CURRICULUM VITAE

Name:	Joan Bray Rose
Present Position:	Homer Nowlin Chair in Water Research Michigan State University College of Agriculture and Natural Resources Departments of Fisheries and Wildlife and Crops and Soil Sciences
Contact:	13 Natural Resources Building Michigan State University East Lansing, MI 48824 Phone: (517) 432-4412 Fax: (517) 432-1699 Email: rosejo@msu.edu
Date of Birth:	March 5, 1954
Citizenship:	U.S.A.
Education:	B.S. (Microbiology), University of Arizona, 1976. M.S. (Microbiology), University of Wyoming, 1980. Ph.D. (Microbiology), University of Arizona, 1985.

PROFESSIONAL EXPERIENCE

2003-present:	Homer Nowlin Endowed Chair for Water Research, Michigan State University
2005-present:	Co-Director, Center for Advancing Microbial Risk Assessment (CAMRA), Michigan State University (Center of Excellence DHS/EPA)
2005-2015:	Co-Director, Center for Water Sciences, Michigan State University
1998-2002:	Professor, College of Marine Science, University of South Florida
1994-1997:	Associate Professor, Department of Marine Science, University of South Florida
1995:	Courtesy Appointment, Associate Professor, Department of Civil and Environmental Engineering, University of South Florida
1989-1994:	Assistant Professor, Department of Environmental and Occupational Health, College of Public Health, University of South Florida
1986-1989:	Research Associate/Lecturer, Department of Microbiology and Immunology, and Nutrition and Food Science, University of Arizona

HONORS AND AWARDS

Received the Honorary Members Award 2022 for lifetime contributions to the International Water Association
Inducted into the Michigan Water Industry Hall of Fame. 2020
Elected as a Corresponding Member of the Royal Academy of Sciences and Arts of Barcelona, Spain, 2020
Elected to the Royal Institution of Singapore, 2019
Elected into the EU Academy of Sciences, 2019
Presented as 50 most impactful Leaders in Water and Water Management. 2018 award. A global listing. Presented by World CSR Day & World Sustainability. Endorsed by World Water Leadership Congress and Awards, 2018
Recipient of The Michigan Environmental Council's Helen & William Milliken Distinguished Service Award, 2018

Invited and approved to serve on the Health Professionals Advisory Board, International Joint Commission, 2017-2020
Invited and approved to serve on the Board of Trustees of the Michigan Nature Conservancy, 2017-2020.
Elected to the Board of Directors for the International Water Association, 2016-2022
Awarded the KWR Water Fellow, Netherlands, October, 2016
Awarded the 2016 Stockholm Water Prize, August 2016
Awarded Honorary Citizenship of Singapore for Distinguished Contributions to the Country's Development of Sustainable Safe Waters, Oct. 2015.
Elected as a Distinguished Fellow, International Water Association, 2014.
Appointed to the National Research Council of the National Academies Board on Environmental Studies and Toxicology 2013-2020.
Appointed to the U.S. Environmental Protection Agency's Great Lakes Advisory Board, 2013-2017
Elected to the National Academy of Engineering, 2011
Appointed to the Scientific Advisory Board of the Canadian National Research Center . *Applied Metagenomics of the Watershed Microbiome*. University of British Columbia, 2011-2015
Appointed as Science Advisor to Singapore *Centre on Environmental Life Sciences Engineering* Nanyang Technological University, Singapore 2009-current
Elected as President of the Michigan Branch of the American Society of Microbiology, 2011-13
Elected as a Fellow to the International Water Association, 2010
Elected as an American Association for the Advancement of Science Fellow, 2010
Appointed as a member of the U.S. National Committee for UNESCO the International Hydrological Program, 2009-2011
Appointed to the Science Advisory Board of the Environmental Protection Agency, Chair of the Drinking Water Committee, 2004-2010
Elected Chair of the International Water Association's Health-Related Water Microbiology Specialty Group, 2003-2010
Presented with the Singapore Public Service Medal, Ministry of Environment and Water Resources, August, 2009
Japan Society for the Promotion of Science Fellowship, January-March, 2009
Michigan State University College of Agriculture and Natural Resources, Distinguished Faculty Researcher, 2009
Michigan State University Distinguished Faculty Award, 2009
Received the first International Water Association Hei-jin Woo Award for Achievements of Women in the Water Profession, 2008
Received the Outstanding Woman Faculty Award, Michigan State University, 2008
Distinguished Lecturer for Association Environmental Engineers and Science Professors, 2006-2007
Elected to the Council Policy Committee for the American Society of Microbiology, 2001-2007
Appointed to the Research Advisory Board, National Water Research Institute, 2002-2007
Appointed to the Science Advisory Board of the International Commission of the Great Lakes, 2003-2005
Elected Vice Chair of the USA National Committee for the International Water Association, 2002-2005
Best Paper Award 2005 Water Science and Research Division, American Water Works Association for: "Risk Assessment of Waterborne Coxsackievirus" JAWWA, July, 2005
Elected to the Research Advisory Council for the Water Reuse Foundation, 2003-2005
Appointed to the Alan T. Waterman Award Committee, National Science Foundation, 2002-2005
Elected to the Board of Directors, Association of Environmental Engineering and Science Professors, 2002-2005

Outstanding Contribution, 2005, AWWA Water Resources Division Best Paper Award for "Risk Assessment for Waterborne Coxsackie Viruses" by Mena et al. in JAWWA, June 12, 2005
Appointed Chair of Michigan Environmental Science Board for the Governor of Michigan, 2004
Appointed to Life Sciences Board of National Academy of Science, National Research Council, 2001-2004
Appointed to Water Science and Technology Board of National Academy of Science, National Research Council, 1998-2004
Best Paper Award, First Place for the 2003 AWWA Water Resources Division for "Predicted Public Health Consequences of Body-Contact Recreation on a Potable Water Reservoir" Stewart et al. JAWWA, June 12, 2003
Presented the "Walter J. Weber, Jr. Distinguished Lecture in Environmental Sciences and Engineering," College of Engineering, University of Michigan March 28, 2003
Lifetime National Associate, National Academies of Science, appointed November 2003
Received the Athalie Richardson Irvine Clarke Water Prize. Presented July 2001 at Costa Mesa, CA for significant contributions to Water Science and Technology, from the National Water Research Institute, 2001
Named as one of the 21 most influential people in Water in the 21st Century by Water Technology Magazine, 2000
Honorary membership to Phi Theta Kappa, 2000
Two Thousand Notable American Women, Millennium edition, American Biographical Institute, 1999
President of Florida Branch of American Society for Microbiology, 1997-1999
Honorary membership award, for dedicated research and education services for the Water Quality Association, 1998
YMCA Tribute to Women and Corporations in Tampa Bay: Nominee, March 1997
American Water Works Association, Research Division, Best Poster Award, Annual Meeting, 1997
President of Florida Environmental Health Association, 1995-1996
Foundation for Microbiology National Lectures Program, American Society of Microbiology, 1994-1996
Appointed to State of Florida Health and Rehabilitative Services Research Review and Advisory Committee, 1993-1995
Vice President of Florida Environmental Health Association, 1994-1995
Distinguished Teaching Award, College of Public Health, 1993-1994
Who's Who in the World, 1994
Elected as a Fellow to the American Academy of Microbiology, August 1993
Article, "Risk Assessment . . ." selected as outstanding in its field by "Clinical Digest Series," 1992
America's Who's Who - Who's Who of American Women, 1992
America's Who's Who - Who's Who Environmental Registry, 1992
Award for best presentation at the National Water Supply Improvement Association, August 1991 (National Conference)
America's Who's Who - Who's Who in Science and Engineering, 1991
America's Who's Who - America's Outstanding Women of the Eighties, 1989
Environmental Science and Engineering Fellowship, American Association for the Advancement of Science, 1988
Phi Kappa Phi and Gamma Sigma Delta Scholastic Honoraria's
Alpha Zeta, Agricultural Honorary
Sigma Xi, Research Honorary
Graduate Study Scholarship (University of Wyoming)
Newton and Shirlee Pfeffer Memorial Scholarship, National Science Foundation

PROFESSIONAL SOCIETY MEMBERSHIPS

American Academy of Microbiologists
American Society for Microbiology
Association of Environmental Engineering and Science Professors
American Water Works Association
Society for Risk Analysis
International Water Association
Water Environment Federation

SPECIAL SEMINARS AND PRESENTATIONS (2017-2022 full list available on request)

2022

Chair of International Water Association (IWA) Webinar and panel on COVID19 Variant Testing in Sewage, Online, January 12th

Organizer and Chair of the International Joint Commission workshop on the Great Lakes Water Quality Study Plan VIRTUAL Workshop 1: Microbial Source Tracking (MST), Online, January 20-21st

Discussant on Anti Microbial Resistance Research for Water, online, Singapore Public Utilities Board, February 8th

Key Note "Why Pathogens Matter for meeting SDG6" International Conference on Water in Africa (ICWA 2022), Online, February 9th

Invited Speaker "Addressing our Health with Environmental Surveillance from SARS in Wastewater to *E. coli* on our Beaches: The Impact of The Michigan Network for Environmental Technology" Annual Great Lakes Conference, sponsored by Michigan State University Department of Fisheries and Wildlife, Institute of Water Research, Michigan Sea Grant Extension, Michigan Department of Environment, Great Lakes, and Energy, and MSU Extension as part of ANR Week at Michigan State University. Support is provided by the US Geological Survey Water Resources Research Program, Grand Rapids, MI, March 8th

Organizer and Co-Chair of the Wastewater Track / Session 6: Wastewater Based Epidemiology, 17th IWA Leading Edge Conference on Water and Wastewater Technologies, Reno, Nevada March 28th- April 1st

Keynote "Metagenomics, agricultural water quality and food safety", FAO Food Security session, Singapore International Water Week, Singapore, April 17-21st

Distinguished Speaker "At the Intersection of Science and Technology Addressing Water Quality and Health" Spring 2022 Distinguished Speaker Series, The Institute for Sustainable Agricultural, Food, and Environmental Science, Pennsylvania State University, University Park, PA April 27-28th

Invited Speaker "From Polio to COVID: Environmental Virology at its Best" International Water Summit & Zuckerberg Water Prize Conference, Water Security in a Changing World, Water Research (ZIWR), Jacob Blaustein Institutes for Desert Research (BIDR) campus of Ben-Gurion University of the Negev. Israel May 22-25th

Invited Speaker "Flushed Down the Toilet, Public Health Issues" National Science Foundation Workshop on Septic Tank Systems, Flathead Lake Biological Station, MT June 9-10th

Keynote "Sinking, Swimming Floating: My Life in Water Sciences" Florida Environmental Health Association, 74th Anniversary Annual Educational Meeting Howey in the Hills, FL August 4th

Moderator "Wastewater Gone Viral" Plenary Session; Invited Speaker "Water Quality in the Great Lakes" HRWM/WHO workshop Water recreational quality from science to policy, IWA World Water Congress & Exhibition, Copenhagen, Denmark September 11-15th

Invited Speaker "The importance of Water" UN Global Compact for Brazil SDGs in Brazil event United Nations Headquarters in New York, NY September 17th

Invited to present "Septic Tanks and Viruses" Higgins Lake Foundation, Online, October 10th

Invited Speaker "The Centennial Study" University of Waterloo Information Day sponsored by the Natural Sciences and Engineering Research Council"s (NSERC) Industrial Research Chair in Water Treatment, Waterloo, Canada, October 26th.

Organizer and Chair "Wastewater Based Epidemiology" Workshop Great Lakes Beachnet, Muskegon, MI October 31st.

Chair of the panel discussion "Wastewater Gone Viral" IWA Copenhagen Congress in a webinar series in China, Online, December 8th

Invited Speaker "*Legionella* Occurrence and review of the NAS report" National Drinking Water Advisory Committee EPA, Online, December 13th

2021 (Year of COVID, Presentation made by Zoom unless otherwise noted)

Keynote, "The Evolution of Environmental Virology" International e-Workshop on Wastewater-Based COVID-19 Surveillance, National University of Singapore Environmental Research Institute March 10-11

Invited Speaker, "My Life in Water Sciences", University of Arizona Public seminars in Environmental Science Arizona Institutes for Resilience: March 15

Organizer and invited speaker, "Overview of Monitoring and Dashboards around the world" Singapore Public Utilities Board Workshop on COVID 19, March 29th

Invited Speaker, "COVID 19 in Wastewater" Michigan Water Environment Association 2021 Virtual Biosolids Conference, March 31

Invited Speaker, "Moving the Political Will" University of Arizona Environmental Science Colloquium Series, April 12.

