual Meeting, Long Beach, CA, Nov. 11-15. In *SETAC North America 33rd Annual Meeting Abstract Book*.
- Breen, M.**, Villeneuve, D. L., Ankley, G. T., Bencic, D. C., Breen, M. S., **Watanabe, K. H.**, Lloyd, A. L. and Conolly, R. B. (2011). Adaptive responses in female fathead minnows exposed to an aromatase inhibitor: Computational modeling of the hypothalamic-pituitary-gonadal axis. Presented at the SETAC North America 32nd Annual Meeting, Boston, MA, November 13-17. In *SETAC North America 32nd Annual Meeting Abstract Book*: p. 151.
- Li, Z.**, Villeneuve, D. L., Jensen, K. M., Ankley, G. T. and **Watanabe, K. H.** (2010). A computational model for oocyte growth dynamics in fathead minnows (*Pimephales promelas*). Presented at the SETAC North America 31st Annual Meeting, Portland, Oregon, November 7-11. In *SETAC North America 31st Annual Meeting Abstract Book*: pp. 146-147.
- Villeneuve, D. L.**, Garcia- Reyero, N., Martinovic, D., Li, Z., **Watanabe, K.**, Orlando, E. F., Lalone, C. A., Edwards, S., Burgoon, L. D., Denslow, N. D., Perkins, E. and Ankley, G. T. (2010). Derivation of tissue-specific functional gene sets to aid transcriptomic analysis of chemical impacts on the teleost reproductive axis. Presented at the SETAC North America 31st Annual Meeting, Portland, Oregon, November 7-11. In *SETAC North America 31st Annual Meeting Abstract Book*: p. 147.
- Watanabe-Sailor, K.**, **Schultz, I. R.**, Andersen, M. E., Basu, N., Carvan III, M. J., Crofton, K. M., King, K. A., Suñol, C. and Tiffany-Castiglioni, E. (2009). Strategies to develop computational models of known adverse outcome pathways: A case study of domoic acid. Presented at the SETAC North America 30th Annual Meeting, New Orleans, Louisiana, November 19 - 23. In *SETAC North America 30th Annual Meeting Abstract Book*: pp. 86-87.
- Li, Z., Kroll, K. J., Jensen, K. M., Villeneuve, D. L., Ankley, G. T., Ekman, D. R., Collette, T. W., Brian, J. V., Sepúlveda, M. S., Orlando, E. F., Lazorchak, J. M., **Denslow, N. D.** and **Watanabe, K. H.** (2009). Development of a computational model for female fathead minnows exposed to 17alpha-ethynylestradiol and 17beta-trenbolone. Presented at the SETAC North America 30th Annual Meeting, New Orleans, Louisiana, November 19 - 23. In *SETAC North America 30th Annual Meeting Abstract Book*: p. 114.
- Orlando, E. F.**, Thompson, J., Sepúlveda, M., Ankley, G., Villeneuve, D., Watanabe, K. and Denslow, N. (2009). Short-Term Exposure Effects of Endocrine Disrupting Chemicals on the Brain-Pituitary-Gonadal Axis Response of the Fathead Minnow. Presented at the 42nd Annual Meeting of the Society for the Study of Reproduction, Pittsburgh, PA. In *Biology of Reproduction*, **81**(Suppl. 1): p. 263.
- Denslow, N. D.**, Martyniuk, C., Garcia- Reyero, N., Kroll, K. J., Sepúlveda, M. S., **Watanabe, K. H.**, Orlando, E. F., Villeneuve, D. L. and Ankley, G. T. (2008). Comparison of transcriptomic and proteomic expression patterns in fathead minnows exposed to trenbolone and flutamide. Presented at the SETAC North America 29th Annual Meeting, Tampa, FL, November 16-20. In *SETAC North America 29th Annual Meeting Abstract Book*: p. 162.
- Johns, S. M.**, Kane, M. D., Denslow, N. D., **Watanabe, K. H.**, Orlando, E. F. and Sepúlveda, M. S. (2008). Effects of estrogenic compounds on fathead minnow (*Pimephales promelas*) early life stages. Presented at the SETAC North America 29th Annual Meeting, Tampa, FL, November 16-20. In *SETAC North America 29th Annual Meeting Abstract Book*: p. 176.

- Watanabe, K. H.**, Li, Z., Kroll, K., Garcia- Reyero, N., Orlando, E. F., Sepúlveda, M. S., Jensen, K. M., Ankley, G. T., Szabo, N. J. and Denslow, N. D. (2006). Comparison of observed and model-predicted hypothalamic-pituitary-gonadal axis effects in male fathead minnows exposed to 17 α -ethynylestradiol. Presented at the SETAC North America 27th Annual Meeting, Montreal, Quebec, Canada, November 5-9. In *SETAC North America 27th Annual Meeting Abstract Book*: p. 242.
- Watanabe, K. H.**, Jensen, K. M., Villeneuve, D. L., Nichols, J., Li, Z., Breen, M. S., Bencic, D. C., Collette, T. W., Denslow, N. D. and Ankley, G. T. (2006). A physiologically based model of the hypothalamic-pituitary-gonadal axis in female fathead minnows (*Pimephales promelas*). Presented at the SETAC North America 27th Annual Meeting, Montreal, Quebec, Canada, November 5-9. In *SETAC North America 27th Annual Meeting Abstract Book*: p. 49.
- Denslow, N. D., Garcia- Reyero, N., Martinovic, D., Adelman, I., Singh, S., Blue, J. L., **Watanabe, K. H.**, Sepúlveda, M. S. and Orlando, E. F. (2006). Exposure of fathead minnows (*Pimephales promelas*) to effluent from a metropolitan sewage treatment plant reduces competitive fitness in males and alters gene expression patterns. Presented at the SETAC North America 27th Annual Meeting, Montreal, Quebec, Canada, November 5-9. In *SETAC North America 27th Annual Meeting Abstract Book*: pp. 41-42.
- Garcia- Reyero, N., Kroll, K., Sepúlveda, M. S., **Watanabe, K.**, Orlando, E. F., Villeneuve, D. L., Ankley, G. T. and Denslow, N. D. (2006). Gene expression profiles for fathead minnows (*Pimephales promelas*) exposed to ethynylestradiol and the anti-estrogen ZM189,154. Presented at the SETAC North America 27th Annual Meeting, Montreal, Quebec, Canada, November 5-9. In *SETAC North America 27th Annual Meeting Abstract Book*: p. 383.
- Watanabe, K. H.**, Jensen, K. M., Villeneuve, D. L., Ankley, G. T., Orlando, E. F., Sepúlveda, M. S., Bencic, D. C., Whitehead, T. L., Miller, D. H. and Denslow, N. D. (2005). Computational model of the hypothalamic-pituitary-gonadal axis in female fathead minnows: baseline state of unexposed fish. Presented at the SETAC North America 26th Annual Meeting, Baltimore, MD, Nov. 13-17. In *SETAC North America 26th Annual Meeting Abstract Book*: p. 216.
- Watanabe, K. H.**, Kroll, K., Orlando, E. F., Sepúlveda, M. S., Nichols, J., Knoebl, I., Lazorchak, J. M., Collette, T. W., Szabo, N. and Denslow, N. D. (2005). Physiologically based pharmacokinetic model of ethynylestradiol exposed fathead minnows (*Pimephales promelas*). Presented at the SETAC North America 26th Annual Meeting, Baltimore, MD, Nov. 13-17. In *SETAC North America 26th Annual Meeting Abstract Book*: p. 76.
- Bencic, D. C., Miracle, A. L., Lattier, D. L., Lazorchak, J. M., Denslow, N. D., **Watanabe, K.**, Whitehead, T. L., Collette, T. W. and Ankley, G. T. (2005). Changes in gene and protein expression in zebrafish (*Danio rerio*) following exposure to environmentally-relevant endocrine-disrupting compounds (EDCs). Presented at the SETAC North America 26th Annual Meeting, Baltimore, MD, Nov. 13-17. In *SETAC North America 26th Annual Meeting Abstract Book*: p. 342.
- Denslow, N. D., Orlando, E. F., Sepúlveda, M. S., **Watanabe, K. H.**, Knoebl, I., Lazorchak, J. M., Miracle, A. L., Collette, T. W., Villeneuve, D. L. and Ankley, G. T. (2005). Gene expression profiles for fathead minnows exposed to ethynylestradiol. Presented at the SETAC North America 26th Annual Meeting, Baltimore, MD, Nov. 13-17. In *SETAC North America 26th Annual Meeting Abstract Book*: p. 139.
- Kroll, K., Mullaly, N., Orlando, E. F., Sepúlveda, M. S., **Watanabe, K. H.**, Bencic, D. C., Whitehead, T. L., Villeneuve, D. L., Ankley, G. T. and Denslow, N. D. (2005). Assay development to evaluate the effect of sex hormone agonists and antagonists in fathead minnows. Presented at the SETAC North America 26th Annual Meeting, Baltimore, MD, Nov. 13-17. In *SETAC North America 26th Annual Meeting Abstracts Book*: p. 261.
- Watanabe, K. H.**, Campanella, R., Meffert, D. J. and Short, J. (2004). A GIS-based tool to visualize environmental contamination and biota prevalence. Presented at the 2004 American Nuclear Society Winter Meeting, Washington, D.C., Nov. 14-18. In *ANS Transactions*, **91**: pp. 69-70.
- Mutlu, E. O., Luna, R. L. and **Watanabe, K.** (2004). Using dynamic segmentation to create home ranges for aquatic species. Presented at the 2004 ESRI International User Conference, San Diego, California, August 9-13. In *2004 ESRI International User Conference Abstract Book*.

