**CV RECENT UPDATE:**

Professor Charles Trick

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**Current and Pending Research Support:**

1. Awarded: National Science Foundation 2019-2022.– Chemical Oceanography (Mark Wells, Charles Trick, Kristin Buck). Collaborative Research: The effect of ocean acidification on iron availability to phytoplankton in coastal and oceanic waters of the North Pacific. Awarded $499,822 (for Trick and Wells, https://www.nsf.gov/awardsearch/showAward?AWD\_ID=1830029&HistoricalAwards=false) + $299,295 for Kristin Buck, University of South Florida).
2. Awarded: California Sea Grant -Ocean Protection Council (submitted Aug 3, 2018; but written during evaluation period). Salinity and light regulation of domoic acid toxicity in California coastal and estuarine systems. Requested $332,000. (Confirmation: https://caseagrant.ucsd.edu/project/present-and-future-climatic-drivers-of-domoic-acid-toxicity-in-coastal-ecosystems-of
3. Teaching workshops: “HABs in coastal waters” – Xiamen University (January 2019); “Coastal Oceanography” – Shanghai University (October 2018); “Ocean acidification and coastal ecology” Second Institute of Oceanography (October 2018); “Jornada del Océano,” Centro de Estudios del Mar y Acuicultura, Universidad se San Carlos de Guatemala (March 2018)
4. Awarded: Ocean STAR Distinguished Research Professor, Second Institute of Oceanography (SIO), Xiamen, China.
5. Appointed: Visiting Research Professor, Center for Ocean Trace Metals, University of Shanghai, Shanghai, China.
6. Elected: Fellow of Association for the Sciences of Limnology and Oceanography (ASLO).
7. Awarded: Chinese NSF cruises: South China Sea. Aerosol iron and nitrogen fixation in subtropical-tropical waters. Awarded: ~$50k to Trick
8. Awarded: NSERC Discovery Grant. Evaluation of the toxicology of the fish-killing flagellate, *Heterosigma akashiwo*. Funded. 2016-2022, @$250K.
9. Awarded: Canadian Foundation for Innovation. Real-time Aquatic Ecosystem Observation Network (RAEON). Funded. 2018, @$870K (for equipment to Creed/Trick). Total Team grant ~$13 million.
10. Awarded: NSERC CREATE. ABATE (algal blooms assessment through science and technology. Funded. 2014-2019.Total Team grant $1.65 million
11. Awarded: NSERC CREATE. Multiple stressors and cumulative effects in the Great Lakes. Funded. 2015-2020. Total Team grant ~$1.65 million.
* Awarded: NSERC Research Tools and Instruments. Imaging plankton observing system (Flow Cam system, microscopes). Funded. 2016, @$150K.
* Awarded: NSERC Research Tools and Instruments. FIA (flow injection analysis) for iron measurements. Funded. 2016, $126K

Curriculum Vitae

Charles Gordon Trick

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# EDUCATION AND EMPLOYMENT HISTORY

## Education:

BSc in Microbiology, University of Manitoba, Winnipeg, MB, 1975. Topic: Freshwater microbiology. Supervisor: Harvest Halvorson. (deceased)

MSc in Marine Sciences, Acadia University, Wolfville, NS, and National Research Council Atlantic Labs (Halifax, NS) 1979. Thesis Title: The Life Cycle of the Marine Prasinophyte, *Platymonas impellucida*. Supervisor: Jack L. McLachlan. (deceased)

PhD in Oceanography, University of British Columbia, Vancouver, BC, 1982. Thesis Title: Production of Unique Bioactive Metabolites by the Marine Dinoflagellate, *Prorocentrum minimum*. Supervisor: Paul J. Harrison. (deceased)

PDF in Biochemistry, University of California, Berkeley, Berkeley, CA, 1984. Topic: Siderophore production in marine bacteria. Supervisor: John B. Neilands. (deceased)

## Principal Professional Employment:

**2019 – present** Professor, Department of Biology, University of Saskatchewan

**2013– 2019** Professor, Cross Appointment, Inter-Faculty Program in Public Health, Schulich School of Medicine and Dentistry, Western University

**1997– 2019** Professor, Department of Biology, Western University

**1991–1997** Associate Professor, Department of Plant Sciences, University of Western Ontario

**1987–1991** Assistant Professor, Department of Plant Sciences, University of Western Ontario

**1984–1987** NSERC University Fellow, Environmental Studies, University of Toronto

## Other Appointments:

**2018–** Ocean STAR Distinguished Research Professor, Second Institute of Oceanography, Hangzshou, China.

**2015– 2017** Distinguished Research Professor, Faculty of Science, Western University

**2004–2010** Senior Researcher, Center for Environmental Bioinorganic Chemistry (CEBIC), Princeton University

**2006–** Senior Advisor, Dartmouth Superfund on Hg and Pb in the Environment. Dartmouth College.

**2004–2016** Beryl Ivey Endowed Chair in Ecosystem Health, Schulich School of Medicine and Dentistry, Western University

**2006–2016** McConnell Family Endowed Chair, Schulich School of Medicine and Dentistry, Western University

**2001–** Adjunct Professor, School of Marine Sciences, University of Maine

**2006–2014** Professor, Joint Appointment, Pathology, Schulich School of Medicine and Dentistry, UWO

**2004–2014** Professor, Joint Appointment, Microbiology and Immunology, Schulich School of Medicine and Dentistry, UWO

**2000–2001** Visiting Professor, Marine Sciences, University of California, Santa Cruz

**1991, 1993–94** Visiting Professor, Civil Engineering, Massachusetts Institute of Technology

# PROFESSIONAL HONORS AND AWARDS

## Honors and Awards:

Elected: Fellow of Association for the Sciences of Limnology and Oceanography (ASLO).

Founding Fellow, The African Institute, Western University. (2017). Awarded to 5 individuals for their creative and energetic contributions to the development of the African Institute through research and scholarship. (inaugural recipient).

Distinguished Research Professorship (2015-2016). Faculty of Science, Western University. Awarded to help creative colleagues achieve scientific success on innovative research.

Rock Star of Research, Research2Reality, (Awarded May 2015), MaRS Discovery District, Toronto. (<http://research2reality.com/video-categories/natural-resources/>)

Edward G. Pleva Award for Excellence in Teaching (2015). Western University. Top educator at Western University. Awarded based on evidence of outstanding contributions in the area of classroom, laboratory or clinical instruction.

Okubo Distinguished Scholar (2015). Awarded by School of Marine and Atmospheric Sciences (SoMAS), Stony Brook University, USA for ocean sciences scholarship.

James Philip Fallona & Mary Catherine Fallona Interdisciplinary Science Award (2014). Faculty of Science, Western University. Awarded for research excellence (inaugural recipient).

Beryl Ivey Chair for Ecosystem Health (2004-2016). Schulich School of Medicine and Dentistry, Western University. Research chair to investigate the relationship between the environment and the human condition (inaugural recipient).

McConnell Family Research Chair in Ecosystem Health (2006-2016). Schulich School of Medicine and Dentistry, Western University. Awarded to advance environment and health education and curriculum at Western (inaugural recipient).

Western Humanitarian Award (2011) to recognize faculty, staff and students who are engaged in a range of efforts directed towards improving the quality of life for individuals and groups around the world. Drs. Trick, Bend, Creed and Darnell were selected to receive the award for their team’s leadership role as humanitarians through their project on Ecosystem Health – Africa Initiative funded by the International Development Research Centre of Canada (inaugural recipient).

Faculty of Science Teaching Award (1996). Western University. Awarded for excellence in academic endeavors with particular emphasis on exceptional performance in undergraduate classroom teaching and undergraduate course/curriculum development (inaugural recipient).

Undergraduate Teaching Honor Roll (most years taught in Department of Biology since 2002). University of Western Ontario. University Student Council. Awarded for receiving an overall course and instructor average of 6.3/7 or above.

Captain Thomas S. Byrne Prize for Academic Excellence in Oceanography (1983). Awarded for outstanding scientific paper in oceanography.

# CURRENT ACTIVITIES OVERVIEW

## Research Interests:

Phytoplankton and human health; Communities at risk; Interdisciplinary and systems thinking; Ecosystem health; Marine community needs assessments; Ocean acidification; Mesoscale ocean iron enrichments; Harmful/toxic algal blooms; Cyanobacteria and cyanotoxins; Fish-killing flagellates; *Pseudo-nitzschia*; *Heterosigma akashiwo*; *Prymnesium parvum*; *Microcystis* sp.

## Current Primary Research Projects and Collaborations:

My research program focuses on advancing a single concern: the expanding human population has placed considerable pressures on two natural resources – oceans and freshwaters – that are intertwined with how our society functions. Science must meet the challenge of the complex interactions between basic scientific studies and human health, and I attempt to do this through three main research areas.

I have a strong program detailing the relationship between nutrient chemistry and phytoplankton community structure that is supported by NSERC, NSF and NOAA. In particular, we are actively investigating ocean acidification, the formation of harmful algal blooms and domoic acid production, and fish killing flagellates (e.g., *Heterosigma akashiwo* in the Salish Sea). We have a long running scientific interest in the role of iron in shaping marine production (including large scale iron addition experiments and iron-ligand interactions). This is highly collaborative work centered around three remarkable colleagues: Dr. Vera Trainer (NOAA-Seattle), Dr. William Cochlan (San Francisco State University) and Dr. Mark Wells (University of Maine). This work has ventured into true groundbreaking research areas such as the role of trace metals on coral bleaching and investigating productivity in hyper-saline lakes in Antarctica.

My freshwater research agenda has a strong focus on the role of trace metals (iron and molybdenum) on the initiation, maintenance and toxicity of freshwater harmful algal blooms. With my colleague, Dr. Irena Creed (University of Saskatchewan), we are building a novel area of discovery research, blending my interests in iron, iron-ligands, siderophores and toxins with her fully developed specialty of whole ecosystem biogeochemistry and the influences of climate change. This research partnership strongly relates anthropogenic changes in terrestrial systems to lake ecology as well as public health.

The final research area is shaping knowledge concerning the environment within the social network of communities at risk and has become the purposeful extension of each line of my research. For example, my research with Dr. Jack Bend (Schulich School of Medicine and Dentistry) considered the impact of eating fish from contaminated areas on the health of the Walpole Island First Nations community. Similarly, I led a team including Drs. Bend and Creed that examined the health of a Kenyan community dependent on waters contaminated with pesticides, mercury, and cyanobacterial toxins. And finally, work with Drs. Trainer, Cochlan and Wells associated with communities-at-risk eating fish contaminated with toxins originating in harmful algal blooms has led to marine sentinel public health programs.

## Professional Memberships:

International Society of Harmful Algae (founding member), Association for the Sciences of Limnology and Oceanography, American Geophysical Union, Northeast Algal Society

## Past work with Professional Organizations:

Chair, Ethics Committee, American Society for Limnology and Oceanography, 1995-2002.

Chair and Moderator, Professional and Public debate on the “Regulation of Phosphate in the Great Lakes” at the Canadian Society of Limnologists Annual Meeting, January 1998.

Co-Chairman, Canadian Society of Microbiologists Annual Meeting (UWO, June 1991).

## Professional Responsibilities:

I am the Canadian Representative for the North Pacific Marine Science Organization (PICES). I have leadership responsibilities for two major sections: Harmful Algal Section and The Ocean Manipulation/Climate Change Section. I also serve as a member of the “Ecological and human social analyses and issues relating to Integrated Multi-Trophic Aquaculture” section.

I represented the North Pacific Marine Sciences Organization at the Open Science Meeting on Harmful Algal Blooms in Paris, France. June 2007, 2009, 2011.

I represented the North Pacific Marine Sciences Organization at the Second Open Science Meeting: “HABs and Eutrophication”, Beijing, China, October 2009.

I have given seminars focusing on “Ecosystem Health” to several scientific societies:

* Second GEOHAB meeting on eutrophication, Beijing, China. October 2009.
* North Pacific Marine Science Annual Meeting in Yokohama, 2006
* First GEOHAB meeting on eutrophication and HABs, Washington, DC, 2006
* UNESCO-Ocean Sciences Conference, Paris, 2005
* Institute of Ocean Research, Tokyo, 2006 and 2005
* North Pacific Marine Sciences Annual Meeting in Russia, 2005

I served as an Ecosystem Health consultant for the World Bank during their deliberations on linking carbon credits with funding.

I have served on NSF research panels (ECOHAB; Biological Oceanography: 2006-2017).

I am Associate Editor for two journals: *Harmful Algae* (since 2010) and *Frontiers in Microbiology* (since 2009).

# PUBLICATIONS

## Refereed Journal Articles, Book Chapters, Reports, and Symposia

Post-docs‡; graduate students; undergraduate students\*

Hollis, L., C. G. Trick, N.P.A. Hüner. Continuous Monitoring of Growth Detects Photoperiod–Dependent Oscillations in Growth rates in *Chlorella vulgaris*. Boitany (submitted)

Wells, M.L., Karlson, B., Wulff, A., and Trick, C.G. (2019.) Future HAB science: Directions and challenges in a changing climate. Harmful Algae (in press).

Peters, J. A., Williams, N.C., Williams, R.M., Trick, C.G., Rieder, M.J., Darnell, R., and Bend, J.R. (2019). Proactive response of members of the Walpole Island First Nations (WIFN) to the release of 400 tonnes of mercury into the St. Clair River in Canada. Environmental Research and Health. (in press)

Raffoul, M., Creed, I.F., and Trick, C.G. (2019) Assessing the potential health risk of cyanobacteharmful algal blooms and cyanotoxins in Lake Naivasha, Kenya. Hydrobiologia (in press).

Allif, M.M. and C.G. Trick. 2019. Multiple-stressor design-of-experiment (DOE) and one-factor-at-a-time (OFAT) observations defining *Heterosigma akashiwo* growth and toxicity. Journal of Applied Phycology (in press).

Du, X., I. F. Creed, R. J. Sorichetti, and **C. G. Trick**. (2019) Maintenance of cyanobacteria biomass in eutrophic lakes linked to an iron scavenging strategy that uses iron-binding ligands. Canadian Journal of Fisheries and Aquatic Sciences. (in press)

Dulal-Whiteway, C. and **C.G. Trick.** (2019). The influence of nitrogen and iron conditions on the hemolytic activity of the fish-killing phytoflagellate *Prymnesium parvum.* Harmful Algae. (in press)

**Trick, C.G.,** V.L. Trainer, W.P. Cochlan,, M.L. Wells, and B.F. Beal. 2018. The successional formation and release of domoic acid in a *Pseudo-nitzschia* bloom in the Juan de Fuca Eddy: a drifter study. Harmful Algae (in press).

Wang, T., P. Jin, M. L. Wells, C. G. Trick and K. Gao(2019). Insensitivities of a subtropical productive coastal plankton community and trophic transfer to ocean acidification: results from a microcosm study. Marine Environmental Research. (in press)

Adhiambo R, F. Muyekho , W. Shivoga, I.F. Creed, E.M. Enanga‡, J. Obiri, **C.G. Trick**. (in press) Managing the invasion of guava trees to enhance carbon storage in tropical forests. Forest Ecology and Management. 432: 623-630.

White, R.C., J.M. Bowles, J.M., E.M. Enanga‡, I.F. Creed and **C.G. Trick**. (in press). Discerning fever tree (*Vachellia xanthophloea*) riparian woodlands responses to land use change, human and wildlife disturbance at Lake Naivasha, Kenya**.** Forest Ecology and Management. 435: 187-195.

Henley, P., I.F. Creed, J.R. Bend, T.P. Fedha, W.A. Shivoga, and **C.G. Trick**. (in press) African women as silent sentinels of Sick Ecosystem Syndromes. Lancet – Planetary Health.

Du, X., I. F. Creed, R. J. Sorichetti, and **C. G. Trick**. (2019) Maintenance of cyanobacteria biomass in eutrophic lakes linked to an iron scavenging strategy that uses iron-binding ligands. Canadian Journal of Fisheries and Aquatic Sciences. (in press)

Creed, I.F., A-K. Bergstum, **C.G. Trick**. Global change-driven effects on dissolved organic matter composition: Implications for food webs of northern lakes. Global Change Biology 24:3692-3714

Erratt, K., I.F. Creed, **C.G. Trick**. 2017. Comparative effects of ammonium, nitrate and urea on growth and photosynthetic efficiency of three bloom-forming cyanobacteria. Freshwater Biology 63:626-638.

Erratt, K., I.F. Creed, **C.G. Trick**. 2017. The differential utilization of ammonium, nitrate and urea by three bloom-forming cyanobacteria. Freshwater Biology (in press).

Ikeda, C.E., W.P. Cochlan, C. Bronicheski, V.L. Trainer, **C.G. Trick**. 2016. The effects of salinity on the cellular permeability and cytotoxicity of *Heterosigma akashiwo*. Journal of Phycology 52: 745-760.

Creed I.F., R. Cormier, K.L. Laurent, F. Accatino, J. Igras, P. Henley‡, K. B. Friedman, L. B. Johnson, J. Crossman, P. J. Dillon, and **C. G. Trick**. 2016. Formal integration of science and management systems needed to achieve a thriving and prosperous Great Lakes. Bioscience 66: 408-418.

Sorichetti R.J., I.F. Creed, and **C. G. Trick**. 2016. Iron and iron-binding ligands as cofactors that limit cyanobacteria biomass across a lake trophic gradient. Freshwater Biology 61: 146-157.

