Job Vacancy Available

Marie Skłodowska-Curie actions
Innovative Training Network (ITN-ETN)
"BASE-LiNE Earth"

We invite applications to undertake competitive high-level research on the complex Phanerozoic seawater history through the determination of original proxy information preserved in reliable ancient geological archives like fossil brachiopods using cutting edge technologies and experimental approaches within the Marie Skłodowska-Curie Innovative Training Networks (ITN-ETN) »Brachiopods As SEnsitive tracers of gLobal mariNe Environment: Insights from alkaline, alkaline Earth metal, and metalloid trace element ratios and isotope systems«. BASE-LiNE Earth is funded through the HORIZON2020 program of the European Union and consists of 14 full partners and seven associated partners out of 11 countries (Austria, Australia, Canada, Czech Republic, Denmark, France, Germany, Israel, Italy, Poland, Slovak Republic) among them internationally leading researchers in the field of geology, chemistry and isotope geochemistry, marine biology and ecology as well as numerical modelling and engineering.

The project is coordinated at the GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany. BASE-LiNE Earth will run until December 2018.

All positions offered are full-time and fixed term for 3 years. Successful applicants will benefit from training and networking program delivered jointly by academic and non-academic partners. As a result, BASE-LiNE Earth fellows will gain both, research experience and complementary skills such as career planning, communicating science, and management techniques. Researchers will mainly work in their host institution, but they will also have the possibility to visit another BASE-LiNE Earth partner for secondment activities, which could be either in academia or in industry. On completion of their fellowship, successful applicants are expected to be among the future leaders in their respective fields. The Researchers recruited for these positions are expected to be an active part within the BASE-LiNE Earth consortium by participating in network wide activities such as workshops and conferences. The candidate will be part of an international, interdisciplinary team at universities and research institutions, and is expected to attend the actions as announced in the proposal.

In order to strengthen the role of women in science the application of females for an ESR position is strongly encouraged. Handicapped persons with comparable qualifications receive preferential status.

Please submit your complete application (including a CV [max. 3 pages], a letter of motivation for the position and a statement of your research interests [max. 1 page], relevant certificates, plus contact details of at least two referees) to the contact below quoting BASE-LiNE Earth_ESR13, Applications are accepted until the positions are filled, but we intend to conduct a first evaluation by May 31st 2015.
ESR13—PhD position

From warm to cold: High resolution trace element and isotope ratios during the late Miocene and the Pliocene/Pleistocene transition from ancient warm to modern cold climates

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SHORT DESCRIPTION: This PhD project focuses on the development and use of non-traditional stable isotope systems of mainly Calcium (Ca, $\delta^{44/40}$Ca) and Strontium (Sr, $\delta^{88/86}$Sr) in brachiopods and pectinids for their potential use as proxies for the geochemical evolution of Phanerozoic seawater. In particular we aim to investigate two important Phanerozoic time intervals: (i) the upper Miocene post-Messinian Salinity Crisis (MSC) and (ii) the warm/cold Pliocene/Pleistocene transition in the circum-Mediterranean in comparison to a large oceanic basin such as the Pacific Ocean (e.g. brachiopods of the Careaga sandstone, Upper Pliocene, California).

FULL JOB DESCRIPTION

The selected PhD student will apply the non-traditional stable isotope systems of Ca ($\delta^{44/40}$Ca) and Sr ($\delta^{88/86}$Sr) in brachiopods and pectinids (as possible target organism in the absence of brachiopods) as potential proxies for the effect of weathering processes on the Phanerozoic seawater composition. We are mainly interested in two specific Phanerozoic time intervals and environments: (i) the post-Messinian Mediterranean, after the recovery of the Mediterranean from the salinity crisis event and (ii) during the Pliocene/Pleistocene transition when the global climate shifted from warm to cold climates ("the rise of Ice Ages"), and the Himalaya mountains induced the monsoon systems in the southern oceans with impacts of the weathering regime on seawater compositions.

The main goals of this PhD study are to establish and comparing the behavior of the Sr and Ca isotope values in brachiopods and pectinids in modern and fossil environments (e.g. modern coral reefs, fossil Miocene-Pliocene marine assemblages). Since both species live together in modern and ancient marine environments this part of the study would open the way for extending the scope of our research to fossil assemblages where pectinids are more abundant than brachiopods.