- Lin, H., Abdelghani, A., Hartley, W. R. and **Watanabe, K. H.** (2003). Uptake and depuration of polycyclic aromatic hydrocarbons from sediments by crayfish (*Procambarus spp.*). Presented at the SETAC North America 24th Annual Meeting, Austin, TX, Nov. 9-13. In *SETAC North America 24th Annual Meeting Abstracts Book*.
- Kunas, M. L., Bart Jr., H. L. and **Watanabe, K. H.** (2002). Food web comparison of *Lepisosteus oculatus* and *Micropterus salmoides* in a Louisiana bayou. Presented at the SETAC 23rd Annual Meeting, Pensacola, FL, Nov. 16-20. In *SETAC 23rd Annual Meeting Abstract Book*: p. 331.
- Lin, H., Berzins, D. W., Sims, C. L., Kunas, M. L., Todaro, V. J., Bart Jr., H. L. and **Watanabe, K. H.** (2002). A probabilistic approach to modelling bioaccumulation of polycyclic aromatic hydrocarbon in a largemouth bass (*Micropterus salmoides*) food web. Presented at the SETAC 23rd Annual Meeting, Pensacola, FL, Nov. 16-20. In *SETAC 23rd Annual Meeting Abstract Book*: p. 154.
- Watanabe, K. H.** (2001). Fundamentals of physiologically-based toxicokinetic models. Presented at the NATO Advanced Research Workshop on Endocrine Disrupters and Carcinogenic Risk Assessment, Bialystok, Poland, May 8-12. Paper in *Endocrine Disrupters and Carcinogenic Risk Assessment* (2002). L. Chyczewski, J. Niklinski and E. Pluygers, Eds. IOS Press, Amsterdam, Netherlands, pp. 271-280. Abstract in *Folia Histochemica Et Cytobiologica* **39**(Suppl. 1): p. 26.
- Watanabe, K. H.** and Chen, C. (2001). Physiological modeling and its role in the paradigm of biologically based risk assessment. Presented at the NATO Advanced Research Workshop on Endocrine Disrupters and Carcinogenic Risk Assessment, Bialystok, Poland, May 8-12. Paper in *Endocrine Disrupters and Carcinogenic Risk Assessment* (2002). L. Chyczewski, J. Niklinski and E. Pluygers, Eds. IOS Press, Amsterdam, Netherlands, pp. 281-289. Abstract in *Folia Histochemica Et Cytobiologica* **39**(Suppl. 1): p. 26.
- Watanabe, K. H.** and Chen, C. (2001). The role of physiologically based toxicokinetic models in biologically based risk assessment. Presented at the NATO Advanced Research Workshop on Endocrine Disrupters and Carcinogenic Risk Assessment, Bialystok, Poland, May 8-12. In: *Folia Histochemica et Cytobiologica* **39**(Suppl. 2): pp. 50-51.
- Watanabe, K. H.** and Luna, R. (2000). Modeling bioaccumulation of polycyclic aromatic hydrocarbons in an aquatic ecosystem. *Proceedings of the 39th Annual Meeting of the Society of Toxicology*, Philadelphia, PA, March 19-23. *The Toxicologist* **54**: p. 327.
- Steinberg, L. J., **Watanabe, K.**, Bollinger, J. E. and George, W. (1999). Time series analysis of Lower Mississippi River nutrient data. *Proceedings of the 218th American Chemical Society National Meeting*, New Orleans, LA, August 22-26. *Division of Environmental Chemistry Preprints of Extended Abstracts* **39**: pp. 164-166.
- Watanabe, K. H.**, Bois, F. Y., Auslander, D. M. and Spear, R. C. (1993). Extrapolated rat models versus a human model for benzene: Prediction performance for risk assessments. *Proceedings of the Society of Toxicology 32nd Annual Meeting*, Washington, D.C., March 14-18. *The Toxicologist* **13**: p. 173.

*Presentations (other than Published Abstracts): since 2003 (Presenter underlined. *Undergraduate co-author)*

Scientific and Professional Meetings

- Daniele, A.*, Austin, K.* and **Watanabe, K. H.** (2024). Photoperiod Effects of Follicle Distribution in Siberian Hamsters (*Phodopus sungorus*). Presented at the 2024 Arizona Physiological Society Annual Meeting, Tucson, AZ, October 11-12.
- Austin, K.*, Daniele, A.* and **Watanabe, K. H.** (2024). Analysis of Siberian Hamster (*Phodopus sungorus*) Follicle Distributions in Response to Photoperiod. Presented at the NCUIRE: New College Research Symposium, Glendale, AZ, April 18.
- Lund, C.*, Sluka, J., Rao, P. R. and **Watanabe, K. H.** (2024). Utilizing Machine Learning Algorithms in ResNet34 Architecture to Enhance Ovarian Follicle Stage Prediction Accuracy. Presented at the NCUIRE: New College Research Symposium, Glendale, AZ, April 18.

- Pak, H.* and **Watanabe, K. H.** (2024). The Multispecies Ovary Tissue Histology Electronic Repository (MOTHER): STEM Encouragement and Outreach Through an Activity Book. Presented at the NCUIRE: New College Research Symposium, Glendale, AZ, April 18.
- Jurado Gutierrez, A.*, Chu, T.-Y. and **Watanabe, K. H.** (2024). Ovary Histology Across Species: Need For a Unifying Ontology. Presented at the NCUIRE: New College Research Symposium, Glendale, AZ, April 18.
- Jurado Gutierrez, A.*, Egusquiza Diaz, E.* and **Watanabe, K. H.** (2023). Exploration of Female Fish Ovaries. Presented at the New College Environmental Health Scholars Family Night, Arizona State University West Campus, Glendale, AZ, July 27.
- Austin, K.*, Daniele, A.* and **Watanabe, K. H.** (2023). Synergistic Collaboration and Data Science Within the MOTHER Project. Presented at the NCUIRE: New College Research Symposium, Glendale, AZ, April 20.
- Lemke, K.*, Hartwell, L., **Watanabe, K. H.** and Sellner, E. (2023). Theoretical Research Plan on improving Captive Eel Reproduction. Presented at the NCUIRE: New College Research Symposium, Glendale, AZ, April 20.
- Shah, G.*, Azooz, M.*, Zelinski, M. B., **Watanabe, K. H.**, Sluka, J. and Dietrich, S. (2023). Rapamycin's Role in Prolonging Ovarian Reproductive Lifespan: A Nonhuman Primate Model. Presented at the NCUIRE: New College Research Symposium, Glendale, AZ, April 20.
- Weir, V.*, Tomlin, M.* and **Watanabe, K. H.** (2023). Variation in Reproductive Cycles and Ovarian Development Among Selected Species. Presented at the NCUIRE: New College Research Symposium, Glendale, AZ, April 20.
- Shah, G.*, Azooz, M.*, Zelinski, M. B. and **Watanabe, K. H.** (2022). Efficacy of Rapamycin in Increasing Female Reproductive Longevity: A Nonhuman Primate Model. Presented at the 2022 Arizona Physiological Society Meeting, Scottsdale, AZ, October 21-22.
- Shah, G.*, Azooz, M.*, Zelinski, M. B. and **Watanabe, K. H.** (2022). Rapamycin's Role on Ovarian Follicular Development: A Nonhuman Primate Model. Presented at the BioSci Southwest, Tempe, AZ, September 30.
- Bhushan, A. and **Watanabe, K. H.** (2022). A Cell-Based Computational Model of Early Ovarian Development in Mice: The role of c-KIT on primordial germ cell migration. Presented at the 2022 SoCal and DSW SETAC Regional Chapters Annual Meeting, Ventura, CA, April 25-26.
- Abbott, K. C., Adler, F. R., Aydeniz, M., Dale, R., Gross, L. J., Hastings, A., Hobson, E. A., Karatayev, V., Killion, A., Madamanchi, A., Marraffini, M., McCombs, A., Samyono, W., Shiu, S.-H., **Watanabe, K. H.**, White, E. R., Edwards, A. M. and Ingalls, B. (2021). Building quantitative skills for biologists: Self-confidence and training alternatives. Presented at the Graduate Student Association, Brock University, St. Catharines, ON, December 2, 2021.
- Hackney Price, J., Marshall, P. A. and **Watanabe, K. H.** (2021). Recruiting Strategies for Place-Bound Undergraduates Interested in Environmental Health Science. Presented at the Society of Toxicology Annual Meeting and ToxExpo, Virtual Event, March 12-26.
- Watanabe, K. H.** (2021). Application of a Cell-Based Computational Model for Predictive Toxicology. Presented at the AAAS Annual Meeting; Understanding Dynamic Ecosystems, Phoenix, AZ (Virtual), February 8-11.
- Conrow, K., Garcia-Martin, Y., Garcia-Reyero, N. and **Watanabe, K. H.** (2019). Adverse Outcome Pathway Development for Acetylcholinesterase Inhibition in the AOP Wiki. Presented at the SETAC Southern California Regional Meeting, San Diego, CA, May 6-7.
- Guerrero, V. D.*, Purdin, H. G.*, Jurutka, P. W. and **Watanabe, K. H.** (2019). A Mathematical Model of ER α and ER β Responsiveness to 17 β -estradiol *In Vitro*. Presented at the Arizona-Nevada Academy of Science, Yuma, AZ, April 6. In *Proceedings of the 63rd Annual Meeting of the Arizona-Nevada Academy of Science*. Arizona-Nevada Academy of Science: pp. 22-23.
- Watanabe, K. H.** and Wear, H. M. (2018). Cell-Based Computational Models for Two Stages of Early Ovarian Development in Mice. Presented at the FutureToxIV: Predictive Toxicology for Healthy Children, Arlington, VA, November 14-16.