Wells, M.L., V. L. Trainer, T. J. Smayda, B. S. O. Karleson, **C. G. Trick**, R. M. Kudela, A. Ishikawa, S. Bernard, A. Wulff, D. M. Anderson, and W. P. Cochlan. 2015. Harmful algal blooms and climate change: Learning from the past and present to forecast the future. Harmful Algae 49:68-93.

Trainer, V.L., L. Moore, B.-T. Eberhart, B.D. Bill, W.P. Cochlan, C.E. Ikeda, C.O. Miles, and **C.G. Trick**. 2015. Characterizing toxic activity from *Heterosigma akashiwo*: a tale of two assays. In: A. Lincoln MacKenzie (Ed.) 2015. Marine and Freshwater Harmful Algae. Proceedings of the 16th International Conference on Harmful Algae, Wellington, New Zealand 27th-31st October 2014. Cawthron Institute, Nelson, New Zealand and International Society for the Study of Harmful Algae. 82-85.

Matheson, J.R., C.E. Ikeda and **C.G. Trick**. 2015. The effects of pH and nutrient stress on the toxicity of *Heterosigma akashiwo.* In A. Lincoln MacKenzie (Ed.) 2015. Marine and Freshwater Harmful Algae. Proceedings of the 16th International Conference on Harmful Algae, Wellington, New Zealand 27th-31st October 2014. Cawthron Institute, Nelson, New Zealand and International Society for the Study of Harmful Algae. 78-81.

Ikeda, C. E., W. P. Cochlan, C. M. Bronicheski, J. R. Matheson, V. L. Trainer, and **C. G. Trick**. 2015. The regulation of toxicity in laboratory cultures of Heterosigma akashiwo from Puget Sound, Washington. Proceedings of the 16th International Conference on Harmful Algae, Wellington, New Zealand 27th-31st October 2014. Cawthron Institute, Nelson, New Zealand and International Society for the Study of Harmful Algae. 74-77.

Donde, O.O., M. A. Wairimu, W. L. Aketch, S. A. William, **C. G. Trick**, and I. F. Creed. 2015. Faecal pollution and solar purification of community water sources within Lake Naivasha basin, Kenya. Journal of Water, Sanitation and Hygiene for Development 5: 252-260.

Henley, P., M. Lowthers, G. Koren, P. Tsimbiri Fedha, E. Russell, S. Van Uum, S. Arya, R. Darnell, I.F. Creed, and **C.G. Trick**, and J.R. Bend. 2014. Hair cortisol as a biomarker of stress in sub-Saharan African communities. Canadian Journal of Physiology and Pharmacology 92: 725-732.

Cornwell, E.R., J. O. Goyette, R. J. Sorichetti, D. J. Allan, D. R. Kashian, P. K. Sibley, W.D. Taylor, and **C. G. Trick.** 2015. Biological and chemical contaminants as drivers of change in the Great Lakes-St. Lawrence river basin. Journal of Great Lakes Research 41: 119-130.

Molot, L., S.B. Watson, I.F. Creed, **C.G. Trick**, S.K. McCabe, M.J. Verschoor, R.J. Sorichetti, C. Powe, J.J. Venkiteswan, and S.L. Schiff. 2014. A novel model for cyanobacteria bloom formation: The critical role of anoxia and ferrous iron. Freshwater Biology 59: 1323-1340.

Sorichetti, R.J., I.F. Creed, and **C.G. Trick**. 2014. Evidence for iron‐regulated cyanobacterial predominance in oligotrophic lakes. Freshwater Biology 59: 679-691.

Sorichetti, R.J., J.T. McLaughlin, I.F. Creed, and **C.G. Trick**. 2014. Suitability of a cytotoxicity assay for detection of potentially harmful compounds produced by freshwater bloom-forming algae. Harmful Algae 31: 177-187.

Sorichetti, R.J., I.F. Creed and **C.G. Trick**. 2014. Iron regulation of cyanobacterial growth in oligotrophic lakes. Freshwater Biology 59: 679-691.

Sorichetti, R.J., I.F. Creed, and **C.G. Trick**. 2014. The influence of iron, siderophores and refractory DOM on cyanobacterial biomass in oligotrophic lakes. Freshwater Biology 59: 1423-1436.

Sutton-Quaid, B. and **C.G. Trick**. 2013. Turbulence, shear stress and toxicity in *Heterosigma akashiwo.* . In: Kim, H.G., B. Reguera, G. Hallegraeff, C.K Lee, M.S. Han and J.K Choi (Eds). *Harmful Algae:*Proceedings of the 15th International Conference on Harmful Algae. International Society for the Study of Harmful Algae in Changwon, South Korea, Copenhagen, ISBN 978-87-990827-4-2.

Cochlan, W.P., V.L. Trainer, **C.G. Trick**, M.L. Wells, B.D. Bill, and B.-T. Eberhart. 2013. *Heterosigma akashiwo* in the Salish Sea: Defining growth and toxicity leading to fish kills. In: Kim, H.G., B. Reguera, G. Hallegraeff, C.K Lee, M.S. Han and J.K Choi (Eds). *Harmful Algae:*Proceedings of the 15th International Conference on Harmful Algae. International Society for the Study of Harmful Algae in Changwon, South Korea, Copenhagen, ISBN 978-87-990827-4-2.

Donde, O., A. Wairimu, A. Muia, W.A. Shivoga, **C.G. Trick**, and I.F. Creed. 2013. Bacterial contamination of borehole water between point-of-access and point-of-use in Naivasha, Kenya. Egerton Journal of Science and Technology13.

Laurent, K.L., and C. G. Trick. 2012. The stimulation of oxidative stress in temperature-stressed, iron-depleted cultures of symbiodinium (frudenthal) maintained under continuous growth. Journal of Phycology 48: S29.-S29.

Weston, A.J., W.C. Dunlap, J.M. Shick, A. Klueter, **C.G. Trick**, K. Iglic, A. Vukelic, and P.F. Long. 2012. A profile of an endosymbiont-enriched fraction of the coral *Stylophora pistillata* reveals proteins relevant to microbial-host interactions. Molecular and Cellular Proteomics 11(6): M111.015487.

Trainer, V.L., S.S. Bates, N. Lundholm, A.E. Thessen, N.G. Adams, W.P. Cochlan, and **C.G. Trick**. 2012. *Pseudo-nitzschia* physiological ecology, phylogeny, toxicity, monitoring and impacts on ecosystem health. Harmful Algae 14: 271-300.

van Lavieren, H., P. Sale, B. Kjerfve, and **C.G. Trick**. 2011. Managing the growing impacts of development on fragile coastal and marine ecosystems: lessons from the Persian Gulf. United Nations University Press, NY, 92 pp.

Possmayer, M., G. Berardi, B.F.N. Beall, **C.G. Trick**, N.P.A. Huner, and D.P. Maxwell. 2011. Plasticity of the psychrophilic green alga *Chlamydomonas raudensis.* Journal of Phycology 47: 1098-1109.

Shick, M., K. Iglic, M.L. Wells, **C.G. Trick** and W. Dunlap. 2011. Experimentally limiting iron availability to the coral *Stylophora* *pistillata* reduces photosynthetic efficiency and increases diatoxanthin in its zooxanthellae at high temperature: Implications of trace-metal limitation for coral bleaching. Limnology and Oceanography 56: 813-828.

Sale, P., D. Feary‡, J. Burt, A. Bauman‡, G. Cavalcante, K. Droullard, B. Kjerfve, E. Marquis‡, **C.G. Trick**, and H. van Lavieren. 2011. The growing need for sustainable ecological management of marine communities of the Persian Gulf. Ambio 40: 4-17.

**Trick, C.G.** 2011. Algal Chemostats. In: Comprehensive Biotechnology, 2nd edition, Volume 4, Agricultural and Related Biotechnolgies, 309-315, Elsevier Press, N.Y.

Powers, L.\*, I.F. Creed, and **C.G. Trick**. 2011. Sinking of *Heterosigma akashiwo* results in increased toxicity of this harmful algal bloom species. Harmful Algae13: 195-204.

**Trick, C.G.**, W.P. Cochlan, V.L. Trainer, M.L. Wells, and L. Pickell. 2010. Iron enrichment stimulates toxic diatom production in High Nitrate Low Chlorophyll areas. Proceedings of the National Academy of Sciences 107: 5887-5892.

Ling, C. and **C.G. Trick**. 2010. Expression and standardized measurement of hemolytic activity in *Heterosigma* *akashiwo*. Harmful Algae 9: 522-529.

Jacobs, D., D. White, N.C. Williams, R. Williams, UWO Ecosystem Health Research Team: J.R. Bend, B. Corbett, R. Darnell, C.P. Herbert, J. Hill, G. Koren, M.J. Rieder, K. Schoeman, K. Stephens, **C.G. Trick**, and S. Van Uum. 2009. Health Risk of the Walpole Island First Nation Community from Exposure to Environmental Contaminants: a Community-Based Participatory Research Partnership. 2009 Aboriginal Policy Research Conference, Ottawa, Ontario, March 9, 2009 (online paper).

Wells, M.L., **C.G. Trick**, W.P. Cochlan and B.F. Beall. 2009. Iron inputs and the persistence of iron limitation in the western subarctic pacific SEEDS II mesoscale fertilization experiment. Deep-Sea Research, Part II 56: 2810-2821.

Trainer, V.L., M.L. Wells, W.P. Cochlan, **C.G. Trick**, K.A. Baugh and N. Lundholm. 2009. A massive bloom of *Pseudo-nitzschia cuspidate* off the Washington State coast. Limnology and Oceanography 54: 1461-1474.

Trainer, V.L., B.M Hickey, E.J. Lessard, W.P. Cochlan, **C.G. Trick**, M.L. Wells, A. MacFayden and S.K. Moore. 2009. Variability of *Pseudo-nitzschia* and domoic acid in the Juan de Fuca eddy region and its adjacent shelves. Limnology and Oceanography 54:289-308.

Pickell, L.D., M.L. Wells, **C.G. Trick**, and W.P. Cochlan. 2008. A sea-going continuous culture system for investigating phytoplankton community response to macronutrient and trace metal manipulations. Limnology and Oceanography Methods 7: 21-32.

Tsuda, A and 43 others, including **C.G. Trick**. 2007. Evidence for the grazing hypothesis: Grazing reduces phytoplankton responses of the HNLC ecosystem to iron enrichment in the western subarctic Pacific (SEEDS II). Journal of Oceanography 63: 983-994.

Hickey, B., A. MacFadyen, W. Cochlan, R. Kudela, K. Bruland, and **C.G. Trick**. 2006. Evolution of chemical, biological, and physical water properties in the northern California Current in 2005: Remote or local wind forcing? Geophysical Research Letters 33: L22S02.

Kudela, R, W.P. Cochlan, and **C.G. Trick**. 2006. Impacts on phytoplankton biomass and productivity in the Pacific Northwest during the warm ocean conditions of 2005. Geophysical Research Letters 33: L22S02.

Wells, M.L., **C.G. Trick**, W.P. Cochlan and V. Trainer. 2005. Domoic acid: the synergy of iron, copper and the toxicity of diatoms. Limnology and Oceanography 50: 1905-1917.

Twiner, M.J., P. Chediac, S.J. Dixon, and **C.G. Trick**. 2005. Extracellular organic compounds from the ichthyotoxic red tide alga *Heterosigma akashiwo* elevate cytosolic calcium and induce apoptosis in Sf9 cells. Harmful Algae 4:789-800.

Hare, C.L., **C.G. Trick**, G.R. DiTullio, E.L. Rue, K.W. Bruland, and D.A. Hutchins. 2005. Phytoplankton community structure changes following simulated upwelled iron inputs in the Peru Upwelling region. Aquatic Microbial Ecology 38: 259-267.

Wilhelm, S.W., **C.G. Trick**, E.L. Rue, K. Bruland, and G.R. DiTullio. The response of marine phytoplankton community to a titration of bioavailable Fe in HNLC waters of the subtropical Pacific Ocean. Aquatic Microbial Ecology 32:75-85.

Eldridge, M.L., **C.G. Trick**, M. Alm, G.R. DiTullio, E.L. Rue, K.W. Bruland, D.A. Hutchins, and S.W. Wilhelm. 2004. The response of the marine phytoplankton community to a manipulation of bioavailable iron in HNLC waters of the subtropical Pacific Ocean. Aquatic Microbial Ecology 35: 75-91.

Twiner, M.J., S.J. Dixon, and **C.G. Trick**. 2004. Extracellular organics from cultures of *Heterosigma* *akashiwo* (Raphidophyceae) increase respiratory activity in mammalian cells. Harmful Algae 3: 173-182.

Wells, M.L. and **C.G. Trick**. 2003. Controlling iron availability to phytoplankton in iron-replete coastal waters. Marine Chemistry 50: 1-13.

Barbeau, K., E.L. Rue, **C.G. Trick**, K.W. Bruland, and A. Butler. 2003. Photochemical reactivity of sidereophores produced by marine heterotrophic bacteria and cyanobacteria by characteristic Fe(III) binding groups. Limnology and Oceanography 48: 1069-1090

Wilhelm, S.W., J.M. DeBruyn, O. Gillor, M.R. Twiss, K. Livingston, R.A. Bourbonniere, L.D. Pickell, **C.G. Trick**, A. Dean, and R.M.L. McKay. 2003. The effect of phosphorus amendments on present day plankton communities in Lake Erie. Aquatic Microbial Ecology 32: 275-85.

Molot, L.A., S.A. Miller, P.J. Dillon, and **C.G. Trick**. 2003. A simple method for assaying extracellular hydroxyl radical activity and its application to natural and synthetic waters. Canadian Journal of Fisheries and Aquatic Sciences 60:203-13.

Hutchins, D.A., C.E. Hare, R.S. Weaver, Y. Zhang, G.F. Firme, G.R. DiTullio, M.B. Alm, S.F. Riseman, J.M. Maucher, M.E. Geesey, **C.G. Trick**, G.J. Smith, E.L. Rue, J. Conn, and K.W. Bruland. 2002. Phytoplankton iron limitation in the Humboldt Current and Peru Upwelling. Limnology and Oceanography 47:997-1011.

Creed, I.F., **C.G. Trick**, L.E. Band, and I.K. Morrison. 2002. Characterizing the spatial heterogeneity of soil carbon and nitrogen pools in the Turkey Lakes Watershed: A comparison of regression techniques. Water, Air, and Soil Pollution FOCUS: Special Issue on the Turkey Lakes Watershed 2:63-80.

**Trick, C.G.**, I.F. Creed, M.F. Henry, and D.S. Jeffries. 2002. Longitudinal trends in diatom assemblages within pools and riffles in a forested watershed containing a series of interconnected lakes. Water, Air, and Soil Pollution FOCUS: Special Issue on the Turkey Lakes Watershed 2:103-128.

Twiner, M.J. and **C.G. Trick**. 2001. Toxic effects of *Heterosigma akashiwo* do not appear to be mediated by hydrogen peroxide. Limnology and Oceanography 46:1400-1405.

Macrellis, H.M., **C.G. Trick**, E.L. Rue, G. Smith, and K.W. Bruland. 2001. Collection and detection of natural iron-binding ligands from seawater. Marine Chemistry 76:175-187.

Gawel, J.E., **C.G. Trick**, and F.M.M. Morel. 2001. Phytochelatins are bioindicators of atmospheric metal exposure via direct foliar uptake in trees near Sudbury, Ontario, Canada. Environmental Science and Technology 35:2108-2113.

Twiner, M.J. and **C.G. Trick**. 2000. Possible physiological mechanisms for production of hydrogen peroxide by the ichthyotoxic flagellate *Heterosigma akashiwo*. Journal of Plankton Research 22:1961-1975.

Wilhelm, S.W., K. MacAuley, and **C.G. Trick**. 1998. Evidence for the importance of catechol-type siderophores in the iron-limited growth of a cyanobacterium. Limnology and Oceanography 43:992-997.

**Trick, C.G.** and M. Ray. 1997. Toxigenic bacterium related to a freshwater fish kill: activities *in vitro*. In: Harmful Algae, B. Reguera, J. Blanco, M.L. Fernandez, and T. Wyatt (eds.).

Wilhelm, S.W., D.P. Maxwell, and **C.G. Trick**. 1996. Changes in iron quotients, pigmentation, and growth response of *Synechococcus* PCC 7002 over a range of iron availabilities. Limnology and Oceanography 41: 89-97.

**Trick, C.G.**, S.W. Wilhelm, and C.M. Brown. 1995. Alterations in cell pigmentation, protein expression, and photosynthetic capacity of the cyanobacterium *Oscillatoria tenuis*, grown under low iron culture conditions. Canadian Journal of Microbiology 41:1117-1123.

**Trick, C.G.** and S.W. Wilhelm. 1995. Physiological changes in the coastal marine cyanobacterium *Synechococcus* sp. PCC 7002 exposed to low ferric ion levels. Marine Chemistry 50: 207-217.

Doucette, G.J. and **C.G. Trick**. 1995. Characterization of bacteria associated with different isolates of *Alexandrium tamarense*. In: Harmful Marine Algal Blooms, P. Lassus, G. Arzul, E. Erard-LeDenn, P. Gentien, and C. Marcaillou-LeBaut (eds.). Lavoisier Publ., Paris, France. p. 33-36.

Wilhelm, S.W. and **C.G. Trick**. 1995. Physiological profiles of *Synechococcus* (Cyanophyceae) grown in iron-limited continuous culture. Journal of Phycology 31: 29-35.

Wilhelm, S.W. and **C.G. Trick**. 1995. Vitamin-B12-limited continuous culture of *Synechococcus* PCC7002. Canadian Journal of Microbiology 41: 145-151.

