

CAREX Newsletter

Coordination Action for Research Activities on life in Extreme Environments

CAREX



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> Editorial

A European Platform for research on life in extreme environments



With the official start of the CAREX project on January 1st, 2008, the European scientific community involved in research on life in extreme environments now has the basis for a platform and a framework to exchange, interact, share expertise and undertake a common reflection on future research priorities in the field.

CAREX is an ambitious project supported by the European Commission for three years (2008-2010) under the Seventh Framework programme (FP7). It builds on the recommendations that emerged from the European Science Foundation's recent Investigating Life in Extreme Environments (ILEE) initiative. It aims at identifying and consolidating the European scientific community involved in research on life in extreme environments around common research priorities and interactive communication tools, hopefully setting the scene for future research programmes funded at national and international levels.

Compartmentalisation and lack of communication between disciplines and their associated technological developments are seen as major hurdles and this is of particular relevance when considering scientific and technological activities in extreme environments where no substantial community is yet recognised. Interdisciplinarity and multidisciplinary have to be major drivers for future scientific achievements in extreme environments. CAREX firmly endorses this view and aims to support research interests across microbes, plants and animals evolving in diverse marine, polar, and terrestrial extreme environments as well as in outer space. It will also provide the opportunity for its stakeholders to develop more targeted initiatives where specific disciplinary issues may arise. In such cases, CAREX Project

Office can and will provide help with coordination and logistical support.

CAREX involves a group of nine core partners (details p. 4) contractually responsible for the project developments. It also involves over 50 European and non-European Associated Partners and Observers, in all representing 23 countries, and these form the backbone of a wide European network in the field of life in extreme environments research.

With the support and involvement of its community and the commitment of its core partners, I am confident that CAREX will successfully implement its ambitious work programme over the next three years and develop a strong European foundation for future research activities in extreme environments that will probe the limits for life both on and off this planet and the lessons to be learnt for fundamental biology.

Dr. Cynan Ellis-Evans
CAREX Coordinator

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> CAREX Kicked-off

British Antarctic Survey, 18 March 2008



CAREX was inaugurated on March 18th in the British Antarctic Survey Offices (Cambridge, UK), 42 European and North American experts attended the event, mostly Associated Partners and Observers.

This meeting provided the opportunity to present the project's structure, approach, objectives and action lines in detail and to get valuable feedbacks and inputs from the audience. Furthermore, in order to illustrate the wide spectrum of disciplines relevant to research on life at the limits, a keynote speech and five thematic presentations were given:

- *Investigating Life in Extreme Environments – Approaching the issue, its boundaries and challenges* (Prof. Charles Cockell – Keynote speech)
- *Extreme Marine Environments* (Dr. Nadine Le Bris)

- *Polar Environments* (Prof. Guido di Prisco)
- *Extreme Terrestrial Environments* (Prof. Ricardo Amils)
- *Space Environments and Outer Space Bodies* (Dr. Petra Rettberg)

Besides presentation of the project and the research challenges in these various environments, and addressing the specificities of extreme environments, this meeting also provided a forum where issues such as networking of scientists, exchange of best practices and identification of research priorities were extensively discussed. These lively discussions and exchanges supported the relevance of CAREX's objectives and illustrated the expectation of the European and international scientific community. This augurs well for the future of the CAREX initiative and the Steering Committee warmly thanks the participants for their enthusiastic contributions and participation.

All the presentations given at the Kick Off meeting are downloadable on the CAREX website:

www.carex-eu.org.



> CAREX call for Transfer of Knowledge Grants

On May 2nd, CAREX opened its first call for Transfer of Knowledge grants

One of the CAREX objectives is to promote knowledge transfer across the life in extreme environments scientific community and to encourage harmonisation of protocols and approaches. An important component of this objective will be Calls for proposals for individual transfer of knowledge grants to which CAREX will contribute up to 1,200 Euros.

The primary aim of these grants is to give young researchers the opportunity to gain knowledge in the use of technologies and/or methodologies specific to life in extreme environments research. Grants can be either used: i) to provide short secondments of young researchers to a life in extreme environments research group as a visiting scientist, or ii) to support the invitation of

a specialist from an advanced life in extreme environments-related technology field to make presentations at an institution. In the latter case the application must be presented by the institute hosting the seminar/course, clearly explaining the educational purpose of the initiative and the target audience.