- Wear, H. M., Mayo, M. L., Perkins, E. J., Vinas, N. G., Burgoon, L. D. and **Watanabe, K. H.** (2016). Potential for Aryl Hydrocarbon Receptor Crosstalk: Predicting susceptible gene targets through bioinformatics and experimental approaches. Presented at the OHSU Research Week 2016, Portland, OR, USA, May 2-6.
- Wear, H. M., Mayo, M. L., Perkins, E. J., Vinas, N. G., Burgoon, L. D. and **Watanabe, K. H.** (2016). Elucidating Molecular Pathways Affected by Aryl Hydrocarbon Receptor-Estrogen Receptor Crosstalk Through Bioinformatics Approaches. Presented at the Pacific Northwest Chapter, Society of Environmental Toxicology and Chemistry (PNW-SETAC) 25th Annual Meeting, Bellingham, WA, USA, June 1-4.
- Wear, H., Eriksson, A. and **Watanabe, K. H.** (2015). Early Ovarian Development Computational Model for Mouse. Presented at the Oregon Health & Science University Research Week, Portland, OR, May 4-8.
- Wear, H., Mayo, M. L., Perkins, E. J., Vinas, N., Burgoon, L. D. and **Watanabe, K. H.** (2015). Potential for Aryl Hydrocarbon Receptor Crosstalk: Predicting susceptible gene targets through bioinformatics and experimental approaches. Presented at the SETAC North America 36th Annual Meeting, Salt Lake City, Utah, USA, Nov. 1-5.
- Watanabe, K. H.** (2014). A Model of Early Ovarian Development as a Future Tool in Toxicity Testing. Presented at the 9th World Congress on Alternatives and Animal Use in the Life Sciences, Prague, Czech Republic, August 24-28.
- Watanabe, K. H.** (2014). Modeling Reproductive Effects of Endocrine Active Chemicals in the Environment: A possible tool to reduce the number of animals used in toxicity testing. Presented at the Northwest Environmental Health Conference, Portland, OR, April 8.
- Breen, M., Villeneuve, D. L., Ankley, G. T., Bencic, D. C., Breen, M. S., **Watanabe, K. H.**, Lloyd, A. L. and Conolly, R. B. (2013). Developing Predictive Approaches to Characterize Adaptive Responses of Reproductive Endocrine Axis to Aromatase Inhibition: Computational Modeling. Presented at the 52nd Annual Meeting of the Society of Toxicology, San Antonio, TX, March 10-14.
- Li, Z., Villeneuve, D. L., Jensen, K. M., Ankley, G. T. and **Watanabe, K. H.** (2010). A Computational Model for Oocyte Growth Dynamics in Fathead Minnows (*Pimephales promelas*). Presented at the Pacific Northwest Chapter, Society of Environmental Toxicology and Chemistry (PNW-SETAC) Fort Worden, WA, April 15-17.
- Li, Z., Kroll, K. J., Garcia-Reyero, N. G., Villeneuve, D. L., Sepulveda, M. S., Orlando, E. F., Ankley, G. T., Denslow, N. D. and **Watanabe, K. H.** (2009). Development of a Computational Model for Female Fathead Minnows Exposed to TB and EE₂. Presented at the 26th Annual OHSU Student Research Forum, Portland, OR, May 14-15.
- Li, Z., Kroll, K. J., Jensen, K. M., Villeneuve, D. L., Ankley, G. T., Ekman, D. R., Collette, T. W., Brian, J. V., Sepulveda, M. S., Orlando, E. F., Denslow, N. D. and **Watanabe, K. H.** (2009). Development of a Computational Model for Female Fathead Minnows Exposed to 17alpha-ethynylestradiol and 17beta-trenbolone. Presented at the Pacific Northwest Chapter, Society of Environmental Toxicology and Chemistry (PNW-SETAC) Fort Worden, WA, April 16-18.
- Watanabe, K. H.**, Li, Z., Garcia-Reyero, N., Villeneuve, D. L., Ankley, G. T. and Denslow, N. D. (2007). A Computational Model of Male Fathead Minnow Reproductive System Regulation: Linking changes in gene expression with reproductive effects. Presented at the International Conference on Systems Biology, Long Beach, CA, Oct. 1-6.
- Li, Z., Kroll, K., Garcia-Reyero, N., Szabo, N., Denslow, N. D., Ankley, G. T. and **Watanabe, K. H.** (2007). A Computational Model for Steroid Hormone and Vitellogenin Concentrations in Baseline and EE₂-exposed Male FHMs. Presented at the Future Research on Endocrine Disruption: Translation of Basic & Animal Research to Understand Human Disease, Research Triangle Park, NC, August 26-28.
- Watanabe, K. H.** (2007). A Physiologically Based Computational Model of the HPG Axis in Fathead Minnows: Predicting effects of endocrine disrupting chemical exposure on reproductive endpoints. Presented at the International Science Forum on Computational Toxicology, Research Triangle Park, NC, May 21-23.

