

Acknowledgment

On behalf of Pathways to Higher Education Management Team in Egypt, the Project Coordinator wishes to extend his thanks and appreciation to the Ford Foundation (FF) for its full support to reform higher education, postgraduate studies and research activities in Egypt. The Management Team extend their special thanks and appreciation to Dr. Bassma Kodmani, Senior Project Officer at the Ford Foundation office in Cairo, who helped initiate this endeavor, and who spared no effort to support the Egyptian overall reform activities, particularly research and quality assurance of the higher education system. Her efforts were culminated by the endorsement to fund our proposal to establish the Egyptian Pathways to Higher Education project by the Ford Foundation Headquarters in New York.

The role of our main partner, the Future Generation Foundation (FGF), during the initial phase of implementation of the Pathways to Higher Education Project is also acknowledged. The elaborate system of training they used in offering their Basic Business Skills Acquisition (BBSA) program was inspiring in developing the advanced training program under Pathways umbrella. This partnership with an NGO reflected a truly successful model of coordination between CAPSCU and FGF, and its continuity is mandatory in support of our young graduates interested in pursuing research activities and/or finding better job opportunities.

The contribution of our partner, The National Council for Women (NCW), is appreciated. It is worth mentioning that the percentage of females graduated from Pathways programs has exceeded 50%, which is in line with FF and NCW general objectives. The second phase of the project will witness a much more forceful contribution from the NCW, particularly when implementing the program on the governorates level as proposed by CAPSCU in a second phase of the program.

We also appreciate the efforts and collaborative attitude of all colleagues from Cairo University, particularly the Faculties of Commerce, Art, Mass Communication, Law, Economics and Political Sciences, and Engineering who contributed to the success of this project.

Finally, thanks and appreciation are also extended to every member of the Center for Advancement of Postgraduate Studies and Research in Engineering Sciences (CAPSCU), Steering Committee members, trainers, supervisors and lecturers who were carefully selected to oversee the successful implementation of this project, as well as to all those who are contributing towards the accomplishment of the project objectives.

Pathways Steering Committee Members

| SN | Member Name | Title | Institution |
|----|-----------------------------|--|-------------|
| 1 | Dr. Ahmed Aboulwafa Mohamed | Professor and Chief of the Department of Public International Law, Faculty of Law and Ex-Vice Dean for Postgraduate Studies, Faculty of Law | CU |
| 2 | Dr. Ahmed Farghally | Professor of Accounting and Dean of the Faculty of Commerce | CU |
| 3 | Dr. Ali Abdel Rahman | President of Cairo University | CU |
| 4 | Dr. Bassma Kodmani | Senior Program Officer, Governance and International Cooperation, Ford Foundation, Cairo Office | FF |
| 5 | Dr. Fouad Khalaf | Ex-Project Manager, Project Consultant and Local Coordinator of TEMPUS Risk Project | CU |
| 6 | Dr. Hoda Rashad | Professor and Director of Social Research Center, American University in Cairo (AUC) | NCW |
| 7 | Dr. Kamel Ali Omran | Professor of Human Resources and Organizational Behavior, Business Administration and Ex-Vice Dean for Postgraduate Studies, Faculty of Commerce | CU |
| 8 | Dr. Mahmoud Fahmy El Kourdy | Professor of Social Science and Ex-Vice Dean for Students Affairs, Faculty of Arts | CU |
| 9 | Mr. Moataz El-Alfy | Vice Chairman of Future Generation Foundation | FGF |
| 10 | Mr. Mohamed Farouk Hafeez | Secretary General and Board Member, Future Generation Foundation | FGF |
| 11 | Dr. Mohamed K. Bedewy | Dean of the Faculty of Engineering and Chairman of CAPSCU Board | CAPSCU |
| 12 | Dr. Mohamed M. Megahed | Director of CAPSCU | CAPSCU |
| 13 | Dr. Mohsen Elmahdy Said | Project Coordinator | CU |
| 14 | Dr. Salwa Shaarawy Gomaa | Professor of Public Policy and Ex-Director of Public Administration Research & Consultation Center (PARC), Faculty of Economics Political Sciences | NCW & CU |
| 15 | Dr. Sami El Sherif | Vice Dean for Students Affairs, Faculty of Mass Communication | CU |
| 16 | Dr. Sayed Kaseb | Project Manager | CU |
| 17 | Dr. Zeinab Mahmoud Selim | Professor of Statistics and Ex-Vice Dean for Students Affairs, Faculty of Economics and Political Sciences | CU |