Organizer and Chair, Webinar on Monitoring SARS-Cov-2 in sewage – progress needs for a public health tool, IWA Task Force, April 13

Invited Speaker, "Evolution of Environmental Virology addressing the COVID 19 Pandemic" XXXVII Congreso Interamericano Virtual De Ingeniería Sanitaria Y Ambiental - Buenos Aires, Argentina, April 12-15

Invited Speaker "Watching the Health of our Communities through Wastewater Monitoring", MSU Community Club, April 15

Invited Speaker, "From Polio to COVID: Environmental Virology at its Best" Institute For Sustainability, Energy, And Environment University Of Illinois Urbana-Champaign, Congress Spring 2021: The Future of Water Miller Communication lecture, April 23

Invited Speaker, "Monitoring COVID-19 in Wastewater" MWEA Laboratory Practices Seminar. May 12

Invited Speaker, "Environmental Virology: Monitoring for Health" National Institute for Standards and Technology May 18

Invited Speaker, "Global Water Pathogens Project" Seminar Wastewater Based Epidemiology, Polio, Plague and Pandemic, Tehnologieland Hessen, Germany, July 15

Invited Speaker, **In Person**, " Sinking, Swimming and Floating: My Life in Water Science" and "From Polio to COVID: Environmental Virology at its Best" Celebrating Women in Energy and Water Research Seminar Series, Pennsylvania State University College Station, September 16-17

Invited Speaker "The World of Environmental Virology" International Forum on Advanced Environmental Sciences and Technology (iFAST) Institute for Environmental Genomics Seminar Series, University of Oklahoma, https://www.ou.edu/ieg/seminars/main September 22

Invited Speaker "Environmental Virology at its Best: Protecting Public Health" College of Veterinary Medicine Seminar Series, MSU, September, 30

Keynote **In Person** "Global and National Trends in Wastewater Surveillance" Michigan Network for Environment and Technology, Grand Valley State University Muskegon, MI, October 13-15

Keynote "From Polio to COVID: Environmental Virology at its Best" 2021 Virtual Atlantic and Eastern Canadian Symposium on Water Quality Research November 2-3

Invited Speaker, "Global Overview, W-Sphere" Global and National Trends in Wastewater Surveillance, Indo-German bilateral cooperation, November 11-12

Invited Speaker, "W-Sphere a Global Data Center" Global Water Research Coalition, December 1

2020 (Year of COVID where all presentations were made by Zoom except at the African Water Association)

Organizer and presenter: K2P Tools for Sanitation, African Water Association, Kampala Uganda, February 23-27

Invited Speaker, Pathogens in Wastewwater Makerere University Kampala, Uganda Feb. 28

Invited Panelist COVID-19 EH Response and Recovery Live Chat: Reopening Buildings and Challenges with Building Water Safety, Program and Partnership Development, National Environmental Health Association (NEHA) May 22nd

Invited to provide the University of Notre Dame Engineering Edison Lecture, My Life at the Intersection of Water Microbiology, Engineering and Health, University of Notre Dame, April 16th

Invited Presenter Environmental Surveillance of COVID 19 Indicators in Sewersheds International Water Research Summit DATES

Key Note Speaker: Impact of COVID19 on the Wastewater Business2020 OZWater online, Australian Water Association, June 9th,

Invited Panelist COVID and Wastewater. Biosolids Conference, Michigan Water Environment Association, August 20th

Invited Speaker Water Management Implementation Mechanisms Stockholm World Water Week, August https://www.youtube.com/watch?v=ZbmrS_Rt4x8&t=539s

Invited Speaker: Sanitary Significance Of The Presence Of Coronavirus In Sewage organized by AIDIS (Sanitary Engineering Interamerican Association) and the Sanitary Engineering Institute (Buenos Aires University).September 29th

Invited Speaker: Monitoring Viruses and COVID in Wastewater Water Conference University of Waterloo, October 1st

Invited Speaker MSU Institute for Public Policy and Social Research legislative staff training session on October 9th

Invited Panelist EGLE Speaker Series Panelists: COVID in Wastewater, October 20th

Invited Speaker Falling Walls event (falling-walls.com) presenting world class scientists during the Berlin Science Week):\ https://falling-walls.com/event/circle-tables-breakthroughs-in-water-diagnosis/ November 8th

Invited Panelist MSU ESPP Fall Research Symposium & Colloquium Marathon, November 12th

2019

Invited as Distinguished Lecture in Environmental Science "Linking Animal and Human Sources of Water Pollution to the Landscape", University of California Riverside, CA, January 25th

Invited for the Purdue Engineering Distinguished Lecture Series "Viruses an old, continuing and new risk" Purdue University, West La Fayette, IN, Feb. 21st

Keynote at the Australian Water Research and Innovation Conference, 10 year celebration, "Water Quality and Health from Source to Tap" Australian Water Research Foundation, Melbourne, Australia, Feb. 9-15th

Invited as the Herb Ward Distinguished Lecture in Environmental Science and Engineering, "The Global Water Pathogen Project: Department of Civil and Environmental Engineering, Rice University, Houston, TX, March 1st

Invited to provide Key Remarks: MSU Water, Collaborative Research and Education Initiative: Kellogg Center MSU , E. Lansing, MI March 25th

Invited Panelist Science-Policy Confluence Conference on Understanding and Addressing Climate Change Impacts on the Great Lakes, Environ Law and Policy Center Chicago, IL March 28th -29th

Invited as the 9th Annual Richard L. Valentine Distinguished Lecture "Tracking Fecal Sources Across the Landscape into River Systems " University of Iowa, Iowa City, October 25th

Invited to provide the Inaugural Water Distinguished Lecture at Lehigh University "Linking Animal and Human Sources of Water Pollution to the Landscape" Lehigh University, Bethlehem, PA, Oct 28th - 30th

Invited Presenter " Threats to Health in and around the Great Lakes" Rural Michigan Initiative Conference, Alma College, MI Nov. 7th

Invited Moos Family Lecture Series. 2019 speaker:" Large Lakes and Microscopic Monsters: Tracking Microbes in the Great Lakes" 2019. https://freshwater.org/moos-family-lecture-series/ Freshwater Society and University of Minnesota, Minneapolis, Mn ,November 14th

Keynote for the Oklahoma's Governors Water conference & Research Symposium, "Moving the Political Will: Tales from the Field" Oklahoma City, OK, Dec 3rd -5th Distinguished Lecturer, Richard L. Valentine Distinguished Lecturer 2019, University of Iowa, Oct 24th-25th

2018

Distinguished Speaker, Department of Civil and Environmental Engineering Distinguished Seminar Series, "Global Pathogen Risks and Sanitation Goals", Boston MA, January 17-19

Invited Speaker, Supply Chain Management Council Meeting, Michigan State University "Water and The Supply Chain: Life as a Water Detective" E. Lansing, MI January 24th.

Invited Speaker, TAMU, "Linking Animal and Human Pollution Sources to the Landscape", College Station, Texas April 2-3.

Invited Speaker, Texas A&M Law School, "Water Quality and Health Challenges and Solutions", Dallas, Texas April 4th.

Distinguished Speaker, Stanford: Perry McCarty Distinguished Lecture Series, "The Water Virome", Stanford, CA, April 16th

Invited Speaker, Thomas J. Grizzard Jr. Research Symposium, George Mason Univ, "Microbiological Advances for the Water Industry: Ensuring Water Quality" Fairfax, VA, May 4th

Invited Speaker, MWEA, Lab Practices Seminar "New Testing Methods for Microorganisms and Pathogens", Lansing, MI, May 15th

Invited Speaker, Association of Public Health Laboratories, "New Testing Methods for Microorganisms and Pathogens" Pasadena CA, June 3rd

Keynote: IGERT program on Water, Climate and Health, John Hopkins University "It's raining it's pouring the sewage is overflowing" Baltimore MD, June 21-22

Invited Speaker, Evening in Science Learning IDEXX, Water Quality and Technology Conference, The Global Water Pathogens Project", Toronto Canada, Nov. 12th

Distinguished Lecture, University of Windsor, "Exploring the Water Virome and Biohealth of the Planet", Windsor Canada, Nov. 28th

Invited Speaker, Sobsey Symposium, Sinking, UNC "Swimming Floating My life in Water Sciences" Chapel Hill, NC, Nov. 30th

Organizer and Speaker, Michigan Environmental Council, Michigan Drinking Water Workshop University of Michigan, Ann Arbor, MI December 6th

2017

Invited speaker, KWR symposium- "Genomics in Water", Utrecht, Netherlands, Jan. 17th

Invited speaker, Midwest Environmental Health Summit, -"Water Contamination"- Lansing, MI Feb. 28th

Invited Speaker, School of Public Health, University of Arizona-"Public Health lessons learned from the Flint water crisis: From lead to *Legionella"*, Tucson, Az, March 8th

Invited Speaker, Women In Science: Opportunities and Obstacles for Career Development – A Forum, University of Arizona, Tucson, AZ, March 9th

Invited Speaker, WEST (Water and Energy Sustainable Technology Center) Research Discussion, University of Arizona, Tucson, AZ, March 10th

Invited Speaker, Moonlight on the Marsh Distinguished Lecture Series, "Monitoring for Water Quality and Health", Gulf Coast University, Fort Myers, Florida, March 16th

Invited Speaker, University of Waterloo, Water Institute- "Monitoring Pathogen Concentrations In Sewage To Inform Treatment Goals And Public Health Risks"- Waterloo, March 28th

Organizer of the MSU Fountain Challenge, a student competition, http://fountainchallenge.msu.edu/ winners announced April 12th

Invited Speaker, Fate of the Earth, "The Water Quality Crisis: Are We Risking Our Health?", Michigan State University, East Lansing, MI, April 12th

Keynote, IAGLR (International Association for Great Lakes Research), "The Science of Water Quality and Public Health in the Great Lakes', Cobo Center, Detroit, MI, May 16th

Invited speaker, Food and Beverage Forum,- "Innovation & Sustainability: Water Quality and Health"- Savannah, GA, May 21-23.

Keynote, Leading Edge Technologies, International Water Association.- "Advancing NGS Technologies for Investigating Engineered Water Systems"- Florinopolis, Brazil, May 28th

Invited Speaker, Singapore International Water Week (SIWW) Spotlight 2017 on Forging Alliances amongst Water Utility Leader, "Public Health lessons learned from the Flint water crisis: From lead to *Legionella*". July Sentosa, Singapore, July 17-19.

Invited speaker, Plenary Session Reuse conference, International Water Association,- "Monitoring Pathogens in Sewage and Using The Information for Risk Assessment"- Long Beach, CA, July 24

Invited speaker, University of Nevada- "Water Quality Crisis are we risking our health?"- Reno, NV, Sept 13th

Invited Speaker, Stockholm International Water Week, "Building our Capacity for Managing Pathogens in Sewage" Stockholm Sweden, Aug. 29th

Invited speaker, Workshop on Water Quality: a New Challenge for Global Scale Modelling, "Monitoring Pathogens in Sewage and Using The Information for Risk Assessment" Wageningen, the Netherlands, Sept 18 – 21

Invited Speaker, Water Wars: Our H2O Futures, Michigan State University, East Lansing, MI, September 25th

Invited Opening Session, WEFTECH TALKS, Annual meeting of the Water Environment Federation, Chicago, IL, Oct. 2nd

Invited Speaker, NWRI (National Water Research Institute) Clarke Prize Conference, "A Clarke Prize Laureate's Perspective on the 2017 Clarke Prize Lecture Topic", Irvine, CA, October 20th

Keynote, International Conference on Sustainable Solutions Implemented to achieve Safe Drinking Water & Beyond, "Status of Water Quality in Advanced Countries" and "Environmental Agencies and Implementation of Sustainable Solutions" Organized by Bhavan's Research Center, Dept of Microbiology, Bhavan's College, Mumbai, India, Dec 11-12

NATIONAL COMMITTEES (bold is current)

US Department of Health and Human Services, Member of the Board of Scientific Counselors National Center for Environmental Health, 2019

National Academy of Engineering

Member of the Membership Committee, Section 4, 2021-2023

Member of the Membership Committee, Section 4, 2015-2017

Member of the Charles Stark Draper Prize Award Committee; 2012-2014

National Academies: Academy of Sciences, Engineering and Institute of Medicine Boards

Appointed to the National Research Council of the National Academies Board on Environmental Studies and Toxicology 2013-2019

Appointed to Water Science and Technology Board of National Academy of Science, National Research Council, 1998-2004

National Academy of Sciences Committees

Chair of National Academy of Sciences, Committee on Management of *Legionella* in Water Systems 2018-2019

