Building needs-based healthcare technology competencies across Africa

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Needs-based technology innovation for better health on the African continent requires that African countries develop a strong health technology research and development base, grounded in an understanding of the local context. The discipline of biomedical engineering plays an important developmental role in this regard, through research and training to advance health technology capacity. In recognition of this strategic imperative, the African Biomedical Engineering Consortium (ABEC) was founded in 2012, with the vision of building and nurturing the competencies required to support a robust and dynamic health technology sector.

Six members of ABEC in six African countries – Addis Ababa University (Ethiopia), Cairo University (Egypt), Kenyatta University (Kenya), the Mbarara University of Science and Technology (Uganda), the University of Cape Town (South Africa) and the University of Lagos (Nigeria) – along with the University of Pisa (Italy), have made a successful bid for an Intra-Africa Mobility Scheme grant funded by the European Commission. The scheme is run under the European Commission's Pan-African Programme and is modelled on Europe's well-established and successful Erasmus-Mundus programme. As part of the Roadmap 2014–2017 of the Joint Africa–EU Strategy, the Intra-Africa Mobility Scheme underlines the contribution of higher education towards economic and social development and the potential of academic mobility to improve the quality of higher education.

The funded project, *African Biomedical Engineering Mobility*, is coordinated by Kenyatta University. It will, over a period of 5 years, build human and institutional capacity in Africa for needs-based health technology research and development through postgraduate student and staff mobility within the continent. Its specific objectives include: enhancing the biomedical engineering research and teaching skills of university lecturers in Africa; establishing a solid task force of African biomedical engineers through postgraduate training; harmonising postgraduate biomedical engineering curricula to ensure a consistent level of academic quality across institutions; and creating a platform for sustained collaboration across Africa for research and teaching in biomedical engineering.

The project will specifically focus on the development of health technology competencies that address the needs of Africa, and more generally on skills that enable graduates to consider and achieve contextual suitability in technology development. Application areas include: rehabilitation engineering to address disabilities that often result from war or late diagnosis of disease; medical devices that are robust to a variety of climatic conditions, interruptions in power supply, and low levels of technological competence in the user; diagnostic tools that may be used in areas remote from clinics and health facilities; and image analysis tools to address the shortage of specialist radiologists in remote and resource-limited settings.

Up to 22 master's and 10 PhD candidates will benefit from the project. They will have an opportunity for training at partner institutions outside their home countries, and will gain skills and specialisations not offered at their home institutions. In addition, nine staff members will undertake teaching and research visits across the partner institutions. Overall, the project will enhance graduate employability; improve staff research profiles and teaching competencies; build institutional research capacity; and promote inter-university collaboration, while also supporting innovation to address health challenges from an African perspective.

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