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#### Dedicated funding available for postgraduate proposals

Out-of-the-box thinkers at tertiary level can participate in cutting-edge science and technology research stimulated by the KAT (Karoo Array Telescope) and SKA (Square Kilometre Array) projects.

Postgraduate students in a range of disciplines stand to benefit - in the form of new degree programmes and dedicated research funding that have been established to prepare South Africa's emerging scientists, engineers and astronomers for involvement in these international projects.

The South African Government has authorised the construction of a radio telescope, aiming at contributing to international expertise leading up to the SKA itself. The KAT is a "pathfinder" project which will significantly bolster South Africa's SKA bid in terms of beefing up scientific and technological capabilities in critical areas. It will also provide enormous opportunities for training and research.

Two programmes aimed at cranking up academic readiness by stimulating research and providing funding are the National Astrophysics and Space Science Programme (NASSP), hosted at UCT, and the Research and Technology Cooperative Centre (RTCC).

"The task is to develop scientists who can utilise South Africa's impressive astronomical facilities," said Professor Mike Inggs of UCT's Department of Engineering and the Built Environment, who is an advisor to the KAT's systems engineering team and responsible for radio frequency (RF) subsystems.

Funding for postgraduate and postdoctoral research is available through the RTCC, a cooperative body tasked with coordinating research and development projects allied to the KAT and SKA.

Funding is available for a range of projects, not only in the disciplines of science and technology. "Even if the SKA is not based in South Africa, we hope to build up a core of young people and local companies able to become involved in the massive construction project," said Professor Inggs.

The RTCC has published a list of areas of interest for which funding will be granted. This is not limited to the fields of science and engineering, but will also cover research in economics, the environment, sociology and education as they impact on the SKA and KAT.

"Funders are looking for creative projects and off-the-wall proposals," said Inggs.

Research was needed into a range of fields around the design of the KAT. For example, would concrete be a suitable material from which to build the structure, or could material engineers or scientists come up with a more suitable material?

Cost was an important gating element, for instance, which could limit the number of dishes used in the final array. "The grand challenge is to come up with proposals for building low-cost antenna structures using new materials and concepts," said Inggs.

On the institutional side, tertiary institutions around the country are working together on programmes aimed at producing people qualified to work on both the KAT and longer-term SKA projects.

In the forefront of these is the NASSP, a national honours and master's coursework programme hosted by UCT, with astronomy, maths and applied maths, and engineering departments contributing to course design.

Directed by Dr Peter Dunsby of the Department of Mathematics and Applied Mathematics, the programme is hosted at UCT. Courses are delivered by staff from around the country, and students carry out project work at their home institutions.

It is hoped that the RTCC and other KAT-related projects will encourage cross-fertilisation between institutions and will go some way towards breaking down the "silo mentality" in which disciplines and institutions kept themselves strictly independent of one another, Inggs said. Collaborative projects will be given priority. Information about the SKA bid is available from <http://www.ska.ac.za>.

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