

**The UNITWIN Programme**  
UNESCO Chairs and Networks

*This project outline indicates the information which is required in order for UNESCO to assess your proposal. Please provide the fullest details as possible. The submission should not exceed 10 pages, excluding annexes, to be presented in a separate document and not on this form.*

**A. Project Summary**

1. Project Title:

**Establishing a Centre of Excellence in Mathematics and Theoretical Physics at Birzeit University, Palestine ("ECCE-Birzeit")**

2. Expected starting date: **September 2006 (establishing a UNESCO Chair)**

To establish a UNESCO Chair will be essential for the success of ECCE-Birzeit: the chair holder will play a vital role for the further preparations of the project, in particular, for the detailed planning of the scientific programme and the indispensable – scientific and organisational – contacts. It is expected that UNESCO will provide financial support for this chair.

3. Duration: **5 years (Network) / 3 years (Chair)**

4. Domain(s) or discipline(s) concerned: **Mathematics and Theoretical Physics**

5. Name of host institution(s): **Birzeit University, Palestine.**

6. Faculty(ies) / Department(s) concerned: **Faculty of Science** (<http://home.birzeit.edu/science/>)

7. Executing institution

Project leader/contact person (name)

**Prof. N. Kassiss, President, Birzeit University**

Full contact address/telephone/fax/e-mail

Birzeit University  
PO Box 14  
Birzeit  
West Bank, Palestine

e-mail: [nikassis@birzeit.edu](mailto:nikassis@birzeit.edu)  
<http://www.birzeit.edu>, <http://home.birzeit.edu>  
telephone: +972 2 298 2000  
telefax: +972 2 281 0656

9. Partners:

a) **University of Augsburg, Augsburg, Germany**

Representative: **Prof. Ulrich Eckern**, Acting Chair of ECCE-Birzeit

Institute of Physics  
University of Augsburg  
86135 Augsburg, Germany

e-mail: [eckern@physik.uni-augsburg.de](mailto:eckern@physik.uni-augsburg.de)  
<http://www.physik.uni-augsburg.de>  
telephone: +49 821 598 3236  
telefax: +49 821 598 3262

b) **Trinity University, San Antonio, Texas, USA**

Representative: **Prof. Saber N. Elaydi**, Acting Vice Chair of ECCE-Birzeit

Department of Mathematics  
Trinity University, One Trinity Place  
San Antonio, TX 78212-7200, USA

e-mail: [selaydi@trinity.edu](mailto:selaydi@trinity.edu)  
<http://www.trinity.edu/selaydi>  
telephone: +1 210 999 8246

telefax: +1 210 999 8264

c) **University Paris-Sud 11, Orsay, France**

Representative: **Prof. Annick Suzor-Weiner**, Vice-President

Université Paris-Sud 11  
Bâtiment 210  
91405 Orsay cedex, France

e-mail: annick.suzor-weiner@ppm.u-psud.fr  
<http://www.u-psud.fr/>  
telephone: +33 1 69 15 77 50  
telefax: +33 1 69 15 67 77

d) **PEACE Programme (UNESCO)**

[<http://www.unesco.org/general/eng/programmes/peace-palestine/>]

Representative: **Prof. Rami Hamdallah**, President

An-Najah National University  
PO Box 7  
Nablus  
West Bank, Palestine

e-mail: president@najah.edu  
<http://www.najah.edu/>  
telephone: +972 9 2398064  
telefax: +972 9 2387982

10. Total budget: **Initial one-time costs – ca. €10.3 million (US \$ 12.8 million)**  
**Annual costs – ca. €4.2 million (US \$ 5.2 million)**

11. Funding sources

No.	Organization	Amount (€)	Remarks
1.	Birzeit University	2,800,000	Land cost / <b>confirmed</b>

12. Summary

A Centre of Excellence in Mathematics and Theoretical Physics at Birzeit University in Palestine is being established in response to the need to build university capacity that will lead 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. (See also Annex 1 for details.)

*\* Please note that the duration of an Agreement for a UNESCO Chair is 3 years, and for UNESCO Network, 5 years. The Agreement can be renewed by UNESCO pending the performance of the Chair or Network.*

## **B. Project Description**

### **1. Type of project:**

**UNESCO Network / UNESCO Chair**

### **2. Domain(s) or discipline(s)**

*(Please indicate how the domain or discipline chosen is directly related to one or more of the following priorities for (i) national development, (ii) regional development, (iii) global agenda – sustainable development, Education for All, Millenium Development Goals, (iv) cultural diversity, (v) bioethics and (vi) water. The approved Programme and Budget for UNESCO is a critical point of reference.)*

The centre will concentrate on **Mathematics** and **Theoretical Physics**, two disciplines which have fertilised each other for several centuries. In the context of the present project, 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.

