PhD Studentship in Particle Phenomenology

at the NExT Institute (Southampton)

The focus of this project on theoretical work for the LHCb experiment. For example on the decay B -> K\*l+l−, one of the golden channels of the LHCb experiment [(LHCb roadmap)](http://arxiv.org/abs/0912.4179) and proposed Super Flavour Factories [(Physics summary)](http://arxiv.org/abs/0810.1312). The goal is to improve on Standard Model contributions in regions sensitive to New Physics (NP) and in devising strategies and observables in order to disentangle various NP scenarios such as Supersymmetry (fundamental Higgs), models with dynamical electroweak symmetry breaking e.g. Technicolor-type models (composite Higgs).

Financial support is provided by the [Higher Education Funding Council for England (HEFCE)](http://www.hefce.ac.uk/) as part of [a five-year grant of £12.5 million](http://www.hefce.ac.uk/news/hefce/2008/sepnet.htm) bringing together physics departments in the South East of England. The studentship is for 3 years.

1. The main purpose of this studentship is to provide an opportunity to carry out research to PhD level on topics in particle physics phenomenology of direct relevance to the Large Hadron Collider (LHC) and future Flavour Factories. The PhD training programme

<http://groups.google.com/group/next-phd/web/next-phd-courses-5?hl=en>

and possible secondary projects are aimed at providing the student with a broad view of particle physics.

1. Training and research will be part of the PhD programme being developed in the context of the NExT Institute. This will involve mixed (theoretical and experimental) training and joint/shared supervision, networking across all nodes, student placements at experiment locations, video-linked delivery of seminars and graduate lectures, annual workshops and a final graduate conference.
2. The studentship can start anytime from now (June 2008).
3. The student will formally be enrolled at the University of Southampton (UoS) and thus will need to satisfy the entry requirements for its PhD programme which can be found at <http://www.hep.phys.soton.ac.uk/phd/>. Please also send a zip-file of your application to R.Zwicky@soton.ac.uk and A.J.Bevan@qmul.ac.uk.
4. The student will receive current UK/EU fees, a yearly stipend of currently £13290 (free of tax) and roughly £800 (free of tax) for teaching.
5. In addition, a research training support grant of £1250 per year will be provided for travel within and outside the Institute.

Informal contact can also be established at the UoS with Dr. Roman Zwicky (R.Zwicky@soton.ac.uk) and at Queen Mary University of London (QMUL) with Dr Adrian Bevan (A.J.Bevan@qmul.ac.uk). Both the UoS and QMUL are part of SEPnet.

The NExT institute ([http://www.next-institute.ac.uk](http://www.next-institute.ac.uk/)), which promotes work at the interface between theory and experiment and is a member of the [South East Physics network (SEPnet)](http://www.sepnet.ac.uk/), a joint venture involving the UoS, the Rutherford Appleton Laboratory (RAL), Royal Holloway University of London (RHUL) and the University of Sussex, is offering a PhD studentship in particle physics phenomenology.