Lewis, B.L., P.D. Holt, S.W. Taylor, S.W. Wilhelm, **C.G. Trick**, A. Butler and G.W. Luther III. 1995. Voltammetric estimation of iron (III) thermodynamic stability constants for catecholate siderophores isolated from marine bacteria and cyanobacteria. Marine Chemistry 50: 179-188.

Wilhelm, S.W. and **C.G. Trick**. 1994. Iron-limited growth of cyanobacteria: siderophore production is a common response mechanism. Limnology and Oceanography 39: 1979-1984.

Maxwell, D.P., S. Falk, **C.G. Trick**, and N.P. Huner. 1994. Growth at low temperature mimics high light accumulation in *Chlorella* *vulgaris*. Plant Physiology 105: 535-549.

**Trick, C.G.** and A. Kerry. 1992. Isolation and characterization of siderophores produced by cyanobacteria, *Synechococcus* sp. R2 and *Anabaena* *variabilis*. Current Microbiology 24: 241-245.

Brown, C.M. and **C.G. Trick**. 1992. Response of the cyanobacterium, *Oscillatoria* *tenuis*, to low iron environments: the effect on growth rate and evidence for siderophore production. Archives of Microbiology 157: 349-354.

Huner, N.P.A., **C.G. Trick** and M. Griffith. 1992. Photosynthetic acclimation in light and low temperature in freezing tolerant plants and psychrophilic microalgae. Advances in Low Temperature Biology 1: 181-220.

Creed, I.F., M. Havas, and **C.G. Trick**. 1990. Effects of arsenate on the growth of nitrogen- and phosphorus-limited *Chlorella* *vulgaris* (Chlorophyceae) isolates. Journal of Phycology 26:641-650.

Laudenbach, D., N.A. Straus, and **C.G. Trick**. 1989. Isolation and nucleotide sequence of the SODb gene from Anacystis nidulans R2. Molecular and General Genetics 216:455-461.

**Trick, C.G.** 1989. Hydroxamate-type siderophore production by gram-negative marine bacteria from oligotrophic waters. Current Microbiology 18:375-378.

Kerry, A., D.E. Laudenbach, and **C.G. Trick**. 1988. The influence of iron limitation and nitrogen source on growth and siderophore production by cyanobacteria. Journal of Phycology 24:566-571.

Stokes, P.M., P.G.C. Campbell, W.H. Schroeder, and **C.G. Trick**. 1988. Manganese in the Canadian Environment. National Research Council Canada. 177 p.

Boyer, G., A. Gillam, and **C.G. Trick**. 1987. Iron chelation and uptake. In: P. Fay and C. van Baalen (eds.) Cyanobacteria: A comprehensive review. Elsevier Science Publishers, p. 415-436.

**Trick, C.G.**, P.J. Harrison, and R.J. Andersen. 1984. Environmental factors influencing the production of an antibacterial metabolite from a marine dinoflagellate, *Prorocentrum* *minimum*. Canadian Journal of Fisheries and Aquatic Sciences 41: 423-432.

**Trick, C.G.**, R.J. Andersen, N.M. Price, and P.J. Harrison. 1983. Examination of hydroxamate-siderophore production by neritic eukaryotic marine phytoplankton. Marine Biology 75:9-17.

**Trick, C.G.**, R.J. Andersen, and P.J. Harrison. 1983. Prorocentrin: an extracellular siderophore produced by the marine dinoflagellate *Prorocentrum* *minimum*. Science 219:306-309.

**Trick, C.G.**, P.J. Harrison, and R.J. Andersen. 1981. Extracellular secondary metabolite production by the marine dinoflagellate *Prorocentrum* *minimum* in culture. Canadian Journal of Fisheries and Aquatic Sciences 38: 864-866.

**Trick, C.G.** 1979. The life cycle of *Platymonas* *impellucida* MacLachlan et Parke (Prasinophyceae) in culture. N.S. Institute Science 29: 215-222.

## Non-Reviewed Technical Reports and Monographs (since 2005):

Creed, I.F., **C.G. Trick,** E. Freeman, and B. Oakes. 2016. Protocol for the analysis of phytoplankton using the FlowCAM® from Fluid Imaging Technologies. Standard Operating Procedure 001-2016. Government of Ontario Ministry of the Environment and Climate Change.

Trainer, V.L., M.L. Wells, and **C.G. Trick**. 2015. S-HAB contributions to FUTURE. PICES Press 23: 25-27.

McBean, G., D. Cunningham, E. Riddell-Dixon, and **C.G. Trick**. 2010. The Security of Canada and Canadians. Implications of Climate Change. Monograph for the Government of Canada. 34 p.

**Trick, C.G.** and V.L. Trainer. 2009. PICES Seafood Safety Project: Guatemala Training Program. PICES Press 19:32-35.

**Trick, C.G.** and V.L. Trainer. 2009. PICES Harmful Algal Bloom Seafood Safety Project. PICES Press 17:5-8.

**Trick, C.G.** and E. Marquis. 2009. Harmful algal blooms and Nakheel Marine Properties. United Nations University, International Network on Water, Environment and Health. 14 pp.

**Trick, C.G.** and E. Marquis. 2009. Marine Water Quality Measurements of Palm Jumeirah for Year 2 (June 2008 to Sept 2009). United Nations University – International Network on Water, Environment, and Health. 83 pp.

Usseglio, P., E. Marquis, G. Cavalcante, J. Burt, D. Feary, A. Bauman, K. Drouillard, B. Kjerfve, **C.G. Trick** and P. Sale. 2009. Methods Manual: Environmental Monitoring Program for Coastal Marine Ecosystems. United Nations University – International Network on Water, Environment, and Health. 190 pp.

Sale, P., P. Usseglio, E. Marquis, G. Cavalcante, J. Burt, D. Feary, A. Bauman, K. Drouillard, B. Kjerfve, and **C.G. Trick.** 2008. Ecological Studies on Coastal Marine Developments. Synopsis. United Nations University – International Network on Water, Environment, and Health. 171 pp.

**Trick, C.G.** and E. Marquis. 2008. Marine Water Quality Measurements of Palm Jumeirah for Year 1 (June 2007 to June 2008). United Nations University – International Network on Water, Environment, and Health. 61 pp.

Bend, J.R., R. Darnell, C.P. Herbert, G. Koren, and **C.G. Trick**. 2006. Contaminant study report on the Walpole Island First Nation Community. 77 pp. Report to Health Canada and the Walpole Island First Nation.

Bend, J.R., B.A. Corbett, R. Darnell, C.P. Herbert, G. Koren, N. Kowal, M.J. Rieder, C. Stephens, and **C.G. Trick** (UWO) and L. Harrison, J. Peters, and D. White (Walpole Island First Nation): Feasibility of Conducting Epidemiological Studies to Assess the Health Risk of the Walpole Island First Nation Community from Exposure to Environmental Contaminants. 82 pp, May 31, 2005; Report to Health Canada and the Walpole Island First Nation.

**Trick, C.G.** 1977. Environmental study of the Bay of Fundy and waters of the Fundy approaches. Special Manuscript. Atlantic Regional Laboratory, National Research Council. 185 pp.

## Publications In Review

Trick, C.G., W.P. Cochlan, M.L. Wells and V.L. Trainer. (submitted). The successional formation and release of domoic acid in a *Pseudo-nitzschia* bloom in the Juan de Fuca Eddy: a drifter study. Harmful Algae

Allaf, M.M. and C.G. Trick. (submitted). Multiple-stressor design-of-experiment (DOE) and one-factor-at-a-time (OFAT) observations defining *Heterosigma akashiwo* growth and toxicity. Harmful Algae.

# PRESENTATIONS

## Invited, Plenary and Keynote Presentations:

**Trick, C.G.** 2015. Comparing the physiologies and toxicities in *Heterosigma akashiwo*: An east-west comparison. PICES Annual Meeting, October 15, Qingdao, China. [Invited].

**Trick, C.G.** 2012. Ciguatera and ecosystem health. North Pacific Marine Science Organization International Symposium, May 13-20, Yeosu, Korea. [Invited]

**Trick, C.G.** 2012. The changing environment of the Persian Gulf. United Nations Conference on the Environment. UN Headquarters, NY. [Invited]

**Trick, C.G** and B. Sutton-Quaid**.** 2011. Are fish-killing flagellates a sign of things to come? North Pacific Marine Science Organization, October 14-23, Khabarovsk, Russia. [Invited Keynote]

**Trick, C.G.** 2011. The road to success: Lake Naivasha Sustainability Project. Conference on Tropical and Subtropical Agricultural and Natural Resource Management. October 5-7, Bonn, Germany. [Invited]

**Trick, C.G.** 2011. So they call it a toxin. Gordon Research Conferences: Mitigation of Natural Toxin Events in a Changing World, Waterville, ME, June 12–17, 2011 [Invited, Plenary].

**Trick, C.G.** 2011. What we know (and do not know) about *Heterosigma* fish kills. International Workshop on Fish-Killing Marine Algae, April 10-11, Oslo, Norway. [Invited]

**Trick, C.G.** 2010. Can business be sustainable without understanding ecosystem services? Distinguished Guest Speaker. Richard Ivey Ph.D. Academy on Sustainability.

**Trick, C.G.** and W. Shivoga. 2008. An ecosystem health – sustainability project for Lake Naivasha, Kenya. EcoHEALTH Symposium, Merida, Mexico. Nov. 2008 [Invited]

**Trick, C.G.** 2008. A historical overview of *Karenia* and *Prorocentrum* occurrences in North American coastal waters. PICES Annual Meeting, Dalian, China. Oct. 2008. [Invited]

**Trick C.G.** 2007. Ecosystem Health and the new Sustainability. W.P. Fyfe Conference on Sustainability. October 2007. [Invited Keynote Speaker]

**Trick C.G.** 2007. Ecosystem Health, Global Health and the search for visionaries. National Student Sustainability Conference. October 2007. [Invited Keynote Speaker]

**Trick, C.G.** and V.L. Trainer. 2006. *Cochlodinium* and *Dinophysis* in western U.S. and Canada. PICES Annual Meeting: Eastern Pacific Boundary Conditions. Yokohama, Japan, October. [invited]

**Trick, C.G.** and M.L. Wells. 2005. Iron, copper and domoic acid production of diatoms. PICES Annual Meeting. "Complexity of grow-out experiments: further iron stimulation of communities from iron fertilized patch." SEEDS-II Workshop on the second iron fertilization of the North Pacific. Institute of Ocean Research, Tokyo. [Invited]

Roy, E., M.L. Wells, **C.G. Trick** and W.P. Cochlan. 2005. "Iron oxidation status during the SEEDS II mesoscale experiment and its potential biological implications. SEEDS-II Workshop on the second iron fertilization of the North Pacific. Institute of Ocean Research, Tokyo. [Invited]

**Trick, C.G.** 2005. "Occurrence and effects of *Alexandrium* species in the North Pacific". PICES (North Pacific Marine Science Organization) Annual Meeting. Vladivostok, Russia. [Invited plenary]

**Trick, C.G.**, W.P. Cochlan. M. Wells, 2005. "Domoic acid: the synergy or iron, copper, and toxicity in diatoms". PICES (North Pacific Marine Science Organization) Annual Meeting. Vladivostok, Russia. [Invited]

**Trick, C.G.**, M.L. Wells and W.P. Cochlan. 2005. Domoic acid: the synergy or iron, copper, and toxicity in diatoms. GEOHAB Eutrophication and HABs, Washington, DC. [Invited]

**Trick, C.G.** 2005. Community structure of phytoplankton after iron fertilization: a comparison of SEEDS-1 and SEEDS-2. Institute of Ocean Research, Tokyo [Invited]

**Trick, C.G.**, V.L. Trainer, B.M. Hickey, W.P. Cochlan, E. Lessard, and M.L. Wells. 2005. A seasonal eddy and a coastal upwelling region provide insights to HAB development. Ocean Sciences Conference. UNESCO, Paris. [Invited Plenary]

Wells, M.L., **C.G. Trick**, and M. Hughes. 2004. The synergy of iron, copper and the toxicity of diatoms. Ocean Sciences / The Oceanic Society Meeting. Honolulu, HI. February. [Invited]

**Trick, C.G.** 2004. Altered physiology leading to cell death with the addition of iron. PICES/SOLAS Iron Workshop, Victoria, B.C. February. [Invited]

**Trick, C.G.** and M.L. Wells. 2003. Iron Limitation of Natural Phytoplankton Assemblages in Pacific Northwest ECOHAB *Pseudo-nitzschia* Blooms. PICES South Korea, October. [Invited]

Wells, M.L., W.P. Cochlan and **C.G. Trick**. 2003. Limitation of natural phytoplankton assemblages associated with the Pacific Northwest ECOHAB *Pseudo-nitzschia* blooms. US ECOHAB Meeting, Woods Hole MA. December [Invited].

**Trick, C.G.** 2002. Nitric oxide detection in marine phytoplankton: the role of iron in greenhouse gas emission. Gordon Research Conference on Environmental BioInorganic Chemistry, New Hampshire, June. [Invited]

**Trick, C.G.** and M.L. Wells. 2002. Iron stress and growth of toxigenic diatoms: a role for a eukaryotic siderophore. Gordon Research Conference on Ocean Chemistry, Oxford (UK), August. [Invited]

**Trick, C.G.** and M.J. Twiner. 2001. Putative toxins from the marine fish killing phytoplankter. US ECOHAB Symposium. Woods Hole MA, December. [Invited]

Hutchins, D., F. Pustizzi, C. Hare, G. DiTullio, and **C.G. Trick**. 2001. Upwelled nutrient and iron effects on phytoplankton community structure investigated using shipboard natural community chemostat systems. Ocean Sciences Meeting, Albuquerque, NM. February. [Invited]

**Trick, C.G.** 2000. Physiological changes to prokaryotes in the central North Pacific gyre. PICES Workshop, Tokyo, Japan, October. [Invited]

Macrelis, H., E.L. Rue, **C.G. Trick** and K. Bruland. 2000. Isolating natural Fe-binding ligands from California Coastal upwelling system. Special Session. Ocean Sciences Meeting, San Antonio TX. February. [Invited]

## Invited Lectures, Seminars and Colloquium Presentations:

**Trick, C.G.** 2014. Managing the built coastal environments: Dubai’s “Palms” & Scenario Analysis. San Francisco State University. April 3.

**Trick, C.G.,** V. Trainer, M.L. Wells and W.P. Cochlan. 2013. Marine toxins, seafood safety and ecosystem health – Sato Umi in action. United Nations University – Institute for Water, Environment and Health. Toronto, Ontario, March.

**Trick, C.G.** 2011. *Heterosigma* blooms – the fish killer of Puget Sound. University of Washington. June 5.

**Trick, C.G.** 2011. Seafood Safety and the Pacific Rim communities. University of Washington. June 4.

**Trick, C.G.** 2011. Lessons learned from the Gulf of Mexico oil spill – Learning Unlimited, London, Ontario. November 10

**Trick, C.G.** 2011. Lessons learned from the Gulf of Mexico oil spill. UWO Alumni – Sarnia, March.

**Trick, C.G.** 2010. The state of the oceans. Ivey Symposium on Environment and Sustainability, London, ON. November 15.

**Trick, C.G.** 2010. Filter your thinking: safe water, safe health. UWO Schulich School of Medicine and Dentistry Mini-Med School, London, ON.

**Trick, C.G.** 2010. The science of ocean health. UWO STEP, Student Development Series.

**Trick, C.G.** 2010. Lessons learned from the Gulf of Mexico oil spill, Classes Without Quizzes. London, ON.

**Trick, C.G.** 2010. Lessons learned from the Gulf of Mexico oil spill. UWO Alumni – Toronto, October.

**Trick, C.G.** 2010. Water quality and sustainability: the critical connection to Ecosystem Health, Ivey School of Business, London, ON.

**Trick, C.G.** 2009. When people poison their environment. Ivey Symposium on Ecosystem Health, London, ON.

**Trick, C.G.** 2009. The management of coastal resources – lessons from Dubai. School of Marine Sciences, University of Maine.

**Trick, C.G.** 2008. The role of iron and other metals in coal bleaching on the Great Barrier Reef, Australia Institute for Marine Sciences, Townsville, QLD.

**Trick, C.G.** 2006. Ecosystem Health and the Great Lakes, Great Lakes Research Institute. WATER series. University of Wisconsin.

**Trick, C.G.** 2006. The reality of climate change. UWO Alumni – Toronto Branch.

**Trick, C.G.** 2006. Ecosystem Health and Ocean Health, School of Marine Sciences, University of Maine.

**Trick, C.G.** 2005. Harmful algal ecology: the West Side story, Romberg Tiburon Center for Environmental Studies, SFSU.

**Trick, C.G.** 2005. Ecosystem Health: the good, bad and ugly. Great Lakes Institute for Environmental Research, University of Windsor.

**Trick, C.G.** 2003. The consequences of iron fertilization of the ocean. Department of Biology/Marine Biology. University of Tokyo.

**Trick, C.G.** 2003. The consequences of iron fertilization of the ocean. Japanese Institute for Oceanography, Tokyo. April.

**Trick, C.G.** 2001. From HNLC to HABs: the special role of iron Institute of Marine Sciences, University of California, Santa Cruz, CA

**Trick, C.G.** 2001. From HNLC to HABs: the special role of iron, Romberg-Tiberon Center for Environmental Studies, CA. January.

**Trick, C.G.** 2001. From HNLC to HABs: the special role of iron, Department of Biology, University of Maine, Orono, ME.