- Watanabe, K. H.**, Kroll, K., Szabo, N. J., Reyero, N., Sepúlveda, M. S., Orlando, E. F. and Denslow, N. D. (2006). Development of a Computational Model for the Hypothalamic-Pituitary-Gonadal Axis in Male Fathead Minnows (*Pimephales promelas*). Presented at the 15th Annual PNW-SETAC Meeting, Port Townsend, WA, April 13-15.
- Denslow, N. D.**, Garcia- Reyero, N., Kroll, K., Sepúlveda, M. S., **Watanabe, K. H.**, Orlando, E. F., Villeneuve, D. L., Martinovic, D. and Ankley, G. T. (2007). A Toxicogenomic Approach Using Fathead Minnows to Identify Biochemical Pathways in the Gonad Impacted by Exposure to Estrogens and Androgens. Presented at the SETAC Europe 17th Annual Meeting, Porto, Portugal, May 20-24.
- Johns, S. M.**, Sepúlveda, M. S., Garcia- Reyero, N., **Watanabe, K. H.**, Orlando, E. F. and Denslow, N. D. (2006). Can Reproductive Alterations in Fish Exposed to Endocrine Disruptors be Predicted by Changes in Gene Expression? Presented at the 23rd Annual Meeting Ohio Valley Chapter SETAC, Fort Wayne, IN, April.
- Ochoa-Acuña, H. G.**, Sepúlveda, M. S., Orlando, E. F., **Watanabe, K. H.** and Denslow, N. D. (2006). Fathead Minnow Metabolic Rate, Stroke Volume, and Cardiac Output for Use in Physiologically Based Pharmacokinetic Models. Presented at the SETAC Europe 16th Annual Meeting, The Hague, The Netherlands, May 7-11.
- Sepúlveda, M. S.**, Orlando, E. F., **Watanabe, K. H.**, Reyero, N., Kroll, K., Johns, S. M. and Denslow, N. D. (2006). Systems Biology Modeling of Fathead Minnow Response to Endocrine Disruption. Presented at the SETAC Europe 16th Annual Meeting, The Hague, The Netherlands, May 7-11.
- Watanabe, K. H.**, Denslow, N. D., Orlando, E. F., Sepúlveda, M. S., Bencic, D. C., Knoebl, I., Lazorchak, J. M., Lattier, D. L., Toth, G. P., Wang, R., Ankley, G. T., Jensen, K. M., Villeneuve, D. L., Collette, T. W., Whitehead, T. L., Miller, D. H. and Miracle, A. L. (2005). The Hypothalamic-Pituitary-Gonadal Axis in Fathead Minnow (*Pimephales promelas*): A targeted systems approach for modeling biological responses to endocrine disrupting chemicals. Presented at the Northwest Symposium for Systems Biology 2005, Richland, WA, June 20-21.
- Watanabe, K. H.**, Denslow, N. D., Orlando, E. F., Sepúlveda, M. S., Lazorchak, J. M., Miracle, A. L., Villeneuve, D. L. and Ankley, G. T. (2005). Fathead Minnow Gene Expression and Physiologically Based Pharmacokinetics in Response to 17α -ethinylestradiol. Presented at the Genotype-to-Phenotype Correlation in Health and Disease, Welches, OR, December 4-7, 2005.
- Watanabe, K. H.**, Denslow, N. D., Orlando, E. F., Sepúlveda, M. S., Bencic, D. C., Knoebl, I., Lazorchak, J. M., Lattier, D. L., Toth, G. P., Wang, R., Ankley, G. T., Jensen, K. M., Villeneuve, D. L., Collette, T. W., Whitehead, T. L., Miller, D. H. and Miracle, A. L. (2005). The Hypothalamic-Pituitary-Gonadal Axis in Fathead Minnow (*Pimephales promelas*): A targeted systems approach for modeling biological responses to endocrine disrupting chemicals. Presented at the Northwest Symposium for Systems Biology 2005, Richland, WA, June 20-21.
- Watanabe, K. H.**, Campanella, R. and Meffert, D. J. (2004). Integration of DOE's RAD-BCG Calculator with ArcGISTM. Presented at the RESRAD-Biota Training Workshop, Argonne National Laboratory, IL, September 15.
- Lin, H.**, Hartley, W. R. and **Watanabe, K. H.** (2004). A Bayesian Approach to Parameter Estimation for a Crayfish (*Procambarus spp.*) Bioaccumulation Model. Presented at the Sixteenth Annual Tulane Health Sciences Research Days, New Orleans, LA, April 28-29.
- Campanella, R.**, **Watanabe, K. H.** and Meffert, D. J. (2003). A Prototype GIS-based Biota Risk Model. Presented at the Society for Risk Analysis Annual Meeting, Baltimore, MD, December 7-10.
- Lin, H.**, Sims, C. L. and **Watanabe, K. H.** (2003). A Probabilistic Approach to Estimate Human Exposure and Health Risks from Fish Consumption. Presented at the Society for Risk Analysis Annual Meeting, Baltimore, MD, December 7-10.
- Watanabe, K. H.**, Campanella, R. and Meffert, D. J. (2003). Hierarchical Modeling of Food Webs for Exposure Assessment. Presented at the Society for Risk Analysis Annual Meeting, Baltimore, MD, December 7-10.

Lin, H., Abdelghani, A., Hartley, W. R. and **Watanabe, K. H.** (2003). Modeling Bioaccumulation of Polycyclic Aromatic Hydrocarbons in Crayfish (*Procambarus spp.*) Exposed to Contaminated Sediments. Presented at the Environmental State of the State VIII (ESOS) Annual Conference, New Orleans, LA, Oct. 10.

Invited Lectures/Seminars

- 2025 Female Reproduction and the Ovary: Computational modeling for predictive toxicology. Molecular and Cellular Biology Graduate Program Colloquia, ASU School of Life Sciences, Tempe, AZ, January 24.
- 2022 The Multispecies Ovary Tissue Histology Electronic Repository (MOTHER) Project. ASU Health Occupations Students of America (HOSA) seminar, Glendale, AZ, September 14.
Mathematical Modeling of Adverse Outcome Pathways for Risk Assessment. ASU School of Sustainable Engineering and the Build Environment seminar, Tempe, AZ, March 29.
- 2019 *In Vitro* and *In Silico* Modeling in Toxicology, Pharmacology and at ASU. Presented at In Vitro and In Silico Modeling: Advancing Research by Looking Beyond Animal Models, Phoenix, AZ, March 28.
- 2017 Adverse Outcome Pathways for Ecotoxicology and Risk Assessment. ASU Biological Design Seminar, Tempe, AZ, September 27.
- 2014 Two lectures on computational modeling of angiogenesis with CompuCell 3D software for Biology 3955-001 Information of Cell Signaling, Villanova University, November 18 & 20.
- 2013 Modeling Reproductive Effects from Exposure to Endocrine Active Chemicals. Presented at the OHSU BME/OCSSB Seminar Series, Portland, OR, December 19.
- 2013 Computational Modeling of the HPG axis and Oocyte Growth Dynamics in Fathead Minnows (*Pimephales promelas*). Presented at the Division of Reproductive Sciences Seminar Series, Oregon National Primate Research Center, Beaverton, OR, October 10.
- 2012 Processes, Pathways, and Computational Models that Link Molecular and Cellular Responses to Organism Effects. Presented at the 1st European Conference on the Replacement, Reduction and Refinement of Animal Experiments in Ecotoxicology, Eawag, Dübendorf, Switzerland, June 28-29.
- 2008 Modeling the HPG-Axis in Fathead Minnows: Linking EDC exposure with measured reproductive endpoints. Presented at e.hormone 2008: "Environmental Signaling in Urban Ecosystems", New Orleans, LA, April 13-16.
- 2006 Linking Engineering and Biology: A road to computational models of biological systems. Presented at the Introduction to Engineering Class Lecture, Invited by J. Brosing, Pacific University, April 17.
- 2005 "A Systems Approach to Assessing Impacts of EDCs on the HPG Axis in Small Fish Models" presented at the EPA/STAR Small Fish Computational Toxicology Team Meeting, Duluth, MN, March 16-18.
"Chemical Dynamics in Aquatic Organisms" presented at the Nonlinear Systems Group Seminar, Math Department, Portland State University, March 4.
- 2002 "Spatial Network Modeling of Bioaccumulation in Aquatic Food Webs" presented at the National Institute for Industrial Environment and Risks (INERIS), Verneuil en Halatte, France, April.
Lecturer on Atmospheric Transport for ENHS 671 - Terrorism: A Public Health Challenge.
- 2001 Invited speaker at the NATO Advanced Research Workshop on "Endocrine Disrupters and Carcinogenic Risk Assessment" in Bialystok, Poland, May 8-12. Two lectures were given, "Pharmacokinetics I: Fundamentals of Physiologically-Based Toxicokinetic Models" and "Pharmacokinetics II: Physiological Modeling and Its Role in the Paradigm of Biologically Based Risk Assessment."

Interviews

- The State Press, April 15, 2021. ASU Receives \$8 Million Grant to Train Unemployed, Underemployed Workers by J. Geenen. <https://www.statepress.com/article/2021/04/spbiztech-asu-develops-aznext-training-program#>.
- NCIAS Outstanding Undergraduate Award Fall 2023, ASU's Gaurika Shah, BS, Biology, Minor in Psychology. https://www.youtube.com/watch?v=-R_YPQrvIYk.

Research Data

- Multispecies Ovary Tissue Histology Electronic Repository (MOTHER) (2022). Zelinski Lab: Cynomolgus Macaque Ovary. <https://doi.org/10.48349/ASU/BUAU3E>, ASU Library Research Data Repository, V1.
- Multispecies Ovary Tissue Histology Electronic Repository (MOTHER) (2022). Zelinski Lab: Japanese Macaque Ovary. <https://doi.org/10.48349/ASU/KM2QZQ>, ASU Library Research Data Repository, V1.
- Multispecies Ovary Tissue Histology Electronic Repository (MOTHER) (2022). Zelinski Lab: Rhesus Macaque Ovary. <https://doi.org/10.48349/ASU/46JWEX>, ASU Library Research Data Repository, V1.

