

Sweden

The Swedish GEOTRACES activities during 2010 comprise four major themes *i)* proposal and planning activities for a GEOTRACES project in the Arctic; *ii)* Participation in intercalibration efforts; *iii)* Participation in COST action ES0801; *iv)* GEOTRACES related activities in other projects/cruises.

Planning work related to GEOTRACES

Building upon the outcome of the Delmenhorst Arctic planning workshop a proposal has been submitted to the Swedish research council (VR) with the aim to use the icebreaker *Oden* as a research vessel for a GEOTRACES cruise in the Arctic Ocean (PI Per Andersson). The proposal was graded *excellent* and adopted for initial planning by Swedish Polar Research Secretariat (SPRS). The proposal includes international collaboration and the time frame for the proposed cruise is by the end of the coming 5 year period.

Participation and presentation (Per Andersson) of the Swedish Arctic GEOTRACES plans at the US GEOTRACES Arctic Workshop, 29 Sept. to 1 Oct., 2010, at NSF headquarters in Washington DC.

Robert Anderson was invited by the Royal Swedish Academy of Sciences (KVA) for a lecture in Nov. 2010. During his visit a presentation of GEOTRACES and the Swedish Arctic plans was made for the KVA geoscience class. Also a meeting between Bob A., SPRS and Per Andersson was undertaken where possible collaboration US-Swedish collaboration was discussed.

COST action ES 0801

Within the COST action *the ocean chemistry of bioactive trace elements and paleoclimate proxies* Swedish scientist are participating in the following during 2010:

- The test and training cruise organised by Dutch researcher on *R/V Pelagia* from Texel to Iceland 22 to 28 April, 2010. Unfortunately the trip was cancelled due to the Icelandic volcanic ash over European air space.
- Swedish participation (Johan Ingri) in planning workshop during 2011 for planning Baltic Sea cruises

GEOTRACES intercalibration work

Swedish laboratories participated in the intercalibration effort of Nd, Th and Si isotopes and some trace elements. Results have been reported to the coordinators for each element. Participation in the GEOTRACES intercalibration workshop at ODU Norfolk VA, 8 to 10 March 2010.

Funding

Some supporting funds for the GEOTRACES IPO have been secured and transferred to the IPO in Toulouse.

GEOTRACES promotion activities within Sweden

- Per Andersson rotated off the GEOTRACES SSC at the end of 2010 and David Turner, Gothenburgh University, is a new SSC member from 2011. Per and David met in March 2011 for a discussion about GEOTRACES.
- An e-mail list is kept and maintained by P Andersson for distribution of information about the GEOTRACES project among marine scientists in Sweden. This list is now transferred to David Turner.
- Presentations of the GEOTRACES project for the Swedish Geophysical Committee at KVA and the Swedish SCOR group meeting in March 2010.

Cruises, projects and publications

Amundsen Sea Polynya International Research Expedition (ASPIRE). A joint US-Swe expedition on icebreaker *Oden* and *R/V Palmer* during 2010/2011 with GEOTRACES related activities. Participation in TEI projects from Stockholm University (Kuria Ndungu) and Swedish Museum of Natural History (Per Andersson).

Presentations of results from the Amundsen Sea cruises at OSM in Portland Oregon, February 2010. Abstract of presentation:

Andersson P.S., Sherrell R.M., Planquette H. and Kylin H.(2010) *The Isotopic Composition of Nd in water from the Amundsen Sea: Influence of Detrital Material From the Antarctic Continent*

West Atlantic Leg3. Preparation of sampling material for collection of Th isotopes at the cruise GEOTRACES West Atlantic leg 3 Punta Arenas (Chile) 02-03-2011 to Las Palmas (Spain) 06-03-2011.

The International Siberian Shelf Study 2008 (ISSS-08) During 2010 publications from the GEOTRACES related cruise have been finalised for publication. A special volume of *Biogeosciences Discussions* for ISSS-08 results is in preparation.

Selected references from ISSS-08 includes:

Alling V., Sanchez-Garcia L., Porcelli D., Pugach S., Vonk J.E., van Dongen B. Mørth C.-M., Anderson L.G., Sokolov A., Andersson P.S., Humborg C., Semiletov I., Gustafsson ö. (2010) Non-conservative behavior of dissolved organic carbon across the Laptev and East Siberian Seas. [doi:10.1029/2010GB003834](https://doi.org/10.1029/2010GB003834) Global Biogeochemical Cycles 24, GB4033

Persson P.-O., Andersson P.S., Zhang J. and Porcelli D. (2011) Determination of Nd isotopes in water: A chemical separation technique for extracting Nd from seawater using a chelating resin. [dx.doi.org/10.1021/ac102529k](https://doi.org/10.1021/ac102529k) Analytical Chemistry 83, 1336-1341.

Climate warming in Siberian Permafrost Regions; tracing the delivery of carbon and trace metals to the Arctic Ocean. This project (PI's P Andersson and D Porcelli, Oxford) was funded by the VR as a three year project (2011-2013) and includes a field study in the Lena River Basin planned to take place during 2012. The main aim is to study a large basin dominated by permafrost and the impact of changing temperatures on the delivery of TEI to the Arctic Ocean.

Submitted by Per Andersson.