**Trick, C.G.** 2000. Coastal/Oceanic difference in iron acquisition in marine phytoplankton. University of Delaware, Lewes, DE.

**Trick, C.G.** 2000. Physiological changes to prokaryotes in the central North Pacific gyre. PICES Workshop, Tokyo, Japan.

**Trick, C.G.** 1999. Pumping iron in the California upwelling ecosystem. Department of Biology, University of Waterloo, March.

**Trick, C.G.** 1999. Pumping iron in the California upwelling ecosystem. Department of Plant Sciences, University of Western Ontario.

**Trick, C.G.** 1999. Getting iron the hard way: Lessons from cyanobacteria. Center for Environmental BioInorganic Chemistry (CBIC) Summer Workshop, Princeton NJ.

**Trick, C.G.** 1999. Hydrological controls on the distribution and export of dissolved organic carbon and nitrogen from a forested catchment. Upper Lakes Environmental Research Network workshop, Sault Ste. Marie.

**Trick, C.G.** 1998. Prokaryotes, siderophores and ligands. Scientific Council for Ocean Research (SCOR), Amsterdam, Netherlands.

**Trick, C.G.** 1998. Manipulating Fe availability in near-shore waters: a toll for ascertaining how subtle changes in Fe availability affect marine ecosystems. Scientific Council for Ocean Research (SCOR), Amsterdam, Netherlands.

**Trick, C.G.** 1998. Biogeochemistry of iron in seawater. Scientific Committee for Oceanic Research (SCOR) Special Symposium, Amsterdam, Netherlands.

**Trick, C.G.** 1996. Role of iron in harmful algal blooms. NATO Advanced Study Institute, Bermuda. June.

**Trick, C.G.** 1996. The role of bacteria in Harmful Algal Blooms: Should we call them Harmful Bacterial Blooms? Department of Oceanography, University of British Columbia, Vancouver, B.C.

**Trick, C.G.** 1995. Iron-regulated ecology of oceans. Department of Biological Sciences, University of Windsor, Windsor, ON.

**Trick, C.G.** 1995. The role of bacteria in Harmful Algal Blooms: Should we call them Harmful Bacterial Blooms? Department of Biology, McGill University, Montreal, PQ

**Trick, C.G.** 1995. On the chemistry and physics of siderophore-mediated iron uptake by marine microorganisms. American Society of Limnology and Oceanography Special Symposium on Ocean Biogeochemistry, Reno, Nevada, June.

**Trick, C.G.** 1994. Iron-controlled physiology in marine cyanobacteria. Special Symposium on Iron Chemistry in the Oceans. Bermuda Biological Marine Research Station, May.

**Trick, C.G.** 1994. Fish kills in acidic lakes: Mystery! Aquatic Sciences Seminar, Massachusetts Institute of Technology, Cambridge.

**Trick, C.G.** 1994. Iron demands and siderophore production in a filamentous cyanobacterium. Bermuda Research Conference, Bermuda Biological Station.

**Trick, C.G.** 1992. Iron regulated populations in pelagic water. Marine Science Center, SUNY - Stony Brook, NY.

**Trick, C.G.** 1991. The role of iron in cyanobacterial ecology. Institute for Marine Resources, Scripps Institute of Oceanography, University of California, La Jolla, CA.

**Trick, C.G.** 1991. The role of iron in cyanobacterial ecology. National Science Foundation/National Research Council (US) Special Symposium on the Productivity of the World's Oceans. Lake San Marcos, CA.

**Trick, C.G.** 1991. The role of iron in cyanobacterial ecology. Department of Microbiology, Queens University, Kingston, Ontario.

**Trick, C.G.** 1991. The role of iron in cyanobacterial ecology. Department of Biochemistry, University of Waterloo.

**Trick, C.G.** 1991. Iron, siderophores and ocean chemistry. Marine Inorganic Symposium, Fourth Chemical Congress of North America, Columbia University, New York, NY.

**Trick, C.G.** 1991. Iron, siderophores and ocean chemistry. Aquatic Sciences Seminars, Massachusetts Institute of Technology, Cambridge.

**Trick, C.G.** 1991. Iron, siderophores and ocean chemistry. Graduate School of Oceanography, University of Rhode Island.

**Trick, C.G.** 1991. Role of microorganisms in the cycling of iron. Environment Alberta, Edmonton, Alberta.

**Trick, C.G.** 1991. Iron, siderophores and ocean chemistry. Bigelow Lab for Ocean Sciences, West Boothbay Harbor, ME.

**Trick, C.G.** 1991. The role of iron and siderophores in cyanobacterial ecology. Woods Hole Oceanographic Inst., Woods Hole, MA.

**Trick, C.G.** 1989. Role of microorganisms in the cycling of iron in pelagic waters. MIT-WHOI Oceanography series, Cambridge, MA.

**Trick, C.G.** 1989. Gaia and environmental perspectives, Environment Week, UWO.

**Trick, C.G.** 1986. Iron limitation and the production of siderophores. Gordon Research Conference, Environmental Science.

**Trick, C.G.** 1986. Chemistry-Biota: role of extracellular microbial processes. Gordon Research Conference, Environmental Science.

**Trick, C.G.** 1984. Iron regulated cell processes in Rhodotorula, Asilomar Research Conference.

**Trick, C.G.** 1983. How do siderophores regulate toxic metals. Department of Biology, University of Quebec, Ste. Foy, PQ.

**Trick, C.G.** 1983. Marine microbial iron cycles. Department of Oceanography, Dalhousie University.

**Trick, C.G.** 1983. Biotechnology and marine resources. Parsons Lab, Massachusetts Institute of Technology, Cambridge, MA.

**Trick, C.G.** 1983. Microbial growth at low iron concentrations. Parsons Lab, Massachusetts Institute of Technology, Cambridge, MA.

**Trick, C.G.** 1983. Iron regulation of marine productivity. Department of Biochemistry, University of California, Berkeley.

## Contributed Presentations:

Post-docs‡; graduate students; undergraduate students\*

2017

Mehdizadeh Allaf M., and **C.G. Trick**. 2017. Cumulative effect of environmental stressors on the growth and toxicity of *Heterosigma akashiwo*. NSERC Create ABATE Ontario Lakes Meeting III, April 10, Toronto, ON.

Erratt K.J., I.F. Creed, and **C.G. Trick**. 2017. Are cyanobacteria gluttons for urea? NSERC Create ABATE Ontario Lakes Meeting III, April 10, Toronto, ON.

Mehdizadeh Allaf M., and **C.G. Trick**. 2017. Multiple-stressor observations defining *Heterosigma akashiwo* growth and toxicity. EnviroCon, March 8, London, ON.

Erratt K.J., I.F. Creed, and **C.G. Trick**. 2017. Urea as an effective nutrient source for cyanobacteria. Fallona Family Interdisciplinary Research Showcase, January 16, London, ON. (poster)

Mehdizadeh Allaf M, C.G. Dulal-Whiteway, and **C.G. Trick**. Yeast cell as a bio-model for measuring the toxicity of harmful algal blooms (HABs). Fallona Family Interdisciplinary Research Showcase, January 16, London, ON. (poster)

Erratt K.J., I.F. Creed, and **C.G. Trick**. 2017. Urea as an effective nutrient source for cyanobacteria. Canadian Conference for Fisheries Research/Canadian Limnologist Society. January 5-8, Montreal, QC.

Enanga E.E., K.J. Erratt, Y. Xu, I.F. Creed, **C.G. Trick**. 2017. Iron and Molybdenum regulation of toxin production in a freshwater cyanobacterium *M. aeruginosa*. Canadian Conference for Fisheries Research - Society of Canadian Limnologists Meeting. January 5-8, Montreal, QC.

Esbri Senar O., E. Freeman, I.F. Creed, and **C.G. Trick**. 2017. Brownification of surface waters promotes cyanobacteria in oligotrophic lakes. Canadian Conference for Fisheries Research - Society of Canadian Limnologists Meeting. January 5-8, Montreal, QC.

2016

Mehdizadeh Allaf M., C.G. Dulal-Whiteway, and **C.G. Trick**. 2016. HABs toxicity measurement by using yeast cells, 7th Annual Biology Graduate Research Forum, October 13-14, London, ON.

Paltsev, A., F. Accatino‡, **C. G. Trick**, and I.F. Creed. 2016. Ecological resilience of temperate lakes to the formation of algal blooms. The Water Initiative for the Future (WatIF): International Graduate Student Conference, July 27-29, Kingston, ON.

Esbri Senar, O., I.F. Creed, K. Kidd, and **C. G. Trick**. 2016. Dissolved organic matter promotes cyanobacterial dominance in oligotrophic lakes. International Association of Great Lakes Research Meeting, June 6-10, Guelph, ON.

Dulal-Whiteway, C., and C.G. Trick. The Fish-Killing Activities of *Prymnesium parvum* (2016, June).  International Association of Great Lakes Research Meeting, June 6-10, Guelph, ON.

Mehdizadeh Allaf M., C.G. Dulal-Whiteway, and **C.G. Trick**. 2016. Yeast cell as a bio-model for measuring the toxicity of harmful algal blooms (HABs). International Association of Great Lakes Research Meeting, June 6-10, Guelph, ON.

Erratt, K., Y. Xu, E. Enanga‡, I.F. Creed, and **C. G. Trick**. 2016. Iron and molybdenum interactions as micronutrients for the growth of a freshwater cyanobacterium, *Microcystis aeruginosa.* Association for the Sciences of Limnology and Oceanography 2016 Summer Meeting, June 5-10, Santa Fe, NM.

Esbri Senar, O., I.F. Creed, K. Kidd, and **C. G. Trick**. 2016. Phytoplankton vs. forests: Who is feeding feeding aquatic food webs. Symposium on Sustainable Agricultural Systems in the Great Lakes. April 14, London, ON. (poster)

Mehdizadeh Allaf M., and **C.G. Trick**. 2016. The effect of vitamin limitation on the toxicity of fish-killing flagellate, *Heterosigma akashiwo*. Fallona Family Interdisciplinary Research Showcase, London, ON.

2015

Esbri Senar O, I.F. Creed, K. Kidd, and **C. G. Trick**. 2015. Dissolved organic matter promotes cyanobacterial biomass in oligotrophic lakes. Fallona Family Interdisciplinary Showcase 2015. December 8, 2015. Western University, ON.

Creed, I.F., P. Henley‡, P. Dillon, L. Molot, F. Pick, J. Smol, **C. G. Trick**, and D. Walters D. 2015. Creating a new knowledge class to address the algal bloom crisis: The ABATE training program. North American Lake Management Society. 35th International Symposium. November 17-20, Saratoga Springs, NY. (poster)

Molot, L., S. Watson, I.F. Creed, S. McCabe, M. Verschoor, R. Sorichetti, C. Powe, C. Venkiteswaran, **C. G. Trick**, and S. Schiff. 2015. Preventing cyanobacteria bloom formation: the critical role of anoxia and ferrous iron. North American Lake Management Society. 35th International Symposium. November 17-20, Saratoga Springs, NY.

Xu, Y., K. Erratt, B. Czikkel, I.F. Creed and **C. G. Trick**. 2015. (Ir)replaceable Molybdenum as a micronutrient for growth of freshwater cyanobacterium, *Microcystis aeruginosa*. North American Lake Management Society. 35th International Symposium. November 17-20, Saratoga Springs, NY.

Erratt, K., I.F. Creed, and **C.G. Trick**. 2015. Do cyanobacterial cells have allelopathic effects? Assessment of oligotrophic lakes in Ontario. North American Lake Management Society. 35th International Symposium. November 17-20, Saratoga Springs, NY.

Oakes, B.C.\*, E. C. Freeman\*, I.F. Creed, and **C. G. Trick**. 2015. Towards an operational detection of sub-visible (biological and anthropogenic) particles in water quality assessment. North American Lake Management Society. 35th International Symposium. November 17-20, Saratoga Springs, NY.

Gilhooly, L., I. Colquhoun, and **C. G. Trick**. 2015. The Effect of Tourists on the Behaviour and Parasite Load of Long-tailed Macaques in Sabah, Malaysia. 43rd Annual Meeting of the Canadian Association for Physical Anthropology, October 28, Winnipeg, Canada.

Creed I.F., and **C. G. Trick**. 2015. Climate effects on wetland soils create the “perfect storm” for toxic cyanobacteria blooms: fresh perspectives on an old problem. Society of Canadian Limnologists, January 8-11, Ottawa, ON.

2014

Sorichetti, R.J., I.F. Creed, and **C.G. Trick**. 2014. Iron as a cofactor that limits the promotion of cyanobacteria in lakes across a trophic gradient. American Geophysical Union Fall Meeting, December 15-19, San Francisco, CA.

Ikeda, C.I., C. Bronicheski, W.P. Cochlan, and **C.G. Trick**. 2014. The induction of toxicity in laboratory cultures of *Heterosigma akashiwo* from Puget Sound, WA.International Conference on Harmful Algal Blooms, October 24-November 1. Wellington, New Zealand.

**Trick, C.G.,** J. Matheson, C.I. Ikeda and W.P. Cochlan. 2014. Multiple stressors on the potential toxicity of *Heterosigma akashiwo* under future ocean conditions. International Conference on Harmful Algal Blooms, October 24-November 1. Wellington, New Zealand.

Trainer, V.L., L. Moore, B.-T. Eberhart, B.D. Bill, W.P. Cochlan, C.I. Ikeda, M.L. Wells, C. O. Miles, and **C.G. Trick**. Characterizing toxic activity from *Heterosigma akashiwo*: a tale of two assays. International Conference on Harmful Algal Blooms, October 24-November 1. Wellington, New Zealand.

Molot, L.A., S.B. Watson, I.F. Creed, **C.G. Trick**, S.K. McCabe, M.J. Verschoor, J.J. Venkiteswan, and C. Powe. Preventing cyanobacteria blooms: The critical role of anoxia and ferrous iron. Eastern Canadian Symposium on Water Quality Research, October 17, 2014, Montreal, PQ.

Molot, L.A., S.B. Watson, I.F. Creed, **C.G. Trick**, S.K. McCabe, M.J. Verschoor, R.J. Sorichetti, C. Powe, J.J. Venkiteswan, and S.L. Schiff. 2014. A novel model for cyanobacteria bloom formation: the critical role of anoxia and ferrous iron. International Association for Great Lakes Research Conference, May 26-30, Hamilton, ON.

Matheson, J.R., W.P. Cochlan, and **C.G. Trick**. 2014. Multiple stressors on the potential toxicity of *Heterosigma akashiwo*, a fish-killing flagellate in the Salish Sea. Salish Sea Ecosystem Conference, April 30-May 2, Seattle WA.

Ikeda, C.I., C.M. Bronicheski, W.P. Cochlan, and **C.G. Trick**. 2014. The combinatorial effect of salinity and temperature on cellular permeability and toxicity of *Heterosigma akashiwo*, from Puget Sound, WA. Ocean Sciences Meeting, February 23-28, Honolulu, HI.

Du, X., I.F. Creed, and **C.G. Trick**. 2014. Cyanobacterial predominance in freshwater eutrophic lakes is linked to iron scavenging strategy that uses siderophores and toxins. Ocean Sciences Meeting, February 23-28, Honolulu, HI.

2013

**Trick, C.G.** 2013. Alternative assessment of the economics of HABs. North Pacific Marine Science Organization Annual Meeting, October 11-20, Nanaimo, BC.

Sorichetti, R.J., I.F. Creed, and **C.G. Trick**. 2013. Dissolved organic matter influences Fe-binding ligand availability for cyanobacteria in oligotrophic Ontario lakes. Abstract EGU2013-13280 presented at 2013 European Geophysical Union General Assembly, April 7-12, Vienna, Austria.

Sorichetti, R.J., I.F. Creed, and **C.G. Trick**. 2013. Dissolved organic matter influences Fe-binding ligand availability for cyanobacteria in oligotrophic Ontario lakes. Northeastern Ecology Research Cooperative (NERC) Meeting, March 19-20, Saratoga Springs, NY.

**Trick, C.G.**, V. Trainer, M.L. Wells and W.P. Cochlan. 2013. Marine toxins, seafood safety and ecosystem health – Sato Umi in action. United Nations University – Institute for Water, Environment and Health. March, Toronto, Ontario.

McLaughlin, J.T., I.F. Creed, and **C.G. Trick**. 2013. Application of cytotoxicity assays to detect potential harmful bioactive compounds produced by freshwater cyanobacteria and chrysophytes. American Society of Limnology and Oceanography Aquatic Sciences Meeting, February 17-22, New Orleans, LA.

2012

Matheson, J.R., W.P. Cochlan, **C.G. Trick**, and M.L. Wells. 2012. Multiple stressors leading to fish kills: *Heterosigma sp.,* Salish Sea Conference, Vancouver, BC, November.

**Trick, C.G.**, W.P. Cochlan, V.L. Trainer, and M.L. Wells. 2012.  *Heterosigma* in Puget Sound: toxicity measurements on natural populations. 15th International Conference on Harmful Algae, November, Changwon, Korea.

**Trick, C.G.** and 10 others. 2012. A 5-year inter/multi disciplinary study off the Washington State/British Columbia coasts. North Pacific Marine Science Organization (PICES) Annual Meeting, October 12-21, Hiroshima, Japan.

**Trick, C.G.**, D. Beausoleil. 2012. HABs and Ciguatera fish poisoning: Emerging methodological perspectives. North Pacific Marine Science Organization (PICES) Annual Meeting, October 12-21, Hiroshima, Japan.

