

Eric Matthew Solomon

Personal Details

Date and place of Birth: April 23, 1965, Framingham, Massachusetts, USA

Nationality: Dual U.S. and Canadian

Affiliation: Ocean Wise Conservation Association

Laureate of the 2013 Arctic Inspiration Prize for work with Ikaarvik: Barriers to Bridges, bridging Arctic communities and scientific research.

Professional Interests

I work at the intersection between Arctic Indigenous ways of knowing and science, between northern communities and the southern public. I have spent the last decade facilitating dialogue and action intended to remove long-standing barriers to incorporation of Indigenous knowledge and meaningful engagement of Indigenous communities in research and decision-making. There are many reasons this is important. In Nunavut, for example, scientific researchers are expected to incorporate Inuit Qaujimajatuqangit (IQ, Inuit knowledge, customs and values) into their work in order to receive permits and funding. Resource development Project Proponents are required to incorporate IQ into impact assessments, determination of significance, monitoring and mitigation plans. For Inuit, it is a matter of self-determination, respect for Inuit knowledge and culture, and to assure all available knowledge is incorporated into decision making. Doing so also results in better, more robust, timely and relevant research results to inform decision making. This is especially evident in the Arctic where scientific study is a relatively young endeavor, data are limited, and local Indigenous knowledge can have a large role to play.

While Inuit are demanding it, Nunavut is requiring it and researchers are expected to do it, there is a critical gap in understanding about what *it* is: what do Inuit mean when they talk about IQ, and what does it look like when it is properly incorporated into research and decision making? These questions are at the heart of my professional interests.

A marine science background, communication, education and facilitation skills alone have not landed me in this place, however, and I am not alone here. My work is grounded in, and dependent upon, partnerships, collaboration, and many cups of tea on the floor with like-minded people. The youth, staff and mentors of Ikaarvik, and their communities, have been important collaborators and mentors over this last decade, and to the extent that I can claim expertise, they have been my teachers.

Employment History

Director of Arctic Programs Ocean Wise Conservation Association (December 2009 to present)

Responsible for directing Ocean Wise's suite of Arctic initiatives, research and programs, developing and maintaining northern relationships, collaborations and networks, and overseeing all messaging and content in partnership with Northern partners.

At the heart of Ocean Wise's Arctic public education, research, programs and initiatives are strong relationships and partnerships with Northern entities and individuals. Given the history of engagement of the North by southern institutions, Ocean Wise works with the North by invitation only, and then only with Northern partners. This necessitates the development and maintenance of long-term, respectful and mutually-beneficial relationships with Arctic communities, governments and individuals. That, in turn, requires a continued presence in Arctic communities. For the last decade, I have been building strong relationships in Northern communities, working with Hunters and Trappers Organizations, Hamlet Councils, Elders and youth on research, public education and capacity-building projects. Through consistent relationship building, collaborative projects and demonstrated integrity, accuracy and cultural sensitivity, Ocean Wise has gained a level of respect in the North that few southern institutions ever achieve.

Program Co-Lead, Ikaarvik: Barriers to Bridges (2010 to present)

In addition to the usual program funding, oversight, budgeting and operational work, I co-facilitate several workshops each year in Northern communities with Ikaarvik youth, community leaders and researchers on local priority setting, incorporation of Inuit Qaujimagatuqangit, research training for Inuit youth (by researchers) and IQ and community engagement training for researchers (by Inuit youth). In each case, the goal of Ikaarvik is to empower the youth and their communities co-lead these workshops. My role is often to create a "safe place for difficult discussion" in which barriers to effective incorporation of Indigenous knowledge and meaningful engagement of communities can be bridged and mutually beneficial collaboration can be created.

Ikaarvik was conceived of by a group of youth in Pond Inlet, Nunavut, who wanted to see more meaningful engagement of their community in research and decision making, and improved recognition, and use of Inuit Qaujimagatuqangit. The program is administered by Ocean Wise and remains driven by the youth and communities whose interests it addresses. Ikaarvik has five staff in Nunavut and many Indigenous and non-Indigenous mentors in four Nunavut communities and two Yukon First Nations.

Ikaarvik youth work with their communities to identify and explore the strengths of IQ (or DÄN K'E, in the Kluane and Champagn & Aishihik First Nations) and the strengths of science, and how the two ways of knowing be effectively combined for better and more relevant research and decision making. They work with their communities to identify local research priorities, then develop and run projects that address those priorities.

With support from Ikaarvik staff, Indigenous and non-Indigenous mentors, Ikaarvik youth have become an important bridge between Indigenous knowledge and science, researchers and communities, and among generations within communities. In addition to running their own research and monitoring projects, Ikaarvik youth work with researchers wishing to conduct studies in the North to bridge their interests with those of the youth's communities. Ikaarvik is also frequently asked to speak at major international conferences, universities and conduct workshops on incorporation of IQ and meaningful engagement of Inuit communities in research.

