

# **European Committee for Establishing a Center of Excellence in Mathematics and Theoretical Physics at Birzeit University, Palestine (ECCE-Birzeit)**

(Project proposal draft, March 2005; cost estimate updated June 2005)

## **Mission**

On the basis of UNESCO's Unifying Theme, "Contributing to peace and human development in an era of globalization through education, the sciences, culture and communication" (Medium-Term Strategy, 2002-2007), we, a group of concerned mathematicians and physicists, have decided to launch a novel initiative. We strongly believe that, along the lines of UNESCO's theme, furthering the education of the people at all levels, in particular in areas marked by deep conflicts, is of vital importance. We hope that bringing people together through higher education, through training in scientific research and cooperation, will be a significant contribution, in the long-term, towards easing of tension in the Middle East.

Hence we propose establishing a Center of Excellence in Mathematics and Theoretical Physics on the campus of Birzeit University, in the town of Birzeit, West Bank, Palestine. Birzeit University has established itself as an important Palestinian university, as well as a very liberal minded and independent one. The support of the authorities at Birzeit University for this initiative has been secured.

The aim of the Center will be twofold. On the one hand, students will be trained in both, Mathematics and Theoretical Physics, up to Ph.D. level. On the other hand, the Center will promote and emphasize research in both fields. This will be accomplished by sponsoring grants, holding workshops and conferences, inviting international scholars for extended periods, and building up a first-rate library as well as computational facilities. The focus of the Center is, at first, on Palestinian students, but in the long run it also will be open to other students from the Middle East. An additional function of the Center is to enhance the quality of teaching and research in Mathematics and Physics at the other Palestinian universities, and to develop teaching materials and methodologies in Mathematics and Physics for secondary education.

We sincerely hope that this initiative will be understood as it is intended, and valued by both, Israelis and Palestinians, and that it will find support among scientists, politicians, and others from the Middle East, Europe, and other parts of the world.

Information about this initiative and new developments can be obtained from the ECCE-Birzeit web site: <http://www.physik.uni-augsburg.de/ifk/ecce/>.

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## **Project Details**

- **Scientific Goals**

The Center will focus on establishing a first rate training program for graduate students in both mathematics and theoretical physics. It will offer graduate programs leading to the Ph.D. degree in both subjects. The curriculum of study will include basic and applied topics. In particular, the Center will promote those fields of study, in mathematics and theoretical physics that are relevant for the development of the Palestinian society and the region at large. The second important goal for the Center is to promote research in mathematics and theoretical physics in Palestine and the region. The Center will establish a series of international and regional conferences that will be held on a regular basis. Moreover, it will initiate workshops to be organised by leading mathematicians and physicists from around the world. Weekly seminars will take place on the premises of the Center, by scientists in residence or by visiting scientists. In addition, the Center will serve as a funding agency to provide grants to qualified researchers in Palestine and the region. Qualified Ph.D. students are eligible to receive scholarships during their study and/or grants to support them while writing their doctoral dissertations.

- **Required Personnel**

The steering committee will appoint an internationally recognized scientist, a mathematician or a physicist, as the director of the Center. The initial appointment is for three years, and is renewable. The director is the chief executive officer of the Center who has the final authority in all matters. He is accountable only to the steering committee. The steering committee, in consent with the director, will also select the key personnel, in particular, the Chair of the Department of Mathematics and the Chair of the Department of Theoretical Physics. The two Department Chairs will act as vice directors of the Center.

We envision that there will be 20 faculty members, about half in mathematics and half in theoretical physics, at the full, associate, and assistant professor level, in addition to the Director. Furthermore, 20 postdoctoral associates and 35 supporting staff are needed.

Most of the personnel will be hired from a pool of talented Palestinians and other qualified individuals from the region. Individuals are hired based solely on their qualifications regardless of their race, gender, religion or ethnic background. The faculty and the top administration posts will be hired through standard international procedures and will be subject to international competition. An internationally recognized tenure process will be implemented.

- **Buildings, Equipment**

There will be three main buildings, one for the library, one for the staff and administration, and one for faculty, postdocs and visiting scientists, as well as classrooms and central computer facilities. A fourth building should house apartments for guest scientists as well as student dormitories. The Center will be built adjacent to the campus of Birzeit University, the land being donated by the board of trustees of Birzeit University. Hence the architecture of the Center will be compatible with the architecture of Birzeit University. The major equipments required are computer facilities, the main resources needed are books and periodicals. The Center's library will provide first-rate service to students, faculty, and researchers in Palestine and the region. It will hold books and periodicals in both mathematics and physics comparable to any West European or North American major doctoral granting institutions.

- **Steering Committee**

At present, ECCE-Birzeit consists of an informal group of scientists supporting the project as outlined above. However, in order to ensure effective procedures as well as clear responsibilities, it is suggested to establish, as soon as possible, a relatively small Steering Committee. The Steering Committee shall consist of: 6 members from the group of proposing scientists; 3 representatives from Palestinian Universities; and 3 representatives from institutions/organisations engaged in furthering higher education in Palestine (e.g. EU, UNESCO). The Steering Committee elects its Chair and its Vice Chair from amongst the 6 members representing the proposing scientists; Chair and Vice Chair shall represent the scientific areas of the Center, mathematics and theoretical physics. The Steering Committee is responsible for ensuring the highest, internationally competitive scientific standard of the Center. It is also responsible for the overall direction and strategic planning of the center.

- **Status of the Center**

The Center will be established in cooperation with the administration of Birzeit University and the Palestinian ministry of higher education. The Center, however, will retain a clear independent status but will abide by the local laws governing institutions of higher education in Palestine. Concerning these aspects, precise rules and legal procedures have to be formulated and negotiated as soon as possible, to provide a solid basis for the efforts of all key partners participating in this project.

- **Finances**

Preliminary estimates have been made for the costs involved. It is expected that the land area will be donated by Birzeit University: an area of approximately 35,000 m<sup>2</sup> will be needed, corresponding to **2.8 million euros** at current value. Capital investments (buildings, library, computers, etc.) are approximately **7.5 million euros**, and annual maintenance and running costs (salaries, library, equipment, international travel, visiting scientists, etc.) amount to about **4.2 million euros**.

## Supporters

The following scientists have agreed to actively support ECCE-Birzeit:

- Aziz Alaoui, Mathematics, Le Havre University, France  
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- Sir Michael F. Atiyah, Mathematics, Edinburgh University, UK  
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- Bernd Aulbach, Mathematics, Augsburg University, Germany  
(\* )
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- Edriss S. Titi, Mathematics, Weizmann Institute of Science, Rehovot, Israel &  
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- Robert Wisbauer, Mathematics, Düsseldorf University, Germany  
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(\*) On January 14, 2005, Professor Bernd Aulbach, co-founder of ECCE-Birzeit, suddenly and unexpectedly passed away at the age of 57 years.

## Partners

The ECCE-Birzeit project needs, quite obviously, the support and help from competent institutions and organisations. Some contacts already have been established, others still have to be worked out. A very tentative list is given below.

- European Union
- Palestinian European Academic Cooperation in Education (PEACE / UNESCO)
- Abdus Salam International Centre for Theoretical Physics, Trieste (ICTP)
- Alexander von Humboldt Foundation
- German Academic Exchange Service (DAAD)
- Faculty For Israeli-Palestinian Peace (FFIPP)
- American University of Beirut
- German University in Cairo
- Israeli-Palestinian Science Organisation (IPSO)
- Arab Science and Technology Foundation (ASTF)
- Private Donors and Businesses