Sorichetti, R.J., I.F. Creed, and **C.G. Trick**. 2012. Iron regulation of cyanobacterial growth in oligotrophic lakes. American Society of Limnology and Oceanography (ASLO) Aquatic Sciences Conference, July 8-13, Lake Biwa, Otsu, Japan.

2011

**Trick, C.G.**, V. Hewlett, and P. Kshatriya. 2011. Contrasting nutrient effects on haemolytic activity produced by harmful algal bloom species: *Heterocapsa pygmaea* and *Heterosigma* *akashiwo*. Sixth Symposium on Harmful Algae in the US, November 13-17, Austin, TX.

Cochlan, W.P., V.L. Trainer, **C.G. Trick**, and M.L. Wells. 2011. *Heterosigma akashiwo* ECOHAB activities in Puget Sound, Washington: defining growth and toxicity leading to fish kills. Sixth Symposium on Harmful Algae in the US, November 13-17, Austin, TX.

Hendrickson, J.L., V.L. Trainer, **C.G. Trick**, W.P. Cochlan, and M.L. Wells. 2011. Marketing science to the social media savvy. Sixth Symposium on Harmful Algae in the US, November 13-17, Austin, TX.

Cochlan, W.P., V. L. Trainer, **C.G. Trick**, and M.L. Wells. 2011. *Heterosigma* ECOHAB activities in Puget Sound: defining growth and toxicity leading to fish kills. Salish Sea Ecosystem Conference, October 25-27, Vancouver, BC.

McLaughlin, J.T., A.T. Spargo, I.F. Creed, and **C.G. Trick**. 2011. Evaluating wetland health with PARAFAC analysis of DOM EEMs. Gordon Research Conference on Catchment Sciences: Catchments as Sentinels of Global Change, July 10-15, Bates College, Lewiston, Maine, USA.

Sorichetti, R.J., I.F. Creed, S.E. Bayley, and **C.G. Trick**. 2011. Defining the ‘sweet spot’: N:P and iron conditions promoting cyanobacterial proportion in two contrasting climatic and hydrologic regions of Canada. Gordon Research Conference on Catchment Sciences: Catchments as Sentinels of Global Change, July 10-15, Bates College, Lewiston, Maine, USA.

**Trick, C.G.** and V.L. Trainer. 2011. PICES seafood monitoring and data efforts. International Conference for the Exploration of the Seas Annual Meeting, Sweden.

2010

Sorichetti, R.J., I.F. Creed, S.E. Bayley, and **C.G. Trick**. 2010. Hydro-biogeochemical linkages and their influence on the timing and magnitude of harmful cyanobacterial blooms: a tale of two landscapes. American Society of Limnology and Oceanography (ASLO) Summer Meeting, June 6-11, Santa Fe, NM.

Petri, B. and **C.G. Trick**. 2010. UV Inactivation of Phytoplankton: Results between species and between analytical methods. Water Quality Technology Conference, November 13-18, Savannah, GA.

Trainer, V.L., M.L. Wells, **C.G. Trick**, W.P. Cochlan, B.D. Bill, and J. Herndon. 2010. Enhancing seafood safety monitoring in developing countries. 14th International Conference on Harmful Algae, November, Crete, Greece.

Beall, B.F., **C.G. Trick**, M.L. Wells, and W.P. Cochlan. 2010. Low sinking rates of *Pseudo-nitzschia*: a competitive feature contributing to the development and maintenance of blooms. American Society for Limnology and Oceanography, Puerto Rico.

Wells, M.L., **C.G. Trick**, and W.P. Cochlan. 2010. A drifter study of a toxic *Pseudo-nitzschia* bloom from the Juan de Fuca eddy in the Pacific Northwest – a natural competition reactor. American Society for Limnology and Oceanography, Puerto Rico.

Pickell, L.D., M.L. Wells, and **C.G. Trick**. 2010. Dissolved domoic acid: a competitive advantage for *Pseudo-nitzschia* in coastal and in off-shore NHCL waters. American Society for Limnology and Oceanography, Puerto Rico.

Petri, B., L. Sealey, and **C.G. Trick**. 2010. UV as an ecological invasion barrier: UV inactivation of *Myxobolus cerebralis*, VHSV, and marine phytoplankton. American Water Works Association Annual Meeting, San Diego, CA.

**Trick, C.G.** 2010. Spatial and temporal variation in the potential for growth and toxin production in the Juan de Fuca eddy of the Pacific Northwest – environmental stimulators of a toxic bloom. US Harmful Algal Bloom annual meeting, Portland, Ore.

Roy, E., M.L. Wells, and **C.G. Trick**. 2010. Different Fe(II) oxidation rates in surface waters of the Eastern and Western Subarctic Pacific: a biological control of iron availability? American Society for Limnology and Oceanography, Puerto Rico.

Cochlan, W.P. **C.G. Trick**, and V.L. Trainer. 2010. The possible role of anthropogenic nutrients in the frequency of Harmful Algal Bloom development in the Pacific Northwest. Coastal Zone Conference, Portland, Ore.

**Trick, C.G.** 2010. Food safety and environmental triggers for ciguatera in the South Pacific. North Pacific Marine Science Organization (PICES) Annual Meeting, October 22-31, Portland, OR.

**Trick, C.G.** and W.P. Cochlan. 2010. Report on the 2009 GEOHAB Meeting on Benthic Harmful Algal Bloom species. North Pacific Marine Science Organization (PICES) Annual Meeting, October 22-31, Portland, OR.

Hewlett, V.B. and **C.G. Trick**. 2010. Causative phytoplankton in the Persian Gulf fish kills. International Conference for Harmful Algae. [Best Student Presentation Award]

2009

Petri, B. L. Sealey, R. Hedrick, J. Lumsden, C.G. Trick. 2009. UV as an ecological invasion barrier: UV inactivation of *Myxobolus cerebralis*, VHSV, and marine phytoplankton. International Ultraviolet Association 5th UV World Congress, September 21-22, Amsterdam, The Netherlands.

Sorichetti, R.J., I.F. Creed, and **C.G. Trick**. 2009. Investigation of landscape controls on cyanobacterial growth in natural and human impacted settings. Gordon Research Conference: Thresholds, Tipping Points, And Non-Linearity: Integrated Catchment Science For The 21st Century, July 12-17, Andover, NH.

Sorichetti, R.J., I.F. Creed, and **C.G. Trick**. 2009. Relationship between hydrologic connectivity of phosphorus source areas to lakes and the occurrence of cyanobacteria in natural landscapes. American Geophysical Union, Joint Assembly, May 24-27, Toronto, ON. Eos Trans. AGU, 90(22), Jt. Assem. Suppl., Abstract B73A-21.

**Trick, C.G.**, B. Bill, W.P. Cochlan, M.L. Wells, V.L. Trainer, and L. Pickell. 2009. Iron enrichment stimulates diatom production in the high nitrate low chlorophyll Eastern Subarctic Pacific. Fifth Symposium on Harmful Algae in the US, November 15-19, Ocean Shores, WA.

**Trick, C.G.**, M.L. Wells, W.P. Cochlan, V.L. Trainer, and B. Bill. 2009. Understanding complexities in the induction of toxic algal blooms: domoic acid. Second Open Science Meeting on HABs and Eutrophication, October 17-21, Beijing, China.

**Trick, C.G.**, M.L. Wells, W.P. Cochlan, V.L. Trainer, and B. Bill. 2009. Iron enrichment stimulates toxic diatom production in the high nitrate low chlorophyll eastern Subarctic Pacific. American Society for Limnology and Oceanography (ASLO) Aquatic Sciences Meeting, January 25-30, Nice, France.

Iglic, K., V.B. Hewlett, J.M. Shick, M.L. Wells, **C.G. Trick**, and W. Dunlap. 2009. Flow cytometric measurements of oxidative stress in freshly isolated algal symbionts as a function of temperature and iron availability to coral colonies. American Society for Limnology and Oceanography (ASLO) Aquatic Sciences Meeting, January 25-30, Nice, France. [Best Student Presentation Award]

Iglic, K., V.B. Hewlett, J.M. Shick, M.L. Wells, **C.G. Trick**, and W. Dunlap. 2009. Iron and temperature affects on photosynthetic and photoprotective pigments in *Stylophora pistillata* zooxanthellae. American Society for Limnology and Oceanography (ASLO) Aquatic Sciences Meeting, January 25-30, Nice, France.

Beall, B.F. and **C.G. Trick**. 2009. Estimating phytoplankton cell biovolume and biomass using flow cytometry. American Society for Limnology and Oceanography (ASLO) Aquatic Sciences Meeting, January 25-30, Nice, France.

Marquis, E., **C.G. Trick**, G. Cavalcante and D. Feary. 2009. Influence of man-made mega-structures on the plankton community along the Dubai coastline (United Arab Emirates). American Society for Limnology and Oceanography (ASLO) Aquatic Sciences Meeting, January 25-30, Nice, France.

**Trick, C.G.**, B. Petri, L. Sealey, B.F.N. Beall and A. Morson. 2009. Methods for measuring the impact of UVC treatments on marine phytoplankton. International Conference on Aquatic Invasive Species, April 19-23, Montreal, PQ.

Beall, B.F.N., B. Petri, L. Sealey, C.G. Trick, and A. Morson. 2009. Differences in the Responses of Marine Phytoplankton to Monochromatic and Polychromatic UVC. International Conference on Aquatic Invasive Species, April 19-23, Montreal, PQ.

2008

**Trick, C.G.** 2008. A historical overview of *Karenia* and *Prorocentrum* occurrences in North American coastal waters. PICES Annual Meeting, Dalian, China. Oct. 2008.

Beall, B.F. and **C.G. Trick**. 2008. Estimating phytoplankton cell biovolume and biomass using flow cytometry. "IMPETUS 2008: Techniques in Polar Ocean Observation and Monitoring" co-hosted by the Otto-Schmidt Laboratory (Germany) and the Arctic and Antarctic Research Institute (Russia). Nov. 2008.

Beall, B.F., **C.G. Trick**, W.P. Cochlan, V.L. Trainer and M.L. Wells. 2008. Nutrient supply affects the community structure and spatial distribution of small phytoplankton and bacterioplankton in the coastal subarctic Pacific Ocean. Ocean Sciences Meeting, Orlando, FL, March 2008.

Hickey, B.M., V.L. Trainer, W.P. Cochlan, M.J. Foreman, E.J. Lessard, A. Pena, R.E. Thomson, **C.G. Trick**, M.L. Wells, J. Herndon, A. MacFadyen, and M.B. Olson. 2008. ECOHAB Pacific Northwest: Toxic *Pseudo*-*nitzschia* in the northern California Current. Ocean Sciences Meeting, Orlando, FL, March.

Wells, M.L., **C.G. Trick**, and W.P. Cochlan. 2008. Fe (III) complexing organic ligands strongly restrict ecosystem responses to atmospheric iron enrichment in high nitrate low chlorophyll waters. Ocean Sciences Meeting, Orlando, FL, March 2008.

2007

Auro, M.E., W.P. Cochlan, and V.L. Trainer. 2007. Growth, toxicity and nitrogen uptake capabilities of the toxigenic diatom *Pseudo-nitzschia cuspidata* from the Pacific Northwest. Fourth Symposium on Harmful Algae in the U.S., Woods Hole, MA, October 2007.

Beall, B.F., **C.G. Trick**, W.P. Cochlan, V.L. Trainer, and M.L. Wells. 2007. Low sinking rates of *Pseudo- nitzschia:* A competitive feature contributing to the development and maintenance of toxic blooms. Fourth Symposium on Harmful Algae in the U.S., Woods Hole, MA, October 2007.

Bill, B.D., W.P. Cochlan, V.L. Trainer, M.L. Wells, **C.G. Trick**, and B.M. Hickey. 2007. Puget Sound, Washington: An emerging hotspot for *Pseudo-nitzschia* blooms and domoic acid toxic events. Fourth Symposium on Harmful Algae in the U.S., Woods Hole, MA, October 2007.

Cochlan, W.P., M.L. Wells, **C.G. Trick**, V.L. Trainer, E.J. Lessard, and B.M. Hickey. 2007. Silicic acid limitation is not a trigger for domoic acid production by *Pseudo-nitzschia* blooms in the Pacific Northwest. Fourth Symposium on Harmful Algae in the U.S., Woods Hole, MA, October 2007.

Hickey, B.M., A. MacFadyen, V.L. Trainer, E.J. Lessard, W.P. Cochlan, **C.G. Trick**, and M.L. Wells. 2007. Regional oceanography leading to toxic *Pseudo-nitzschia* events on beaches in the northern California Current. Fourth Symposium on Harmful Algae in the U.S., Woods Hole, MA, October 2007.

Lessard, E.J., V.L. Trainer, B.M. Hickey, W.P. Cochlan, **C.G. Trick**, M.L. Wells, J. Herndon, A. MacFadyen, and S. Moore. 2007. Seasonal and interannual variability of *Pseudo-nitzschia* and domoic acid in the Juan de Fuca Eddy region and its adjacent shelves. Fourth Symposium on Harmful Algae in the U.S., Woods Hole, MA, October 2007.

Trainer, V.L., W.P. Cochlan, M.L. Wells, **C.G. Trick** and the ECOHAB education group (L. Kuehne, C. Muir, D. Costello). 2007. ECOHAB Pacific Northwest (ECOHAB PNW) outreach: Opening the scientific journey to the world. Fourth Symposium on Harmful Algae in the U.S. Woods Hole, MA, October 2007.

Cochlan, W.P., M.E. Auro, J. Herndon, V.L. Trainer, M.L. Wells and **C.G. Trick**. 2007. The possible role of anthropogenic nutrients in harmful algal bloom development in the Pacific Northwest. Coastal Zone 2007, Portland, OR, July 2007.

Cochlan, W.P., M.L. Wells, **C.G. Trick**, and J. Herndon. 2007. The effect of iron and copper on nutrient utilization and new production in High Nitrate Low Chlorophyll Waters. EGU General Assembly, Vienna, Austria, April 2007.

**Trick, C.G.**, W.P. Cochlan, M.L. Wells, and J.N. Betts. 2007. Complexity of grow-out experiments: further iron stimulation of planktonic communities from the iron fertilized mesoscale patch during SEEDS. EGU General Assembly, Vienna, Austria, April 2007.

Wells, M.L., **C.G. Trick**, and W.P. Cochlan. 2007. Fe (III) Complexing organic ligands and their regulation of ecosystem response to atmospheric iron enrichment of High Nitrate Low Chlorophyll Waters. EGU General Assembly, Vienna, Austria, April 2007.

Trainer, V.L., W.P. Cochlan, A. Erickson, B.D. Bill, F.H. Cox, J.A. Borchert, and K.A. Lefebvre. 2007. Intrusion of domoic acid into Puget Sound, Washington State. 2007 Georgia Basin Puget Sound Research Conference, Vancouver, BC, Canada, March 2007.

**Trick, C.G.**, W.P. Cochlan, M.L. Wells, and V.L. Trainer. 2007. *Pseudo-nitzschia* growth and toxin production in the Juan de Fuca Eddy in the Pacific Northwest – environmental stimulators of a toxic bloom.

2006

**Trick, C.G.**, W.P. Cochlan, M.L. Wells, and J.N. Betts. 2006. Complexity of grow-out experiments: Further iron stimulation of planktonic communities from the iron-fertilized mesoscale patch during SEEDS. 2006. PICES Annual Meeting: Eastern Pacific Boundary Conditions. Yokohama, Japan, October.

Wells, M.L., **C.G. Trick**, W.P. Cochlan, and J. Herndon. 2006. The persistence of iron limitation during the SEEDS II mesoscale iron enrichment experiment. 2006. PICES Annual Meeting: Eastern Pacific Boundary Conditions. Yokohama, Japan, October.

**Trick, C.G.**, W.P. Cochlan, B. Hickey, E.J. Lessard, V. Trainer, and M.L. Wells. 2006. A drifter study of a toxic *Pseudo-nitzschia* bloom from the Juan de Fuca Eddy in the Pacific Northwest. International Harmful Algal Bloom Conference, Copenhagen, September.

Wells, M.L., W.P. Cochlan, V. Trainer, **C.G. Trick**, E.J. Lessard, and B. Hickey. 2006. Domoic Acid Production is not linked to silicate limitation in natural populations of *Pseudo-nitzschia*. International Harmful Algal Bloom Conference, Copenhagen, September.

Trainer, V.L., W.P. Cochlan, B.M. Hickey, E.J. Lessard, A. MacFadyen, and **C.G. Trick**. 2006. The nature of the Juan de Fuca eddy: the rise and fall of domoic acid to the Washington State coast. International Harmful Algal Bloom Conference, Copenhagen, September.

2005

E. Roy, M. Wells, **C.G. Trick**, and W.P Cochlan. 2005. "Iron oxidation status during the SEEDS II mesoscale experiment and its potential biological implications. SEEDS-II Workshop on the second iron fertilization of the North Pacific. Institute of Ocean Research, Tokyo.

**Trick, C.G.**, W.P. Cochlan, and M.L. Wells. 2005. Nutrient dynamics of a non-bloom: drawdown within cell biomass increases. SEEDS-II Workshop on the second iron fertilization of the North Pacific. Institute of Ocean Research, Tokyo.

Kim, H.-G., T. Orlova, V. Trainer, and **C.G. Trick** . 2005. "Participation in the Intergovermental Oceanographic Commissioner's Harmful Algal Event Database: The first year of PICES involvement". PICES (North Pacific Marine Science Organization) Annual Meeting. Vladivostok, Ru.