A selection of Ikaarvik projects bridging science and Indigenous knowledge, research and communities:

SmartICE (Pond Inlet, NU), **Arctic Corridors and Northern Voices** (Pond Inlet, NU, Gjoa Haven, NU, Salluit, Nunavik), **Invasive Species Baseline Monitoring** (Pond Inlet, NU), **Small Craft Harbour project** (Pond Inlet, NU), **Coppermine River Health Monitoring** (Kugluktuk, NU), **Canadian Rangers Ocean Watch**, Gjoa Haven, NU), **Microplastics in the Canadian Arctic** (Kugluktuk, NU, Pond Inlet, NU), **Genomics and Wildlife Co-management in Nunavut** (several communities across Inuit Nunangat)

**Vice President, Conservation Research & Education, Vancouver Aquarium Marine Science Centre (now Ocean Wise Conservation Association)
(March 2006 to December 2009)**

With over 500 employees and 1,200 active volunteers, the Vancouver Aquarium has earned national and international acclaim as a world-class conservation organization and a premier visitor attraction. Committed to innovation and excellence in exhibitry, research and education, the VAMSC is dedicated to fostering public awareness, engagement and commitment to finding and living real world solutions to complex marine conservation issues.

A positive, high-energy leader and a key member of the executive management team, I had responsibility to help create an organizational culture where respect, innovation, risk taking, cooperation, personal accountability, results, evaluation, team work and performance management are valued and rewarded. I was an active contributor to the strategic planning process for the VAMSC overall and assist the Board, executive team and staff to realize strategic goals and objectives in an efficient and effective manner.

My mandate was to provide integrative leadership and management to several departments: Conservation, Research, Curriculum Programs, Interpretive Delivery, Library and Information Services, Volunteer Services, Camps and Clubs, and Content Production. As the key advocate for, and expert on, an integrated approach to conservation, research and education, I had accountability to inspire creativity, excellence, innovation, focus, and teamwork and ensure that the Conservation, Research & Education (CRE) Group set and realized stretch goals. Through effective networking, partnerships, alliances, outreach and internal teamwork, I led and managed the business planning process for the CRE Group and encouraged the development, implementation and evaluation of innovative conservation, education and research initiatives that engage public interest and support for conservation.

**Project Director, Center for Cooperation in Research and Education (CORE), Ocean Institute
(May 2003-April 2006)**

Established in 2003, the Center for Cooperation in Research and Education designed, developed and tested innovative models for integration of research and education through collaborative projects among scientific research, formal and informal education, professional, technical and community institutions. In two years, CORE had grown from 3 to 9 full-time staff and 14 active grant-funded collaborative projects, and gained national recognition as a leader in the field.

- Developed and tested innovative models for integration of ongoing scientific research with formal and informal education with project budgets ranging from \$10,000 to \$900,000.
- Served as an interface between the research and education communities, recognizing and communicating the needs of all parties to foster effective collaborations.

- Designed and developed exhibits, learning labs, teaching stations, and public programs that engage audiences and interpret complex, accurate, and relevant scientific research and content.
- Integrated new technologies and scientific data into educational programming and exhibits.

**Senior Program Director, Ocean Education Center, Ocean Institute
(January 2002-May 2003)**

The Ocean Education Center is a 6-building campus, opened in late 2002 which hosts school groups during weekdays and public visitors on weekends for activity-oriented hands-on programming and exhibits. The OEC houses a large living collection of marine plants and animals in a marine laboratory-style setting. It is, in many ways, a laboratory for the design, testing, and dissemination of innovative approaches to marine education.

During design and construction of the new 60,000 square foot Ocean Education Center campus, I was responsible for:

- Conceptual and Interpretive planning, exhibit/teaching station design and development.
- Project management for development of all interpretive buildings and spaces, contractor selection, fabrication and installation of FF&E, exhibits, program and lab equipment, signage, seawater system, living collections, and aquarium design, fabrication and installation.
- Management of design, development, and implementation of 16 new education programs.

Upon completion of construction and opening of the new facility, responsibilities included:

- Management of operations for all OEC learning labs/exhibition spaces, life support systems, and oversight of husbandry staff, program coordinators and more than 60 instructional staff.
- Oversight of 16 weekday educational programs as well as public programs and exhibits, new program development, testing and evaluation.

Other Professional Activities

**Peer Reviewer for major scientific journals on manuscript submissions involving the use of Inuit Qaujimagatuqangit in Arctic research
(2018-Present)**

**Curriculum and Marine Biology Consultant for children's television.
(2009-Present)**

Consult on Arctic and marine biology-themed children's television programming. Currently Curriculum and Marine Biology Consultant on the Jim Henson Company's Splash and Bubbles, now in its second season. Review episode premises, develop episode curriculum, review outlines and scripts for accuracy, age-appropriateness and correlation to national science education standards. Also consulting on the development of a National Science Foundation-funded interactive education app for the show.

**Naturalist, Guide and Lecturer, One Ocean Expeditions
(2015-2020)**

Representing both Ocean Wise and One Ocean Expeditions, I lead shore excursions, give lectures and engage passengers in research projects while aboard One Ocean vessels.

