

NSF BIOGRAPHICAL SKETCH

NAME: Shapiro, Karen

POSITION TITLE & INSTITUTION: Associate professor of Parasitology, University of California

(a) PROFESSIONAL PREPARATION

INSTITUTION	LOCATION	MAJOR / AREA OF STUDY	DEGREE (if applicable)	YEAR YYYY
UC Davis	Davis, California	Wildlife conservation	BS	1997
UC Davis	Davis, California	Veterinary Medicine	DVM	2002
UC Davis	Davis, California	Epidemiology	MS	2006
UC Davis	Davis, California	Comparative pathology	PHD	2009
UC Davis	Davis, California	Waterborne zoonoses	Postdoctoral Fellow	2010 - 2011

(b) APPOINTMENTS

2019 - present Associate professor of Parasitology, University of California, Davis, CA
2015 - present Adjunct Professor, University of Guelph, Ontario Veterinary College, Guelph
2012 - 2019 Assistant/Associate Researcher, University of California, Davis, CA
2004 - 2009 Veterinary Graduate Academic Fellow, University of California, Davis, CA
2002 - 2004 Associate Veterinarian, Mueller Veterinary Hospital, Sacramento, CA

(c) PRODUCTS

Products Most Closely Related to the Proposed Project

1. de Wit LA, Kilpatrick AM, VanWormer E, Croll DA, Tershy BR, Kim M, Shapiro K. Seasonal and spatial variation in *Toxoplasma gondii* contamination in soil in urban public spaces in California, United States. *Zoonoses Public Health*. 2020 Feb;67(1):70-78. PubMed PMID: [31677251](https://pubmed.ncbi.nlm.nih.gov/31677251/).
2. Shapiro K, Bahia-Oliveira L, Dixon B, Dumètre A, de Wit L, VanWormer E, Villena I. Environmental transmission of *Toxoplasma gondii*: Oocysts in water, soil and food. *Food and Waterborne Parasitology*. 2019 June; 15:e00049. DOI: 10.1016/j.fawpar.2019.e00049
3. VanWormer E, Carpenter T, Singh P, Shapiro K, Wallender W, Conrad P, Largier J, Maneta M, Mazet J. Coastal development and precipitation drive pathogen flow from land to sea: evidence from a *Toxoplasma gondii* and felid host system. *Scientific Reports*. 2016 February 06; 6(1). DOI: 10.1038/srep29252
4. Shapiro K, Krusor C, Mazzillo F, Conrad P, Largier J, Mazet J, Silver M. Aquatic polymers can drive pathogen transmission in coastal ecosystems. *Proceedings of the Royal Society B: Biological Sciences*. 2014 November 22; 281(1795):20141287. DOI: 10.1098/rspb.2014.1287
5. Shapiro K, VanWormer E, Packham A, Dodd E, Conrad P, Miller M. Type X strains of *Toxoplasma gondii* are virulent for southern sea otters (*Enhydra lutris nereis*) and present in felids from nearby watersheds. *Proceedings of the Royal Society B: Biological Sciences*. 2019 August 21; 286(1909):20191334. DOI: 10.1098/rspb.2019.1334

Other Significant Products, Whether or Not Related to the Proposed Project

1. Shapiro K. Climate and coastal habitat change: a recipe for a dirtier ocean. *Mar Pollut Bull.* 2012 Jun;64(6):1079-80. PubMed PMID: [22341407](#).
2. Shapiro K, VanWormer E, Aguilar B, Conrad P. Surveillance for *Toxoplasma gondii* in California mussels (*Mytilus californianus*) reveals transmission of atypical genotypes from land to sea. *Environmental Microbiology.* 2015 November; 17(11):4177-4188. DOI: 10.1111/1462-2920.12685
3. Shapiro K, Conrad P, Mazet J, Wallender W, Miller W, Largier J. Effect of Estuarine Wetland Degradation on Transport of *Toxoplasma gondii* Surrogates from Land to Sea. *Applied and Environmental Microbiology.* 2010 October 15; 76(20):6821-6828. DOI: 10.1128/AEM.01435-10
4. VanWormer E, Fritz H, Shapiro K, Mazet J, Conrad P. Molecules to modeling: *Toxoplasma gondii* oocysts at the human–animal–environment interface. *Comparative Immunology, Microbiology and Infectious Diseases.* 2013 May; 36(3):217-231. DOI: 10.1016/j.cimid.2012.10.006
5. Shapiro K, Silver M, Largier J, Conrad P, Mazet J. Association of *Toxoplasma gondii* oocysts with fresh, estuarine, and marine macroaggregates. *Limnology and Oceanography.* 2012 March; 57(2):449-456. DOI: 10.4319/lo.2012.57.2.0449

(d) SYNERGISTIC ACTIVITIES

1. Founder and co-chair, International Network for Environmental Toxoplasma Studies (INETS). Established a new platform for connecting international expertise on environmental transmission and epidemiology of *Toxoplasma* & organized the inaugural workshop on Environmental *Toxoplasma* transmission (Armenia, Colombia 2019).
2. Scientific advisor for international efforts focused on environmental contamination with *Toxoplasma*, including in France (L'Agence nationale de la recherche: mitigating the risk of protozoal disease in people); New Zealand (Department of Conservation: toxoplasmosis in Hector's and Māui dolphins); and in the US (National Oceanic and Atmospheric Administration: Hawaiian Monk Seal toxoplasmosis taskforce).
3. Public outreach K-12 curriculum development for coastal health and marine biology. Through NSF funding (2009-2013), I developed interactive games and educational materials that have reached more than 4550 children to date.
4. Author, Global Water Pathogen Project: Member and author in an advanced information technology resource on water-related disease risks and intervention. (<https://www.waterpathogens.org/book/toxoplasma-gondii>).
5. Mentor for undergraduates, graduate and professional students with a focus on recruiting and supporting women (25 to date) and individuals from educationally or economically disadvantaged students with an interest in STEM research.