**Trick, C.G.**, L. McClintock, W.P. Cochlan, and N.C. Ladizinsky. 2005. The role of copper for iron acquisition in the Juan de Fuca Eddy *Pseudo-nitzschia* bloom. Ocean Sciences Conference. UNESCO, Paris.

Wells, M.L., **C.G. Trick**, and W.P. Cochlan. 2005. Domoic acid: the synergy or iron, copper, and toxicity in diatoms. Ocean Sciences Conference. UNESCO, Paris.

Wells, M.L., **C.G. Trick**, and W.P. Cochlan. 2005. Domoic acid: the synergy or iron, copper, and toxicity in diatoms. American Society for Limnology and Oceanography Annual Meeting, Spain.

**Trick, C.G.**, W.P. Cochlan, and M.L. Wells. 2005. Iron limitation of natural phytoplankton assemblages associated with the Pacific Northwest ECOHAB *Pseudo-nitzschia* blooms. American Society for Limnology and Oceanography Annual Meeting, Spain.

Trainer, V.L, B.M. Hickey, E. Lessard, M.L. Wells, **C.G. Trick**, and W.P. Cochlan. 2005. Characteristics of the Juan de Fuca eddy, a source of domoic acid to the Washington coast. 3rd US HABs Conference, Monterey, CA.

2004

Wells, M.L., **C.G. Trick**, and W.P. Cochlan. 2004. Regulation of Domoic acid production in *Pseudo-nitzschia* – lab and field verifications. International Conference on Harmful Algal Blooms, Cape Town, South Africa. November

Hickey, B., S. Greir, V. Trainer, M.L. Wells, **C.G. Trick**, and W.P. Cochlan. 2004. Comparison of two sites with respect to HABs viability: a topographic eddy and coastal upwelling region. International Conference on Harmful Algal Blooms, Cape Town, South Africa. November.

**Trick, C.G.**, M.L. Wells, W.P. Cochlan, L. Pickell, L. McClintock, and N.C. Ladizinsky. 2004. Iron limitation and copper effects in the Juan de Fuca Eddy. Ocean Sciences / The Oceanic Society Meeting. Honolulu, HI. February.

2002

Howard, R.S., W.P. Cochlan, L. Connell, and **C.G. Trick**. 2002. The detection of nitric oxide (NO) production by *Heterosigma akashiwo* using the fluorescent dye DAF-FM diacetate and flow cytometry. American Society for Limnology and Oceanography Annual Meeting, Victoria BC. June.

Gareis, J.A., K.L. Webster, I.F. Creed, and **C.G. Trick**. 2002. Comparison of the characteristics of dissolved organic carbon export from topographically distinct catchments in the Turkey Lakes Watershed, Ontario. Canadian Association of Geographers Annual Meeting, May 28- June 1, Toronto, ON.

Hare, C.E., D.A. Hutchins, K.W. Bruland, E.L. Rue, G. DiTullio, M.B. Alm, and **C.G. Trick**. 2002. Phytoplankton iron limitation and nutrient drawdown ratios in the Peru Upwelling and Humboldt Current. Ocean Sciences Meeting, Honolulu, February.

Creed, I.F., C.C. Krezek, C.L. Tague, and **C.G. Trick**. 2002. Water and Nutrient Export from a Coastal Watershed to the Coastal Waters in Barkley Sound, British Columbia, CANADA. American Society of Limnology and Oceanography. February 11-15, Honolulu, Hawaii.

2001

**Trick, C.G.**, R.M. McKay, M. Twiss, R. Bourbonniere, and S. Wilhelm. 2001. Further evidence of trace element limitation of phytoplankton in pelagic lake Erie. 9th Symposium on Microbial Ecology, Amsterdam, NL.

Wells, M.L., M. Maldonado, and **C.G. Trick**. 2001. Iron availability of *Pseudo-nitzschia* spp.: results from monoclonal and natural population cultures during the 1998 Monterey Bay bloom. PICES Annual Meeting, Victoria BC. October.

**Trick, C.G.**, G. DiTullio, D. Hutchins, R. Weaver, and S. Wilhelm. 2001. Effects of artificial chelators on phytoplankton community structure in the oligotrophic subtropical Pacific. Ocean Sciences Meeting, Albuquerque, NM. February.

**Trick, C.G.**, I.F. Creed, C.C. Krezek, E.D. Heterington, and P.J. Tschaplinski. 2001. Carnation Creek: a Canadian long-term experimental watershed. Ocean Sciences Meeting, Albuquerque, NM. February.

Eldridge, M.L., **C.G. Trick**, G. DiTullio, and S. Wilhelm. 2001. Influence of iron availability on group-specific phytoplankton success in HNLC waters of the subtropical Pacific Ocean. Ocean Sciences Meeting, Albuquerque, NM. February.

Wells, M.L., M. Maldonado, and **C.G. Trick**. 2001. Iron availability of *Pseudo-nitzschia* spp.: results from monoclonal and natural population cultures during the 1998 Monterey Bay bloom. Ocean Sciences Meeting, Albuquerque, NM. February.

McKay, R.M., M. Twiss, R. Bourbonniere, **C.G. Trick**, and S. Wilhelm 2001. Further evidence of trace element limitation of phytoplankton growth in pelagic Lake Erie. Ocean Sciences Meeting, Albuquerque, NM. February.

2000

**Trick, C.G.**, I.F. Creed, C.C. Krezek, E.D. Hetherington, and P.J. Tschaplinski. 2000. Carnation Creek: A Canadian Long-Term Experimental Coastal Watershed. American Geophysical Union, Fall Meeting. December 15-19, San Francisco, CA. Eos Trans. AGU, 81(48), Fall Meet. Suppl., Abstract H51B-05, 2000.

**Trick, C.G.** and M. Twiner. 2000. Hydrogen peroxide as the toxicological agent in *Heterosigma* blooms: fact or fiction? International Conference on Harmful Algae, Hobart Tasmania, February.

**Trick, C.G.** and R. El-Sabaawi\*. 2000. Use of xenosiderophores by marine eukaryotic phytoplankton. Special Session. American Society for Limnology and Oceanography, San Antonio TX. February.

Macrelis, H., E. Rue, **C.G. Trick**, and K. Bruland. 2000. Isolating natural Fe-binding ligands from California Coastal upwelling system. Special Session. Ocean Sciences Meeting, San Antonio TX. February.

Pickell, L. and **C.G. Trick**. The unique iron uptake of *Heterosigma*: a proposed model. American Society of Limnology and Oceanography. Copenhagen, DK. June 2000.

Pickell, L., R. El-Sabaawi\*, and **C.G. Trick**. Isn’t it ironic? *Heterosigma* and its unique relationship to iron. International Conference on Harmful Algal Blooms, Hobart, Tasmania, February 2000.

Creed, I.F., **C.G. Trick**, L.E. Band, and I.K. Morrison. Multiscale topographic control of the distribution of soil carbon and nitrogen pool within an old-growth sugar maple forest. American Geophysical Union Fall meeting, San Francisco, December 2000.

1987 – 1999

**Trick, C.G.**, C.C. Krezek, I.F. Creed, C.A. Scholey, M.C. English, and S.L. Schiff. 1999. Forest-to-ocean linkages: A new conceptual view. Gordon Conference on Hydro/Geo/Biological processes of Forested Catchments, July 18-22, Andover, NH.

**Trick, C.G.**, I.F. Creed, I.K. Morrison, and L.E. Band. 1999. Hydrological controls on the distribution and export of dissolved organic carbon from a forested catchment. Upper Lakes Environmental Research Network Workshop, May 17-22, Sault Ste. Marie, ON.

Twiner, M. and **C.G. Trick** 1999. Nutritional control of hydrogen peroxidase production in the marine Raphidophyte, *Heterosigma aksihiwo*. American Society of Limnology and Oceanography, Santa Fe, NM, February.

McArthur, M. and **C.G. Trick**. 1997. Land-ocean interactions: the first step is remineralization. Northeast Algal Society Annual Meeting, Woods Hole, MA, April.

Siddell, S.\* and **C.G. Trick**. 1997. Nutrient limitation of periphyton communities in streams of the Yukon Territory, Canada. Northeast Algal Society Annual Meeting, Woods Hole, MA, April.

Ray, M., K.A. Murphy and **C.G. Trick**. 1996. Bacterial association with a freshwater fish kill. Canadian Society of Limnologists, Montreal, P.Q., January 4-6, 1996.

**Trick, C.G.** and N.M. Rooney. 1996. Relationships between lake metabolism and phytoplankton specie assemblages in an experimentally acidified lake. Canadian Society of Limnologists, Montreal, P.Q., January 4-6, 1996.

Bonney, L.\*, **C.G. Trick**, I.F. Creed, and L.E. Band. 1996. Variability of dissolved organic carbon in soils of a forested catchment. Canadian Society of Limnologists, Montreal, P.Q., January 4-6.

**Trick, C.G.**, K. Murphy, and N. Rooney. 1995. Toxic freshwater dinoflagellate blooms: control and mechanism. Northeast Algal Society Annual Meeting, Woods Hole, MA, April.

Gawel, J., **C.G. Trick**, B. Ahner, and F.M.M. Morel. 1995. Metal stress and red spruce decline in the Northeastern U.S. American Society of Plant Physiology, July.

Rooney, N.M. and **C.G. Trick**. 1995. Environmental regulation of phytoplankton community structure in an experimentally acidified lake. Northeast Algal Society Annual Meeting, Woods Hole, MA (Robert T. Wilce Award for Best Student Presentation).

Murphy, K.A. and **C.G. Trick**. 1995. Freshwater red tides: carbon cycling between bacteria and dinoflagellates and their potential toxicity. Northeast Algal Soc. Annual Mtg, Woods Hole, MA.

Trick C.G., S.W. Wilhelm, K.A. Murphy and N. Rooney. 1993. Iron-limited algal ecology. American Society of Limnology and Oceanography, Edmonton, Alberta, June.

Wilhelm, S.W. and **C.G. Trick**. 1993. Iron-limited physiology of *Synechococcus* sp. American Society of Limnology and Oceanography Annual Meeting, Edmonton, AB. June 1993.

**Trick, C.G.** and S.W. Wilhelm. 1993. Acquisition of iron by cyanobacteria. American Society of Limnology and Oceanography Annual Meeting, Edmonton, AB. June 1993.

Wilhelm, S.W. and **C.G. Trick**. 1993. Physiology of iron stress in *Synechococcus* sp. Northeast Algal Society Annual Meeting, Woods Hole, MA.

Rooney, N.M. and **C.G. Trick**. 1993. Cyanobacterial blooms: which factors might advance or deter them. Northeast Algal Society Annual Meeting, Woods Hole, MA.

Murphy, K.A. and **C.G. Trick**. 1993. Remobilization of iron by grazing zooplankton. Northeast Algal Society Annual Meeting, Woods Hole, MA. (Robert T. Wilce Award for Best Student Presentation)

Cellucci, M., **C.G. Trick**, and R.C. Bailey. 1993. Predicting epilithic algal biomass from zebra mussel abundance: a multi-lake, multi-scale observational study. Third International Zebra Mussel Conference, Toronto.

Wilhelm, S.W. and **C.G. Trick**. 1992. Siderophore variability in Synechococcus sp. American Society of Limnology and Oceanography Annual Meeting. Santa Fe, NM. (ASLO Student Award).

Wilhelm, S.W. and **C.G. Trick**. 1992. Multiple siderophore production by marine *Synechococcus* spp. Northeast Algal Society Annual Meeting, Woods Hole, MA. (Robert T. Wilce Award for Best Student Presentation).

Wilhelm, S.W. and **C.G. Trick**. 1991. Cellular responses of cyanobacteria to low iron and vitamin B-12 stresses. Northeast Algal Society Annual Meeting, Woods Hole, MA., April.

Brown, C.M. and **C.G. Trick**. 1990. The physiological response to iron stress in *Oscillatoria*. Canadian Society of Plant Physiologists, University of Waterloo, Waterloo, December.

Brown, C.M. and **C.G. Trick**. 1990. High affinity iron acquisition in *Oscillatoria tenuis*. Northeast Algal Society Annual Meeting, Woods Hole MA. April.

Creed, I.F. and **C.G. Trick**. 1989. The influence of nutrient limitation on the metabolism of arsenic by *Chlorella.* Phycological Society of America, Toronto, August.

Creed, I.F. and **C.G. Trick**. 1989. The effect of nutrient limitation on the metabolism of arsenate in *Chlorella*. Phycological Society of America, Toronto, August.

Guo, M. and **C.G. Trick**. 1989. Iron regulated membrane proteins in *Anacystis nidulans*. Phycological Society of America, Toronto, August.

Brown, C.M. and **C.G. Trick**. 1989. Iron acquisition in *Oscillatoria tenuis*. Phycological Society of America, Toronto, August.

**Trick, C.G.** 1989. Characterization of the *Anacystis nidulans* R2 superoxide gene. Molecular Biology of Cyanobacteria Workshop, Toronto.

Laudenbach, D., M. Reith, and **C.G. Trick**. 1987. Transcriptional regulation of photosynthetic electron transport genes in response to iron stress. Molecular Biology of Cyanobacteria Workshop, St. Louis, MO.

**Trick, C.G.** and A. Kerry. 1987. Siderophore production by cyanobacteria. American Society for Limnology and Oceanography, Madison, WI.

**Trick, C.G.** and I.F. Creed. 1987. Isolation and detection of organo-arsenate complexes from natural waters, American Society for Limnology and Oceanography, Madison, WI.

# RESEARCH GRANT FUNDING (2000 TO PRESENT)

**Awarded, Current and Pending Research Support:**

Awarded: National Science Foundation – Chemical Oceanography (Mark Wells, Charles Trick, Kristin Buck). Collaborative Research: The effect of ocean acidification on iron availability to phytoplankton in coastal and oceanic waters of the North Pacific. Awarded $499,822 (for Trick and Wells, https://www.nsf.gov/awardsearch/showAward?AWD\_ID=1830029&HistoricalAwards=false) + $299,295 for Kristin Buck, University of South Florida).

Awarded: California Sea Grant -Ocean Protection Council (submitted Aug 3, 2018; but written during evaluation period). Salinity and light regulation of domoic acid toxicity in California coastal and estuarine systems. Requested $332,000. (Confirmation: https://caseagrant.ucsd.edu/project/present-and-future-climatic-drivers-of-domoic-acid-toxicity-in-coastal-ecosystems-of

Pending: National Science Foundation- Biological Oceanography (submitted Aug 1, 2018 – but written during evaluation period) (William Cochlan, Charles Trick, Mark Wells), Collaborative Research: Temperature and ocean acidification influences on phytoplankton – zooplankton linkages in a nutrient-rich eastern boundary upwelling system. Requested $1,300,000.

Awarded: California Sea Grant (submitted Aug 3, 2018). Present and future climate drivers of domoic acid toxicity in coastal California waters. Requested $332,000.

Awarded: GEOTRACES cruise. South China Sea to Hawai’i. Sept 15- Oct 15, 2019. Awarded: ~$50k for Trick.

Awarded: Chinese NSF cruises: South China Sea. Aerosol iron and nitrogen fixation in subtropical-tropical waters. Awarded: ~$50k to Trick.

Creed, I.F. and C.G. Trick. NSERC Research Tools and Instruments. Imaging plankton observing system (Flow Cam system, microscopes). Funded. 2016, @$150K.

Trick, C.G. and I.F. Creed. NSERC Research Tools and Instruments. FIA (flow injection analysis) for iron measurements. Funded. 2016, $126K

Fisk, A. (University of Windsor). Canadian Foundation for Innovation. Real-time Aquatic Ecosystem Observation Network (RAEON). Funded. 2018, @$870K (for equipment to Creed/Trick). Total Team grant ~$13 million.

Creed IF, **C. G. Trick**, and P. Henley. Presenting “Foundations in Planetary Health”: Preparing graduates to navigate decision-making in a complex earth. eCampus Ontario Research and Innovation Grant. $20,400.

**Trick, C.G.** and others. 2015. National Science Foundation – International Collaboration. US-CHINA Mesocosm study: ocean acidification – Planning visit. $41,202 ($10,000 to Trick).

Creed, I.F., **C.G. Trick**, L. Molot, N. Huner, and M. Stillman. NSERC – RTI. AquaTox Research Facility. 2015. $125,994.

**Trick, C.G.**, and I.F. Creed. 2014. Western International Curriculum Fund. Nexus Leadership – African Experiences Abroad Program. $35,000.

Creed, I.F. (UWO) and others (including **C.G. Trick**). NSERC – CREATE. NSERC CREATE for freshwater Harmful Algal Blooms (fHABs): Algal Bloom Assessment through Science, Technology and Education (ABATE). 2014-2020. $1,650,000 ($185,000 to Trick).

Sibley, P. (UGuelph) and others (including **C.G. Trick**). NSERC – CREATE. Multiple stressors and cumulative effects in the Great Lakes: An NSERC CREATE program to develop innovative solutions through international training partnerships. 2013-2019. $1,650,000 ($150,000 to Trick)

**Trick, C.G.** NSERC – Discovery. Toxicity of fish-killing flagellates. 2011-2016. $185,000.

**Trick, C.G.** and others. National Science Foundation – Biological Oceanography. Ocean acidification and phytoplankton food quality. 2011-2014. $920,000 ($60,000 to Trick).

**Trick, C.G.** and others. National Science Foundation – EcoHAB. The ecophysiology and toxicity of *Heterosigma* *akashiwo*. Puget Sound: a living laboratory ecosystem approach. 2010-2013. ~$700,000 ($120,000 to Trick).