Grants and Contracts

- 2/24 – 1/27 ASU subaward PI, In Vitro to In Vivo Extrapolation of Toxicant Effects on Ovarian Function. Sponsor: National Institutes of Health, \$2,190,962 total project award. PI: Dr. Zeliann Craig (University of Arizona). Grant #1R01ES034690. Subaward to ASU: \$400,344.
- 3/21 – 2/25 PI, CIBR Multispecies Ovary Tissue Histology Electronic Repository (MOTHER). Sponsor: National Science Foundation, \$939,436. Co-PIs: Drs. Suzanne Dietrich, James Sluka (Indiana University), and Mary Zelinski (Oregon Health & Science University). Grant # DBI-2054061. Summer 2022. Research Experience for Undergraduates Supplement to CIBR Multispecies Ovary Tissue Histology Electronic Repository (MOTHER). Sponsor: National Science Foundation, \$13,202.
- 3/21 – 2/26 co-PI, Arizona Workforce Training Accelerator Partnership for Next Generation Jobs (AZNext). Sponsor: U.S. Dept. of Labor, \$8,029,594. PI: Dr. Raghu Santanam.
- 8/18 – 8/24 co-Investigator, ASU ADVANCE. Sponsor: National Science Foundation. PI: Dr. Elizabeth Wentz.
- 6/21 – 9/21 PI, New College Environmental Health Science Scholars (NCEHSS) Internship Supplement. Sponsor: Society of Toxicology, \$4,600.
- 2/19 – 1/24 PI (1 of 3 PIs), New College Environmental Health Science Scholars: A Unique Summer Program Designed to Increase Diversity in the Environmental Health Sciences. Sponsor: National Institute of Environmental Health Sciences, National Institutes of Health. Grant #1R25ES030238, \$521,083. PIs: Drs. Pamela Marshall and Jennifer Hackney Price. Summer 2021. New College Environmental Health Science Scholars (NCEHSS) Internship Supplement. Sponsor: Society of Toxicology, \$4,600.
- 8/18 – 8/23 Investigator, ASU ADVANCE. Sponsor: National Science Foundation, \$6293.
- 7/18 – 6/19 PI, Probing the Activity of ER α and ER β in Response to Synthetic Estrogens in Multiple Human Cells: Development of Novel Modeling Paradigms. Sponsor: ASU New College of Interdisciplinary Arts and Sciences Scholarship, Research and Creative Activities Grant Seed Grant 2018-2019, \$9,989.
- 9/17 – 6/20 PI, Development of Quantitative Adverse Outcomes of High-Nitrogen Chemicals that Cause Acetylcholinesterase Inhibition. Sponsor: U.S. Army Engineer Research and Development Center (ERDC), Contract # W912HZ-17-2-0029, \$119,966.
- 1/15 – 9/16 PI, Toxicokinetic Modeling of High Nitrogen Compounds and Mixtures. Sponsor: U.S. Army Engineer Research and Development Center (ERDC), Contract # W912HZ-15-C-0002, \$178,310.

- 10/14 – 9/15 Investigator, A Systems Biology Virtual Fish Platform to Assess and Predict Chemical Hazards. Sponsor: U.S. Army Engineer Research and Development Center (ERDC), Intergovernmental Personnel Agreement, \$38,600.
- 8/13 – 4/15 PI, Formulation of a Computational Model for Ovarian Development. Sponsor: Alternatives Research and Development Foundation, \$40,000.
- 4/11 - 9/14 PI, Dynamic Modeling of Reproduction-Related Adverse Outcome Pathways to Inform Ecological Risk Assessment. Sponsor: U.S. Army Corps of Engineers, Grant # W912HZ-11-2-0023, \$150,000.
- 12/06 - 11/08 PI, A Novel Approach to Physiological Modeling of Xenobiotic Mixtures. Sponsor: Medical Research Foundation of Oregon, \$29,991.
- 8/04 - 7/08 co-PI, Systems Biology Modeling of Fathead Minnow Response to Endocrine Disruptors. Sponsor: U.S. Environmental Protection Agency, \$722,851. PI: Dr. Nancy Denslow
- 9/03 - 5/04 PI, Development of a Bioenvironmental Monitor: Integration of Biota Exposure to Contaminants. Sponsor: U.S. Department of Energy through the Center for Bioenvironmental Research at Tulane and Xavier Universities (Subcontract to OHSU), \$84,777.
- 8/02 - 12/03 PI with Hsin-I Lin as applicant, The Uptake and Depuration of PAHs from Sediments by Crayfish. Sponsor: the J. Bennett Johnston Science Foundation, \$5000.
- 12/01 - 12/02 PI, Review of Air Quality Models to Predict Ozone Concentrations for Ecosystem Studies: Sponsor: National Institute for Global Environmental Change, \$39,952.
- 10/01 - 5/04 PI, Research Experience for Undergraduates Supplement to Spatial Network of Bioaccumulation in Food Webs. Sponsor: National Science Foundation, \$40,725.
- 6/00 - 5/04 PI, Spatial Network of Bioaccumulation in Food Webs: Sponsor: National Science Foundation, \$415,488.
- 7/00 - 12/02 PI, POWRE: A Population Approach to Modeling Contaminant Bioaccumulation: Sponsor: National Science Foundation, \$74,912.
- 9/00 - 8/01 Participating investigator, Biocomplexity- Incubation Activity: Exploration of Feedback Mechanisms Influencing Contaminant Flux and the Ecology of the Lower Mississippi River System. Sponsor: National Science Foundation. PI: Dr. William George.
- 1/00 - 4/01 Participating investigator to study the “Dynamics of Bioaccumulation in Aquatic Organisms” as part of the Mississippi River Project sponsored by Freeport-McMoran. PI: Dr. William George.
- 4/99 - 8/00 Co-PI, Spatial Network Modeling of the Biological Fate of Aquatic Ecosystem Contaminants. Sponsor: Tulane/Xavier Center for Bioenvironmental Research, U.S. Department of Defense/Defense Threat Reduction Agency, \$70,000.
- 4/98 - 6/99 Participating investigator to perform data analysis of nutrients in the Mississippi River as part of the Mississippi River Project sponsored by Freeport McMoran. PI: Dr. William George.
- 2/96 - 3/98 Participating Investigator, Tulane/Xavier Center for Bioenvironmental Research Data Management Core. Sponsor: U.S. Department of Energy. PI: Dr. Charles F. Ide.
- 2/96 - 1/97 Participating Investigator, Consortium for Environmental Risk Evaluation. Sponsor: U.S. Department of Energy. PI: Dr. James L. Regens.
- 8/95 - 2/96 Participating Investigator, Expert Geographical Information Systems for Assessing Hazardous Wastes in Aquatic Environments. Sponsor: Tulane/Xavier Center for Bioenvironmental Research, U.S. Department of Energy. PI: Dr. James L. Regens.

Students Advised (organized by year of graduation)

Graduate Degree Major Advisor

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|---------|--|
| Present | Israels, Riley. Adapting an Image Recognition Algorithm for Large Ovarian Follicles. Biological Data Science MS expected completion Spring 2025. |
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- Russel, Benjamin. Development of a Quantitative Adverse Outcome Pathway for Acetylcholinesterase Inhibition Leading to Neurodegeneration. Biological Data Science MS expected completion Spring 2025.
- 2024 Chu, T-Y. Comparative Analysis of Ovarian Follicle Development in the MOTHER Project: Exploring Observer Variability in Human Follicle Identification. Biological Data Science MS completed in Summer 2024.
- 2023 Sinitsyn, D. (2023). Development of Qualitative and Quantitative Adverse Outcome Pathways for Acetylcholinesterase Inhibition Leading to Neurodegeneration. School of Mathematical and Natural Sciences, Arizona State University, Glendale, AZ. Master's thesis: pp. 111. <https://hdl.handle.net/2286/R.2.N.187841>. Biological Data Science MS completed Spring 2023.
- 2022 Bhushan, A. Evaluation of a cell-based model of early ovarian development with c-kit knock-out mouse data. Biological Data Science MS completed Spring 2022.
- 2017 Wear, H. M. Modeling the Mammalian Ovary: A cell-based computational model of early ovarian development in mice and preliminary data for a model of folliculogenesis in rhesus monkey. Institute of Environmental Health, Oregon Health & Science University, Portland, OR. Master's thesis: pp. 178. Winner of the 2017 OHSU School of Medicine Outstanding Master's Thesis award.
- 2015 McPike, M. Non-thesis Master's student in Biochemistry and Molecular Biology, Division of Environmental and Biomolecular Systems, Oregon Health & Science University, Portland, OR.
- 2010 Li, Z. Physiologically based computational modeling of the hypothalamic-pituitary-gonadal axis in fathead minnows. Division of Environmental and Biomolecular Systems, Oregon Health & Science University, West Campus, Beaverton, OR. Ph.D. dissertation: pp. 188.
- 2008 Mahyari, E. Utilization of 2003-2004 NHANES Database for Nicotine & Cotinine Pharmacokinetics & Cotinine Bioaccumulation. Department of Environmental and Biomolecular Systems, Oregon Health & Science University, Beaverton, OR. M.S. report: pp. 43.
- 2008 George, E. M.S. Environmental Science & Engineering, Department of Environmental and Biomolecular Systems, Oregon Health & Science University, Beaverton, OR.
- 2004 Lin, H. Polycyclic Aromatic Hydrocarbon Bioaccumulation in Crayfish: Field Sampling, Laboratory Analysis, and Bayesian Model Development. Department of Environmental Health Sciences, Tulane University, New Orleans, LA. Doctor of Science dissertation: pp. 154.