Member of the National Academy of Sciences, Board on Environmental Studies and Toxicology, Committee on "Science for EPA's Future" 2011-2012

Member of National Academy of Sciences, Space Studies Board, Human Health and Security Panel, 2002-2007

Member of National Academy of Sciences, Water Science and Technology Board, Committee on "Sustainable Underground Storage of Recoverable Water of the Division on Earth and Life Studies," 2004-2007

Member of National Academy of Sciences, Ocean Studies Board, Committee to "Review the Sea Grant Research Program," 2004-2007

Member of National Academy of Sciences, Board on Life Sciences, Committee on "Indicators of Waterborne Pathogens," 2002-2003

Member of National Academy of Sciences, Board on Atmospheric Sciences and Climate, Committee on "Climate, Ecosystems, Infectious Diseases, and Human Health," 1999-2001

Member of National Academy of Sciences, National Academy of Engineering, National Research Council Committee on "Prioritization of Contaminants in Drinking Water," 1997-2001

Member of National Academy of Sciences, National Academy of Engineering, National Research Council Committee on "Viability of Augmenting Potable Water Supplies with Reclaimed Water," 1996-1997

Member of National Academy of Sciences, National Academy of Engineering, National Research Council Committee on "Opportunities to Improve Wastewater Management for Urban Coastal Areas," 1990–1992

Other National Committees

Member of the International Joint Commission, Health Professionals Advisory Board. Appointed 2016-2025

Member of the Science Advisory Board for the Shedd Aquarium, 2016-Current

Member of Independent Advisory Panel (Panel) to support the California State Water Board Division of Drinking Water (DDW) to support to support the State Water Board in developing direct potable reuse regulations

Member of the Task Force for the Council for Agriculture, Science and Technology Issue Paper on the topic, "Animal Agriculture and Zoonoses in the Time of COVID. A One Health Perspective." 2020-2021

Member of the Water Research Foundation Committee on Methods for SARS-CoV-2 in Sewage 2020-2021

Chair of the External Review Team for the Water Management and Hydrological Science graduate degree program. Texas A&M University, November 2020.

Member of Water Quality and Health Council, Chemical Manufacturers Association, 2000-2020

Member of the Expert Panel on the Development of Water Recycling Criteria for Indirect Potable Reuse through Surface Water Augmentation and the Feasibility of Developing Criteria for Direct Potable Reuse, California State Water Resource Control Board Division of Drinking Water.2013-2018

Member of the U.S. Environmental Protection Agency Great Lakes Advisory Board 2013-2019

Member of the President's Council of Advisors on Science and Technology (PCAST) Science and Technology Committee to Ensure the Safety of the Nation's Drinking Water. 2017

Member of the Technical Advisory Board for the Midland Research Institute on Value Chain Creation MSU 2013-2017

Vice Chair of the Science Advisory Board the Engineering Research Center (ERC NSF) for Re-inventing the Nation's Urban Water Infrastructure [ReNUWlt] 2012-2017

Member Water Science Advisory Board Amway Corp. 2012-2016
Member of the U.S. National Committee for UNESCO International Hydrological Program, 2009-2011
Member of the Water Quality Expert Panel, the Coca Cola Company, 2006-2009
Member of the American River's Science Advisory Board 2006-2010
Chair of the U.S. Environmental Protection Agency Science Advisory Board Drinking Water Committee (DWC), 2008-2009
Sustainable Beaches Conference Honorary Advisory Committee, 2005
Participating Expert on Wastewater Security Panel, Experts' Views on How Federal Funds Should Be Spent to Improve Security, GAO-05-165, January 2005
Scientific Advisory Panel, Orange County Water District Santa Ana River Water Quality and Health Study, 1996-2003
Member of the National review team of the University of Florida's, Institute of Food and Agricultural Sciences teaching and research programs, December 2-6, 2002
Advisory Panel Member, Oversight and Microbial Pathogens, George Washington University and Environmental Protection Agency's Office of Water, 1999-2002
American Academy of Microbiology: Health, Climate and Infectious Diseases: A Global Perspective. 2001
American Academy of Microbiology: Re-evaluation of Microbial Water Quality: Powerful New Tools for Detection and Risk Assessment.2001
Advisory Committee member for the Harvard Center for Risk Analysis, 1999-2000
Advisory Committee member for the Harvard Center for Risk Analysis, 1999-2000
Member of the U.S. National Climate Assessment Team for the Health Sector, 1998-2000
Member of the U.S. National Climate Assessment Team for the Health Sector, 1998-2000
Member of the Public and Scientific Affairs Board, Environmental Committee, American Society for Microbiology, 1996-1999
Member American Public Health Associate Committee on Laboratory Standards and Practice Clasp, 1997-1999
Member of Blasker Award Committee, 1999
Member of American Academy of Microbiology Climate Variability and Human Health, 1997
Member of the Microbial Task Force, National Water Research Institute, Fountain Valley, California, 1995-1996
Member of the National Center for Infectious Diseases Centers for Disease Control and Prevention, Working Group on Waterborne Cryptosporidiosis, 1995-1996
Member of the Cryptosporidium Task Group, National Sanitation Foundation, Ann Arbor, Michigan, 1995-1996
Member of the Research Advisory Council, American Water Works Research Assoc, 1993-1996
Member of the Public Advisory Committee for the American Society for Microbiology with involvement in addressing the reauthorization of the "Safe Drinking Water Act, 1996
Member of the ILSI RSI/EPA Microbial Risk Assessment Working Group, Washington, DC, 1995
Member of National Drinking Water Advisory Council, Environmental Protection Agency, 1992-1995.
Member of Workshop on "Protozoa, Virus, and Coliphage Monitoring Workshop," United States Environmental Protection Agency, Cincinnati, Ohio, August 10-13, 1993
Member of Selection Committee for "Holly A. Cornell Scholarship" in Environmental Engineering, 1990-1992
Member of Science Advisory Board for EPA Subcommittee Colilert Testing, 1991-1992
Member of Committee for *Cryptosporidium* Removal Assessment, National Sanitation Foundation, 1991
Member of Disinfection Technical Advisory Committee for City of Portland, Bull Run Water Supply Water Treatment Improvements, 1989-1991
Member of "Committee on Minority Affairs," American Water Works Association, 1989-1991

Member of "American Water Works Association Water Quality Division Committee on Organisms in Water," Chairman of Subcommittee on Waterborne Outbreaks, 1987-1990
Member of Joint Task Group for Section 9510 Enteric Viruses and Joint Task Group for Section 9711 Pathogenic Protozoa of "Standard Methods for the Examination of Water and Wastewater," 1989
Member of Task Force for Council for Agricultural Science and Technology on "Risks Associated with Foodborne Pathogens," Ames, Iowa, July 26 - 27, 1989
Member of "Potential Pathogens in Drinking Water Committee," Assessment of Research Needs, American Water Association Research Foundation, Durango, Colorado, July 31- August 2, 1989
Member of Applied and Environmental Microbiology Division for the American Society for Microbiology, Nominating Committee; subsection Committee on Methods for Detection of Parasites in Water, 1987
Member of Science Advisory Board Subcommittee on Water Filtration EPA, 1987
Member of American Society for Testing and Materials Subsection Committee on Standard Methods for Detection Viruses in Soils, 1986

INTERNATIONAL COMMITTEES (bold is current)

Water Quality Advisory Public Utilities Board Singapore 2021-2022, Chair of the PUB Water Fellows Program
Chair of the External Advisory Board for the Water Institute, University of Waterloo, Canada 2020-2024
Member of the Programme Committee for the Stockholm International Water Institute World Water Week 2019-2022
Member of the Environment and Water Industry Programme Office (EWI), Project Evaluation Panel (PEP) of Environment and Water Research Programme (EWRP), Singapore 2015-2022
Board of Directors International Water Association, 2014-2021
Chair of the International Water Association Task Force on COVID 10, 2020
Chair of the External Audit Panel, Public Utilities Board, Singapore, 2004-2019
Appointed as Science Advisor to Singapore Centre on Environmental Life Sciences Engineering Nanyang Technological University, Singapore 2009-2019
Member of the Program Committee for the International Water Association 2016 Biennial Conference, 2015-2018.
Member of Science Advisory Board for Applied Metagenomics of the Watershed Microbiome, British Columbia Centre for Disease Control, Public Health Microbiology and Reference Laboratory, Vancouver, British Columbia, 2011-2016
Elected as a Member of the US National Committee for the International Water Association, 2011-2015
Member of the Women of Water Steering Committee for the International Water Association, 2010-2013.
Member of Queensland Water Commission Scientific Expert Advisory Panel, 2006-2011
Chair of the Health Related Water Microbiology Specialist Group, International Water Association, 2007-2011
Advisory Board to the Canadian Water Network, 2004-2010
Member of the KWR peer review committee, KWR, Watercycle Research Institute, The Netherlands, 2009
Science Advisory Board International Joint Commission for the Great Lakes, 2003-2007
Invited Member of Scientific Advisory Board for the *Genomics Applications for Water Management* for the Dutch Initiative research program; Lead by Dr. Gerritsen, Inst for Inland Water Management and Waste Water Treatment RIZA, 2006-2007
Member of Model Compact Project Advisory Committee, 2005
Supervised Vera Pavlova, visiting scientist from Sofia Bulgaria, “Training and Research in Environmental Health – The Balkans,” Institute of International Health at Michigan State University, October 1–November 14, 2005
Advisor to Singapore Government, Dept. of Environment on Water Reuse, 1999-2004

Member of Model Compact Project Advisory Committee, 2005
Supervised Vera Pavlova, visiting scientist from Sofia Bulgaria. "Training and Research in Environmental Health – The Balkans." Institute of International Health at Michigan State University. October 1 – November 14, 2005.
Advisor to Ministry of Environment of Korea, and participant in workshop on Viruses in Drinking Water, 2001

EDITORIAL FUNCTIONS

Editor for Special Edition on *Viruses* for *Water Research* 2020-2021
Designer and Director of QMRAwiki 2010-Current.
http://wiki.camra.msu.edu/index.php?title=Quantitative_Microbial_Risk_Assessment_(QMRA)_Wiki
Editorial board member, International Journal of Hygiene and Environmental Health, 2001-current
Regional Editor for the Americas "International Journal of Environmental Health Research," Taylor and Frances, 1990-2011
Special Editor "Environmental Science and Technology" Emerging Waterborne Pathogens, 2006
Special Editor "Water Environment Research" Updates on Microbial Risks, 2005-2006
Editorial board member, Journal of Climate and Health, 2000
Editorial board member for the Journal of American Water Works Association, 1999-2001

Current Reviewer for:
- American Journal of Infection Control
- Applied and Environmental Microbiology
- Canadian Journal of Microbiology
- Compost Science and Utilization
- Environmental Science and Technology
- Journal of American Water Works Association
- Journal of Environmental Science and Technology
- Journal of Parasitology, Environmental Technology Letters
- Michigan Sea Grant
- Oregon Sea Grant
- Minnesota Sea Grant
- National Science Foundation
- International Association for Water Pollution Research and Control
- Scripps Institute of Oceanography Sea Grants
- University of New Hampshire
- Water Environment Federation
- USDA Water Initiative Grants
- USDA Food Safety Grants
- Journal of International Ozone Association

Review of "Agents of Bioterrorism: Pathogens and their weaponization," edited by Geoffrey Zubay, *Nature Biotechnology*, November 2005, Columbia University Press
Review of "*Giardia* The Cosmopolitan Parasite," edited by B.E. Olson, M.E. Olson and P.M. Wallis, The Quarterly Review of Biology, State University of New York, Stony Brook, NY, September 11, 2003
Review of FAO/WHO Microbiological Risk Assessment Guidelines for "Hazard Characterization for Pathogens in Food and Water," 2003
Reviewer for Papers for the 2002 International Water Association Third World Water Congress, Melbourne, Australia, April 8-12, 2002

UNIVERSITY, COLLEGE AND DEPARTMENT COMMITTEES (Michigan State University)

Member of the Provost's Committee on University Laude/Individual Honorifics Program, 2021-2022
Member of the MSU COVID Surveillance Committee, 2020-2022
Member of the Water Structure Advisory Committee, 2021-2022
Member of the University Strategic Planning Committee 2019-2021
Member of the Campus Water Committee, 2016-2020.
Member of the Advisory Committee for MSU Water Science Network, 2014-2018.
Member of the Blue Ribbon Panel for the MSU Global Water Initiative, 2012
Member of the Faculty Advisory Committee for the MSU Global Water Initiative, 2012
Vice Chair of the Search Committee for the Dean of the College of Agriculture and Natural Resources 2011-2012
Honorary Degree Committee, 2008-2011
MSU Graduate School, Planning, Managing, and Funding the Research Project, Workshop, April 4, 2009
Reviewer for John K. Hudzik, Emerging Leader in Advancing International Studies and Programs Award Search Committee, 2008-2009
Committee for University Distinguished Professors, 2007
Search Committee member, ESPP, FW, CSS for Unsaturated Hydrology Position 2006-2007
Panel Member for MSU Extension annual conference, Strengthening Connections – Counties, Communities, Campus, October, 2005
Review of Intramural Research Grants Program proposal, Michigan State University, Fall, 2003