**Trick, C.G.** and others. International Development Research Centre of Canada – Ecohealth Program. The Sustainability of Lake Naivasha, Kenya. 2009-2012. ~$600,000 ($380,000 to Trick).

Branfireun, B. and **C.G. Trick**. NSERC – RTI. In situ optical sensors for the characterization of dissolved organic matter and other solute fluxes in remote rivers and ocean waters. 2012. $87,742.

**Trick, C.G.** NSERC – Discovery. Toxigenesis of the fish kill phytoflagellates. 2007-2011. $140,000.

**Trick, C.G,** V. Trainer (NOAA), and W. Cochlan (SFSU). Ministry of Agriculture, Food and Fisheries. Government of Japan. Safe Seafood Training Program. 2006-2010. $170,000 ($20,000 to Trick).

Wells, M.L. (UMaine) and **C.G. Trick**. NSF – Environment. Novel mechanisms for coral bleaching. 2007-2009. $720,000 ($90,000 to Trick).

Sale, P. (UWindsor), **C.G. Trick**, and B. Kjerfve (Texas A&M). United Nations – Water, Environment and Health. Strategic Management of Marine Ecosystems in the Palm Developments of Abu Dhabi. 2005-2009. $4,130,000 ($50,000 to Trick).

**Trick, C.G.** and M.L. Wells (UMaine). Office of Naval Research. The source, cycling and behaviour of chromophoric dissolved organic matter in coastal waters. 2005-2008. $407,856 (USD) ($45,000 to Trick).

**Trick, C.G.** and W.P. Cochlan (SFSU). CALFED Bay-Delta Science Consortium – Science Support Funds. Environmental controls on the growth and toxicity of blooms of *Heterosigma akashiwo*, a fish-killing flagellate, now resident in San Francisco Bay. 2004-2007. $75,000 (USD) ($45,000 to Trick).

**Trick, C.G.** NSERC – Discovery. Iron-regulation of algal toxicity. 2004-2007. $100,000.

**Trick, C.G.**, B.B. Ward (Princeton), and M.L. Wells (UMaine). National Science Foundation – Polar Programs. Control of denitrification in a permanently ice covered Antarctic Lake: potential for regulation by bioactive metals. 2003-2007. $681,000 ($140,000 to Trick).

**Trick, C.G.** and others. Health Canada. Health risks of the Walpole Island First Nations. 2005-2006. $65,000 ($15,000 to Trick).

**Trick, C.G.**, M.L. Wells (UMaine), and W.P. Cochlan (SFSU). National Science Foundation – Ocean Sciences Program. The effect of iron-complexing ligands on iron availability to phytoplankton in HNLC waters of the Subarctic Pacific Ocean. 2002-2006. $320,000 ($200,000 to Trick).

**Trick, C.G.**, M.L. Wells (UMaine), and W.P. Cochlan (SFSU). National Science Foundation – Ocean Sciences Program. International Planning Program – Japan Collaboration. 2003. $16,417 (USD) ($5,500 to Trick).

# PROFESSIONAL SERVICE ACTIVITIES

## Workshop and Session Organizer:

2010. Flow cytometry and Harmful Algal Blooms Workshop, organizer and presenter, two-day short course, North Pacific Marine Organization (PICES), Portland, OR. I invited all the speakers and arranged the symposium, gave a 1- hour overview lecture, and ran a “hands-on” workshop. (45 participants, 7 countries)

2010. Ciguatera and Harmful Algal Blooms Workshop, organizer and presenter, four-day course on “Seafood Safety: development of marine toxin capacity building, analytical procedures and volunteer network for phytoplankton monitoring,” Rarotonga, Cook Islands. 15 invited participants (4 countries).

2010. Lake Naivasha Sustainability Project Workshop, organized and facilitated with I.F. Creed, August, Elsamere Field Study Centre, Lake Naivasha, Kenya.

2009. Harmful Algal Bloom Cysts Workshop, organizer and presenter, two-day short course to the North Pacific marine community, invited all the speakers and arranged the symposium, gave a 1- hour overview lecture, and ran a taxonomy and cyst analysis workshop. Jeju, Korea. (120 participants, 16 countries)

2009. Marine Ecosystems and Harmful Algal Blooms Workshop, organizer and presenter, five-day short course on “Seafood Safety: development of marine toxin capacity building, analytical procedures and volunteer network for phytoplankton monitoring”, Guatemala City, Guatemala. 30 invited participants.

2009. Seafood Safety Workshop, organizer and presenter, 10-day short course on “Seafood Safety: development of marine toxin capacity building, analytical procedures and volunteer network for phytoplankton monitoring”, Manila, Philippines. 80 invited participants.

2009. Management of Marine Coastal Communities Workshop, organizer and presenter, United Nations Environment Programme-sponsored workshop that provided invitees from 13 nations surrounding the Persian Gulf with training on designing and implementing environmental monitoring programs. Gave three one-hour lectures (“Designing a sustainable environmental network”, “Constructing environmental program on phytoplankton”, and “Emerging environmental problems in coastal communities,” ran a full-day “hands on” field demonstration program.). Dubai, UAE. 50 invited participants.

2008. Marine Toxins Workshops, organizer and presenter, short course on “Marine toxin analysis and database management,” sponsored by the North Pacific Marine Science Commission. 35 participants form the Philippines and Indonesia, led hands-on activities on “database management of community measurements” and “the value of Community Participation networks for environmental data acquisition”. Manila, Philippines.

2008. “KARENIA” HABs WORKSHOP. Organizer and presenter of a short course to the North Pacific marine community. Dalian, China. In this Two-and-a-half day workshop, I invited all the speakers and arranged the symposium, provide a 1-hour overview lecture, and ran a taxonomy and toxin analysis workshop.

2008. “SUSTAINABILITY OF LAKE NAIVASHA” WORKSHOP. With Dr. Creed (Biology) and Dr. Bend (Pathology) we collaborated with colleagues in Egerton University (Kenya) on a 5-day specialist and stakeholder workshop on the Ecosystem Health issues of Lake Naivasha, Kenya. Held in Naivasha, Kenya, the workshop provided community participation with ~50 attendees on each of the 5 days.

2008. “ECOSYSTEM HEALTH OF SIBERIAN MINING”. With Dr. Ruud (History) and Dr. Rupar (London Regional Health), we held a series of community, academic and ministry-level “town hall” meetings to engage the community on an ecosystem health perspective of health problems. Held in September over a 5-day period.

2008. “SOUTHEAST ASIA HABS” WORKSHOP. A 5-day workshop and seminar series, funded by the Intergovernmental Oceanographic Commission (UNESCO). Ran two community-participation workshops aimed at volunteer environmental monitoring and HABs identification. Borneo, Indonesia.

2008. “ENVIRONMENTAL IMPACT ASSESSMENT OF MARINE COASTAL COMMUNITIES” WORKSHOP. Organizer and presenter of a United Nation Environment Programme (UNEP)-sponsored that provided invitees from 13 nations surrounding the Persian Gulf with training on designing and implementing environmental monitoring programs. Dubai, UAE. 50 invited participants.

2007. “*COCHLODINIUM* AND *HETEROSIGMA*” HABS WORKSHOP. Organizer and presenter of a short course to the North Pacific marine community (PICES). Victoria, BC. In this two-and-a-half day workshop, I invited all the speakers and arranged the symposium, provide a 1-hour overview lecture, and ran a taxonomy and toxin analysis workshop.

2007. “AN EVENING WITH AL GORE”. A professionally organized fundraiser for the St. Joseph’s Health Centre, I worked with Mr. Gore’s advance team to shape his presentation to reflect human health aspects of climate change.

2006. “ECOSYSTEM HEALTH WORKSHOP”. Organizer and presenter of a short course (1-day) on “Ecosystem Health and Communities”, Department of Pathology, UWO.

2006. “TOXIC ALGAL BLOOM WORKSHOP”. Organizer and instructor of a short course on “Measurement of neurotoxin in environmental samples”, National Center for Marine Fisheries, Yokohama, Japan.

2005. “TOXIC ALGAL BLOOM WORKSHOP”. Organizer and instructor of a short course on the “Measurement of toxicity levels in natural waters”, Russian Institute for Oceanography, Vladivostok, Russia.

2004. “VIETNAM COASTAL ECOSYSTEM WORKSHOP”. “Halong Bay and the Red River Estuary Ecosystem Research Program” Vietnam Institute for Oceanography, Hanoi and Halong, Vietnam. May 19-20, 20-22. (Organizer and participant).

2003. “OCEANS FUTURE WORKSHOP”. “Ecosystem and Ecology Studies for the Future Ocean” UNESCO, Paris. January 4-12. (Participant).

2001. “CANADIAN HABs WORKSHOP”. “Cyst distribution in BC sediments” Nanaimo, BC. May. (Participant).

2001. “CANADIAN HABs WORKSHOP”. “Detecting *Heterosigma* toxins.” Nanaimo, BC. May. (Participant).

2001. “NASA / SEAWIFFS TECHNOLOGY WORKSHOP”. “Cyanobacterial blooms from space: the case of the Costa Rica Upwelling Dome.” San Diego May. (Participant).

1999. “WORKSHOP ON ENVIRONMENTAL DECISION MAKING”. CIDA-Sponsored 3-day workshop for government managers. Organizer and instructor. Hanoi, Vietnam.

1999. “WORKSHOP ON COASTAL INITIATIVES”. Organized and participates in a 4-day workshop on research initiatives along the British Columbia coast. Institute for Ocean Sciences, Sidney, B.C.

1998.“GIS AND DECISION SUPPORT SYSTEMS” (co-instructor) (with faculty from University of Victoria and York University) - CIDA-sponsored 8-day Government Workshop, Hanoi, Vietnam.

1997.“TEACHING RESPONSIBLE SCIENCE” A Planning Workshop for a Guide for Education in Science Conduct. (Invited Panellist) National Academy of Sciences, Washington, D.C., February 26-27, 1997.

1995.“GIS AND ENVIRONMENTAL MONITORING” (co-instructor, with faculty from Univ. of Toronto). CIDA - sponsored Government Workshop, Hanoi, Vietnam, February 20-24, 1995.

## Summary of Grants Reviewed (Since 2000):

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Year | NSERC | NSF | Other agencies | Manuscripts | Journals  |
| 2017 | 2 | 8 | 6 | 15 | Associate Editor – Harmful Algae  |
| 2016 | 1 | 8 | 4 | 12 | Associate Editor – Harmful Algae |
| 2015 | 3 | 10\* | 5 | 8  | Associate Editor – Harmful Algae |
| 2014 | 3 | 10\* | 4 | 8  | Associate Editor – Harmful Algae |
| 2013 | 3 | 7\* | 5 | 15 | Associate Editor – Harmful Algae |
| 2012 | 3 | 10\* | 5 | 8  | Associate Editor – Harmful Algae |
| 2011 | 3 | 10\* | 4 | 8  | Associate Editor – Harmful Algae |
| 2010 | 3 | 7\* | 5 | 15 | Associate Editor – Harmful Algae |
| 2009 | 3 | 8\* | 3 | 15 |  *Marine Chemistry, Limnology and Oceanography, Journal of Phycology, FEMS Microbial Ecology, Nature, Science, Harmful Algae, Phycologia, Chinese Journal of Oceanography and Limnology, PNAS*\*NSF Panel Member – responsible for 20 additional  |
| 2008 | 2 | 6 | 3 | 12 |
| 2007 | 2 | 6 | 4 | 14 |
| 2006 | 3 | 6\* | 2 | 14 |
| 2005 | 2 | 4 | 4 | 16 |
| 2004 | 2 | 4 | 4 | 18 |
| 2003 | 2 | 4 |  | 10 |
| 2002 | 2 | 4\* |  | 7 |
| 2001 | 1 | 3 |  | 8 |
| 2000 | 2 | 3 |  | 10 |
|  |  |  |  |  |  |

# TEACHING AND SUPERVISORY DUTIES

## Undergraduate Courses:

1987-1988. Bio 020 – Introductory Biology

1987-1992. Bio 202 – Introductory Microbiology

1987-2000. Bio 213b – Productivity and Pollution in Aquatic Ecosystems

1987-2003. Bio 402b – Advanced Environmental Microbiology

1985-1995, 1997-2002. Bio 320y – Aquatic Ecology Field Course

1993-1999. Bio 222b – Biology of Protists

1994, 2000-2003. Bio 283 – Ecology

1993, 2002-2005. Environmental Science 300G – Introduction to Environmental Sciences

1999-2003. Interdisciplinary Studies 020E – The Sea

2000-20005. Bio 3327b – Aquatic Ecosystems

2005-Present. Bio 4230 – Ecosystem Health

## Graduate Courses:

1988-2006 (even years). Bio 563b – Physiological Ecology of the Phytoplankton

1989, 1991, 1993. Bio 502a – Current Issues In Biology

1990, 1992, 1994. Bio 540b – Professional Issues

2004. Bio 560b – Biogeochemistry from microbes to Gaia (with I.F. Creed)

2006. Bio 543 – Ocean Health

2007. ENVSUS 630 – Becoming an Environmental Professional

2008. ENVSUS 9011 – Foundations of Sustainability

2009, 2011. ENVSUS 9014g – Ecosystem Health (with Jack Bend)

2010, 2011. Bio 9418 – Ecosystem Ecology

2013 – present. MPH 9003 - Sustainable Environmental Health (Masters of Public Health foundation course)

2014 – present. Bio 9439L – International Field School on Algal Blooms

## Post-Doctoral Fellows Supervised (current in bold):

**Enanga, Eric.** Starting 2016.Department of Biology, The University of Western Ontario, London, Ontario. (co-supervised with Dr. Irena Creed, Biology).

Henley, Phaedra.2014-2016. NSERC CREATE on freshwater Algal Blooms.Department of Biology, The University of Western Ontario, London, Ontario. (co-supervised with Dr. Irena Creed, Biology). Next position: Assistant Director, Master of Science in Global Health Delivery, University of Global Health Equity.

Hundey, Beth. 2014. NSERC CREATE on freshwater Algal Blooms.Department of Biology, The University of Western Ontario, London, Ontario. (co-supervised with Dr. Irena Creed, Biology).

Feary, David. 2007-2009. Strategic Management of Marine Ecosystems in the Palm Developments of Abu Dhabi. United Nations University INWEH Dubai. (co-supervised with Dr. Peter Sale, University of Windsor). Next Position: PDF, University of Technology Sydney.

Marquis, Elise: 2007-2009. Strategic Management of Marine Ecosystems in the Palm Developments of Abu Dhabi. United Nations University INWEH Dubai. (co-supervised with Dr. Peter Sale, University of Windsor). Next Position: PDF, Institute of Oceanography, National Taiwan University; Present Position: Senior Marine Scientist, URS / AECOM.

## PhD Students Supervised (current in bold):

**Erratt, Kevin.** Started 2017. BBMA from natural cyanobacterial blooms. Department of Biology, The Western University, London, ON.

**Gilhooly, Lauren**. Started 2014. Emergent infectious disease transmission from the Borneo forest: from macaque to pigs to tourists. Department of Anthropology, The University of Western Ontario, London, Ontario. (co-supervised with Dr. Ian Colquhoun, Anthropology).

**Mehdizadeh, Malihe**. Started 2014. Assessment of fish-killing activities of *Heterosigma akashiwo*. Department of Biology, The University of Western Ontario, London, Ontario.

**Esbri Senar, Oscar**. Started 2014. The role of dissolved organic matter in lake food webs. Department of Geography, The University of Western Ontario, London, Ontario (co-supervised with Dr. Irena Creed, Biology)

Henley, Phaedra (OGS). 2014. Exposure to environmental contaminants and stress as determinants of health in three communities: Walpole Island and Attawapiskat First Nations and Naivasha, Kenya. Department of Pathology, The University of Western Ontario, London, Ontario. (co-supervised with Dr. Jack Bend). Next Position: PDF, Western.

Sorchetti, Ryan (NSERC CGS). 2013. The role of N:P and Iron in the recent emergence of cyanobacterial blooms in oligotrophic lakes in the Canadian Shield. Department of Biology, The University of Western Ontario, London, Ontario. (co-supervised with Dr. Irena Creed). Next Position: PDF, Western.

Iglic, Katrina (NSERC CGS). 2011. Novel explanations for coral bleaching. Department of Biology, The University of Western Ontario, London, ON. Next Position: PDF, Western.

Vogel, Catherine. 2009. Interactions between heterotrophic marine bacteria and trace metals. School of Marine Sciences, SUNY – Stony Brook, NY. (co-supervised with Dr. Nicholas Fisher). Next Position: Research Scientist, MIT.

Beall, Ben. 2009. Measurement of growth kinetics of *in situ* microbial populations. Department of Biology, The University of Western Ontario, London, ON. Next Position: Consultant, ERM Rescan.

Sweeney, Michelle. 2004. Cadmium accumulation and adaptation in grasses. Department of Plant Sciences, The University of Western Ontario, London, ON. (co-supervison with Dr. Sheila Macfie).

Twiner, Michael J. 2002. Bioactive extracellular metabolites from the marine flagellate, *Heterosigma* *akashiwo*. Department of Plant Sciences, The University of Western Ontario, London, ON.

Maxwell, Denis. 1995. Photosynthetic acclimation to light and temperature: excitation pressure and redox sensing. Department of Plant Sciences, The University of Western Ontario, London, ON (co-supervised with Dr. Norm Huner)

Wilhelm, Steven W. 1995. Iron acquisition in marine phytoplankton. Department of Plant Sciences, The University of Western Ontario, London, ON.

