How can you take polar marine science to the world?
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Polar Regions are key to address major scientific issues related to Marine Science, such as climate change, ocean acidification and sea level rising. Within the last years, worldwide scientific and public communities highly benefitted from all the research and educational programs associated to the International Polar Year 2007-09 (IPY). Today there is some IPY, Polar Weeks are an international education & outreach initiative still in full swing. Polar Weeks is a twice a year initiative promoted by the international Association of Polar Earlier Career Scientists (APECS) and the Polar Educators International (PEI). This initiative aim to stimulate the knowledge of the poles through the science that is conducted there, engaging polar scientists, educators, policy makers, the media and the public in general.

Standing out from the more than 60 countries involved in the IPY, Portugal was considered a success story. Education PRO-POLAR and Profession-Polar Scientist are our most recent educational polar projects, endorsed by the Portuguese Polar Program. These programs aim to take polar scientists (including marine biologists) to schools, produce educational films (sharing mainly national scientific missions to polar regions), polar exhibitions, among others. Together, all these initiatives carried out at the national level, and coordinated internationally, have gathered 23 scientists. In two years of work we visited more than 88 schools, from the basic to the secondary levels, and reached more than 16000 students of all ages in Portugal alone.

In this presentation we will show on the value of polar science to address world marine science issues, and focus on some examples of national and international successful activities carried out since 2007. Finally, we will provide guidance on how to convey simple marine science concepts to wider audiences.

Peeling shrimp and oral history
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The Flanders Marine Institute (VLIZ), maritime author Katrien Vervaele and the Centre for Agrarian History (CAG) set up a project on oral history and the transmission of intangible marine cultural heritage about brown shrimp (Crangon crangon), a local seafood product with a long gastronomic heritage in Belgium.

The project fits in with the book «Garnalen – Verhalen en recepten van vroeger en nu” (Shrimp - previous and recent stories and recipes), published in 2012 (www.lannoo.be/garnalen). The authors - Katrien Vervaele and Nancy Fockedey (VLIZ) - discovered that young people barely know the taste of freshly peeled brown shrimp and lack the skills of peeling.

Some hundred children (9-10 year old) and elderly people (living in four senior care centres at the Belgian coast) met each other in November 2013. The seniors learned the children how to peel the shrimp and meanwhile they told about the shrimp fishing, processing and gastronomy in their old days. Next to learning to know the skill, the youngsters (re)discovered the taste of freshly peeled shrimp. Meanwhile the seniors told about their old days: oral history stories of how fishing and processing of, and cooking with brown shrimp evolved over the period of some generations. Within the same activity, the children learned about oral history and oral knowledge transfer. They were confronted with their recent history.

The children were prepared in class with an educational kit with information about the biology, context and history of the shrimp. CAG, specialised in oral history and intangible cultural heritage of agriculture and food, gave expert advice and basic tips on oral history interviews (www.katrienvervaele.be/garnalenverhalen.html).

During the activity in the senior day centres, the organizers noticed that the role of the supervisor at each table was crucial, since the children of this age experienced some difficulties to get the conversation going. The reactions of both sides, children and seniors, were heart warming positive. The success of the activity prompted the organizers to share their experiences and to inspire other schools and senior care centres to organize this activity.


References
Pel grijze garnalen en proef de verhalen. Het Virtuele Land - CAG (www.hetvirtuoleeland.be)
The health of polar marine ecosystems is intimately tied to seawater temperature and the amount of sea ice present. These two factors influence the growth and reproduction of organisms, food sources, and the biogeochemical cycles of the region. An example of the effects of climate change on the biodiversity in the polar regions is the reduced population of Adélie penguins. For example, an increase in water temperature as little as 1°C causes coral bleaching, the loss of color due to the death of the zooxanthellae that live within the coral tissues. But, bleaching does not affect only the color of coral. Moderately bleached coral has lower growth and reproduction rates and severe bleaching kills them. Start studying Marine Science - Polar Seas. Learn vocabulary, terms and more with flashcards, games and other study tools. How does it relate to density? Surface water flows to the plate and gets colder, when seawater freezes it leaves salt behind increasing salinity - water becomes denser and sinks. What is a Global Conveyor Belt? Cold, deep current + warm, surface current. It circulates seawater around the earth - entire process takes as long as 1000 years to complete. What does a Global Conveyor Belt do to heat? What would earth be without it? Both cause climate impacts all over the world: ice storms, droughts, mudslides, floods. Both caused by a change in winds that blow over the Pacific Ocean. What do hurricanes need to form and thrive? How does the Polar Code protect the environment? The following infographic illustrates the environmental requirements of the Polar Code - available to view and download: Arabic. Chinese. The issuance of a certificate would require an assessment, taking into account the anticipated range of operating conditions and hazards the ship may encounter in the polar waters. The assessment would include information on identified operational limitations, and plans or procedures or additional safety equipment necessary to mitigate incidents with potential safety or environmental consequences. The draft amendments will be submitted to the Marine Environment Protection Committee with a view to approval and circulation for future adoption. Voyage planning in remote areas. You can learn about marine robotics, the challenges of atmospheric measurements, how to manage working in a laboratory when it is moving and best practices in technical science support. The course is of interest for both, scientists and technical professionals. All workshop materials will be available online on the APECS vimeo channel. My motivation to take part in this training is to increase understanding and awareness among the new researcher's generation for the engineer's perspective so that the two worlds can work better together and also to increase the visibility of women's contribution to polar research. Course outline. Historical overview of polar marine robotics: an introduction to the topic. CNR marine robotics activities in Ny-Ålesund /Svalbard. Scientific motivations.