Vacancy Notice

Internal Research Fellow (post-doc) in Innovation Dynamics and Computational Economics

The European Space Agency's Advanced Concepts Team (www.esa.int/act) is looking for a highly motivated young researcher in the field of innovation dynamics and Computational Economics, with good analytical and communicational skills and an excellent aptitude for teamwork.

The Team

The Advanced Concepts Team (ACT) is a group of research fellows (post-docs) and young graduates who originate from a broad variety of academic fields and aim at an academic career. Its task is to monitor, perform and foster research on advanced space systems, innovative concepts and working methods. It interacts externally almost exclusively with academia and operates as a truly interdisciplinary team bound to high scientific standards. Via its research, the team acts as a cross-departmental pathfinder to explore novel, potentially promising areas for ESA and the space sector, ranging from applied to basic fundamental topics. The team is in constant evolution and attempts to lead and embrace changes and new trends. Each member is therefore encouraged and expected to contribute and suggest changes.

Internally, the Advanced Concepts Team acts as the technical think tank within the Director General's Policy Office. Thus, an important task of the team is to communicate scientific trends and results, as input to the strategic planning of the Agency.

The team has entered the related field of computational management science in 2008/2009 with small exploratory activities related to innovation dynamics in governmental monopsony structures and agent-based approaches to smart distributed energy grid modelling. The successful candidate will work in a team of scientists and engineers having diverse backgrounds ranging from physics to biology and will define and shape her/his research together with the team drawing from his or her own insight and analysis.

Duties and tasks

Successful candidates will carry out research in innovation dynamics and computational economics and will in particular carry out the following tasks (emphasis between these to be agreed jointly):

- Propose and perform high-level research in the field of innovation dynamics within the highly peculiar space sector: strong governmental share and influence with a governmental monopsony tendency; including incremental, sustaining innovation as well as emerging radical, potentially disruptive innovation at the fringes of the core sector (e.g. space tourism, cube-sats etc, concept of “space 2.0”). This will likely also include the definition and

gathering of representative data sets and space-sector specific adaptation of academic innovation models.

- Propose, develop and/or use advanced computer models simulating innovation dynamics in selected representative parts of the European space sector and derive innovation policy recommendations from such findings.
- Investigate innovation dynamics related to spin-in and spin-off, comparisons with the US space sector and processes outside the space domain (in close cooperation with the ESA Technology Transfer Programme)
- Assess and investigate newly published concepts in the field of computational economics and computational management science and their potential for ESA and the space sector in general.
- Take advantage of new developments and results especially in the field of agent-based modelling and simulations of interactions in complex systems.
- Lead and assist interdisciplinary projects with other ACT Research Fellows and Young Graduate Trainees.
- Publish results in peer-reviewed publications and additionally use modern communication tools to communicate with broader audience inside and outside ESA
- Participate, with the rest of the team, in the assessment of proposed space system concepts by providing economic expertise, insight and academic contacts.
- Perform and participate in studies on subjects of strategic interest to provide in-house expertise to ESAs Director General's Policy Office and its General Studies Programme.
- Follow and monitor the progress of research in the areas of innovation research, computational economics and computational management science of interest to ESA and the team in order to derive and report strategic trends.

Areas of research are partly chosen by the successful candidate based on his/her own expert judgements and insight into trends and developments, partly chosen by the team as to follow strategic directions of the Agency.

Qualifications

The candidate should hold a degree in economics, mathematics, informatics or engineering. She or he should have completed (or be about to complete) a PhD in either computational economics, computational management science, innovation and entrepreneurship, complex systems or mathematics with a strong economics component, subject of the thesis being relevant to the description of at least some of the tasks outlined above, and aim at an academic/research career.

The candidate is expected to bring to the team functioning links to universities and research institutes. The candidate should demonstrate an interest in space science and / or technology as well as the ability and interest to get actively involved in prospective interdisciplinary research.

Successful candidates are expected to show an aptitude to contextualise their areas of research, to quickly assess their potential with respect to other domains and applications and to be able to communicate effectively their research to researchers with completely different background. An avid, natural curiosity and a passion for

new subjects and research areas are essential. As member of an interdisciplinary, multicultural team of peers, the candidate should have a natural aptitude to teamwork, while being able to set-up, follow, monitor and be responsible for his/her own personal research plans and directions. Good methodological and organisation skills are therefore a valuable asset.

Application

Information on the ESA Research Fellowship Programme and the application form are available at: www.esa.int/SPECIALS/Careers_at_ESA/SEM19DXO4HD_0.html.
Applicants should send their CV, a covering letter stating their research interests and the filled-out RF application form to: act@esa.int as well as temp.htr@esa.int. (if not possible by email, the reference letters can also be sent via normal mail to: ESTEC HR Division, RES-HTR, ESA/ESTEC; Keplerlaan 1, PO Box 299, 2200AG Noordwijk ZH, The Netherlands).
The general eligibility criteria of the ESA Research (Internal) Fellowship Programme apply.

All applications will be considered until the available post is filled. A first round of interviews is expected to take place still in December 2009; to enter this call it is recommended to submit applications no later than December 4, 2009. (update!)
Interested candidates are highly encouraged to visit the teams website: www.esa.int/act as well as: www.esa.int .