Graduate Degree Committee Member (year of graduation listed)

- 2024 Juve, J. Biological Data Science MS applied project supervisory committee member.
- 2023 Ding, Y. Biological Data Science MS applied project supervisory committee member.
- 2022 Cassel, S. Biological Data Science MS applied project supervisory committee member.
Ma, W. Biological Data Science MS applied project supervisory committee member.
Petrosino A. Biological Data Science MS applied project supervisory committee member.
- 2021 Lobb, B. Biological Data Science MS applied project supervisory committee co-chair.
- 2016 Chauhan, S. Kinetic and Spectroscopic Study of Peptidylglycine Monooxygenase. Institute of Environmental Health, Oregon Health & Science University. Doctoral dissertation.
- 2015 Mather, A. L. Stream Turbidity Modeling: A foundation for water quality forecasting: a dissertation. Division of Environmental and Biomolecular Systems, School of Medicine, Oregon Health & Science University. Doctoral dissertation: pp. 166.
- 2014 Breen, M. Predicting the Biochemical Response of Vertebrate Endocrine Systems to Endocrine Active Chemicals. Biomathematics, North Carolina State University. Doctoral dissertation: pp. 182.

- 2006 Chen, C. The Gas/Particle Partitioning of Ammonia and Nicotine in Mainstream Tobacco Smoke and Its Implications for Acid/Base Chemistry of Tobacco Smoke. Division of Environmental and Biomolecular Systems, Oregon Health & Science University, Beaverton, OR. Doctoral dissertation: pp. 135.
- 2003 Kunas, M. Spatial and Temporal Variation in Feeding Preferences of Top Predatory Fishes in a Contaminated Wetlands Ecosystem. Institute for Earth and Ecosystem Science, Department of Ecology and Evolutionary Biology, Tulane University, New Orleans, LA. M.S. thesis: pp. 85.
- 2003 Mutlu, E. O. Spatial Representation of Bioaccumulation Studies. Department of Environmental Engineering, University of Missouri, Rolla, MO. M.S. thesis.

Undergraduate Students Advised

Honors Thesis– primary advisor

- 8/19 – 5/20 Guerrero, V., Applied Math Major, ASU. Barrett Honor's Thesis, "A Mathematical Model of Cell Confluency In Vitro" completed Spring 2020.

Honors Thesis– second reader

- 10/22 – 5/23 Lemke, K., Pharmacology and Toxicology major, ASU. Barrett Honors Thesis, "Theoretical Research Plan on Improving Captive Eel Reproduction" completed Spring 2023.
- 1/20 – 12/21 Kreutzer, A., Forensic Science major, ASU. Barrett Honors Thesis, "Implementing Standards for Newborn Toxicology Testing in the Diagnosis of Neonatal Abstinence Syndrome" completed Fall 2021.
- 9/19 – 12/20 Student 3, Environmental Science major, ASU. Barrett Honors Thesis project to compare fish consumption advisory programs between the US and Canada completed Fall 2020.

Undergraduate Research

Students working on the MOTHER project learn to scan histology slides to create digital images, and perform quality control checks of scanned images and ovary follicle identification. Additional responsibilities or related subprojects may be noted for each student.

- 1/24 – 12/24 Aljaizany, A. Pharmacology and Toxicology major. Performed a literature review of dibutyl phthalate effects on female reproduction and assisted with testing ChatGPT as a tool for conducting a literature search.
- 1/24 – 5/24 Egusquiza, E., Pharmacology and Toxicology major. Performed a literature review of dibutyl phthalate effects on female reproduction and assisted with testing ChatGPT as a tool for conducting a literature search.
- Hernandez, V., Biology major. Worked on the MOTHER project.
- 8/23 – present Jurado Gutierrez, A. Biology major with concentration in Pharmacology and Toxicology. Worked on the MOTHER project and assisted with investigating ontologies relevant for MOTHER. She also assisted with a di-butyl phthalate physiologically based model development project by compiling model parameters from the literature. NCUIRE support provided in Fall 2023.
- 2/23 – 5/23 Granillo, L., Pharmacology and Toxicology major. Worked on the MOTHER project.
- Pinon, W., Pharmacology and Toxicology major. Worked on the MOTHER project.
- 8/22 – present Pak, H., Medical Studies major, ASU. Works on the MOTHER project to develop educational outreach materials to inspire middle and high school students to pursue STEM majors. Two products in 2024:
- 8/22 – 5/24 Tomlin, M., Biology major, ASU. Worked on the MOTHER project through NCUIRE support in Spring 2023. Reviewed reproductive cycle types and nomenclature of different species.
- 8/22 – 5/24 Austin, K., Medical Studies major, ASU. Works on the MOTHER project and will start to manage the scanning of one contributor's slides in Fall 2023.
- 8/22 – 5/23 Luxton, C., Biology major, ASU. Worked on the MOTHER project.
- Mohammed, U., Anthropology major, ASU. Worked on the MOTHER project.

- Nsengamungu, D., Health Science major, ASU. Worked on the MOTHER project.
 Weir, V., Biology major, ASU. Worked on the MOTHER project through NCUIRE support in Spring 2023. Reviewed reproductive cycle types and nomenclature of different species.
- 8/22 – 12/22 Cole, B. Nursing major, ASU. Worked on the MOTHER project.
- 6/22 – 5/23 Villanueva, E., Biology major, ASU. Research project: Comparing the effect of different diets on macaque ovarian follicles in different stages of development supported by an NSF-REU supplement to the MOTHER project (DBI-2054061). Research continued during the academic year through 499 research credits.
- 6/22 – 8/22 Hernandez, G., Environmental Science major, ASU. Research project: Comparison of the macroscopic anatomies of *Busycon sp.* (whelks) and *Macaca fascicularis* (cynomolgus macaques) ovaries supported by an NSF REU Supplement to the MOTHER project (DBI-2054061).
- 1/22 – 5/24 Azooz, M. Pharmacology and Toxicology major, ASU.
 Research project: Ovarian follicle identification and counting for rapamycin treated macaques. Collaborating faculty: Dr. Mary Zelinski, OHSU
- 1/22 – 12/23 Shah, G., Biology major, ASU. NCIAS Outstanding Undergraduate Award Fall 2023.
 Research project: Ovarian follicle identification and counting for rapamycin treated macaques. Collaborating faculty: Dr. Mary Zelinski, OHSU
- 1/22 – 12/24 Daniele, A. Medical Studies major, ASU. Works on the MOTHER project and will start to manage the scanning of one contributor's slides in Fall 2023.
- 8/21 – 5/22 Miguel Karlo Dote, Biology major (Pharmacology and Toxicology concentration)
 8/21 – 12/21 Symone Griffith, Pharmacology and Toxicology major
 Research project: Measurement of organophosphorus pesticides on jalapeno peppers supported by the New College Environmental Health Science Scholars summer undergraduate research program and a Society of Toxicology Internship supplement. The research study was designed by Miguel and Symone, and presented at the SOT meeting in March 2022.
- 8/20 – 1/21 Student 4, Pharmacology and Toxicology major, ASU. Research project: *Acetylcholinesterase inhibition leading to neurodegeneration*” involved compiling data on acetylcholinesterase inhibitor inhibition constants.
- 8/19 – 5/20 Muhammed Jaafar, Medical Studies major, ASU.
 Rand Jaafar, Medical Studies major, ASU
 Research project: *Development of data gap analysis tools for the Fish Consumption Advisory program at the AZ Department of Environmental Quality (DEQ)*. Muhammed and Rand worked together to develop an Excel macro that identifies field sample data gaps based on criteria provided by AZ DEQ.
- 8/18 – 5/20 Carson Yockey, Applied Math major, ASU. Research project: *Mathematical modeling of fever response due to lipopolysaccharide exposure in mice*.
- 8/18 – 12/19 Susana Avezbadalova, Medical Studies major, ASU
- 6/18 – 5/19 Victor Guerrero, Applied Math Major, ASU. Research project: *Mathematical modeling of selective estrogen receptor binding in TE85 bone cells by three estrogenic chemicals*.
- 6/18 – 5/19 Alejandro Vidales Aller, Applied Math Major, ASU
- 8/17 – 12/19 Katherine Fullerton, Microbiology major, ASU. Research projects: *The Gut Microbiome*. Katherine is in her third 1-credit LSC 499 Independent Study. Her first two semesters focused on investigating the relationship between the gut microbiome and immune function. Her third semester of research focuses on the development of a mathematical model for fever response to bacterial infection. This is an interdisciplinary project with two other students.
- Summer 2018 Rusty Conway, Applied Math and Applied Computing double major, ASU West. Research project: *Identifying ovarian follicles in Rhesus macaque with ImageJ software*. I mentored Rusty in training ImageJ software to identify Rhesus monkey ovarian follicles in different stages of development.