### **Context and justification**

*(Analyze trends and issues surrounding the theme of the proposal. What difference will the project make in terms of capacity-building, exchange of knowledge, and strengthening links between universities/other higher education institutions and development bodies?)*

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", a group of concerned scientists has decided to launch this initiative. We strongly believe that furthering the education at all levels, in particular in areas marked by deep conflicts, is of vital importance. We expect 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 Centre of Excellence in Mathematics and Theoretical Physics on the campus of Birzeit University, Birzeit, West Bank, Palestine. Birzeit University has established itself as an important Palestinian university, as well as a very liberal minded and independent one. A few years ago, a consortium of French universities has helped to organize a Bachelor curriculum in Applied Mathematics and this Bachelor programme which is now autonomous has proved the local training capacities in this field.

The aim of the Centre will be twofold. On the one hand, students will be trained in both Mathematics and Theoretical Physics, up to Ph.D. level. The curriculum of study will complete and broaden the existing Bachelor programme in Applied Mathematics, and include basic and applied topics. In particular, the Centre 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. On the other hand, the Centre 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 computer facilities. The focus of the Centre 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 Centre 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.

### **3. Objectives**

#### **Development objective (long-term)**

*(Contribution to overall development goals taking into consideration social, economic and cultural development)*

To contribute to and accelerate the development of the Palestinian society, building the foundations for technology by creating a critical mass of high level expertise in mathematics and physics. This will be achieved by establishing a Centre of Excellence in Mathematics and Theoretical Physics, in order to build institutional and national capacity for quality teaching programmes, undertake applied research and promote information sharing in mathematics and theoretical physics. In particular, the Centre will

- focus on establishing a first rate training programme for graduate students in both mathematics and theoretical physics,
- establish programmes leading to the Ph.D. degree in mathematics and physics,
- prepare a curriculum that will include basic and applied topics; in particular, the Centre 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,
- establish partnerships with other universities in and out of Palestine,
- promote research in mathematics and theoretical physics in Palestine and the region,
- organize international and regional conferences that will be held on a regular basis to create a platform for national and international exchange of ideas; moreover, it will initiate workshops to be organised by leading mathematicians and physicists from around the world,
- organize weekly seminars that will take place on the premises of the Centre, by scientists in residence or by visiting scientists,
- serve as a funding agency to provide grants to qualified researchers in Palestine and the region,
- support qualified Ph.D. students with scholarships during their study and/or grants to support them while writing their doctoral dissertations,
- organize exchange of lecturers across borders and within Palestine, and
- establish the corresponding high-level information technology environment and library.

**Specific objectives (short-term)**

*(Short-term needs to be satisfied by the proposal)*

As short-term objectives towards realization of the project, it is proposed to formalize ECCE-Birzeit within the UNITWIN Programme, by establishing a UNESCO Network as well as a UNESCO Chair. The **Network** will consist of the core partners listed in Section A, and will be supported by several institutions (see Section C.1). In particular, it will:

- formulate grant proposals to be submitted to national and international agencies;
- develop contacts with politicians and other authorities, to have ECCE-Birzeit adopted as an official EU project to be funded and supervised by the European Union;
- make definite plans of operation in every phase of the project;
- contact prospective scientists willing to participate in building the Centre, and obtain commitments to ensure the efficient and smooth inauguration of the Centre.

The duties of the UNESCO **Chair** will 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 official bodies 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.

The Chair holder will be appointed by mutual agreement among the core partners of the Network.

**4. Type of activities** *(several types can be included)*

Postgraduate teaching programme	<input checked="" type="checkbox"/>
Short-term training	<input checked="" type="checkbox"/>
Research	<input checked="" type="checkbox"/>
Visiting professorships	<input checked="" type="checkbox"/>

Scholarships [X]  
Institutional development [X]  
(including strengthening of information/library services, laboratories, etc.)

See also Section B.3 above.