College
College of Agriculture and Natural Resources
Chair of the CANR Global Water Initiative, 2013-2014
Sustainable Michigan Endowed Project Executive Committee, February 2003-2018
Tenure and Promotion, 2005-2007

College of Engineering
Department of Civil and Environmental Engineering, Faculty Search Committee, December 2002-2006

Department
Member (Chair) of the Department Advisory Committee, of Fisheries and Wildlife, 2017-2020 (2019-2020)_
Chair of the Search Committee for the Molecular Microbial Ecology Position 2019-2020
Chair of the Department of Fisheries and Wildlife Strategic Planning Committee
Chair of the Search Committee for the Molecular Microbial Ecology Position 2018-2019
Member of the Search Committee for Fisheries and Wildlife Position in Global Inland Fisheries Ecology and Governance, 2018
Department of Plant Soil and Microbial Sciences (formally CSS) Dept Advisory Committee, 2012-14
Department of Crops and Soil Sciences (CSS): Dept Advisory Committee, 2004-2007
Department of Fisheries and Wildlife: Graduate Committee, 2004-2006

SERVICE TO THE COMMUNITY

2022

1. Advisory Committee: Saginaw Bay Water Quality Monitoring Initiative, 2020-2023
2. Jan 17th http://greatlakesecho.org/2022/01/17/covid-19-in-sewage-is-new-gauge-on-state-dashboard/ Interview for the Great Lakes Echo *COVID-19 in sewage is new gauge on state dashboard*

2021

1. Member of the Committee on Chemicals of Emerging Concern, Urban Water Center Wayne State University 2021
2. Advisory Committee: Saginaw Bay Water Quality Monitoring Initiative, 2020-2022
3. USA Today, The Times of India and Yahoo "Colleges, cities test sewage for presence of virus" (usatoday.com) wastewater testing. February.
4. Interview *Water by the Quarter*. Oakland County Water Resources Commissioner Jim Nash, June 11

2020

1. Advectorial Science Magazine won the competition: BioRad and COVID monitoring.
2. https://www.theguardian.com/us-news/2020/oct/14/legionella-water-killing-americans-pandemic
3. Video news conference releasing Environment America's Safe for Swimming? report detailing Michigan's contaminated beaches, Thursday, July 23rd
4. Uncommon Will for Uncommon Times | Michigan State University - YouTube https://www.youtube.com/watch?v=K_4bsjVT16I

COVID in Sewage:

5. https://www.msnbc.com/rachel-maddow-show
6. https://www.wkar.org/post/testing-waters-msu-searches-covid-beneath-campus
7. https://www.nbcnews.com/now/video/-we-have-to-be-ready-to-pivot-colleges-develop-safety-plans-for-on-campus-learning-90042949778
8. https://www.clickondetroit.com/news/defenders/2020/09/15/following-experts-into-michigan-state-sewers-as-they-search-for-signs-of-covid-19-in-wastewater/
9. Advectorial Science Magazine Oct issue won the competition: BioRad and COVID monitoring. https://www.sciencemag.org/advertorials/bio-rad-laboratories-innovators-sars-cov-2-testing
10. https://www.chronicle.com/article/these-colleges-are-winning-the-fight-against-covid-19-at-least-for-now?utm_source=Iterable&utm_medium=email&utm_campaign=campaign_1555468_nl_Academe-Today_date_20200925&cid=at&source=&sourceId=&cid2=gen_login_refresh
11. http://greatlakesecho.org/2020/11/10/project-begins-testing-sewage-for-covid-19-across-michigan/?fbclid=IwAR1UzY-gqHUlOJ3OpOhJomiI5EG1S2N7F98SC3I-8IexfxvrQOw-uxHMb5Y
12. City Pulse newspaper. Interview 12/18/2020
13. Interview Chanel 10 Lansing MI 12/17/2020.

2018

Testimony to Leelanau County Board of Commissioners meeting on Septic tank ordinances, January 30th
Assistance with the Humphries Fellowship for Water Quality in the Great Lakes
Developed and distributed the US National Committee's Newsletter for the International Water Association
Workshop on future plans, Michigan Water Environment Association, May 17th
Poster Judge, Singapore International Water Week, July 9th
Science Speaker for the Global Chlorine Chemistry Council annual meeting, Buenos Aires, Argentina, Oct 4th
Radio interview WHYY, NPR member station in Philadelphia weekly, nationally-broadcast The Pulse Nov. 11th

2017

Coffee with Profs, MSU Alumni, Water Quality and Health presentation. March 6th

Public participation symposium and roundtable meeting with Commissioners of the International Joint Commission "'Swimability' and Human Health on Great Lakes Beaches" Detroit, MI. Mar 21

World Water Day, MSU TED TALKS, http://cas.msu.edu/speaking-of-water-celebrating-world-water-day/ "Toilet Talk", E. Lansing, MI March 22nd

Radio Interview WILS Michigan Radio Water Infrastructure, Dave Ackerly website: http://1320wils.com/podcasts/the-wils-morning-wake-up, March 23

Invited to participate in the workshop for Institute for Journalism & Natural Resources, Cleveland, OH, April 2nd

Issues & Ale: Protecting our Drinking Water. Panel discussion hosted by Rebecca Williams: Michigan Radio Issues & Ale Event, Kalamazoo, MI April 25.

2016

Radio interview: Microbial Source Tracking January 27 http://brownfieldagnews.com/2016/01/29/142158/

Participated in the Journalists workshop, Beyond Flint Water Reporting "Water Microbiology in the News" Lansing BWL headquarters. MI April 16

Speaker on Earth Day, invited by Laura Ogar, Bay County Director, Environmental Affairs and Community Development Bay City, MI, April 22

Published in The Conversation: Brazil's sewage woes reflect the growing global water quality crisis https://theconversation.com/brazils-sewage-woes-reflect-the-growing-global-water-quality-crisis-63172 August 7

Presented The Rose Water fellowship: Ms. Courtney Larson, Dissertation: Diverse Allochthonous Resource Quality Effects On Headwater Stream Communities Through Insect-Microbe Interactions

Participation in the US Council on Competitiveness

2015

Panel Member "Discussions with Women Leaders: Pathways and Problem Solving Deb DeZure and Nicole Rovig co-facilitating: Leadership Learning Community MSU. Tuesday, February 17

MSU Networking lunch with undergraduate researchers. Brief Panel: Office of the Provost - Undergraduate Education, June 18th, E. Lansing MI

Presented the First Water Fellowship: Coordinated the External Review of Candidates: The Rose Water fellowship: http://msutoday.msu.edu/news/2015/rose-water-fellowship-awardee-named/; http://msutoday.msu.edu/360/2015/kateri-salk-little-fish-girl-grown-up/

2014

International Opponent for the Examination of the dissertation by Ekaterina Sokolova, CHALMERS UNIVERSITY OF TECHNOLOGY, Department of Civil and Environmental Engineering, SE-412 96 Göteborg, SWEDEN, Feb.6-7

Participant in the MSU Faculty TOUR of Turkey, Sharing Agricultural Sciences, February 8-15, 2014

External Reviewer for the University of Nebraska Water Sciences Laboratory, Lincoln NE, May 7-9.

Invited to provide Training for Water Laboratory Analyst Workshop, Operator Training Committee of Ohio, Inc. MT Sterling, OH May 15, 2014

Invited as Part of the Public Health Panel as part of the USEPA Experts Forum on Public Health Impacts of Blending, Fairfax, VA June 19-20, 2014

Panelist The Blue Economy, Role of MSU, University Research Corridor event at the Shedd Aquarium, Chicago IL, December 17th , 2014

2013

Radio Interview, "Measuring Great Lakes water quality today and a century ago," WKAR Radio Magazine, East
Lansing, MI, March 26.
Radio Interview: Beach Hygiene for a New Water Cycle, Great Lakes Echo, May 6.
Featured Article in Mlive.com, "Thousands of failed septic tanks across the state threaten Michigan's waters," Mlive.com, May 14.
Huffington Post Water Science Blog http://www.huffingtonpost.com/joan-b-rose/do-you-know-where-your-e-coli-are_b_3480136.html, Do you Know Where Your *E coli* Are?, June 2013.
Presentation for Webinar: Food Safety KOmmunity Webinar Series by The Coca-Cola Company and Michigan State University – Safe Water Safe Food, Global Water Quality Issues and Solutions, October 29, 2013.

2012
Presentation for the Workshop for Faculty on Leadership and Academic Life, Discussion of the Public Intellectual. Michigan State University, E. Lansing Feb. 28th
Reviewer for NSF program on Ecology and Evolution of Infectious Disease, Washington D.C., Feb. 22-24.
Featured article in X-ology, Water Professionals, Detroit MI, http://xologymagazine.com/index.php, April 2012
Radio Interview, Pools and Safe Swimming, Bernier, Nathan J [nbernier@kut.org] June 7
Participant Water Quality Town Hall, Rep Forlini, MacRay Harbor, Sept 5
Huffington Post Water Science Blog http://www.huffingtonpost.com/joan-b-rose/water-pollution_b_1858928.html. Is Your Water Making You Sick, Sept 2012
Huffington Post Water Science Blog http://www.huffingtonpost.com/joan-b-rose/water-cycle_b_2172883.html The New and Improved Water Cycle? Nov. 2012

2011
Magazine Interview: Water Quality Men's Health Magazine. Claire Constant Feb 9, 2011
The Spartan Insight Series, sponsored by the MSU Alumni Club of Mid MI. Michigan's Water Assets: The Threats to Water Quality and Our Health, MSU, Feb. 16th, 2011
Sea Grant Advisory Board meeting: Invited presentation: Water Perturbations- Health Risk Research and Outreach Needs of Great Lakes Coastal Communities, Henry Center, MSU. April 15th, 2011
Presentation Water Quality Issues for SOAR (Society of Active Retirees), Detroit, May 11, 2011
Radio Interviews with J.B. Rose: Water Quality in Pools; Sacramento CA, KFBK-AM, 5/23; Syracuse NY, WNTQ-FM, 5/29; Boston, MA, WDIS-AM, 5/23; Tampa FL, WMNF-FM (taped); Omaha, NE, KMA-AM, 5/25
Invited Speaker: American Society of Microbiology, Kadner Institute for Graduate Students and Postdoctoral Scientists in Preparation for Careers in Microbiology, MSU, July 23-27, 2011
Interviewed for "The State News" Company sniffs out environmental hazards with the help of canine companions," Sep 7, 2011.
Participation in Academic Roundtable with the Honorable David Adleman, U.S. Ambassador to Singapore, Why Singapore? Why Asia? Why now? MSU, September, 14, 2011

2010
Review of "Water on the Table," A film by Liz Marshall, Bullfrog Films, Reading, PA
Lecture for the University Club Luncheon Colloquia: Threats to our clean water supply, Feb 16th
RADIO: Greening Michigan MSU/WJR
RADIO INTERVIEWS on Safe Swimming: June 7 (KMA - AM (Nebraska) 10:38 - 10:48 AM ET – Live); (RADIOTVDAILY.COM (National Internet Show)11:00 - 11:10 AM ET); June 8, (9:30 - 9:40 AM ET, WSNY Taped, Clark Donley); (11:00 - 11:20 AM ET, KTOK, (Taped) Reid Mullins); (12:00 - 12:15 PM ET, HEATH RADIO NETWORK, Live, Dr. Derrick De Silva Jr.)
SMEP Academy, *Water Sustainability, Wicked Problems*, Union, MSU, Oct. 28, 2010

2009

Freep.com "A Decaying Water System Leaves the Nation Vulnerable," January 14, 2009.

Invited participant in The Johnson Foundation Environmental Forum, Working Session #2: Examining U.S. Freshwater Systems and Services - Infrastructure and the Built Environment Development of a White paper May 20-22, 2009, Wingspread Conference Center, Racine WI,

Member of the Water Management Research Consortium. Canadian Water Network, Development of a paper "What is Risk" for *Water Sci and Tech.* Banff, Alberta, Canada. July 10-11, 2009

Invited to present and facilitate WERF FUTURES: developing and recommending future research initiatives, Water Environment Research Foundation Joint Board / Research Council Meeting. Alexandria, VA, December 10, 2009

2008

Radio GUEST "Water Quality and Health in the Great Lakes: MSU/WJR collaboration, the "Greening of the Great Lakes," Radio guest aired March 19, 2008.