Furthermore, the study intends to establish the behavior of Sr and Ca isotope values during two major transitions in seawater history: the post-Messinian rise of seawater in the circum-Mediterranean where marine transgressions are evident. This will address the major issue of how Mediterranean seawater evolved after a major desiccation and brine formation event as compared to the global open ocean (Upper Pliocene in California). The variations of the $\delta^{44/40}$Ca - and $\delta^{88/86}$Sr isotope values across the Pliocene/Pleistocene transition when the global ocean entered the era of ice ages, with all their affects (e.g. ocean circulation, dust deposition, hydrological patterns) will be examined in detail in order to quantify changes in continental weathering rates.

The PhD study will be conducted at the Institute of Earth Sciences at the Hebrew University of Jerusalem (IES –HUJ) and the Geological Survey of Israel (GSI). Both institutes are equipped with all necessary petrographic and geochemical facilities including clean room laboratories for sample preparation, also new XRD, SEM, new microprobe system, mass spectrometers for stable isotope measurement, high-resolution plasma mass-spectrometers (MC-ICP-MS), 193nm excimer laser ablation system. PhD secondments at other institutions linked to the BASE-LineE Earth project will allow for comprehensive topical expansions of the PhD study. A tight
collaboration amongst the BASE-LiNE Earth nodes will set an ideal basis for this and all the other PhD projects of this call.

Qualifications:
As a successful candidate you should have

- A MSc degree in one of disciplines of geochemistry with good background in geology and some knowledge in isotope geochemistry and oceanography
- The ability to work in an internationally-oriented environment
- A broad interest in geosciences, and the willingness and capacity to work independently
- The willingness to travel
- A good knowledge of English (fluent in oral and written), since the host group is highly international in composition and publication aims
- Experience in laboratory work, e.g., wet chemistry techniques, microscopy, operation of analytical instrumentation, etc.
- The willingness to conduct field work if needed, e.g., specimen collection, small scale geological mapping, etc.

Employment conditions:
The position is offered for three years full-time position, starting summer/autumn 2015. In accordance with the Marie Skłodowska-Curie rules, the salary will be calculated as follows:

Annual salary: ~47,000 €* plus in case of family obligations** additionally 6000,-€.

* This amount is based on the relevant budget concerning the employment of the EU-Researcher. After deduction of the employer’s social insurance share, it amounts to the gross salary for the activity. Employees gross salary includes taxes, social security, insurance, pension summing up the following:

1. The Living Allowance is a gross EU contribution to the salary costs of the researcher, calculated individually for each European country. “The net salary results from deducting all compulsory (employer/employee) social security contributions as well as direct taxes (e.g. income tax) from the gross amounts. The final amount will not change during the secondment activities. The primary host will ensure that the researcher is covered under the social security scheme. During the secondment the social security provision will also cover the researchers during this period.” (Ref: Guide for Applicants, Marie Skłodowska-Curie Actions).

2. The Mobility Allowance: All eligible researchers recruited within an ETN/ITN are entitled to receive this allowance. It contributes to the expenses of the researcher caused by the mobility. The amount of the mobility allowance is specified in Table 3 of the MSCA Work Programme and for the calls 2014-2015 it amounts to €600 per month.” (Ref: Guide for Applicants, Marie Skłodowska-Curie Actions). According to the country-specific requirements this amount may be subject to taxation.

3. Family Allowance of €500 per month will be paid should the researcher be eligible for this allowance. See ** below.

** In this context, family is defined as persons linked to the researcher (i) by marriage, or (ii) a relationship with equivalent status to a marriage recognised by the legislation of the country where this relationship was formalised; or (iii) as dependent children who are actually being maintained by the researcher. The family status of a researcher will be determined at the time of their (first) recruitment in the project and will not evolve during the project lifetime.” (Ref: Guide for Applicants, Marie Skłodowska-Curie Actions).

In order to be eligible, each applicant must simultaneously fulfil the following criteria at the time of recruitment:

- Mobility: At the time of recruitment, the applicant must not have resided or carried out his/her main activity (work, studies, etc...) in the country of the host organization for more
than 12 months in the 3 years immediately prior to his/her recruitment. Compulsory national service and/or short stays such as holidays are not taken into account.

- **Qualifications and research experience:** The applicant must fulfil the requirements defined for Early Stage Researchers (ESRs): ESRs are researcher who, at the time of recruitment, has **NOT yet been awarded the doctorate degree** and is in the first 4 years (full-time equivalent) of his/her research career.

Additional information on BASE-LiNE Earth and further job descriptions can be found on our website, [https://www.baseline-earth.eu/](https://www.baseline-earth.eu/).