### **5. Target beneficiaries**

Students [X]  
Academics [X]  
Professionals in development fields [X]

### **6. Expected output / results**

- A Centre of Excellence serving to enhance and maintain capacity in mathematics and physics
- Postgraduates in the mathematics and theoretical physics
- Institutional strengthening of universities in Palestine
- Enhancing the quality of teaching with respect to secondary education

When in full operation, the Centre will employ 20 professors (some permanently, the majority visiting) and 20 postdocs. These will be able to supervise about 10-20 M.Sc. and 5-10 Ph.D. students.

### **7. Implementation Strategy** – How the project will be implemented?

The Centre will be established in cooperation with the administration of Birzeit University and in coordination with the Palestinian Ministry of Education and 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. 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.

#### **a. management**

At present, ECCE-Birzeit consists of an informal group of scientists supporting the project. 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 Centre, mathematics and theoretical physics. The Steering Committee is responsible for ensuring the highest, internationally competitive scientific standard of the Centre. It is also responsible for the overall direction and strategic planning of the Centre.

#### **b. capacity building**

Visiting scientists from EU and other countries will help establishing the scientific profile of the Centre. There will also be a lively exchange of professors as well as lecturers and post docs in mathematics and physics (usually short-time visits) with the local Palestinian universities. A high-level graduate programme will be established.

#### **c. sustainability**

##### **i. linkages with other relevant activities at institutional, national, regional and international levels**

The Centre will operate in close cooperation with local physics and mathematics departments in the education of graduate students and the training at the post doc level. Cooperation

agreements with related departments and centres in Arab countries will be concretized. Various international contacts will be established. (See also Section C.)

**ii. how benefits will be sustained?**

Joint research projects will form the basis for a lasting integration of the Centre into the international scientific community, and its international visibility.

**d. knowledge sharing**

Through

- seminars, workshops, and conferences
- publication of the results in international journals as well as on the internet
- visiting scientists and international cooperation

**8. Proposed schedule of major activities**

*(There should be a clear link between the activities and the objectives to be achieved. The schedule should show activities, timing and expected outcomes.)*

No.	Time	Activity	Remarks
1.	2004 - 2005	Establishing contacts, developing the proposal	Achieved (see Annex 1 and 2)
2.	Jan 2005 – Jun 2005	Preparing detailed budget plan	Achieved (see Annex 3)
3.	Jan 2006 – Jun 2007	Further preparations: establishing political contacts, fund raising	
4.	Sep 2006	Establishing a UNESCO Chair	
5.	Feb 2007	Preparatory workshop, to discuss structural aspects and scientific objectives of the Centre	
6.	Jul 2007 - Dec 2007	Site planning	
7.	Jan 2008 - Jun 2009	Construction	
8.	Jul 2009 - Aug 2009	Furnishing and equipping	
9.	Sep 2009	Start operation	

**C. Partnerships / Networking**

(Please, (i) state motivation for the partnership, (ii) attach letter(s) of support signed by the Head of the institution(s) concerned.)

1. Participating institutions (name and address of each)

**Confirmed:**

In addition to the core partners listed in Section A, namely

- Birzeit University, Palestine
- University of Augsburg, Germany
- Trinity University, San Antonio, Texas, USA,
- University Paris-Sud 11, Orsay, France,
- PEACE,

the following institutions pursuing closely related goals have confirmed their support of the project:

- Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy [<http://www.ictp.it/>]
- Center for Advanced Mathematical Sciences, American University of Beirut, Lebanon [<http://www-lb.cams.aub.edu.lb/>]
- Center for Applied Mathematics and Theoretical Physics (CAMTP), Maribor, Slovenia [<http://www.camtp.uni-mb.si/>]
- European Physical Society, Interdivisional Group of Physics for Development [<http://igpd-eps.epfl.ch/>]
- International Society of Difference Equations [<http://web.umar.edu/~isde/>]
- International Union of Pure and Applied Physics (IUPAP), Commission C13: Physics for Development [<http://www.iupap.org/>]

**Proposed:**

The – financial and political – support from the **European Union** will be most essential for the success of the project. Furthermore, concerning different aspects of the project, contacts shall be established e.g. to the following organizations:

- Alexander von Humboldt Foundation, Germany [<http://www.avh.de/>]
- Arab Science and Technology Foundation [<http://www.astf.net/site/>]
- Faculty For Israeli-Palestinian Peace [<http://www.ffipp.org/>]
- German Academic Exchange Service [<http://www.daad.de/>]
- German University in Cairo [<http://www.guc.edu.eg/>]
- International Council for Science (ICSU) [<http://www.icsu.org/>]
- Max Planck Society, Germany [<http://www.mpg.de/>]
- Royal Society, United Kingdom [<http://www.royalsoc.ac.uk/>]
- Third World Academy of Sciences [<http://www.twas.org/>]

The project will also seek partnership with national societies in mathematics and physics, as well as private sector organizations whether in or out of Palestine.