Interview with WWJ radio in Detroit, (Earth Day), April 22, 2008

Testimony to the State of Michigan Joint committee of the House committee on the Great Lakes and Environment and Senate Committee on Natural Resources and Environment. Release of Waterborne Pathogens: Where Michigan stands now and Recommendations for our Future. May 14, 2008

Interview: Risk of Disease Rises With Water Temperatures by Kari Lydersen Washington Post Staff Writer, October 20, 2008

Provided advice to Michigan Economic Development Corporation

Review of "Assessment of Research Quality 2003-2007," December 11-12, 2008, The Netherlands.

2007

Development of the Water Fellows Program at the Center for Water Sciences (http://cws.msu.edu)

Invited to Chair the Saginaw Bay Science Committee for the Michigan Department of Environmental Quality. Presentation of Report *Potential Public Health Risks Associated With Pathogens in Detritus Material ("Muck") in Saginaw Bay*, 2007

News Article in MSU News Bulletin, "Weather, old pipes challenge nation's water supply," Pg. 4, February 22, 2007

Interview for Q&A "Water Safety" in National Geographic Traveler, pg 32, March, 2007

Participant in Forum on Emerging Issues in Dairy and Livestock Production, Gratiot County, March 20, 2007

Interview for Q&A water safety in *National Geographic Traveler*, March 2007 pg 32

Invited speaker: Water Quality in Michigan, Presentation & Discussion, League of Women Voters of the Lansing Area, April 12, 2007

Radio interview, "Environmental clean-up after a bio-event," Homeland Security Inside and Out, May 1, 2007

Presentation of MIDEQ Report *Potential Public Health Risks Associated with Pathogens in Detritus Material ("Muck") in Saginaw Bay.* As Chair of the Saginaw Bay Science Committee, appointed by Dr. Steve Chester. Bay City, Michigan, May 2, 2007

Invited speaker: Groundwater Risks and Microbes Presented to the Local Health Department training Series Session 1, MI DEQ, May 2, 2007

Invited speaker: Protection Our Water Quality, Our Health and Our Quality of Life in Michigan The Greater Lansing Farmers Club, Okemos, Michigan, May 7, 2007

Invited participant for National Summit on Coping with Climate Change, May 8-10, 2007 Hosted by University of Michigan School of Natural Resources and Environment.

Participant in Press Conference: Changing Environment and Disease. American Society for Microbiology Toronto, Canada, May 22, 2007

MSU Podcast discussion. Water Quality and Health, October 9, 2007 http://spartanpodcast.com/?p=326Article in Animal Agriculture and the Environment, Water Quality, MSU Extension, 2007

2006

Featured mention, "The Power 25," Aquatics International Magazine, p34, February 2006
Panelist in the IJC's Great Lakes Water Quality Agreement Web dialogue, April 2006
Featured mention, "2006 AEESP Distinguished Lecturer," AEESP Newsletter, p3, April 2006
News Interviewee for Farms or Cities: Which pollute more? Muskegon Chronicle, July 30, 2006

2005-1989

Radio interview, Blended Sewage issues, NPR, Great Lakes Radio Consortium, January 12, 2005
Panelist for MSU Extension Fall Conference, August 2005
Interviewee for Impacts, College of Agriculture and Natural Resources, MAES and MSU Extension publication, "Water for Life," Fall 2005
Interview, "Q & A with Joan Rose, Faculty Conversation," MSU News Bulletin, September 15, 2005.
Interviewee for MSU Today, Research and Creative Activities Newsletter, "Better Water, Better Health." Spring 2005.
Radio Interview, "How massive is the problem of sewage overflows. Blending story." NPR, April 5, 2005.
News Interview: "More Data needed on health impacts related to blended sewage, panel told," Daily Environment Report, April 14, 2005.
Presentation: "Water and Health," Michigan Lake and Stream Associations, Inc. 44th Annual Conference, Three Rivers, MI, April 24, 2005.
Interviewee, "Hung out to dry: Post-Katrina floodwaters are dirty, but so are other US waterways," for Grist Magazine: Environmental News and Commentary, by Osha Gray Davidson, October 11, 2005.
Invited speaker, MSU Board of Trustees, MSU, October 21, 2005.
Featured article, "Biosecurity, disease to be focus of new center," MSU News Bulletin, 37(5), October 27, 2005.
Interviewee for video project, "Water quality issues facing Michigan," MSU, Nov. 16, 2005.
Panelist for IJC web dialogue and conference call, Nov. 21, 2005.
Radio Interview, "Ten Threats: sewage in the lakes," NPR, November 21, 2005.
Participant: Meeting with Environmental Protection Agency, Administrator Leavitt: "External scientists advice and review," Salt Lake City, Utah, May 27, 2004.
Participant in press conference for Healthy Pools, Ogilvy PR worldwide, National Press Club, Washington DC, June 2, 2004.
Participant: "City of San Diego Water Reuse Study," Independent Advisory panel meeting, July 13-14, 2004, San Diego, CA.
Participant: "Pathogen and Water Reuse Workshop," University of California, Davis, California, November 1, 2004.
Testimony, Sewage Blending Policy Briefing, EPA, December 21, 2004.
Interviewee for Floridians for a Sustainable Population Video, "Phantom Future," Pompano Beach, FL, April 2003.
Interviewee, "What's in the Water?," by Peter Jaret in Denali Backpacker, December 2003, pp. 45-58.
Featured Commentary, "Understanding SARS," The Washington Times, May 21, 2003.
Editorial: Rose, J.B. 2003. "Don't Pin Hopes for Stopping SARS on Creating Vaccine," in The Detroit News, Sunday May 25, p. 14A.
Participation at the Neogen Corporation Scientific Review Council, Lansing MI, June 3, 2003.
Presentation: Earth Day – Williams Park, St. Petersburg, FL "Florida's Aquifer is Under Attack!" April 2001 – Radio Interview.
Presentation: Charlotte Harbor National Estuary Program. "Results of the Healthy Beaches Study" June 2001

Presentation: 2001, An Ocean Odyssey Ocean Conference and Stranding Symposium. Clearwater Marine Aquarium, "Water Quality and Pollution." August 2001.
Participation in SeaWeb Ocean Report, Finger Lakes Production International. "Our Ocean World" 2001-2002
Radio Interview WKLN, St. Augustine, FL, Topic: Oceans in Peril/Coastal Waters Microbial Pollution's effects on People, June 4, 2001 55 min.
Radio Interview KAOS, Olympia WA Topic: Oceans in Peril/Coastal Waters Microbial Pollution's effects on People, May 10, 2001 30 min.
Radio Interview KVSC, St. Cloud, Minnesota Topic: Microbial Pollution, June 28, 2001 15-30 min.
Radio Interview, National Public Radio, Todd Mundt Show, August 10th recorded, 2001.
News Interview: Bay News 9, Water Quality, Tampa, FL, August 4, 1999.
News program segment: The Ocean Report. "Shellfish Contamination: a sewage treatment plant discharges water in shallow bay. Dec. 14, 1999. Finger Lakes Productions Int'l.
Testimony for Assembly woman Jackson, Beach Water Quality and Testing, Dec. 1999, Santa Barbara, CA
Interviewee for USF Magazine, Media Relations, published article 'Faculty Profiles', 1998.
Organizer and participant in the water symposium "*Exploring Alternative Water Sources"* Sponsored by USF and SWFMD, Pinellas-Anclote River Basin Board. Feb. 12-13, 1998.
WQYK-FM, St. Petersburg, Radio taped interview, Thur. March 19, 1998.
WMXJ/WYLF/WAXY stations, Miami, In-Studio interview, Friday, March 20, 1998.
Senate Staff Briefing on "Global Climate Change and Its Possible Impacts on Public Health" April 10, 1998. Washington D.C.
News Briefing: Environmental and Energy Study Institute and Center for Global Health and the Environment. June 3, 1998, Washington, D.C.
Presentation: Leadership Tampa Bay, May 21, 1998, St. Petersburg, FL Florida Water Environment Association Training Session: "Gaining Public Acceptance of reuse, biosolids and water treatment systems," Rose, J.B. Health Issues, May 14-15, 1998, St. Petersburg, FL.
Radio Interview: MSNBC—Earthfile "Drinking Water's Hidden Threats," Nov. 5, 1998.
Participant in the *Entamoeba* water testing, Florida Department of Health, Polk County, 1997.
Speaker, Society for Occupational and Environmental Health, "Effects on Water Resources and Health," March 1997.
Participation in the Center for Food Safety and Applied Nutrition, "Cyclospora" public meeting, D.C., July 1997.
Participant, Oversight Committee for Department Agriculture and Consumer Service Division of Food Safety, August 1997.
Invited Speaker, National Science Foundation, Workshop on Research, "Needs for Coastal Pollution in Urban Areas," Milwaukee, WI, Oct 16-17th, 1997.
Speaker at special workshop for the City of St. Petersburg; hosting the 26 city officials from The Netherlands, November 1997.
U.S. Department of Justice Expert Witness, New Orleans Lake Pontchartrain Water Quality 1997.
Participant in the Leadership Tampa Bay Group at USF, April 18, 1996.
Participant in the *Giardia* and *Cryptosporidium* outbreak investigation of Eagle Harbor subdivision and Clay County, 1996.
Speaker at the Rotary Sunbean, St. Petersburg, FL, April 14, 1995.
Speaker at the Gateway Rotary Club, St. Petersburg, FL, June 6, 1995.
Assistance to Representative Jim Davis of the Florida House of Representative Palm River Water Quality, September, 1995.
Testimony to the Florida Senate Committee on Health Care, October 12, 1995.
Participant to Sanibel-Captiva Shell Club Meeting, "Viruses," Sanibel, FL, November 28, 1995.
Channel 28 News, "Bottle Water Quality" May 5, 1995;

Science Adventures WUSF TV, October, 1995.
Participant in news programs on water: Channel 8 6:00 pm news, Tampa, Fl, February 16 - 8, 1994; CBS "Eye on America" 6:00 pm evening news, April 4, 1994; CBS "48 Hours," May 18, 1994; NBC "Dateline," September 20, 27 & 28, 1994;
Expert for U.S. Department of Justice, Miami Dade Recreational Water Quality, 1994.
Member of the Hillsborough County Septage Study Panel, March - May, 1994.
Judge for the 39th Annual State Science and Engineering Fair of Florida, April 14, 1994.
Invited by City of Milwaukee to provide expertise on *Cryptosporidium*, October 17, 1994.
Participant in the Water for Healthy Living, "A Workshop on Public Decisions about Participant in the Pro-health Safe Drinking Water Coalition Meeting, "Drinking Water and Health Risks," Washington, DC, November 28, 1994.
Invited member of EPA Panel for assessment of New York City's application for Avoidance of Filtration, November 1992 - January 1993.
Participant in Water Conservation for Egyptian Delegation Study Tour, February, 1 1993.
Invited by City of Milwaukee to provide expertise on waterborne *Cryptosporidium*, April 12, 1993.
Invited by City of Green Bay to provide expertise on waterborne *Cryptosporidium*, April 20 21,1993.
Expert for U.S. Department of Justice, EPA vs. Butte Water Co., October 27, 1992.
Invited to provide information for the U.S. EPA, negotiated rule making committee for Disinfection By-Products, November 4, 1992.
Instructor for "Methods for Identifying and Enumerating *Giardia* and *Cryptosporidium* in Water Samples," Training Course for Water Quality Technology Conference, AWWA, Orlando, FL, November 14 - 15, 1991; and Toronto, Canada, November 19 - 20, 1992; Miami, FL, November 11 - 12, 1993.
Invited to provide testimony before the U.S. Senate Committee on the Environment, May 1991.
Participant in Hillsborough County Public Schools "Great American Teach-In," November 12, 1991.
Expert Witness for the State of Florida, Amtrak Federal Court Trial, May 2, 1990.
Speaker for Earth Day, April 22, 1990.
Pasco County Interview on Drinking Water Quality, Channel 8 News, April 25, 1990, Tampa, FL.
Instructor for American Society for Microbiology Workshop on "Pathogenic Protozoa in Water," Miami, FL, May 1988.
Instructor for American Society for Microbiology Workshop on "Drinking Water Quality: Recent Concerns and New Developments," New Orleans, LA, 1989.

