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Education:

- 5/90 – 12/93 **UNIVERSITY OF CALIFORNIA** Berkeley, CA
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.
- 8/88 – 5/90 **UNIVERSITY OF CALIFORNIA** Berkeley, CA
Master of Science in Mechanical Engineering awarded May 1990. Concentration in heat transfer and transport in porous media.
- 9/82 – 6/86 **NORTHWESTERN UNIVERSITY** Evanston, IL
Bachelor of Science in Chemical Engineering awarded June 1986. Specialization in biomedical engineering.

Professional Experience:

- 7/19 – present Interim Director of the Biological Data Science MS program, Arizona State University
- 7/18 – present Program Lead for the Pharmacology and Toxicology BS degree, Arizona State University
- 8/16 – present Associate Professor, School of Mathematical and Natural Sciences, 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:

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, Society of Environmental Toxicology and Chemistry (SETAC) Member, Society for the Study of Reproduction
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:

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.
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- 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.
MAT 275 Modern Differential Equations.
- Spring 2017 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.

Publications:

Peer-reviewed Publications (undergraduate co-author)*

- 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.

- 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.
- 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.
- 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/iox089.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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/kft067.
- 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.
- 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 Sepúlveda, 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

Watanabe, K. H., Cheng, W. Y., Mayo, M. L., Miller, D. H., Ankley, G., Conolly, R. B., Villeneuve, D. L. and Perkins, E. J. (manuscript in preparation). Quantitative adverse outcome pathway from molecular initiation to population changes: a framework for risk-based thinking. *Toxicological Sciences*.

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

- 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.
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- Watanabe, K. H.**, Campanella, R. and Meffert, D. J. (2004). Integration of DOE's RAD-BCG Calculator with ArcGIS[™]. 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

- April 2019 Add presentation at ASU Symposium on alternatives
- September 2017 Adverse Outcome Pathways for Ecotoxicology and Risk Assessment. ASU Biological Design Seminar, September 27.

- November 2014 Two lectures on computational modeling of angiogenesis with CompuCell 3D software for Biology 3955-001 Information of Cell Signaling, Villanova University, Nov. 18 & 20.
- December 2013 Modeling Reproductive Effects from Exposure to Endocrine Active Chemicals. Presented at the OHSU BME/OCSSB Seminar Series, Portland, OR, December 19.
- October 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.
- June 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.
- April 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.
- April 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.
- March 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.
- April 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.
Lecturer on Atmospheric Transport for ENHS 671 - Terrorism: A Public Health Challenge.
- May 2001 Invited speaker at the NATO Advanced Research Workshop on "Endocrine Disrupters and Carcinogenic Risk Assessment" in Bialystok, Poland. 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."

Grants and Contracts:

- 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. Sponsored by the National Institute of Environmental Health Sciences, National Institutes of Health. Grant #1R25ES030238, \$521,083. PIs: Drs. Pamela Marshall and Jennifer Hackney Price.
- 9/17 – 6/20 PI, Development of Quantitative Adverse Outcomes of High-Nitrogen Chemicals that Cause Acetylcholinesterase Inhibition. Sponsored by U.S. Army Engineer Research and Development Center (ERDC), Contract # W912HZ-17-2-0029, \$119,966.
- 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. Sponsored by ASU New College of Interdisciplinary Arts and Sciences Scholarship, Research and Creative Activities Grant Seed Grant 2018-2019, \$9,989.
- 1/15 – 9/16 PI, Toxicokinetic Modeling of High Nitrogen Compounds and Mixtures. Sponsored by the 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. Sponsored by the 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. Sponsored by the 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. Sponsored by 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. Sponsored by Medical Research Foundation of Oregon, \$29,991.
- 8/04 - 7/08 co-PI, Systems Biology Modeling of Fathead Minnow Response to Endocrine Disruptors. Sponsored by 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. Sponsored by the 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. Sponsored by the J. Bennett Johnston Science Foundation, \$5000.
- 12/01 - 12/02 PI, Review of Air Quality Models to Predict Ozone Concentrations for Ecosystem Studies: Sponsored by the 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. Sponsored by the National Science Foundation, \$40,725.
- 6/00 - 5/04 PI, Spatial Network of Bioaccumulation in Food Webs: Sponsored by the National Science Foundation, \$415,488.
- 7/00 - 12/02 PI, POWRE: A Population Approach to Modeling Contaminant Bioaccumulation: Sponsored by the 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. Sponsored by the 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. Sponsored by the 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. Sponsored by the U.S. Department of Energy. PI: Dr. Charles F. Ide.
- 2/96 - 1/97 Participating Investigator, Consortium for Environmental Risk Evaluation. Sponsored by the 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. Sponsored by the 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

