

Announcement of Opportunity – Theme 2

Published 28 February, 2005

The strategic objective of QUEST Theme 2 is to **discover principles underlying the natural regulation of atmospheric composition on glacial-interglacial and longer time scales, with a view to developing an improved, quantitative understanding of present and future Earth System responses to ongoing anthropogenic global change.**

This announcement solicits collaborative grant proposals that will address this objective. Specifically, proposals to this announcement should seek **to advance quantitative understanding of the interactions among climate change, atmospheric composition and global biogeochemical cycles.** Proposals may focus on the most recent glacial-interglacial cycle, and/or the nature of earlier warm periods such as the last interglacial, marine isotope stage 11, and the Palaeocene-Eocene thermal maximum. Proposed research should compare well-designed Earth System Modelling “experiments” with large-scale, comprehensive syntheses of data. The aim must be to account for the totality of relevant observations at a global scale (i.e. not just a single region, domain, or type of record). Achievement of this goal is expected to demand a new, high level of collaboration, e.g. between data specialists and modellers, and among experts in palaeodata derived from the terrestrial, marine and cryospheric domains.

Earth System Models to be used must conform with the QUEST Earth System Modelling Strategy. Additionally, research funded through this announcement will be required to ensure that sources and reliability of data are transparent and documented according to standards for data syntheses for the Earth System Atlas that will be developed during the course of QUEST.

Outline Bids and Full Proposals will be evaluated according to the NERC assessment criteria for directed programmes. Key sub-criteria to be applied during the evaluation of proposals will include the fit to the strategic objective of QUEST Theme 2, and the fitness of proposed collaborations to achieve their goals. Proposals will be expected to pass standards of excellence in terms of both data synthesis and modelling components, and to demonstrate through a well-developed management plan how the two aspects will inform one another. Proposals that consist mainly of modelling, or of data synthesis, will not be accepted. The ways in which the work will contribute to an improved understanding of present and future Earth System states must be explicit and clearly articulated. National and international synergies should be exploited wherever appropriate.

New data collection, and the development of new kinds of palaeodata, will not be supported; however, clear synergies with observational research projects funded through other mechanisms, within and beyond NERC, are welcomed.

Although proposals should principally address the strategic objectives of Theme 2 as stated in this Announcement of Opportunity, they should also take into account QUEST’s overall strategic ambitions, as outlined in the QUEST Science Plan and Implementation Plan. The total sum available in connection with this announcement is up to £3 million. Proposed research projects may be up to three years duration.

Potential proposers must submit an outline bid using the QUEST Project Outline Form by 1 April 2005. Further information for submitting the outline bid is provided below. The outline bids will be evaluated and examined for possible synergies and overlaps. The QUEST Leader will then solicit a limited number of full proposals. The full proposals will be due to NERC by 17:00 on 20 June 2005. Further information for submitting full proposals is provided below.

A follow-up announcement is tentatively planned for December 2005. This subsequent announcement is likely to call explicitly for collaborative research on modelling atmospheric composition changes on glacial-interglacial time scales as revealed by polar ice-core records.