PROFESSIONAL EXPERIENCE

Quantitative Microbial Risk Assessment
Public Health Water Microbiology
Environmental Virology
Environmental Parasitology
Drinking Water Treatment and Disinfection
Wastewater Treatment and Reuse
Water Pollution Microbiology
Mycology
Food Microbiology

TEACHING EXPERIENCE AND EDUCATIONAL ACTIVITIES

PhD Students Graduated

1 Dr. Debra E. Huffman, USF (1994)
2 Dr. John Lisle, USF (1996)
3 Dr. Dale Griffin, USF (1999)
4 Dr. Erin Lipp, USF (1999)
5 Dr. Michael Callahan, USF (2001)
6 Dr. Theresa Slifko, USF (2001)
7 Dr. Walter Quintero Betancourt, USF (2003)
8 Dr. David John, USF (2003)
9 Dr. Stephanie Shehane, USF (2003)
10 Dr. Mark Wong, MSU (2008)
11 Dr. Theng Theng Fong, MSU (2009)
12 Dr. Sangeetha Srinivasan, MSU (2010)
13 Dr. Kyle Enger, MSU (2012)
14 Dr. Marc Verhougstraete, MSU (2012)
15 Dr. Yolanda Brooks MSU (2014)
16 Dr. Yiseul Kim, MSU (2015)
17 Dr. Alshae Logan MSU (2020)
18 Dr. Matthew Flood MSU (2022)

Masters of Science Students Graduated

19 Debra Friedman, USF (1991)
20 Kelly Reynolds, USF (1992)
21 Kristi Crabtree, USF (1993)
22 Dale W. Griffin, USF (1994)
23 Xingting Zhou, USF (1995)
24 Linda Dickson, USF (1997)
25 Theresa R. Slifko, USF (1997)
26 Lara Nicosia, USF (1998)
27 Kelley R. Riley, USF (1998)
28 Molly McLaughlin, USF (2000)
29 Angela D. Coulliette, USF (2001)
30 Annabel Montgomery, USF (2001)
31 Angela Gennaccaro, USF (2003)
32 Tracy Idocks, USF (2003)
33 Mechelle Woodall, MSU (2004)
34 Tracie Jenkins, , MSU (2005)
35 Lekha Kumar, MSU (2007)
36 Rachel M. McNinch, MSU (2007)
37 Shikha Singh, MSU (2007)
38 Arun Nayak, MSU (2008)
39 Mustafa A. Mazher, MSU (2010)
40 Rebecca Ives, MSU (2011)
41 Lauren Peterson, MSU (2011)
42 Emaly Leak, MSU (2013)
43 Matthew Flood (2014)
44 Sam Wengert (2015)
45 Nicholas Kiulia (2017)
46 Christopher Owen (2018)

Visitors

Dr. Veska Kambourova, National Centre of Hygiene, Medical Ecology and Nutrition, Sofia, Bulgaria March 15-April 30, 2004

Dr. Mayuna Srisuphanunt from Faculty of Public Health, Mahidol University in Thailand, June 10-Sept. 15, 2006

Ms. Mariangela Bracho, Universidad del Zulia, Venezuela; June 4-June 30, 2007

Dr. Maria Tereza Pepe Razzolini, School of Public Health, University of Sao Paulo, Brazil, September 1, 2009–March 15, 2010

Dr. Stephanie Luster-Teasley, North Carolina A & T University, June 1-August 9, 2010

Dr. Hiromoto Koshikawa, Dept. of Environmental Solution Technology, Ryukoku University, Otsu, Shiga, Japan, January – October, 2011

Dr. Xiaoqing He, Beijing Forestry University, Beijing, China, June 15 – July 15, 2013

Ms. Nishita D'Souza PhD Student, Department of Microbiology, Bhavan's College, Munshi Nagar Mumbai-400058, INDIA. July to Dec, 2015

Student Summer Interns

Christopher Jackson, North Carolina A & T University, June 1-August 9, 2010

Chanel Rogers, North Carolina A & T University, June 1 –August 9, 2010

Sibel Zeki, Institute of Marine Sciences and Management, Istanbul, Turkey, May 25-July 25, 2010

Muhamad Firdaus Hamzah, Public Utilities Board, Singapore, July 10-August 21, 2010

Johana Marcela Soto Beltran, University of Arizona, June 20-August 20, 2010

Nishita D"souza, Bhavan College, Mumbai India, August 1-Decemnber 2015

Post-Doctoral Training

1. Dr. Yoshima Masago, Department of Civil and Environmental Engineering, Tohoku University, Japan Fellowship, March, 2006 – August, 2007
2. Dr. Tomoyuki Shibata, August, 2006-March, 2008, Assistant Research Professor, Illinois State University
3. Dr. Angela D. Coulliette, August, 2008-April 18, 2010, Research Scientist, CDC,
4. Dr. Asli Aslan-Yilmaz, September, 2008-2011; Research Assistant Professor, MSU, 2011
5. Dr. Joanna Pope, July 2009-2011
6. Dr. Mark Weir, July 2009-2011; Environmental Protection Agency, Washington D.C.
7. Dr. Yin Huang, 2010-2012, Food and Drug Administration
8. Dr. Sushil Tamrakar, 2011-2013
9. Dr. Melissa Baustian, 2011-2013
10. Dr. Georgia Mavrommati, 2011-2014
11. Dr. Tiong Gim Aw, 2011-2015
12. Dr. Kyana Young, 2014-2016
13. Dr. Yiseul Kim, 2015-current
14. Dr. Jean Pierre Nshimimynara, 2016-2019
15. Dr. Pan Ji, 2017-2019
16. Dr. Nishita DSouza 2020-2022
17. Dr. Andri Rachmadi, 2021-2022

Undergraduate Supervised

Brian Panzl, graduated May 2011

Matthew Field, graduated May 2010.

Christian Beato-Melendez, McNair Program, University of Puerto Rico, MSU-SROP Summers of 2008-2011

Zach Geurin, Microbiology, MSU, 2012-2013

Katie Delancey, Microbiology, MSU, 2012-2013

Eric Reilly, Microbiology, MSU, 2012-2013
Madeline Lipp, Microbiology, MSU, 2012-2013
Abby Shotwell, MSU 2016-2017
Paige Larner, MSU 2017-2018
Nichole Helmuth, MSU 2017-2018
Erin Uhelski, MSU 2017-2018
Lilly Celovsky, MSU 2017-2018
Sydnee Wright, MSU 2017-2018
Syrena Whitner, MSU 2018-2019
David Chalmers, MSU 2018-2019
Parker Kelly, MSU 2018-2019
Kayla Fagan, MSU 2020
Andrew Ladd, MSU 2020-2021
Corrine C 2022-2023
Emily Zak, 2022-2023

Outside Committees
Lucie Vermeulen, opponent for the PhD thesis defense, University Wageningen, the Netherlands (2018)
Ekaterina Sokolova, opponent for the PhD thesis defense, Chalmers University Gothenburg, Sweden (2014)
Heather Murphy, University of Guelph, Environmental Engineering, School of Engineering (2010)
Joanna Pope, Drexel University, Dept. Civil and Environmental Engineering, PhD (2006-2009)

Special Students
Josh Mosberg, Department of Homeland Security student intern, from Washington University St. Louis. May-August, 2007

Specialized Instruction
Taught the Quantitative Microbial Risk Assessment Institute (QMRA III) , The Ohio State University, Columbus , OH Aug 4-15, 2019
Taught the Quantitative Microbial Risk Assessment Institute (QMRA III) , University of Washington, Seattle, WA, Aug 3-10, 2017
Organized and Taught the Quantitative Microbial Risk Assessment Institute Innovative Instruction (QMRA III) , MSU, E. Lansing, MI July 23-Aug 3, 2016
Organized and Taught the Quantitative Microbial Risk Assessment Institute Innovative Instruction (QMRA III) , MSU, E. Lansing, MI Aug. 21-26, 2015
Organized and Taught the Quantitative Microbial Risk Assessment Innovation Institute (QMRAII), Sao Paulo Brazil, June 30-July 10, 2013
Organized and Taught an International Quantitative Microbial Risk Assessment Institute, Public Utilities Board, Singapore, Jan 16-18, 2012
Organized the 6th Quantitative Microbial Risk Assessment Summer Institute, MSU, E. Lansing, MI Aug. 21-26, 2011
Organized the 5th Quantitative Microbial Risk Assessment Summer Institute, Delft University, Netherlands, June. 20-25, 2010
Organized the 4th Quantitative Microbial Risk Assessment Summer Institute, MSU, E. Lansing, MI Aug. 15-21, 2009
Organized the 3rd Quantitative Microbial Risk Assessment Summer Institute, MSU, E. Lansing, MI Aug. 10-15, 2008
External Examiner: Ryan S. Signor, PhD in School of Civil and Environmental Engineering, University of New South Wales, Sydney, Australia. 2008

Organized the 2nd Quantitative Microbial Risk Assessment Summer Institute, MSU, E. Lansing, MI Aug. 19-24, 2007

Organized the 1st Quantitative Microbial Risk Assessment Summer Institute, MSU, E. Lansing, MI Aug. 5-12, 2006

Organizer of training workshop, "Ensuring the Quality and Safety of Hawaiian Water," CDC's National laboratory Training workshop Network, Pearl City, Hawaii January 1997.

Project Oceanography 3 part series, "The Watery Planet," Feb 28, March 7, March 14-1997.

Instructor for Florida Water & Pollution Control Operators Association, training of Plant and Systems Operators Region IV Short School, June 23, 1997.

American Water Works Service Company Educational Workshop Microbial Risk Assessment, New Jersey, December 2, 1997.

Instructor for The National Laboratory Training Network on "Twentieth Century Plagues," Los Angeles, CA, March 1 - 2, 1996.

Lecture on Environmental Law at Stetson University College of Law, St. Petersburg, FL, May 25, 1996.

Mentor to High School student Stacey Gorovoy during the summer of 1996.

Instructor for short course in Florida Water Pollution Control Operators Association, Inc. "Microbiology and Bloodborne Pathogens," Clearwater, FL, June 26, 1995.

In-service Division Staff Training Session, Pinellas County Public Health Unit, Clearwater, FL, December 1, 1995.

Training for Mr. Richard Berry and Ms. Debra Petty of the Department of Health and Rehabilitative

Instructor in American Water Works Association Teleconference, "Prevention of Waterborne Disease," April 8, 1994.

Instructor for "Methods for Identifying and Enumerating *Giardia* and *Cryptosporidium* in Water Samples," Training Course for Water Quality Technology Conference, AWWA, Orlando, FL,

November 14 - 15, 1991; and Toronto, Canada, November 19 -20, 1992; Miami, FL, November, 1993.

External Examiner for PhD candidate Mr. Robert A. Gilmour, Dept. of Civil Engineering, University of Strathclyde, 1990.

Instructor for American Society for Microbiology Workshop on "Drinking Water Quality: Recent Concerns and New Developments," New Orleans, LA, 1989.

Educational Representative for Arizona Branch of Education and Training, American Society for Microbiology, 1986-1988.

Advisor for University of Arizona Student Microbiology Club, 1987-1988.

Instructor for American Society for Microbiology Workshop on "Pathogenic Protozoa in Water," Miami, FL, May 1988.

DEVELOPMENT OF INSTRUCTIONAL VIDEOS

Project Oceanography: "Neighborhood Water Quality II," College of Marine Sciences, USF, 2000

American Medical Review, WJMK video, "Preventing waterborne illness through the use of P.O.U. Systems," January 1997.

WUSF FM 89.7, "Water," University Beat, March 1997.

The Education/Explorer Channel Telethon, Science Forum, 1997.

Septic Tanks and Water Quality, Health and Rehabilitative Services, Florida, 1994.

American Water Works Association Teleconference, "Prevention of Waterborne Disease," April 8, 1994.

American Water Works Association, "*Cryptosporidium* Meeting the Challenge," 1994.

Microscopic Detection of *Cryptosporidium* and *Giardia,* American Water Works Service Company, University of South Florida, and the Environmental Protection Agency, 1993.

