

# **Andrea Kirkwood, PhD**

**Associate Professor, Faculty of Science at University of Ontario Institute of Technology**  
Oshawa, ON, CA

Leading aquatic microbial biologist working to understand and preserve ecological systems

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Andrea Kirkwood, PhD, knows exactly what's in the water of our rivers, lakes and streams. An aquatic microbial biologist, she has dedicated her life's work to the understanding and preservation of ecological systems, in addition to harnessing biotechnology from aquatic microorganisms.

An inherent curiosity about the world around her and deeper concern for the sustainable health of the environment guided Dr. Kirkwood's education. In 1994, she completed a Bachelor of Environmental Studies (Joint Honours) degree in Environment and Resource Studies and Biology (Co-op), which she received from the University of Waterloo, Ontario. In 1996, she earned her Master of Science degree in Aquatic Ecology at McMaster University, Hamilton, Ontario, where she fell in love with research and the freedom to explore both in the field and the lab. In 2003, Dr. Kirkwood obtained her Doctorate in Environmental Microbiology from the University of Toronto (U of T), Ontario.

Since joining UOIT in 2008, Dr. Kirkwood has been instrumental in developing a new state-of-the-art UOIT Aquatics Lab, which will open in August, 2014. She has worked to strengthen the university's Science programs and she has helped bring a Doctorate of Philosophy in Applied Bioscience degree to the university.

Dr. Kirkwood also serves as an adjunct faculty member in the U of T Graduate Environmental Science program. She previously held the appointments of post-doctoral fellow and research associate in the Alberta Ingenuity Centre for Water Research at the University of Calgary, and post-doctoral fellow at Oklahoma State University.

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Biotechnology, Education/Learning, Environmental Services, Fishery and Aquaculture, Laboratory Services, Renewables and Environmental, Research

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Algae, Algal Blooms, Aquatic Ecology, Aquatic Invasive Species, Biofuels and Combustion Emissions, blue-green algae, environmental microbiology, Great Lakes, Lake Ecosystems, river ecosystems, Pollution, Urban Ecosystems, Water Quality

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American Society of Limnology and Oceanography, Canadian Society for Ecology and Evolution, Canadian Society of Microbiologists, Ecological Society of America, Global Lake Ecological Observatory Network, North American Lake Management Society, Phycological Society of America, Society of Freshwater Sciences, Society of Canadian Limnologists, Friends of Second Marsh, Canadian Phycological Culture Collection, University of Toronto

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**Determining the impact of cadaver decomposition on soil microbial communities**  
63rd Annual Conference of the Canadian Society of Microbiologists

**The role of *Cladophora glomerata* as a refuge for fecal and pathogenic bacteria in a near-shore region of Lake Ontario**  
2013 Annual Conference of the Canadian Society of Microbiologists: Environmental Dimension of Antibiotic Resistance Satellite Symposium

**Assessment of wastewater algae for use in biofuel production**

BioFuelNet Annual General Meeting

**Characterization of stormwater management ponds and their role as a land-water linkage in urban environments**

Joint Meeting of the Society of Canadian Limnologists and Society of Wetland Scientists

**Characterization of urban stormwater ponds and their role as a cross-ecosystem linkage in urban environments**

Society of Freshwater Science

**Diversity, function and resilience of microbial communities from urban wetlands**

Canadian Society of Microbiologists Conference

**The influence of shoreline development and geology on lake water quality in The Land Between Ecotone Lake Simcoe Science Forum**

**Water quality characteristics of lakes in The Land Between**

The Land Between Science and Stewardship Symposium

**The role of urban wetland community structure and function in contaminant fate**

37th Annual Aquatic Toxicity Workshop

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**University of Toronto**

PhD Environmental Microbiology

**McMaster University**

Master of Science Aquatic Ecology

**University of Waterloo**

Bachelor in Environmental Science Environment and Resource Studies and Biology

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**Board of Directors, Friends of Second Marsh**

Since 2012, Dr. Kirkwood has been a member of the Board of Directors of Friends of Second Marsh, a not-for-profit charitable organization dedicated to encouraging the protection and appreciation of Second Marsh, a coastal wetland located in Durham Region, other Great Lakes wetlands, our natural heritage system, and to promoting a healthy environment through education, communication, developing partnerships and fostering connections with all sectors of the community.

**Scientific Advisory Board, Canadian Phycological Culture Centre**

The Canadian Phycological Culture Centre (CPCC) provides research quality cultures, culture medium, and other related services to educational institutions, government and commercial laboratories worldwide. Housed at the University of Waterloo in the Department of Biology, the CPCC is internationally recognized as a major service collection of living freshwater algal, cyanobacterial and *Lemna* spp. (duckweed) cultures.

**Post-doctoral Fellow, University of Calgary**

Dr. Kirkwood completed her post-doc work and continued as a research associate supported by grants from the Alberta Conservation Association and Alberta Sustainable Resource Development.

**Post-doctoral Fellow, Oklahoma State University**

During her two-year post-doctoral fellowship, Dr. Kirkwood studied algal extremophiles at the Salt Plains Microbial Observatory.

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