- 8/17 – 12/17 Students 1 and 2: a biochemistry major from ASU Tempe, and a biology major, ASU West. Names withheld due to FERPA regulations.
- 9/16 – 12/17 Honors thesis advisor for Alyssa Clayton. Sr. Honors Thesis, Environmental Science, Portland State University.
Clayton, A. (2017). A Case for Collaborative Resource Management: Comparative Analysis of Public Resources to Establish Fish Consumption Advisories in the Pacific Northwest, Portland State University. University Honors Theses. Paper 482: pp. 20.
<http://pdxscholar.library.pdx.edu/honorstheses/482>.

Summer Internship Students (high school and undergraduate)

- Summer 2023 Eliany Egusquiza Diaz and Aleli Jurado Gutierrez. New College Environmental Health Science Scholars (NCEHSS) program. Research project: Exploration of female fish ovaries and effects of environmental estrogens.
- Summer 2021 Symone Griffith and Miguel Karlo Dote. New College Environmental Health Science Scholars (NCEHSS) program. Research project: Measurement of chlorpyrifos residues on jalapeno peppers.
- Summer 2019 Jessica Macedo. New College Environmental Health Science Scholars (NCEHSS) program. Research project: *In-vitro cell lines and their estradiol and estrogen receptor concentrations*. Jessica conducted a literature review to obtain data on E2 and ER concentrations in a variety of in -vitro cell lines that are needed for developing a predictive mathematical model of estrogen receptor binding by a variety of estrogenic chemicals.
- Summer 2015 Alyssa Clayton. OHSU Equity program undergraduate intern in Public Health. Alyssa worked on a statewide bass fish consumption advisory for mercury. Co-mentors: Nievita Watts from the Institute for Environmental Health; David Farrer and Rebecca Hillwig from the Oregon Health Authority.
- Summer 2014 Ermenejildo (Meadow) Rodriguez. Summer intern who recently graduated with a B.S. degree in Computer Science from Heritage University, Toppenish, WA. Meadow worked on a preliminary computational model of ovarian development in mice using CompuCell3D software.
- Summer 2008 Saturday Academy/Apprenticeships in Science and Engineering (ASE). Co-mentored (with Drs. Needoba and Peterson) Jessica Wagner, an entering high school senior, in a research project entitled, "Carbon Cycling in the Columbia River Estuary."
- Summer 2007 EBS Summer Internship Program. Mentored Sophia Cai, an undergraduate student from the University of Massachusetts, Amherst. Sophia used MATLAB® to develop StringQuery, a software tool that allows a user to search FASTA-formatted data files for strings of characters (e.g., nucleotides or amino acids). Sophia used StingQuery to search for estrogen response elements (e.g., ggtca***tgacc) in the zebrafish genome.
- Summer 2001 Joyanna Gamble-George, Louisiana Alliance for Minority Participation (LAMP) summer intern from Xavier University. Joyanna compared mechanisms of xenobiotic metabolism between mammals and freshwater organisms.

Educational Outreach

- 1/24 ASU Open Door, West Valley campus. Hosted an exhibit about the MOTHER project with a MOTHER activity book and video developed by H. Pak (ASU undergraduate student mentee) and ovary histology slides from different species. January 27, 2024.
- Pak, H. (2024). MOTHER Project Activity Book, Zenodo. <https://doi.org/10.5281/zenodo.13685872>.
 - Pak, H. (2024). Why Science is Important, Zenodo. <https://zenodo.org/records/13685662>.
- Summer 2021 and 2020 *Summer Experience West I*. Gave a one-hour lecture, "Pharmacology, Toxicology, and Biological Data Science" for the STEM learning community of high school students.

- Sparky's Virtual Experience. Created and delivered a one-hour lecture, "Pharmacology and Toxicology of Vitamin C". Two virtual sessions were offered (4/27/20 and 6/19/20) for 8th to 10th grade students.
- 2020 ASU West Open Door. Coordinated a team of student volunteers to assist with Medication Safety badge activities for K-12 students and their parents. Four activity stations covered different aspects of medication safety, and students were given a medication safety badge after completing the four activities. Feb. 1.
- Summer 2019 *Summer Experience West 1*. Gave a one-hour lecture on Pharmacology and Toxicology: Chemical effects on living organisms for the STEM learning community.
- Summer 2018 *Upward Bound West*. Learning Community Lead, "Environmental Chemicals and Their Effects." In an active learning environment, taught high school juniors about mercury and endocrine active chemicals and their effects on humans and wildlife.
- Summer Experience West 1 and 2*. Gave one-hour lectures in each session to high school students. (1) Science, Technology, Engineering, and Mathematics; (2) Game theory. Taught game theory by having students play two games: Prisoner's Dilemma, and the Ultimatum Game to provide an active hands-on learning environment for some difficult concepts.
- Summer 2014 Attended a faculty teaching workshop on the Science of Information at the University of California, San Diego. Sponsored by an NSF-funded Center for Science of Information.
- Summer 2013 Attended a faculty workshop, "Teaching a Science of Information Course" sponsored by an NSF-funded Center for Science of Information (CSoI) at Purdue University. Products of this activity include developing an education module on computational modeling of ovarian development to be included in a cell signaling course at Villanova University, and a reading group examining issues of data quality to be taught at OHSU with corresponding educational materials to be uploaded to the CSoI Learning Hub.
- 2007 Saturday Academy Oceanography Summer Camp for students in grades 7 to 10. Prepared a lecture and computer laboratory activity about mercury in our environment and how it bioaccumulates in fish.
- 2005 Advocates for Women in Science, Engineering, and Mathematics (AWSEM) Site Visit Activity Leader. Prepared a computer lab, "Developing a VBA Macro to Compute Fish Consumption Rate Limits" for 7th and 8th grade students.
- 1996 Tulane/Xavier Campus Affiliates Program: Information Systems Workgroup

Professional Service

- 2024 Proposal panel reviewer for Delta Research Awards managed by California Sea Grant.
- 2024 – present Society for the Study of Reproduction Public Affairs Committee member. Review and formulate recommendations on issues of reproductive significance that impact the general public and public policy. The Committee is responsible for distribution of the Society's quarterly newsletter and for the preparation and dissemination of public pronouncements and information regarding reproductive biology. The Committee also makes recommendations to the Board of Directors for the organizational structure and function of the Society's Public Affairs Program.
- 2023 - present Associate Editor, *Frontiers in Toxicology, Computational Toxicology and Informatics* section since 2/23. Lead editor for *Frontiers in Toxicology Research Topic, "Educational Frontiers in Computational Toxicology: Building the Future Workforce"* launched April 2024.
- 2023 - 2024 Chair, SOT FUTURE committee subgroup Annual Meeting Proposals/Posters, 7/23 to 4/24.
- 2023 Reviewer, NSF EDU review panel
- 2022 Served as an ad-hoc reviewer for an NSF proposal
- Co-coordinated event logistics for a hybrid CompTIA (Computing Technology Industry Association) Connect 4 Cybersecurity panel, "Inside Perspectives: Cybersecurity Experts Share Stories" held on October 18 at ASU's West campus. The event was viewed online by approximately 400 viewers.