INTERNATIONAL COURSES

Singapore, Instructor for the Water Academy, Water Quality Management, Public Utilities Board, Jan, 2020

Singapore, Instructor for the Water Academy, Water Quality Management, Public Utilities Board, Jan, 2019

Southport, Queensland Australia, Instructor and Organizer of the Quantitative Microbial Risk Assessment Training and Research Workshop, Smart Water Research Centre Edmund Rice Griffith University, 21st – 24th March 2016

Singapore, Instructor for the Water Academy, Water Quality Management, Public Utilities Board, July 2016

Hyderabad, India, Instructor and Organizer of the International Perspectives on Quantitative Microbial Risk Assessment, School of Public Health, Summer School, Hyderabad, Part of the Obama-Singh Knowledge Grant. March 21-30, 2015

Delhi, India, Instructor and Organizer of the International Perspectives on Quantitative Microbial Risk Assessment, IIT Delhi Summer School, Delhi, Part of the Obama-Singh Knowledge Grant. June 30 to July 9th, 2014

Sao Paulo, Brazil, School of Public Health, Organized and Taught the Quantitative Microbial Risk Assessment Innovation Institute (QMRAII) June 30-July 10, 2013

Singapore Publics Utilities Board, "Quantitative Microbial Risk Assessment", Singapore, January 17-18, 2012

Instituto de Ecologia, Universidad Nacional Autónoma de México *Introduction to Quantitative Microbiological Risk Assessment Methodologies Course*, Mexico City, Mexico, Nov. 7-9, 2011

Brazilian Federal Government CETESB "Program in Microbial Risk Assessment" Sao Paulo, Brazil, June 16-18, 2005

Ministerio de Salud. Water Quality Workshop. Panama. Nov. 17-21 2001.

Tools and Techniques for Addressing Emerging Microbial Water Quality Issues, University of Singapore, July 25-27, 2000.

Seminario de Microbiologia del agua, y aspectos relacionados con microbiologia ambiental, CDC, Universidad del Valle de Guatemala: January 25-28, 2000.

"Seminario De Microbiologia y Ambiental De Agua," Universidad de Panama, Suelo y Alimento, Panama, May 12-16, 1997.

Workshop on "Detection of Viruses and Parasites in Water," Sao Pablo, Brazil, Universidad de Brazil, August 15 - 19, 1994.

"Water Microbiology for the 21st Century," Department of Microbiology and Public Health Laboratory, University Hospital, Queens Medical Centre, Nottingham, United Kingdom, September 21 - 23, 1994.

"Waterborne Microbiology for the 21st Century," MacQuarie University, Group on Australian Environmental Flow Cytometry, Sydney, Australia, September 21 - 22, 1993.

"Auanas en la Deteccion de Virus y Parasitos en Auguas y Liquidos Residuales," Universidad de Buenos Aires, Argentina, July 26 - 31, 1993.

Workshop on "Detection of Viruses and Parasites in Water," Maracaibo, Venezuela, University of Zulia, September 21 - 25, 1992.

Workshop on "Environmental Biotechnology of Waterborne Microorganisms," University of Panama, Panama, April 20 - 25, 1992.

"Curso Para Deteccion de Parasitos, Viros y Bacteria en Agua," Univ of Chile, October 5 - 15, 1991.

"International Course for Virus and Parasites from Wastewater," sponsored by World Bank, Pan American Health Organization and Instituto Mexicano de la Technologia del Agua, Mexico City, Mexico, September 26 - October 7, 1988.

RESEARCH ACTIVITIES

1. Principal Investigator. 1986. "Detection and Isolation of *Cryptosporidium*, *Giardia*, and *Entamoeba* from Waters Throughout the United States." EPA. 2 years. $160,933.

2. Co- Investigator. 1986. "Rotavirus Survival and Transport in the Subsurface." EPA. 2 years. $120,000.

3. Principal Investigator. 1987. "Effectiveness of Hand Washing for the Removal of Viruses and Parasites." Dial Corp. 2 years. $25,000.

4. Travel Award. 1988. "Significance of the Environmental Occurrence of *Cryptosporidium* and Potential for Waterborne Disease." Scottish Endowment Research Trust. $1,200.

5. Co-Principal Investigator. 1988. "Parasites in Drinking Water Supplies." American Water Works Research Foundation. 2 years. $49,923/year.

6. Principal Investigator. 1989. "Evaluation of Gene Probe Technology for the Detection of Human Immunodeficiency Virus in Hospital Wastewater Concentrates." National Science Foundation. 1.5 years. $30,000.

7. Principal Investigator. 1989. "Water Sample Analysis." 11 years, $450,000.

8. Principal Investigator. 1990. "Applications of Gene Probes for Detection of *Giardia* and *Cryptosporidium* in water." Metropolitan Water District. 1 year. $50,000.

9. Principal Investigator. 1990. "Development of Gene Probes for Detection of *Cryptosporidium.*" Environmental Protection Agency. 3 years. $230,000.

10. Principal Investigator. 1990. "Strategies for Assessment and Control of Parasites in Water." National Science Foundation. 2 years. $19,070.

11. Faculty International Travel Award. 1990. Tubigen, Germany. University of South Florida. $1000.00

12. Co-Principal Investigator. 1990. "Are Viruses a Significant Component of Dissolved DNA in the Marine Environment." National Science Foundation. 1 year. $41,160.

13. Co-Principal Investigator. 1991. "School Based Recycling Programs and Florida School Food Service Programs." Department of Education, State of Florida. 1 year. $20,000.

14. Principal Investigator. 1991. "Pathogen Removal by Full-Scale Wastewater Treatment of Reuse of Reclaimed Water." Department Environmental Regulation State of Florida. 1 year. $100,000.
15. Principal Investigator. 1991. "Survey of Viral Abundance in Key Largo Sanctuary." The National Undersea Research Center. 1 year. $3,000.

16. Travel Award. 1991. To: University of Chile. "Curso para Deteccion de Parasitos, Virosy Bacteria en Agua." Latin American Professorship Program. American Society for Microbiology. October 5-15.

17. Co-Principal Investigator. 1992. "Genetic Significance of Viruses in the Marine Environment." National Science Foundation. 3 years. $366,020.

18. Principal Investigator. 1992. "Microbial Risk Assessment for Drinking Water." American Water Works Research Foundation. 2 years. $270,000.

19. Principal Investigator. 1992. "Reedy Creek Demonstration Project." Reedy Creek Utility. 1 year. $25,852.

20. Principal Investigator. 1993. "Viral and Bacterial Indicators of Anthropogenic Stresses on the Ecosystem in the Florida Keys." National Undersea Research Center. 2 years. $75,706.

21. Co-Principal Investigator. 1993. "Acquisitioning a Transmission Electron Microscope and Elemental Analysis System for the New Marine Science Building." National Science Foundation. $150,000.

22. Co-Principal Investigator. 1993. "Infectivity of *Cryptosporidium parvum* for Adult Humans." Environmental Protection Agency. 2 years. $424,979.

23. Co-Principal Investigator. 1993. "Coliphage and Indigenous Phage in Mamala Bay." Mamala Bay Study Commission. 2 years. $75,000.

24. Co-Principal Investigator. 1993. "Incidence of Pathogens in Mamala Bay: Molecular Detection and Risk Assessment." Mamala Bay Study Commission. 2 years. $423,600.

25. Principal Investigator. 1994. "Survival of *Cryptosporidium* oocysts in Marine Waters." Mamala Bay Study Commission. 2 years. $20,000.

26. Principal Investigator. 1994. "Viruses Associated with Marine Water Impacted by Septic Tanks." Sarasota Bay National Estuary Program. 2 years. $10,000.

27. Principal Investigator. 1995. "UV Vis Spectroscopy for Rapid On-line Detection of Protozoa in Water for Assessment of Public Health." American Water Works Association. 2 years. $363,514.

28. Principal Investigator. 1995. "Balancing Risks: Characterization of Heterotrophic Bacterial Populations in Point-of-Use Water Treatment System." Water Quality Association. 2 years. $65,000.

29. Principal Investigator. 1995. "Microbial Water Quality and Monitoring Program for the Upper Occoquan Water Authority." UOSA. 2 year. $350,000.

30. Co-Principal Investigator. 1995. "Instrumentation for the Molecular Laboratory" National Science Foundation. $150,000.

31. Principal Investigator.1995. "Water Quality Study in New Port Richey." City of New Port Richey. 2 year. $30,000.

32. Principal Investigator. 1995. "Feasibility of a Cultural Method for Detecting Viable *Cryptosporidium* Oocysts in Environmental Samples." USEPA. 1 year. $50,000.

33. Co-Principal Investigator. 1995. "Wastewater Disposal Practices in Florida Keys." National Undersea Research Center. 1 year. $8,000.

34. Co-Principal Investigator. 1995. "Viral - Bacterial Interactions in the Marine Environment: Significance of Lysogeny." National Science Foundation. 2 years. $200,000.

35. Principal Investigator. 1996. "The Survival of *Cryptosporidium* in Food Environments." Pillsbury. 1 year. $23,250.

36. Principal Investigator. 1996. "Improved Method of Monitoring Water for *Cryptosporidium.*" Missing Info year, funding agency

37. Principal Investigator. 1996. "A Study on the Presence of Human Viruses in Surface Waters of Sarasota County." State of Florida, Department of Health and Rehabilitative Services. 1 year. $60,900.

38. Principal Investigator. 1996. "Water Quality in Charlotte Harbour." Florida Department of Health. 2 years. $70,960.

39. Principal Investigator. 1997. "A Study on the Presence of Human Viruses in Surface Waters of Sarasota County." Sarasota County Government. 1 year. $24,960.

40. Principle Investigator. 1997. "Human Pathogens in Canals and Confined Bodies of Water in the Florida Keys." 2 years. U.S. Environmental Protection Agency and Drexel University. $94,170.

41. Co-Principle Investigator. 1997. "Oceanography Camp for Girls and Teachers." National Science Foundation. $71,805.

42. Co-Principle Investigator.1997. "Viral Interactions in the Marine Environment: Significance of Lysogeny." NSF (modification). $100,000.

43. Principle Investigator.1997. "Water Sampling Analysis Project." John Hopkins University. 10 years. $50,000/yr.

44. Principle Investigator. 1997. "Integrated Assessment of Public Health Effects of Climate Change for the United States." John's Hopkins University. 3 years. $54,000.

45. Co-Principal Investigator. 1997. "Viral Tracer Technology for Tracking Wastewater Contamination of Coastal Marine Environments." Florida Sea Grant. 1 year. $63,525.

46. Co-Principal Investigator. 1997. "Microbiological Testing of Crystal Springs." South West Florida Water Management District. 1 year. $16,000.

47. Principal Investigator. 1997. "Methods for Detection of *Cyclospora.*" Environmental Protection Agency. 2 years. $50,000.

48. Co-Principal Investigator. 1998. "Protocol for *Cryptosporidium* Risk Communication for Drinking Water Utilities." American Water Works Association Research Foundation. 17 months. $30,000.

49. Co-Principle Investigator. 1998. "Innovative Methods for Rapids Detection of *Cryptosporidium* and *Giardia* in Wastewater." Water Environment Research Foundation. 1.5 years. $75,007.

50. Co-Principle Investigator. 1998. "Quantitative Microbial Risk." International Life Sciences Institute (Drexel). 1 year. $15,000.

51. Co-Principle Investigator. 1998. “Impact of Sample and Processing on *Cryptosporidium* Viability and Infectivity.” American Water Works Research Foundation. 3 years. $350,000.

52. Principal Investigator. 1998. “Microbial Occurrence, Exposure, and Risk Associated with Laundry.” Missing info. Funding agency and amount.

53. Principal Investigator. (year) “Control Options and Risk Reduction through Sanitation.” Procter and Gamble. 1 year. $66,456.

54. Co-Principal Investigator. 1998. “The Electron Beam Process in Drinking Water Treatment: Biological, *Cryptosporidium* Inactivation.” NSF. 3 years. $72,725 USF/ year.

55. Principal Investigator. 1998. “Exploratory Development of NASBA with Combined Methodology for the Detection of *Cryptosporidium* in Drinking Water.” IBA. 1.5 years. $25,000.

56. Principal Investigator. 1998. “Membrane Integrity Testing.” University of Central Florida. 1 year. $7,000.

57. Principal Investigator. 1999. “Healthy Beaches Tampa Bay." Florida Department of Health. 1 year. $161,905.

58. Principal Investigator. 1999. “Climate Variability and Water Quality in South Florida." NOAA. 1 year. $15,000.

59. Principal Investigator. 1999. “Microbiological Water Quality Issues Associated with Septic Tanks and Seasonally Inundated Areas in Florida." Florida Department of Health. 1 year. $54,750.

60. Principal Investigator. 1999. “Evaluation of Low and Medium Pressure UV for Inactivation of Microorganisms." Florida Department of Environmental Protection. 1 year. $5,000.

61. Principal Investigator. 1999. “Chassahowitzka Water Quality Assessment Study." Citrus County. 1.5 years. $60,000.

62. Principal Investigator. 1999. “Human Pathogens in Canals and Confined Bodies of Water in the Florida Keys: Abundance and Human Health Risks." EPA. 2 years. $94,170.

63. Principal Investigator. 1999. “Implementation of the Section 21 Wellfield Pilot Rehydration Project." HDR Engineering. 1.5 years. $123,327.

