BGeoSys (Biogeochemistry and Modeling of the Earth System, http://biogeomod.ulb.be/) at the Université Libre de Bruxelles (in close collaboration with the Max Planck Institute, Hamburg) is inviting applications for a **2 year Postdoctoral Research Assistant to work in the EU Horizon 2020 project “Nunataryuk”** (https://nunataryuk.org) that brings together 27 partners from 11 countries to determine both physical, as well as social impacts of permafrost thaw on the fragile Arctic environment.

The position will focus on the modelling aspects of the project and will include regular research visits to MPI Hamburg and other partner institutions. It also provides opportunities to join field work and offers ample networking opportunities within the (inter)national network of project partners.

**Project Background**

A quarter of the landmass in the Northern Hemisphere consists of permafrost soils, which have been frozen solid for thousands of years. A third of the world’s coastlines are permafrost and span Alaska, Canada, Greenland, Norway and Siberia. Researchers have known for years that the permafrost is thawing ever more rapidly due to climate change. Yet, the implications of this permafrost thaw on global climate and local communities remain unconstrained.

In the EU project *Nunataryuk*, coordinated by the Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research (AWI), experts from 27 research institutions will spend the next five years answering this research question and determining the role of permafrost coastlines in the Earth’s climate system. *Nunataryuk* is unique because physical and social scientists collaborate closely with local communities to determine how they can best adapt to thawing permafrost.

**The Position:**

Existing Earth System Models currently do not include the sub-sea permafrost component thus compromising our ability of assessing the potential effect of sub-sea permafrost thawing on climate. The PDRA position will develop a numerically efficient encapsulation of benthic pelagic fluxes from permafrost-bearing sediments that will be coupled to the Earth System Model MPI-ESM. To this end, the PDRA will develop and apply a stand-alone biogeochemical model of permafrost bearing marine sediments with a focus on the production, fate and transport of CO$_2$ and CH$_4$ through the sediment column. This stand-alone model will be initialized using data generated and synthesized during the project. The sediment model will then be coupled to the marine biogeochemistry model HAMOCC within the MPI-ESM. In cooperation with the MPI-M group, processes of CH$_4$ transport and oxidation pathways in the water column will be added to the MPI-ESM.

The PDRA thus plays a crucial role in interdisciplinary knowledge synthesis. She/he will be required to closely collaborate with the modelling partners at MPI-M in Hamburg (Dr. Victor Brovkin, Dr. Tatiana Ilyina) and liaise with all project partners. The PDRA will undertake regular research visits to Hamburg and will have the opportunity to join fieldwork. In addition, the successful candidate will have opportunities to present the research at project meetings and international conferences.

**Your Profile**
The candidate will have a PhD in geosciences, climate science, environmental sciences, oceanography, marine sciences, physics (or related fields). He/she will have strong numerical skills and extensive experience in numerical modelling, and will be author of publications in top-ranked international journals. We are looking for candidates who can demonstrate excellent communication skills, experience in working as part of a research project, and proven ability to work independently with the ability to take the initiative, develop research methodologies and methods of data analysis. Eligible applicants must not have resided or carried out their main activity (work, studies, etc.) in Belgium for more than 12 months during the 3 years preceding the appointment.

Applications should be sent by email to sarndt@ulb.ac.be and should include:

- a cover letter
- a CV, including a list of publications
- contact details of two referees

Please note that we aim to fill the position before fall 2019, but the position will remain open till filled.

The net amount of the fellowship will be ~€ 2421/month (minimum, exact salary depends on experience). Further benefits are:

- EU Citizens and citizens from countries that have a bilateral social security agreement with Belgium: social security coverage including medical insurance, unemployment benefit, pension, maternity leave and child benefit.
- Non-EU Citizens from countries that have no bilateral social security agreement with Belgium: social security coverage including medical insurance, maternity leave and child benefit.
- Insurance against accidents in the workplace.
- Tax exemption.
- Low-cost private hospitalization insurance.
- On-site services at the ULB: medical centre, university hospital, sports centre, subsidized restaurants, cultural centre, childcare, holiday camps for children, etc.

For informal enquiries please contact Prof. Sandra Arndt (sarndt@ulb.ac.be)