



## **Earth Science Teaching Strategies Used in the International Polar Year**

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There are many effective methods for teaching earth science education that are being successfully used during the fourth International Polar Year (IPY). Relevance of IPY and the polar regions is better understood using a systems thinking approach used in earth science education. Changes in components of the earth system have a global effect; and changes in the polar regions will affect the rest of the world regions and vice versa. Teaching strategies successfully used for primary, secondary, undergraduate and graduate student earth science education and IPY education outreach include: 1) engaging students in earth science or environmental research relevant to their locale; 2) blending lectures with research expeditions or field studies, 3) connecting students with scientists in person and through audio and video conferencing; 4) combining science and arts in teaching, learning and communicating about earth science and the polar regions, capitalizing on the uniqueness of polar regions and its inhabitants, and its sensitivity to climate change; and 5) integrating different perspectives: western science, indigenous and community knowledge in the content and method of delivery. Use of these strategies are exemplified in IPY projects in the University of the Arctic IPY Higher Education Outreach Project cluster such as the GLOBE Seasons and Biomes project, the Ice Mysteries e-Polar Books: An Innovative Way of Combining Science and Literacy project, the Resilience and Adaptation Integrative Graduate Education and Research Traineeship project, and the Svalbard Research Experience for Undergraduates project.