

ECCE Birzeit: Establishing a Centre of Excellence in Mathematics and Theoretical Physics at Birzeit University, Palestine

<http://www.physik.uni-augsburg.de/ifk/ecce/>

► **Idea**

A Centre of Excellence in Mathematics and Theoretical Physics at Birzeit University in Palestine shall be established in response to the need to build university capacity that will contribute to reconstruction and development of the Palestinian society. The Centre will serve as a focal point for research, programme development, training and knowledge sharing. It will facilitate cross-border cooperation through linkages with universities and research centres in different parts of the world and hence will open avenues for state-of-the-art technology to enter Palestine. A high, internationally competitive scientific level will attract leading scientists from all-over the world. There will also be opportunities for Palestinian academics to undertake short-term study or attachments abroad and to cooperate in setting up well equipped laboratories. In addition the Centre will enhance the quality of teaching at the Palestinian universities, and develop teaching materials and methodologies for secondary education.

The Centre will concentrate on **Mathematics** and **Theoretical Physics**, two disciplines which have fertilised each other for several centuries. In the present context, it must be emphasised that a thorough education in these disciplines is mandatory for every modern, technologically oriented society, especially in a region which cannot rely on natural resources – and that such an education will have a long-lasting positive effect, since students will be trained in areas most useful for today's and future job markets. Finally, mathematics and physics are fields based on 'hard' facts, only to be judged by logic and experiment, and not by political opinion: hence in these disciplines difficulties of communication across frontiers will be alleviated.

► **First steps**

The basic idea was developed late in 2003 in discussions between two mathematicians and a physicist at Augsburg University, Germany. In the following months, contacts to potential supporting scientists were established, with remarkable success, as well as to the authorities of Birzeit University and to PEACE. The project was publicly announced, and discussed in detail, at the PEACE conference in Bethlehem (25-27 February 2005). BZU's administration developed a detailed budget plan a few months later.

► **UNITWIN / UNESCO Chair & Network**

The core partners of the project: Birzeit University (N. Kassir), University of Augsburg (U. Eckern), Trinity University (S. Elaydi), University Paris-Sud 11 (A. Suzor-Weiner), and PEACE (R. Hamdallah) submitted the application to establish an UNESCO Chair & Network in April 2006. The official agreement for the establishment of the Chair at the Faculty of Sciences, Birzeit University, was signed on 1 December 2006. The main functions of the Chair include:

- building local contacts with mathematicians and physicists in Palestine, as well as with the administrations of the Palestinian universities;
- conduct, on a regular basis, workshops and symposia in mathematics and physics, as well as on pedagogical issues pertaining to mathematics and physics education;
- build contacts to local politicians and the Palestinian ministries concerned;
- establish contacts with local and international organizations and businesses, to obtain the necessary funding for the Centre and to assure its launching in due time and its sustainability as a benchmark institution in the region.

Professor Henry Jaqaman, formerly at Bethlehem University, was appointed UNESCO Chair Holder on 1 September 2007. The Chair is supported by UNESCO's Higher Education Division and International Basic Sciences Programme.

► Financial aspects

A major financial effort is required in order to establish a centre of highest scientific reputation and international visibility. We envision that there will be 20 faculty members, about half in mathematics and half in theoretical physics. Furthermore, 20 postdoctoral associates and 35 supporting staff are needed. On this basis, estimates have been made for the costs involved. The land area will be donated by Birzeit University, corresponding to 2.8 million euros at current value. Capital investments are approximately 7.5 million euros, and annual maintenance and running costs amount to about 4.2 million euros.

► Timetable

The establishment of the UNESCO Chair at BZU was an important step in the preparations for the Centre. A workshop is envisaged for 2008, to discuss structural aspects and scientific objectives. Optimistically speaking, site planning could start in 2008, construction in 2009, and the Centre might start its operation in 2010.

► Supporters and partners

In addition to about 25 individual scientists, the following institutions pursuing closely related goals have confirmed their support of the project:

- Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy
- Center for Advanced Mathematical Sciences, American University of Beirut, Lebanon
- Center for Applied Mathematics and Theoretical Physics (CAMTP), Maribor, Slovenia
- European Physical Society, Interdivisional Group of Physics for Development
- International Society of Difference Equations
- International Union of Pure and Applied Physics (IUPAP), C13: Physics for Development

► Implementation

The Centre will be established in cooperation with the administration of BZU and other member universities of the Palestine Council of Higher Education. The Centre, however, will retain a clear independent status but will abide by the local laws governing institutions of higher education in Palestine.

In order to ensure effective procedures as well as clear responsibilities, it is suggested to establish a relatively small Steering Committee, e.g., with 6 members from the group of proposing scientists, 3 representatives from Palestinian Universities, and 3 representatives from institutions/organisations (e.g. EU, UNESCO). The Steering Committee is responsible for ensuring the highest, internationally competitive scientific standard of the Centre, as well as for the overall direction and strategic planning.

► Final remarks

Even though ECCE Birzeit is a large-scale project, with several foreseeable and unforeseeable difficulties to overcome, the encouragement we have received during the past few years from numerous scientists from all over the world as well as from the Palestinian universities has confirmed our intentions. We hope and expect that, by furthering the education of the people at all levels, and thus enhancing scientific and consequently also non-scientific communication, a contribution can be made towards a lasting peaceful development in Palestine.

U. Eckern / Augsburg, 22 January 2008