64. Principal Investigator. 2000. “Effects of UV inactivation in wastewater.” Water Environ. Res. Foundation. 2 years. $80,000.

65. Principal Investigator. 2000. “Underground injection study.” EPA. 1 year. $18,875.

66. Co- Principal Investigator. 2000. “Bacteria as potential indicators of Pfiesteria-like blooms or fish disease.” Florida Fish and Wildlife Conservation Commission. 2 years. $100,000.

67. Principal Investigator. 2000. “Water Quality.” U.S. Filter. 2 Years. $50,000.

68. Principal Investigator. 2000. “Use of Microbial Risk Modeling to Determine the Benefit of Topical Antimicrobial Products.” Soap and Detergent Association. 1 Year. $30,000.

69. Co- Principal Investigator. 2000. Hillsborough County Water Quality Study. Florida Inst. Of Govt., Hillsborough County. 1 Year. $12,375.

70. Principal Investigator. 2000. Innovative methods for rapid detection of *Cryptosporidium*. Water Environment Research Foundation. 2 years. $36,846.

71. Principal Investigator. 2001. “Reduction of Pathogens, Indicator Bacteria and Alternative Indicators by Wastewater Treatment and Reclamation Processes.” Water Environment Research Foundation. 2.5 years. $237,203.

72. Principal Investigator. 2001. “Micro and Ultrafiltration Performance Specifications Based on Microbial Removal.” Montgomery Watson, Inc. 3 years. $45,000.

73. Principal Investigator. 2001. “A Study of the Fate of Microorganisms in the Florida Aquifer.” SWFMD. 1 year. $68,292.

74. Principal Investigator. 2001. “Microbial Quality of Groundwater at the Section 21 Wellfield.” Tampa Bay Water. 2 years. $40,000.

75. Principal Investigator. 2001. “Microbiological Monitoring for Central Florida Artificial Recharge Demonstration Program.” CH2MHILL. 3 months. $17,044.

76. Principal Investigator. 2001. “Understanding the Sources and Fate of Conventional and Alternative Indicator Organisms in Subtropical Waters.” EPA. 2 years. $76,243.

77. Co- Principal Investigator. 2002. “Genosenser for Detection of Viruses in Coastal Waters.” NSF. 4 years. $240,000.

78. Co- Investigator. 2002. “Epidemiology of Groundwater and Waterborne Disease.” EPA. 3 years. $150,000.

79. Co- Investigator. 2002. “Bioinformatics Pilot Program for the Assessment of Virulence-Factors and Activity Relationships (VFARs) for Waterborne Disease Microorganisms.” EPA. 1 year. $30,000.

80. Co- Principal Investigator. 2002. “Occurrence and removal of Blue Green Algae and their toxins by water treatment.” American Water Works Association Research Foundation. 2 years. $150,000.

81. Principal Investigator. 2003. “Impact of Water Management Options on Pollution Control in Michigan and the Great Lakes Region.” Michigan Applied Public Policy Research Funds. 1 year. $30,000.

82. Principal Investigator. 2003. “Water Quality and Public Health Risks in the Great Lakes.” Michigan Sea Grant. 1 year. $15,000.

83. Co-Investigator. 2003-2005. “Human fecal indicator bacteria and pathogenic viruses in offshore reefs and human recreational risk in nearshore waters of the Florida Keys.” EPA 3 years. $15,000.

84. Co-Investigator. 2003-2010. “Food and Waterborne Integrated Disease Network, NIH Research Contract Proposal.” NIH-NIAID-DMID-03-04, [Whittam PI]; 5 years. $10, 295,014 (10%).

85. Principal Investigator. 2004-2007. “Development of a Virulence Factor Biochip and its Validation for Microbial Risk Assessment in Drinking Water.” EPA. 3 years. $600,000.

86. Principal Investigator. 2004-2009. “Center of Excellence for Great Lakes and Human Health.” NOAA. 5 years. $1,500,000 (MSU share).

87. Principal Investigator. 2004-2009. “Influence of Combined Sewer Overflows on *Cryptosporidium* and *Giardia* Accumulation in Sediments and Impacts on Water Quality and Health in the Great Lakes.” NOAA. 3 years. $600,000.

88. Principal Investigator, Co-Director. 2005-2013. “Center for Advancing Microbial Risk Assessment.” EPA/Department of Homeland Security. 7.5 years. $10,000,000.

89. Co-Principal Investigator. 2006-2009. “Rapid and quantitative detection of *Helicobacter pylori* and *E. coli* 0157 H7 in Well Water Using a Nano-wired Biosensor and QPCR.” EPA. 3 years. $600,000.

90. Principal Investigator. 2006-2007. “Development of a source-specific genetic marker to identify fecal contamination by wild birds at recreational beaches in the Great Lakes region.” NOAA. 1 year. $15,099.

91. Principal Investigator. 2008-2010. “Quantitative Microbial Risk Assessment Summer Institute.” DOE. 2 years. $50,000.00.

92. Co-Principal Investigator. 2007-2009. “Integrated Assessment of Human Health Risks Associated with Fecally-Contaminated Benthic Algal Mats.” CILER University of Michigan/NOAA. 2 years. $105,659.

93. Principal Investigator. 2007-2012. “Fellowship Program in Microbial Risk Assessment for Public Security, Safety and Health.” Department of Homeland Security, Drexel University. 3 years. $97,573.

94. Co-Principal Investigator. 2008-2011. “Transport and Survival of *Escherichia coli* with Soil Aggregates,” USDA. 2 years. $260,259.

95. Principal Investigator. 2009-2011. “Assessment of Water Quality and Health Risk in Grand Traverse Bay Watershed,” MI DNRE. 2 years. $23,680.

96. Co-Investigator, 2009-2010 “Water Utility Framework for Responding to Emerging Contaminant Issues.” AWWA. 1 year. $97,890.

97. Principal Investigator. 2010-2011. “Forecasting Beach and Nearshore Health Effects Using QMRA.” EPA. 1 Year. $65,000.

98. Principal Investigator. 2011-2012. “WSC Category 1: Learning from Adaptable Water Systems.” NSF. 1 year. $149,998.

99. Principal Investigator. 2010-2011. “Evaluation of a Biofilter in removal of bacteriophages, bacteria, and *Cryptosporidium* SPP.” Access Business Group. 1 year. $104,681.

100. Principal Investigator. 2010-2012. “Improved Understanding and Forecasting of Viral and Bacterial Sources and Transport in the Great Lakes-Amendment 4.” CILER UMich/NOAA. 1 year. $200,000.

101. Principal Investigator. 2010-2012 “Rapid Biosensor Technology for Recreational Fresh Waters.” CILER UMich/NOAA. 2 years. $97,544.

102. Principal Investigator. 2010-2011 “Integrated Beach Sanitary Surveys via qPCR and Modeling.” MI DNRE. 1 year. $230,000.

103. Co-Investigator. 2010-2012. “Healthier Great Lakes Beaches through Improved Communication.” MI DNRE. 2 year. $82,892.

104. Principal Investigator. 2011-2020. “City Of Toledo Ballasted Flocculation Pathogen Sampling Study.” City of Toledo; Black and Veatch. 10 years. $1,200,000.

105. Principal Investigator. 2012-2013. Pan-American Advanced Studies Institutes Program (PASI); Quantitative Microbial Risk Assessment Innovation Institute, National Science Foundation, 1 year, $99,986.

106. Co-Principal Investigator. 2012-2017. “Partnership for International Research and Education: Water and Commerce- Technologies to Enable Environmental Sustainability in Global Markets,” National Science Foundation, 5 years, $5,000,629.

107. Principal Investigator. 2013-2015. “Advancing Next Generation Genomic Tools for Discovery of the Food Microbiome: From the Field to the Store,” USDA NIFA, $299,999.

108. Principal Investigator. 2013-2015. “Urban Pollution Footprints on the Great Lakes,” University of Wisconsin-Milwaukee, $14,480.

109. Principal Investigator. 2014-2017. “Building a Knowledge Value Chain to Support Global Water Safety Part of the UNESCO Global Water Pathogen Project” Midland Research Institute on Value Chain Creation. $325,000.

110. Principal Investigator. 2015-2016. Understanding Nutrient Impacts and Sources at the Watershed Scale to Enhance Environmental Stewardship. Corn Marketing Program of Michigan. $29,985

111. Principal Investigator. 2015-2017. “Proposal for a Study on the Enumeration of Viruses in Ballast Water” California State Land Commission. $148,738.

112. Principal Investigator, 2015-2017. “UNESCO, Global Water Pathogens Project” Gates Foundation and UNESCO. $65,999.

113. Principal Advisor post-doctoral fellowship, 2016-2018. “The Role of The Virome in The Microbiological Stability of The Built Aquatic Environment. Informing The Engineering of Natural Systems.” The Alfred P. Sloan Foundation Microbiology of the Built Environment (MoBE) program.. $120,000.

114. Principal Investigator, 2016-2017. “2016 Year of Water, The Fountain Project” Midland Research Institute on Value Chain Creation. $80,000.

115. Principal Investigator. 2016-2018. "The Aquarium Microbiome" The Shedd Aquarium . $95,000.

116. Principal Investigator, 2017-2019. Comparing Best Management for Chemical Agricultural Fertilizer and Manure and The Impacts on Water Quality to Enhance Environmental Stewardship. Corn Marketing Program of Michigan. $80,000.

117. Co-Principal Investigator, 2016-2021. "Right Sizing Tomorrow's Water Systems for Efficiency, Sustainability, and Public Health" USEPA $2,163,647 ($920,673.48 MSU)

118. Principal Investigator. 2015-2020. "Training and Support for Beach Monitoring with QPCR" Michigan Department of Environmental Quality. $230,000.

119. Principal Investigator. 2017-2020. "Rapid detection of viral pathogens using third generation technologies for addressing marine mammal health" Office of Navy Research . $368,335

120. Principal Investigator. 2018-2021. "Knowledge-to-Practice - K2P: Mapping and Implementing Knowledge to Practice Utilizing the Global Water Pathogen Project (GWPP)" Bill and Melinda Gate Foundation. $1,300,000

121. Co-Investigator 2018-2020. "Research Initiative for Real-Time River Water and Air Quality Monitoring" INDO_US Science & Technology Forum. IIT Delhi, $114,243

122. Principal Investigator. 2018-2020. "Water Fellows Program: Water Infrastructure" The Nature Conservancy, $70,000

123. Co-Investigator. 2020-2023. "Integrating a rapid nanopore sequencing platform for building the virome of marine mammal's associated environments." Office of Navy Research . $152,193

124. Principal Investigator 2020-2021. "COVID Testing Philadelphia" Philadelphia Department of Public Health & Temple University $92,196

125. Principal Investigator 2020, "EGLE SARS-CoV-2 in Wastewater Pilot Project" Michigan Department of Environment, Great Lakes, and Energy (EGLE), $ 1,326,694.16

126. Principal Investigator 2021-2022, "SARS-CoV-2 Environmental Surveillance Data Repository" PATH, $661,992.00

127. Co-Principal Investigator 2020-2025, "QMRA IV- Quantitative Microbial Risk Assessment Interdisciplinary Vehicle: Addressing Emerging Global Health Risks" NIH, $2,309,335.00

128. Principal Investigator 2021-2022 "Occurrence and persistence of SARS-CoV-2 (COVID-19) along with known biological indicators in waste waters of Mumbai city" Indo-US Science & Technology Forum, $13,427.17

129. Principal Investigator 2021-2023, "SARS-CoV-2 Epidemiology – Wastewater Evaluation and Reporting (SEWER) Network." Michigan Department of Human Health Services (MDHHS), $1,230,048.00

130. Co-Principal Investigator (Tulane primary) 2021-2024, " Quantitative Methods for New Indigenous Viruses in Wastewater: Improving the Assessment of Reuse Treatment Performance" EPA, $ 1,239,240.00

131. Co-Principal Investigator (Univ Michigan primary) 2022-2023 “Water Infrastructure Regional Planning Michigan Dept of Environment, Great Lakes, and Energy $89,785.00

132. Principal Investigator 2022-2023 “Wastewater Analysis for SARS-CoV2, City of Philadelphia” Centers for Disease Control and Prevention $638,000.00

133. Principal Investigator 2022-2023 “SARS-CoV-2 Epidemiology - Wastewater Evaluation and Reporting (SEWER) Network” Michigan Dept of Health & Human Services $1,230,048.00

134. Co-Principal Investigator (Dreelin, PI) 2022-2023 MiNET Beach Support Michigan Dept of Environment, Great Lakes, and Energy $100,948.50

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