2. Other inter-university networks in the same field (name and address of each)

A similar network does not exist, as far as we know, in the Middle East.

In mathematics and physics, the following UNESCO Chairs have been established:

- UNESCO Chair in Mathematics and Science Education (213), established in 1992 at the University of Western Cape within the framework of UTRECHT-UNITWIN Network for Southern Africa (South Africa)
- UNESCO Chair in mathematics and development (610), established in 2003 at the University of Tunis El Manar (Tunisia)
- UNESCO-Gas Natural Chair in sustainable development studies (389), established in 1999 at Houari Boumediene University of Sciences and Technology (Algeria)
- UNESCO-Ulugbek Chair of Physics and Astronomy (298), established in 1998 at Tashkent State University (Uzbekistan)

**D. Funding of the Project**

1. Total project budget: **Initial one-time costs – ca. €10.3 million (US \$ 12.8 million)**  
**Annual costs – ca. €4.2 million (US \$ 5.2 million)**

Based on the proposal given in Annex 1, detailed estimates have been made for the costs involved. The land for the buildings will be donated by Birzeit University, corresponding to an amount of ca. **US \$ 3.5 million** at current value. Capital investments (buildings, library, computers,

etc.) are approximately **US \$ 9.2 million**. Annual maintenance and running costs (salaries, library, equipment, international travel, visiting scientists, etc.) will amount to about **US \$ 5.2 million**. Full details are given in Annex 3.

2. Contribution of your institution

Budgetary provision (in US \$): ---

In-kind services (in US\$): **3.5 million (land area 3.5 hectare)**

3. Extra-budgetary resources to be mobilized

*(Please refer to the total project budget under D1 and indicate items for which you will mobilize extra-budgetary resources)*

It is hoped that the running costs of **US \$ 5.2 million per year** will be made available by the European Union, at least for an initial period of five years. Donors and third-party funding will be sought in addition after that period. – The European Union and the World Bank will be approached to support some of the capital investments (**US \$ 9.2 million**).

4. Donor funding – Source; purpose and amounts (US\$)

We expect to be able to mobilize funding from various private donors to cover a large part of the capital investments.

5. Proposed funding sources

*(E.g. UNDP, regional development banks, foundations, NGOs, national / bilateral donors, the public or private sector, etc. Indicate those funding sources which your institutions / associations or the national authorities in your country are in a position to approach and those for which you request UNESCO support)*

On a smaller scale, some of the institutions mentioned in Section C.1 are expected to contribute to specific projects (exchange of academics, meetings, workshops, etc.). While the support of the project at large by UNESCO clearly will be helpful also in these specific cases, we request, in particular, strong UNESCO support for establishing contacts to the European Union and the World Bank, as well as for finding private donors.

For the short term, we also look forward to assistance for the project when the Round Table on Palestinian Higher Education will be convened by UNESCO. In addition, there are still enormous efforts necessary for the scientific and organisational preparation of the project, for which support from UNESCO also is requested. This includes e.g. further networking and a preparatory meeting of the supporting scientists (presumably early in 2007, see Section B.8).

## E. Support

### Institutional

*(Please note that the project should be presented by the vice-chancellors, rectors, presidents of the participating institutions.)*

In addition to the core partners listed in Section A – Birzeit University, University of Augsburg, Trinity University, University Paris-Sud 11, PEACE – the project will be supported by the UNESCO Office in Ramallah (Ms. Constanza Farina).

### Other

Please specify

---

## F. Evaluation and reporting



*(Identify indicators of progress and the measures to ensure evaluation and annual reporting to UNESCO.)*

An 'Advisory Board' or 'Evaluation Committee' is to be established shortly, consisting of 4-6 internationally recognised and experienced scientists, e.g. from the group of supporters (see Annex 2). This Committee will act independently from the Steering Committee (see Section B.7.a) and will be responsible for the annual evaluation of the progress of the project.