- Wear, H. M. (2016). 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.

- McPike, M. (2015). Non-thesis Master's student in Biochemistry and Molecular Biology, Division of Environmental and Biomolecular Systems, Oregon Health & Science University, Portland, OR.
- Prof, G. (withdrawn). Non-thesis Master's student in Biochemistry and Molecular Biology, Division of Environmental and Biomolecular Systems, Oregon Health & Science University, West Campus, Beaverton, OR.
- Li, Z. (2010). 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.
- Mahyari, E. (2008). 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.
- George, E. (2008). M.S. Environmental Science & Engineering, Department of Environmental and Biomolecular Systems, Oregon Health & Science University, Beaverton, OR.
- Lin, H. (2004). 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

- Chauhan, S. (2016). Kinetic and Spectroscopic Study of Peptidylglycine Monooxygenase. Institute of Environmental Health, Oregon Health & Science University. Doctoral dissertation.
- Mather, A. L. (2015). 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.
- Breen, M. (2014). Predicting the Biochemical Response of Vertebrate Endocrine Systems to Endocrine Active Chemicals. Biomathematics, North Carolina State University. Doctoral dissertation: pp. 182.
- Chen, C. (2006). 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.
- Kunas, M. (2003). 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.
- Mutlu, E. O. (2003). Spatial Representation of Bioaccumulation Studies. Department of Environmental Engineering, University of Missouri, Rolla, MO. M.S. thesis.

Undergraduate Students Advised

Honors Thesis— primary advisor

- 2019 - present Victor Guerrero, Applied Math Major, ASU. Barrett Honor's Thesis, "A Mathematical Model of Cell Confluency In Vitro."

Honors Thesis— second reader

- 2019 - present Student 3, Environmental Science major, ASU. Barrett Honor's Thesis project to compare fish consumption advisory programs between the US and Canada.

Undergraduate Research

- 8/19 – present 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 – present 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 – present 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 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:

- 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.
- 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.
- 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:

- 2018 – present Leading effort to revitalize the Desert Southwest Regional Chapter of SETAC. Role: President, effective 9/19.
- 2019 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- present SETAC North America Awards & Fellowships committee member.
- 2016 Reviewer for the Netherlands Organisation for Scientific Research
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 *PLOS ONE*.
- 2011 Reviewer for *Mathematical Biosciences*, *Journal of Experimental Biology*, *Human and Ecological Risk Assessment*, and *Science of the Total Environment*
- 2009 - 2010 Reviewer for the *Journal of Biological Systems*
- 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 *Risk Analysis*
- 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 to 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 *Fisheries Research*
Reviewer for *Environmental Science and Technology*
- 1998 to 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 *Journal of Toxicology and Environmental Health*
- 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 to 2000 School of Public Health and Tropical Medicine Representative to the Tulane University Senate Development Committee
- 1999 Reviewer for *Biotechnology Progress*
- 1998 Reviewer for *Automedica* – A biomedical engineering journal
- 1997 School of Public Health and Tropical Medicine Core Values Committee
- 1994 Reviewer for *Risk Analysis*
Reviewer for *Occupational and Environmental Medicine*

University Service

- 7/19 – present Biological Data Science, Interim Program Director.
AZ Transfer
- 7/18 – present Program Lead for Pharmacology and Toxicology program.
- 8/17 – present School of Mathematical and Natural Sciences Seminar co-coordinator.
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

- 9/18 – present 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.