Laudenbach, D. 1991. Iron regulated genes in *Anacystis nidulans* R2. Department of Botany, The University of Toronto, Toronto, ON (co-supervised with Dr. N. Straus)

## MSc Students Supervised (current in bold):

**Singh, Veerta.** Started 2016. TBD. Department of Biology, The University of Western Ontario, London, ON.

Erratt, Kevin. 2017. Urea as a potential nutrient source for cyanobacteria. Department of Biology, The University of Western Ontario, London, ON.

Dulul-Whiteway, Christine. 2016. Hemolytic activity in the euryhaline fish-killing phytoflagellate *Prymnesium parvum* under environmental stresses. Department of Biology, The University of Western Ontario, London, ON. Next position: Educator at Ripley’s Aquarium of Canada

Xu, Yan. 2015. Molybdenum and iron interactions as micronutrients for growth of a freshwater cyanobacterium, *Microcystis aeruginosa*. Department of Biology, The University of Western Ontario, London, ON. (co-supervised with Dr. Irena Creed) Next position: Stay at home parent

Sutton-Quaid, Brian. Withdrawn. *Heterosigma akashiwo* toxicity. Department of Biology, The University of Western Ontario, London, ON. Next Position: Withdrew to pursue consulting work.

Ikeda, Christopher. 2014. Effect of temperature and humidity on the growth of Heterosigma akashiwo. San Francisco State University, San Francisco, CA. (co-supervised with Dr. William Cochlan SFSU). Next Position: Research Technician at SFSU

Matheson, Julia. 2014. Effect of ocean acidification on toxicity in the marine phytoflagellate, *Heterosigma* *akashiwo*. Department of Biology, The University of Western Ontario, London, ON. Next Position: Research technician, Bermuda Institute of Ocean Sciences.

Du, Xue (Lily). 2013. Cyanobacteria predominance in Alberta's eutrophic lakes linked to iron scavenging strategy that uses siderophores and toxins. Department of Biology, The University of Western Ontario, London, ON (co-supervised with Dr. Irena Creed). Next Position: Dental School, USC.

Bronichesky, Cayla. 2013. Ocean acidification and phytoplankton fatty acids – food quality changes. Department of Biology, The University of Western Ontario, London, ON. Next Position: Canadian College of Naturopathic Medicine.

McLaughlin, Jace. 2012. Novel methods to assess phytotoxicity. Department of Biology, The University of Western Ontario, London, ON (co-supervised with Dr. Irena Creed). Next Position: Aquatic Scientist/Biologist, Stantec Consulting.

Hicks, Chelsea. 2012. Metals and persistent organic pollutants as ecological determinants of human health in Naivasha, Kenya. Department of Biology, The University of Western Ontario, London, ON. Next Position: Project Coordinator, Ivey Network for Business Sustainability.

Raffoul, Melissa. 2012. Assessing the potential health risk of cyanobacteria harmful algal blooms and cyanotoxins in Lake Naivasha, Kenya. Department of Biology, The University of Western Ontario, London, ON. Next Position: Environmental Planner with AECOM/URS.

White, Rachel. 2011. Ecosystem Health of *Acacia* forests in Lake Naivasha, Kenya. Department of Biology, The University of Western Ontario, London, ON. (co-supervised with Dr. Jane Bowles). Next Position: Coordinator, Huron Stewardship Council

Hewlett, Victoria (NSERC CGS). 2010. Nutritional study of the fish-killing flagellate, *Heterocapsa pygmae* isolated from the Persian Gulf. Department of Biology, The University of Western Ontario, London, ON. Next Position: Scientist, Walkerton Clean Water Centre

Dickinson, Katie. 2008. The ecology of the marine flagellate, *Eutriptiella*. Department of Biology, The University of Western Ontario, London, ON.

Bjornnson, William. 2007. The regulation of toxicity in *Heterosigma akashiwo*, a fish-killing flagellate. Department of Biology, The University of Western Ontario, London, ON.

Ling, Crystal. 2007. The role of nitrogen availability in regulating toxicity in *Heterosigma akashiwo*, a fish killing flagellate. Department of Biology, The University of Western Ontario, London, ON.

Klein, Monica. 2006. Iron-induced exocellular enzymes in marine phytoflagellates. Department of Biology, The University of Western Ontario, London, ON.

Beall, Ben. 2005. Nutrient availability and sedimentation in marine phytoplankton. Department of Biology, The University of Western Ontario, London, ON.

McClintock, Liza. 2005. Cellular markers of iron- and copper-stressed *Pseudonitzscia* cells. Department of Biology, The University of Western Ontario, London, ON.

Jung, Anna. 2005. Isolation of *Heterosigma* cysts and the distribution in B.C. sediments. Exchange student from Germany.

Pickell, Lisa. 2001. Fundamental differences in the systems of iron acquisition among phytoplankton. Department of Plant Sciences, The University of Western Ontario, London, ON.

Macrellis, Heather. 2001. Isolation of natural organic iron-binding ligands from the California Coastal upwelling system. Marine Sciences, The University of California, Santa Cruz, CA. (Co-supervision with Ken Bruland)

Gennings, C. 1998. Photochemical oxidation of dissolved organic carbon in streams. Department of Biology, York University, Toronto, ON. (Co-supervised with Lewis Molot)

Ray, Michael. 1997. Toxigenic bacteria associated with a freshwater fish kill. Department of Plant Sciences, The University of Western Ontario, London, ON.

Bowman, Michelle. 1997. The potential for zebra mussels to alter food web dynamics. Department of Zoology, The University of Western Ontario, London, ON (co-supervised with Dr. Robert Bailey)

Rooney, Neil. 1995. Phytoplankton community changes associated with an experimentally acidified lake. Department of Plant Sciences, The University of Western Ontario, London, ON.

Murphy, Kelly. 1995. Microbial ecology of a freshwater fish kill. Department of Plant Sciences, The University of Western Ontario, London, ON.

Brown, Christopher. 1991. Protein alteration is cyanobacteria grown at different iron stresses. Department of Plant Sciences, The University of Western Ontario, London, ON.

Kerry, Alison. 1988. The effect of iron availability on the growth and physiology of *Anabaena* and *Anacystis* (Cyanophyta). Department of Botany, The University of Toronto, Toronto, ON.

## Undergraduate Research Thesis Students Supervised (current in bold):

Freeman, Erika. 2016. Dissolved organic matter modifies nutrient availability providing freshwater cyanobacteria with a competitive advantage. Department of Biology. (co-supervised with Dr. Irena Creed, Biology).

Oakes, Bryant. 2016. An assessment of microbead prevalence in Muskoka, Ontario lakes. Department of Biology.

Schellenbach, Andrew. 2015. Natural levels of toxicity in Ontario lakes. Department of Biology. (co-supervised with Dr. Irena Creed, Biology). Next Position: Master of Management of Innovation student, UofT Mississauga.

McCain, J. Scott. 2013. Using optical signatures of the toxic alga *Heterosigma akashiwo* to delineate cellular physiological states. Department of Biology. Next Position: Graduate School.

Bakker, Nicole. 2011. Encroachment of settlements within riparian buffer areas as a leading cause of declining dissolved oxygen concentrations in Lake Naivasha, Kenya. Environmental Sciences Program. (co-supervised with Dr. Irena Creed, Biology). Next Position: Law School.

Du, Lily (Xue). 2011. The importance of soil CO2 efflux during rain events in estimating forest carbon budgets. Department of Biology. (co-supervised with Dr. Irena Creed, Biology). Next Position: MSc student, Western.

Matheson, Julia. 2011. Establishing sediment core archives for algal communities in Lake Naivasha, Kenya: A story of two basins. Environmental Sciences Program (co-supervised with Dr. Irena Creed, Biology). Next Position: MSc student, Western (Trick lab).

Barons, Katie. 2011. Novel instrumentation for assessing fish-killing mechanisms. Department of Biology. Next Position: Graduate School.

Laduc, Altaz. 2011. Effect of germicidal UV on marine cyanobacteria. Department of Biology. Next Position: Law School.

Walker, Sarah. 2011. Effect of ocean acidification on marine cyanobacteria. Department of Microbiology. Next Position: Graduate School.

Sutton-Quaid, Brian. 2010. The effect of salinity on *Heterosigma akashiwo* toxicity. Department of Biology. Next Position: MSc Student, Western (Trick Lab).

Frankiv, Illiana. 2010. UV effects on marine bacteria. Environmental Sciences Program. Next Position: Technical Instrument Sales Person.

Bronichesky, Cayla. 2010. UV effects on marine phytoplankton. Environmental Sciences Program. Next Position: MSc Student, Western (Trick Lab).

Kshatriya, Premlata. 2009. The effect of nutrient availability on the levels of haemolytic activity expressed by three fish-killing phytoflagellates. Department of Biology. Next Position: Medical School.

Powers, Lucas. 2009. The relationship between sinking and toxicity in a fish-killing flagellate (co-supervised with Dr. Irena Creed, Biology). Department of Biology. Next Position: Journalism Student, UBC (Donaldson Scholar).

Mckee, Tahnee. 2009. Characterization of fluorometric procedures to measure reactive oxidative species. Environmental Sciences Program. Next Position: Unknown.

Hewlett, Victoria. 2008. Characterization of oceanic cDOM. Next Position: MSc Student, Western (Trick Lab).

Rui, Manak. 2008. Characterization of exoenzymes from marine phytoplankton. Next Position: Unknown.

Quai, Ryan. 2007. Use of flow cytometry to measure ROS in heat and light stressed coral symbionts. Next Position: Medical School.

Li, Robbie. 2007. Isolation of iron-induced protein from *Heterosigma akashiwo*. Next Position: Medical School.

Cini, Elio. 2006. Probe assisted flow cytometric (FCM) analysis of mitochondrial reactive oxygen species (ROS) accumulation in marine phytoflagellates. Next Position: Medical School.

Iglic, Katrina. 2005. Role of iron in toxin production in *Microcystis.* Next Position: PhD Student, Western (Trick lab).

Doran, Sean. 2005. Heterosigma growth under differing N:P ratios. Next Position: Medical School.

Speers, Tara. 2004. The role of ligand-bound iron in explaining species competition among different groups of marine phytoplankton. Next Position: Other Professional School.

Martin, Haley. 2004. Regulation and variation in catalase activity in *Heterosigma akashiwo*. Next Position: Other Professional School.

Dalton, Rebecca. 2004. Methods for the detection of cellular iron status using molecular probes and the flow cytometer. Next Position: Graduate School.

Stein, Aaron. 2004. Development of low cytometry methods to assess the production of reactive oxygen species in phytoplankton. Next Position: Other Professional School.

Di Loreto, Adrianna. 2003. The detection of nitric oxide (NO) production by marine flagellates using the intracellular fluorescent dye DAF-FM. Next Position: Unknown.

Burley, Paul. 2002. Reconstruction of algal bloom history using sediment cores in the Straight of Georgia (BC). Next Position: Unknown.

Howard, Rachel. 2001. The measurement of senescence in marine phytoplankton. Program in Oceanography, San Francisco State University (Romberg Tiberon Center for Environmental Studies), Tiberon Ca. (co-supervision with William Cochlan). Next Position: Graduate School.

DeMaeyer, Trish. 2000. Characterization of periphyton communities in streams draining forests in the Great Smokey Mountains National Park. Next Position: Unknown.

El-Subawwi, Rana. 1999. Ligand-iron availability in iron-limited marine environments. Next Position: Graduate School.

Millar, Sean. 1998. Sinking rates of phytoplankton under different iron stresses. Next Position: Graduate School.

Pickell, Lisa. 1998. Iron regulation of growth of marine phytoplankton. Next Position: MSc student, Western (Trick lab).

Siddell, S. 1997. Periphyton growth and limiting nutrients in Yukon streams. Next Position: Unknown.

McArthur, Mike. 1997. Supply of DOC to marine phytoplankton. Next Position: Graduate School.

Millman, David. 1996. Alkaline phosphatase regulation in marine phytoplankton. Next Position: Unknown.

Bonney, Lisa. 1996. Terrain attributes contributing to DOC export. Next Position: Unknown.

Henry, Michael. 1995. Diatom communities in the Turkey Lakes Watershed. Next Position: Graduate School.

McAuley, Kevin. 1995. Iron transport kinetics in cyanobacteria. Next Position: Graduate School.

McGregor, Terry. 1995. Stress induced proteins in cyanobacteria. Next Position: Unknown.

Rooney, Neil. 1993. Cyanobacterial blooms: which factors might advance or deter them? Next Position: MSc student, Western (Trick lab).

Murphy, Kelly. 1993. Remobilization of iron by grazing zooplankton. Next Position: Unknown.

Shilts, Elizabeth. 1993. The effectiveness of various tailing covers in abating acid generation. Next Position: Other Professional School.

Furgal, John. 1991. A survey of phototrophic organisms occurring at the chemocline of meromictic Crawford Lake, Ontario. Next Position: Graduate School.

Brown, Heather. 1991. Periphyton as indicators of urban river water quality. Next Position: Unknown.

Chandler, Danielle. 1991. Variations in snow algae growing on the surface of Victoria glacier, BC. Next Position: Unknown.

Manser, Rob. 1989. The effect of arsenic on phosphate transport in arsenic sensitive and tolerant species of *Chlorella vulgaris.* Next Position: Graduate School.

Wilhelm, Steven. 1989. Iron transport in cyanobacteria. Next Position: PhD student, Western (Trick lab).

## Technical Staff (current in bold)

Czikkel, Beatrix. 2014-2017. Laboratory technician for phytoplankton analysis.

Beausoleil, Danielle. 2011-2012. Research assistant for Ciguatera poisoning research. Next Position: Field Sales Representative, Iovate Health Sciences.

Bauman, Andrew. 2007-2010. Strategic Management of Marine Ecosystems in the Palm Developments of Abu Dhabi. United Nations University INWEH Dubai. (co-supervised with Dr. Peter Sale, University of Windsor). Next Position: PhD Student, ARC Centre of Excellence for Coral Reef Studies

## Undergraduate Research Assistants and Volunteers

Freeman, Erika (NSERC USRA). 2015. Laboratory technician. (co-supervised with Dr. Irena Creed, Biology).

Oakes, Bryant. 2015. Laboratory technician.

Erratt, Kevin. 2015. Laboratory technician.

McCain, J. Scott (NSERC USRA). 2012. Laboratory technician.

Arya, Sumedha (NSERC USRA). 2011. Lake Naivasha Sustainability Project field technician. (co-supervised with Dr. Irena Creed, Biology)

Walker, Sarah (NSERC USRA). 2010. Laboratory technician.

## University Mentor for “Students for Development Program”

We applied for the Association of Universities and Colleges of Canada Scholarships that the graduate students used to go to Kenya to work for a four-month period on a project that I co-supervised remotely (with Dr. Irena Creed):

Velasquez, Diego (PhD Student). 2009.

Fisher, Dane (BSc Student). 2009.

Sorichetti, Ryan (PhD Student). 2007.

Casson, Nora (MSc Student). 2007.

## University Mentor for International Graduate Students Studying in Canada

I sponsored applications for Department of Foreign Affairs and International Trade Canada Scholarships that the graduate students used to come to Canada to work for a six-month period on thesis-related research activities.

Donde, Oscar (MSc Student). 2012.

Jepkemoi, Susan (MSc Student). 2010.

Onyango, Godfrey (MSc Student). 2010.

Evelia, Dorothy (MSc Student). 2010.

Kigen, Charles Kipsang. (MSc Student). 2009.

Enanga, Eric Mudoto (MSc Student). 2009.

# SIGNIFICANT UNIVERSITY AND PUBLIC SERVICE (FROM 2000 TO PRESENT)

## University Committees and Activities

As an academic I participated in the curriculum design, course content and core competencies for two major programs: Masters of Environment and Sustainability and Master of Public Health.

## Faculty:

Member, Search Committee, Director of Centre for Environment and Sustainability, 2008-2009.

Chair, Senate Committee on Promotion and Tenure (SCPT-1), 1998-2002

Member, Basic Medical Sciences Undergraduate Education Task Force (Schulich School of Medicine) 2004-2006.

## Department:

Pathology, Promotions and Tenure. 2007-present

Modern Languages, Promotion and Tenure. 2011-present

Microbiology and Immunology, Promotions and Tenure, 2004-2006

Biology, Appointments, Promotion & Tenure 2003-present

Biology, Department Advisory Committee 2000-2006

Biology, Departmental Chair Selection Committee, 2002-2003

## Public Outreach:

 Our work on iron fertilization and marine toxin programs has drawn public attention.

* **New York Times**: www.nytimes.com/2010/03/16/science/16obiron.html**;**
* **Nature News**: www.nature.com/news/2010/100315/full/news.2010.124.html and [www.nature.com/climate/2010/1004/full/climate.2010.23.html](http://www.nature.com/climate/2010/1004/full/climate.2010.23.html),
* **Science:** news.sciencemag.org/sciencenow/2010/03/carbon-capture-method-could-pois.html;
* **Discover Magazine:** blogs.discover.magazine.com/80beats/2010/03/16/study-climate-hacking-scheme-could-load-the-ocean-with-neurotoxins/

**North Pacific Marine Science on our Seafood Safety project:** http://www.pices.int/ publications/pices\_press/volume18/v18\_n2/pp36\_PICES\_Seafood\_Safety\_Guatemala\_project.pdf, <http://www.pices.int/publications/pices_press/volume17/v17_n2/pp_5-7%20HAB%20project_f.pdf>.