We are offering a 4-years PhD thesis contract associated to the research project PALEOGREEN - "**Glacial oscillations and climate variability in NE Greenland**" funded by Spanish Research Agency (ref. (CTM2017-87976-P).

We are looking for a highly motivated graduate student, able to work independently and to actively interact with an international research team. The PhD student will be supervised by Dr Marc Oliva (University of Barcelona) and Dr Santiago Giralt (Institute of Earth Sciences Jaume Almera, CSIC). She/he should be proficient in English (both oral and written) and show a good academic record. Ideally, candidates should hold an MSc Degree in Geography, Geology or related disciplines and have research interests on geomorphological and paleoenvironmental issues in polar regions. A record of previous experience publishing scientific papers will be highly valuable. Annual Gross Salary will be 16.422 € plus full Social Security Benefits.

Interested candidates should email a motivation letter and CV to Marc Oliva (marcoliva@ub.edu).

Project Summary
The High Arctic has been among the fastest warming regions on Earth during the last decades. In Greenland, such warming is having important implications on glacier mass balances and driving substantial geoecological changes in ice-free areas, but many effects are yet not understood. Glaciers and permafrost-related features are among those expected to show the most dramatic local responses to changing climate in Greenland. The consequences of this warming trend on polar terrestrial and marine ecosystems may also affect the entire Earth through a wide range of feed-back processes and climate teleconnection patterns.

Within this context, PALEOGREEN will focus on Zackenberg area, an ice-free site located in the NE of Greenland to address two main hypotheses:

(1) Glacier thinning rates in nunataks (i.e. rocky areas surrounded by glaciers) and deglaciated coastal environments can be inferred since the onset of the deglaciation. Their comparison with recent/contemporary dynamics will allow framing recent rates of glacier shrinking with the Late Pleistocene-Holocene record.

(2) Ice-free areas include a large number of lakes in continuous permafrost terrain. A high-resolution geochemical, biological and physical characterization of the properties of sediment cores from some of these lakes will provide the climatic background driving glacial oscillations since their deglaciation.

We will apply a multiple-dating approach combining absolute (cosmogenic, lichenometry, OSL, 14C) and relative dating techniques (Schmidt hammer, Equotip) at each site to reconstruct the spatio-temporal patterns of glacial advances and retreats since the onset of the deglaciation. The analysis of remote sensing and aerial imagery, old pictures and glaciological data, will elucidate whether the recent glacial retreat in NE Greenland is part of natural climate variability or it results of the amplification of the feedback effects of climate change in the High Arctic.

The multidisciplinary team of PALEOGREEN will address the two hypotheses completing five tasks carried out using cutting-edge field technologies, analytical methodologies and statistical techniques:

Task 1 - Remote sensing mapping
Task 2 - Field work activities
Task 3 - Laboratory analyses
Task 4 - Reconstruction of the deglaciation
Task 5 - Reconstruction of climate variability

Marc Oliva, PhD
www.marcoliva.com

Antarctic, Arctic and Alpine Environments (ANTALP) research group
Department of Geography, Universitat de Barcelona
Montalegre 6-8, 3r floor, 08001 - Barcelona
+34 934037867 / +34 616104266