Creating quality in PhD education through a national research school

Anniken R. Birkelund and Stephanie C. Werner, University of Oslo, CEED, Norway (a.r.birkelund@geo.uio.no)

WHAT IS QUALITY IN PHD EDUCATION?

The quality of Norwegian research schools were measured according to these parameters in a 2018 report (Piro et al., 2018):

- High completion rates: How many accepted PhD students who finish their degree
- Low completion time: How long a PhD student use to finish a degree
- High degree of internationalization and national cooperation

These parameters can display some degree of quality, but they are far from interpreting the quality of the PhD students work, their future career possibility or their impact on the research community. How we choose to educate PhD students and how the PhD students manage to perform scientifically and career vice are more important for each individual PhD student.

CREATING QUALITY THROUGH A NETWORK

The short duration of Norwegian PhD programs combined with a course requirement of 30 ECTS points, calls for well-planned and efficient research, good supervision and course work. For a PhD student to work efficient a good workplace, role models and a good network is also of great importance. Under difficult conditions, the universities see higher drop out and longer completion time numbers from the PhD program, especially for already vulnerable groups.

Our solution has been to gather the Norwegian natural science expertise relevant for studying the Earth as part of the Solar System and promotes an environment that enables efficiency, at the same time as the scientific quality remains high.

Since 2016 DEEP research school has offered specialised scientific courses and a bigger network for the PhD students and their supervisors. We see an increasing interest in joining the research school as part of the PhD program and increasing cooperation between PhD students within the network. With annual conferences and many smaller gatherings, we also ensure that the PhD students form a network amongst each other and find mentors that will strengthen them in their future careers.

EFFECTS

- We have diversified the training for PhD students in the scientific fields offered.
- By attending our General Assemblies and our interdisciplinary courses, the PhD students are exposed to a wider range of scientific topics. They do not only see the topic they are focusing on in their PhD, but get to experience and see related topics as well.
- We have unified and intensified the exchange and interaction between the partner institutions.
- Using national collaboration as an asset for smaller geoscience communities. It improves the geoscience education and the geo-community for our PhD students.

The DEEP network will have a lasting impact on Geosciences in Norway and beyond as the network is bringing all institutions closer together and a small, scattered field has built up an offer for their PhD students that was lacking before.

REFERENCES

- Piro, Fredrik Nicklas, Siv-Elisabeth Skjelbred, Dag W. Aksnes, Kjersti Nesje and Pål Børning (2018): Evaluation of the national research school scheme. NIFU Report 2018:13. Oslo: NIFU

DEEP: A NORWEIGAN RESEARCH SCHOOL

The Norwegian Research School for Dynamics and Evolution of Earth and Planets (DEEP) is a national research school in geosciences. DEEP aims to educate solid earth and planetary scientists in a holistic way, placing the Earth's structure and evolution in a comparative planetology perspective.

DEEP is a national initiative and involves all major national institutes educating PhD students within the fields of dynamics and evolution of the earth and planets. The goal is to offer efficient training of doctoral students by providing a platform for scientific discussions, fostering networks across Europe, offering specialized courses as well as soft skill training.

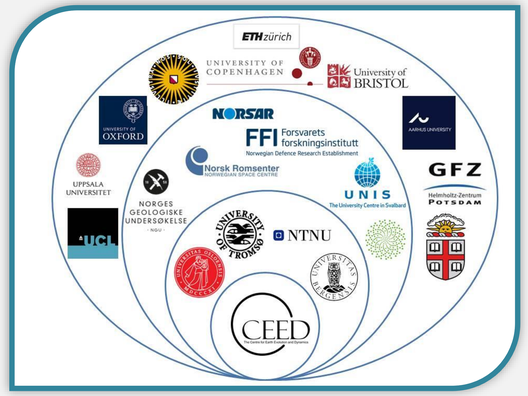
All the activities are focused within the four main DEEP themes:

- Planetary Physics and Global Tectonics: Study of the physics and tectonic processes that govern the properties and evolution of the Earth and other planets.
- Planetary interior: materials, structure and dynamics: Study of heat and mass flow in the core and the mantle. Mineralogy, seismology and Earth structure, melting relations and chemical heterogeneities.
- Solid Earth: composition and evolution: Study of the crust, lithosphere and asthenosphere based on geology and geochemistry, geophysical imaging, and geodynamical modelling.
- Solid Earth - Fluid Earth Interactions: Material recycling across the geospheres, how mantle dynamics, volcanism, plate tectonics influences long-term, global environmental and climatic changes.

The Centre for Earth Evolution and Dynamics (CEED), University of Oslo, is host to the research school. CEED combines studies of processes and materials common to the terrestrial planets, convective mantle dynamics and plate tectonics, paleomagnetism, paleogeography and Earth evolution, including events like the formation of Large Igneous Province and their atmospheric and oceanographic consequences, such as related mass extinction.

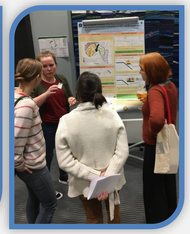
The school is funded by the Research Council of Norway.

To learn more about DEEP Research school and our courses and activities, please scan the QR code or contact us by email: post-deep@geo.uio.no



All national and international DEEP partners.

PhD students at the 3rd DEEP General Assembly 2019, Sommarøy, Tromsø, Norway.



DEEP PhD student members partacing at DEEP poster sessions and courses.

Portraying DEEP.