### **G. Visibility**

*(Please indicate how the activities of the project will be given visibility – websites, brochures, publications, etc.)*

The measures to ensure the visibility of the project will follow internationally accepted standards. A website will be established, containing information about the Centre: members and associate members, guest scientists, study courses, weekly events, workshops, conferences, etc. Master's and Ph.D. theses will be made available on the internet. An annual report will be published electronically and in paper form. The scientific results will be submitted to international journals. Teaching material will be developed and made available to students and cooperating institutions.

### **H. General**

*(Please add any information relevant to the proposal which has not been covered by the above points.)*

#### **1. Specific issues to be studied at the Centre**

The Centre will concentrate on topics in mathematics and theoretical physics at the forefront of today's research which will have a lasting impact on the area at large. These are, for example: non-linear dynamics, complex systems, quantum chaos, quantum information, mathematical biology as well as certain aspects of life sciences and biophysics. A detailed research plan will be formulated in due course.

#### **2. Contributing to peace in the Middle East**

Even though this is a large-scale project, with several foreseeable and unforeseeable difficulties to overcome, the encouragement we have received during the past two 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, an area which is marked by deep conflicts for several decades.

## **Annex 1: Summary of the project “ECCE-Birzeit” (as agreed in 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 Centre 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 Centre 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 Centre 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 Centre 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 Centre 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 all concerned, 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/>.

### **Details**

- **Scientific Goals**

The Centre 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 Centre 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 Centre is to promote research in mathematics and theoretical physics in Palestine and the region. The Centre 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 Centre, by scientists in residence or by visiting scientists. In addition, the Centre 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 Centre. The initial appointment is for three years, and is renewable. The director is the chief executive officer of the Centre 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 Mathemat-

ics and the Chair of the Department of Theoretical Physics. The two Department Chairs will act as vice directors of the Centre.

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 Centre 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 Centre 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 Centre'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 Centre, mathematics and theoretical physics. The Steering Committee is responsible for ensuring the highest, internationally competitive scientific standard of the Centre. It is also responsible for the overall direction and strategic planning of the Centre.

- **Status of the Centre**

The Centre will be established in cooperation with the administration of Birzeit University and coordination with the Ministry of Education and Higher Education, whose accreditation of academic programs is required. The Centre, 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**.

## Annex 2

### Supporters

**The following scientists have agreed to actively support the project.**

- Aziz Alaoui, Mathematics, Le Havre University, France
- Sir Michael F. Atiyah, Mathematics, Edinburgh University, UK
- Sir Michael V. Berry, Physics, Bristol University, UK
- Anastassios Bountis, Physics, Patras University, Greece
- Gustavo Castelo Branco, Physics, Universidade Técnica de Lisboa, Portugal
- Paul L. Butzer, Mathematics, RWTH Aachen, Germany
- Majed Chergui, Physics, Ecole polytechnique federale de Lausanne, Switzerland
- Peter V. Coveney, Chemistry, University College London, UK
- Maurice Dodson, Mathematics, University of York, UK
- Ivar Ekeland, Mathematics, Pacific Institute for the Mathematical Sciences, Vancouver, Canada
- Jost-Hinrich Eschenburg, Mathematics, Augsburg University, Germany
- Sumaya Farhat-Naser, Biology, Birzeit, Palestine
- José Manuel Ferreira, Mathematics, Universidade Técnica de Lisboa, Portugal
- Henry Jaqaman, Theoretical Physics, Bethlehem University, Palestine
- Artur Vaz Ferreira, Mathematics, University of Bologna, Italy
- Ulrich Krause, Mathematics, Bremen University, Germany
- Matthias Kreck, Mathematics, Heidelberg University, Germany
- Rupert Lasser, Mathematics, GSF Neuherberg / TU München, Germany
- Hanna Nasir, Vice-Chairman of the Board of Trustees, Birzeit University, Palestine
- Vincent Rivasseau, Physics, Université Paris Sud, Orsay, France
- Marko Robnik, Physics, University of Maribor, Slovenia
- Andreas Ruffing, Mathematics, Technical University Munich, Germany
- Aziz Shawabka, Faculty of Science, Birzeit University, Palestine
- Colin Sparrow, Mathematics, University of Warwick, UK
- Ziad Taib, Mathematics, Chalmers University, Göteborg, Sweden
- Edriss S. Titi, Mathematics, Weizmann Institute of Science, Rehovot, Israel & University of California, Irvine, CA, USA
- Robert Wisbauer, Mathematics, Düsseldorf University, Germany