This first Call is restricted to early career scientists (within nine years after PhD) working in CAREX partner institutions. The deadline for submission is June 30, 2008. For more information and submission, see www.carex-eu.org and/or contact Nicolas Walter (nwalter@esf.org).

> CAREX Website and Databases

Key elements towards CAREX Achievements

CAREX aims at providing the scientific community involved in life in extreme environments research with an interactive platform that will be a focus for information on the project and on extreme environment research. It will target not only the research community but also funding agencies, decision makers and the general public. It will also gather and make available information relevant to the field for research news, funding opportunities, job opportunities or event announcements.

Furthermore, in order to provide an efficient contact and networking facility to the community, **the CAREX website will host a set of three open access databases** gathering information on experts, projects and infrastructures. These databases will be structured around three main dimensions:

- **the type of organism** considered (e.g. eukaryotes, fungi, plants and vertebrates)
- **the type of environment** of interest (e.g. hydrothermal vents, alkaline environments, polluted areas and polar regions)
- **the type of stress/adaptation** considered (e.g. temperature, pressure, salt concentration, radiation and chemicals)

In order to find relevant experts, projects or infrastructures, the search engine associated to these databases will allow performing targeted queries as search criteria will include the type of organism, environment or stress to be considered in the search results.

Being populated by the community, these databases will be interactive collaborative tools that will allow information exchange, networking and sharing of expertise at the individual level.

The current CAREX website (www.carex-eu.org) is temporary. The final website and associated databases are under development and will be operational by mid-June 2008.

> CAREX Workshops Announcement

30 November - 5 December 2008

Sant-Feliu de Guixols, Spain

Addressing the recommendations emerging from the ESF-ILEE initiative, CAREX will organise a series of three workshops on model ecosystems, model organisms and enabling technologies. These workshops will aim at identifying strategic research priorities and establishing a research agenda in the field of life in extreme environments research.

The first two workshops will consider the **Identification of model ecosystems in extreme environments** (30 November – 2 December 2008) and **Priorities for environment-specific technological developments and infrastructures** (3-5 December 2008). Both workshops will be held in Sant-Feliu de Guixols, Spain (north of Barcelona).

The “model ecosystem” workshop will focus on identifying key extreme environments and the potential for applying an ecosystem-based approach. Ecosystem-based approaches can provide unique insights to ecosystem functioning and the response to environmental changes, whilst contributing to understanding of broader biological and ecological issues such as those related to the evolution of life on early Earth. This is a challenging approach to investigate the interaction of extremophile organisms with their environment and associated communities. It will require interdisciplinarity and appropriate time scales in order to address both environmental and biological variability.

Microbial, animal and plant dominated communities in polar, marine, and terrestrial environments will be considered and integration of research across different fields and disciplines will be actively encouraged.

The “technology and infrastructures” workshop will be focussed on cutting-edge technologies, innovative instrumentation and key infrastructure needed to support life in extreme environments research. It will be closely linked to the model ecosystems workshop and its recommendations. Participants will examine the European capability and potential leadership in the area and will produce a set of recommendations for the enlargement of European technological capacities to study life in extreme environments.

Both workshops will gather around 80 participants. Participation to these workshops will be by invitation only with CAREX Associated Partners and Observers being invited as a first priority. For more information: info@carex-eu.org.



Eden Roc Hotel, Sant-Feliu de Guixols

> Information from CAREX Associated Partners and Observers

For announcements, opportunities or information to be published in the CAREX newsletter, please write to newsletter@carex-eu.org

> Ben-Gurion University - Jacob Blaustein Institutes for Desert Research (BGU – BIDR) - Israel

All the infrastructures of the Blaustein Institutes for Desert Research (BIDR) are open to European scientists that wish to carry out research in arid/hyper arid regions under a special FP6 project (Dryland Research SSA).

The details of this project can be found at: <http://www.bgu.ac.il/BIDR/bic/ssa/index.html>

A general description of the activities of the BIDR can be found at:

<http://cmsprod.bgu.ac.il/Eng/Units/bidr/About/>

For more information, contact:

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> CAREX Core Partners

The implementation of the CAREX workprogramme falls under the responsibility of its nine Core Partners. These partners are work package and/or task leaders and sit in the project's Steering Committee.



British Antarctic Survey

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