Education

I hold a Bachelor's in Psychology, a Master's in Marine Ecology and advanced graduate studies in Science Education, none of which compares to what I have learned while working with Indigenous communities across the North.

1998-2001, Postgraduate studies in science education at the Graduate School of Education, University of California, Santa Barbara, Teaching and Learning Doctoral Program.

Research interests and coursework centered on qualitative research on public understanding of science, and informal science and environmental education.

1998, Master's in marine ecology, Department of Ecology, Evolution and Marine Biology, University of California, Santa Barbara.

Research centered on the roles of species interactions, dispersal potential, and habitat spatial structure in the determination of species distribution and abundance. Additional research funded by the U.S. Minerals Management Service for studies of the reproductive biology and ecology of surfgrass and the development of conservation and restoration protocols.

1991-1993, Full time unclassified postbaccalaureate course work in biology, chemistry, physics and calculus, University of California, Santa Barbara.

1987, BA in psychology, emphasis on human information processing, University of California, Santa Barbara.

Peer-reviewed publications

Eby, D. W., Loomis, J. M., & Solomon, E. M. (1989). Perceptual Linkage of Multiple Objects Rotating in Depth. *Perception*, 18(4), 427–444. <https://doi.org/10.1068/p180427>

Reed, D. C. Holbrook, S. J., Solomon, E., & Anghera, M. (1998). Studies on germination and root development in the surfgrass *Phyllospadix torreyi*: implications for habitat restoration. *Aquatic Botany*, 62(2), 71-80. [https://doi.org/10.1016/S0304-3770\(98\)00088-6](https://doi.org/10.1016/S0304-3770(98)00088-6)

Sevellec, M, Lacoursière-Roussel, A, Howland, K, et al. (2020). Detecting community change in Arctic marine ecosystems using the temporal dynamics of environmental DNA. *Environmental DNA*. 00: 1– 18. <https://doi.org/10.1002/edn3.155>

Ross, P.S., Chastain, S., Vassilenko, E. et al. Pervasive distribution of polyester fibres in the Arctic Ocean is driven by Atlantic inputs. *Nat Commun* 12, 106 (2021). <https://doi.org/10.1038/s41467-020-20347-1>

Pedersen, C., M. Otokiak, I. Koonoo, J. Milton, E. Maktar, A. Anaviapik, M. Milton, , G. Porter, A. Scott, C. Newman, C. Porter, T. Aaluk, B. Tiriraniaq, A. Pedersen, M. Riffi, E. Solomon, and S. Elverum. (2020). SciQ: an invitation and recommendations to combine science and Inuit Qaujimagatuqangit for meaningful engagement of Inuit communities in research. *Arctic Science* 6: 326–339 <https://doi.org/10.1139/as-2020-0015>

Selection of Relevant Invited and Conference Presentations

- Solomon E. 2009. Canadian Perspectives on the Ocean and Climate Change. Annual Meeting, Canadian Association of Zoos and Aquariums, October 2, 2009.
- Solomon E. 2010. Rethinking our relationship with the public. Why they can't relate to Arctic science, why it matters and what we can do about it. ArcticNet ASM, December 2010.
- Solomon E. 2011. An Arctic primer. Invited lecture, University of British Columbia Beyond the Classroom, March 5, 2011.
- Solomon E. 2011. The role of zoos and aquariums in breaking down barriers to polar science communication. ArcticNet ASM, December 2011.
- Solomon E. 2012. Framing the North at a major public aquarium. International Polar Year, April 2, 2012.
- Solomon E. 2015. Canada's Changing Arctic. Arbutus Manor, March 27, 2015.
- Solomon E. 2015. Impacts and implications of changing sea ice on Canada's Arctic communities. Vancouver Aquarium Café Scientifique. November 25, 2015.
- Solomon E. 2015. Life in a changing Arctic. Museum of Vancouver, Arctic Adaptations. November 26, 2015.
- Solomon E. 2016. Connecting the North and South: the role of public aquariums. Coastal Education Learning Centers Meeting, November 30, 2016.
- Solomon E, Elverum S, Arreak A, Carter N. 2016. Addressing community research priorities through youth engagement and capacity building. ArcticNet ASM, December 2016.
- Solomon E, Elverum S, Otakiak M. 2017. Bridging barriers to Inuit youth engagement in locally relevant science and research. International Arctic Change Conference, December 2017.
- Solomon E. 2017. Arctic awareness, research and engagement in times of change. Our Poles Our Planet Conference, March 4, 2017.
- Solomon E. 2018. The changing Arctic (and why we care). Guest lecture on board One Ocean Expeditions cruise, August 2018.
- Solomon E. 2018. Ikaarvik: Inuit youth bridging research and their communities in a changing Arctic. Arctic Institute of North America, University of Calgary, November 16, 2018.
- Maktar, E, Anaviapik A, Porter G, Milton J, Milton M, Otakiak M, Kogvik S, Kogvik B, Solomon E, Elverum S. 2018. Ikaarvik and the SciQ Summit. International Arctic Change Conference, December 13, 2018.