- Committee member, Society of Toxicology, Faculty United for Toxicology Undergraduate Recruitment and Education Committee (FUTURE). The SOT FUTURE committee manages undergraduate travel awards to the National meeting, grants to host institutions for summer research experiences and other resources for undergraduate toxicology education. 8/22 to 4/24.
- Reviewer, Agence Nationale de la Recherche, France. I was part of the evaluation panel CE45- Interfaces: mathematiques, sciences du numerique-biologie, sante.
- 2021 Served on NSF BIO review panel
- Reviewer, OECD Adverse Outcome Pathway Framework. I reviewed a key event relationship description, "Impaired spermatogenesis leads to impaired fertility".
- Reviewer, U.S. Environmental Protection Agency. I reviewed and commented on a manuscript authored by EPA employees for their internal review process.
- 2020 – 2021 Session Organizer, AAAS 2021 Annual Meeting, scientific session on “Computational Modeling of the Ovary: Applications for Predictive Toxicology.”
- Member, SETAC North America 42nd annual meeting program committee.
- Member, SETAC Joint Regional Chapter Meeting Organizing Committee. SoCal SETAC & Desert Southwest. Organizing committee liaison from the Desert Southwest chapter. Attended planning meetings to coordinate volunteers, moderated a session of 3-minute lightning talks, and judged student presentations.
- 2020 NIEHS conference proposal reviewer.
- 2018 – 2022 Led effort to revitalize the Desert Southwest Regional Chapter of SETAC. Role: member. Served as President, 9/19 – 9/21, and Past President from 10/21 to 9/22.
- 2019 – 2020 Reviewer for *Environmental Science and Technology*
- 2018 Reviewer for the *Journal of Theoretical Biology*
- Proposal Reviewer for the French National Research Agency. Panel CE14 – Physiologie et physiopathologie.
- 2017 – 2019 SETAC North America Awards & Fellowships committee member.
- 2016 Reviewer for the Netherlands Organisation for Scientific Research, Earth and Life Sciences divisional board
- Reviewer for *Environmental Science and Technology*
- 2015 – 2017 Participant, National Institute for Mathematical and Biological Synthesis (NIMBioS) Working Group: Modeling Molecules-to-Organisms.
- 2015 – 2016 OHSU Faculty Senate, School of Public Health representative
OHSU-PSU School of Public Health, Academic Policy and Curriculum Committee member
OHSU-PSU School of Public Health Field Experience Committee member
- 2015 Reviewer for *Integrated Environmental Assessment and Management, PLoS Computational Biology*
- 2014 Panel member: Bay-Delta Ecosystem Restoration Program Independent Scientific Peer Review of Delta Fish Health Project. University of California, Davis, April 10-11.
- Participant, Workgroup 1: Identification of Research Priorities for Development of AOPs, in a workshop entitled, “Advancing Adverse Outcome Pathways for Integrated Toxicology and Regulatory Applications” held in Somma Lombardo, Italy, March 2-7, 2014
- Reviewer for *Environmental Science & Technology, Bioinformatics, Aquatic Toxicology*
- 2007 - 2014 Coordinator EBS/IEH Student Research Symposium. Organized a one-day student poster presentation competition open to all students in the Division of Environmental and Biomolecular Systems
- 2013 Reviewer for *Aquatic Toxicology, Environmental Science & Technology, Comparative Physiology and Biochemistry*

2012	Reviewer for <i>PLOS ONE</i> .
2011	Reviewer for <i>Mathematical Biosciences</i> , <i>Journal of Experimental Biology</i> , <i>Human and Ecological Risk Assessment</i> , and <i>Science of the Total Environment</i>
2009 - 2010	Reviewer for the <i>Journal of Biological Systems</i>
2008 - 2009	Co-chair, Workgroup 1: Computational Modeling of Known Pathways, for a Pellston workshop entitled, "A Vision and Strategy for Predictive Ecotoxicology in the 21st Century: Defining Adverse Outcome Pathways Associated with Ecological Risk" held in Forest Grove, Oregon, USA, April 19-23, 2009
2006 - 2008	Board of Directors (Academia-at-large) Pacific Northwest Chapter of the Society of Environmental Toxicology and Chemistry (PNW-SETAC)
2008	Panel reviewer for NSF URM program Reviewer for <i>Risk Analysis</i>
2007	Co-chaired an EPA Science Forum session on Systems Biology Models of the HPG Axis
2005 & 2007	Panel reviewer for NSF Research Experience for Undergraduate Sites
2005	Reviewer for EPA Bio-chem Redirect Project
2004 - 2007	Member of the Education Committee (EBS track development), Department of Environmental and Biomolecular Systems, Oregon Health & Science University
2004	Fastlane review for NSF Cross-disciplinary Research at Undergraduate Institutions (CRUI) Reviewer for <i>Fisheries Research</i> Reviewer for <i>Environmental Science and Technology</i>
1998 - 2003	Newcomb Children's Center Advisory Board, Co-chair for 2000-2001 academic year
2002	U.S. Environmental Protection Agency Graduate Fellowship Panel Reviewer
2001	Proposal reviewer for the U.S. Civilian Research and Development Foundation Reviewer for <i>Journal of Toxicology and Environmental Health</i>
2000	Proposal reviewer for the New York Sea Grant Hard Clam Initiative School of Public Health and Tropical Medicine Constitution and By-Laws review committee Reviewer for the 2000 Spring/Summer ASPH/CDC/ATSDR Internship Program
1998 - 2000	School of Public Health and Tropical Medicine Representative to the Tulane University Senate Development Committee
1999	Reviewer for <i>Biotechnology Progress</i>
1998	Reviewer for <i>Automedica</i> – A biomedical engineering journal
1997	School of Public Health and Tropical Medicine Core Values Committee
1994	Reviewer for <i>Risk Analysis</i> Reviewer for <i>Occupational and Environmental Medicine</i>

University Service

10/24	Organized a Climate Change, Justice and Equity seminar on October 31 st at ASU's West Valley Campus, "Climate Chats with Edward Chu and Carleton Waterhouse".
3/24 – present	Member, SMNS Bylaws Committee.
11/23	Reviewer, ASU Presidential Graduate Assistantship.
9/23 – 5/24	Applied Math Search Committee member.
9/23 – 10/23	Member, Probationary Review Committee for SMNS
4/23	ASU Day at the Capitol. Hosted a table focused on AZNext programs. April 10, 2023.
5/22 – 8/22	Member, advisory board for "Training in Genomics Research (TiGER)" funded by the National Human Genome Research Institute program, NIH.

- 8/21 – present STEM team member, Accelerate Latinx Representation in STEM Education (ALRISE) Alliance, Center for Broadening Participation in STEM 2021-10-01, The NSF Includes ALRISE Alliance is led by ASU's Center for Broadening Participation with \$10M of funding from the NSF. The Alliance is a coordinated network of 26 HSI/eHSI institutional members and their STEM teams. Until my sabbatical August 2022, I was the ASU West STEM Team Lead. Over the course of the grant, STEM Teams will participate in a series of facilitated workshops focused on STEM planning and professional development to implement data driven strategies in MNS that serve Latinx students and improve student outcomes.
- 5/20 – present Member of the New College Anti-Racism Council (NewARC).
- 9/21 – 9/21 Member, Promotion and Tenure Peer Committee for SMNS.
- 8/21 – 5/22 Applied Math Lecturer Search Committee. Started as a member of this committee and took over as chair when the chair took a leave of absence.
- 7/19 – 6/22 Biological Data Science, Interim Program Director. Responsibilities: Oversee the execution of the academic, administrative, and developmental program activities, cultivate partnerships with international universities, professional organizations, local corporations, and charitable foundations, contribute to planning and implementation of marketing and recruitment strategies, supervise program admissions processes and fellowship nominations, manage curricular changes for program development, consult with students as needed, and perform annual program evaluations.
AZ Transfer biology representative. Includes attending a 3-hr AZ Transfer Biology meeting held on a Saturday in October.
- 7/18 – 6/22 Program Lead for Pharmacology and Toxicology program. Identified toxicology as an area for program growth given the faculty expertise in SMNS. In particular, computational toxicology is an emerging area that will require professionals trained in both toxicology and quantitative data analysis methods. Responsibilities: review and recommend class scheduling, perform annual program assessment, revise catalog copy annually, manage curricular changes for program development, work with academic advisors to approve course substitutions for students, advise and counsel majors as needed, and cultivate partnerships with professional organizations.
- 5/20 – 5/21 Lead, NCIAS Environmental Justice degree planning team. This is an interdisciplinary group of NCIAS faculty developing Environmental Justice undergraduate and graduate degrees.
- 4/20 – 6/21 STEM-ESS Institute team leader, Science Foundation Arizona and Excelencia in Education. Led a team from NCIAS to evaluate and improve the graduation rates of Hispanic and Latino students (of all racial backgrounds) in STEM majors by being evidence-based and student serving (ESS).
- 8/19 – 8/22 Member, School of Mathematical and Natural Sciences website committee. I contributed ideas to the re-design of the MNS website, reviewed and provided feedback on its content.
- 11/19 – 4/20 PTX Faculty Search Committee Chair, (School of Mathematical and Natural Sciences) Coordinated all aspects of the faculty search (e.g., search committee meetings, applicant reviews, interviews, and correspondence).
- 8/17 – 11/20 School of Mathematical and Natural Sciences Seminar co-coordinator.
- 8/17 – 5/20 Arizona State University Faculty Senate, School of Mathematical and Natural Sciences senator.
- 8/19 – 5/20 Senate Personnel Committee member
- 8/17 – 5/19 Senate University Services and Facilities Committee member.

Community Service

- 2023 – present West Valley Workforce Workgroup. Monthly meetings with business leaders from West Valley communities.
- 2018 – 2022 MET (Medical, Engineering, Technology) Professional Academy Advisory Board, Peoria Unified School District. As a board member I attend quarterly meetings and assist with educational outreach activities related to pharmacology and toxicology, engineering or quantitative sciences.
- 2009 - 2015 Sunset High School College and Career Center mentor. Advise junior and senior students on post-high school planning.
- Spring 2012 Sunset High School Grants Committee. Assist Sunset High School principal with finding extramural funding for high school students.
- 2008 - 2011 Beaverton School District Science Project Team. Member of a panel reviewing the school district's K-12 science curriculum.