

IMS Seminar
November 6, 2013
201 O'Neill, 3:30 pm

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Polar Marine Science in the Genomics Era

Unprecedented environmental changes are occurring in the polar regions and climate models suggest that these changes are only accelerating into the future. Changes in temperature, sea level, ocean alkalinity and sea ice cover are expected to alter ecosystem structure and function, but how? The changes are complicated and are happening quickly, but difficulty of access and limited baseline data make the poles challenging environments to conduct research in, which is why it is imperative to increase the sensitivity and sophistication of our methods as well. Paradigm-disruptive advances in DNA sequencing technologies are offering deeper views into biology at all levels, and particularly in the microbial realm. However, in the polar marine sciences we have only begun to take advantage of these advances to study the diversity, evolution, distribution, function, and future of life in the polar seas. I will review the state of the art in next-generation sequencing technologies as applied in the Arctic and Antarctic, and provide some thoughts on potential uses for these technologies in Alaskan waters.