CU Cairo University

FF Ford Foundation

CAPSCU Center for Advancement of Postgraduate Studies and Research in Engineering Sciences, Faculty of Engineering - Cairo University

NCW National Council for Women

FGF Future Generation Foundation

Publisher Introduction

The Faculty of Engineering, Cairo University is a pioneer in the field of learning and continual education and training. The Center for Advancement of Postgraduate Studies and Research in Engineering Sciences, Faculty of Engineering - Cairo University (CAPSCU) is one of the pillars of the scientific research centers in the Faculty of Engineering. CAPSCU was established in 1974 in cooperation with UNIDO and UNESCO organizations of the United Nations. Since 1984, CAPSCU has been operating as a self-financed independent business unit within the overall goals of Cairo University strategy to render its services toward development of society and environment.

CAPSCU provides consultation services for public and private sectors and governmental organizations. The center offers consultation on contractual basis in all engineering disciplines. The expertise of the Faculty professors who represent the pool of consultants to CAPSCU, is supported by the laboratories, computational facilities, library and internet services to assist in conducting technical studies, research and development work, industrial research, continuous education, on-the-job training, feasibility studies, assessment of technical and financial projects, etc.

Pathways to Higher Education (PHE) Project is an international grant that was contracted between Cairo University and Ford Foundation (FF). During ten years, FF plans to invest 280 million dollars to develop human resources in a number of developing countries across the world. In Egypt, the project aims at enhancing university graduates' skills. PHE project is managed by CAPSCU according to the agreement signed in September 22nd, 2002 between Cairo University and Ford Foundation, grant No. 1020 - 1920.

The partners of the project are Future Generation Foundation (FGF), National Council for Women (NCW) and Faculties of Humanities and Social Sciences at Cairo University. A steering committee that includes representatives of these organizations has been formed. Its main tasks are to steer the project, develop project policies and supervise the implementation process.

Following the steps of CAPSCU to spread science and knowledge in order to participate in society development, this training material is published to enrich the Egyptian libraries. The material composes of 20 subjects especially prepared and developed for PHE programs.

Dr. Mohammad M. Megahed
CAPSCU Director
April 2005

Foreword by the Project Management

Pathways to Higher Education, Egypt (PHE) aims at training fresh university graduates in order to enhance their research skills to upgrade their chances in winning national and international postgraduate scholarships as well as obtaining better job.

Pathways steering committee defined the basic skills needed to bridge the gap between capabilities of fresh university graduates and requirements of society and scientific research. These skills are: mental, communication, personal and social, and managerial and team work, in addition to complementary knowledge. Consequently, specialized professors were assigned to prepare and deliver training material aiming at developing the previous skills through three main training programs:

1. Enhancement of Research Skills
2. Training of Trainers
3. Development of Leadership Skills

The activities and training programs offered by the project are numerous. These activities include:

1. Developing training courses to improve graduates' skills
2. Holding general lectures for PHE trainees and the stakeholders
3. Conducting graduation projects towards the training programs

Believing in the importance of spreading science and knowledge, Pathways management team would like to introduce this edition of the training material. The material is thoroughly developed to meet the needs of trainees. There have been previous versions for these course materials; each version was evaluated by trainees, trainers and Project team. The development process of both style and content of the material is continuing while more courses are being prepared.

To further enhance the achievement of the project goals, it is planned to dedicate complete copies of PHE scientific publications to all the libraries of the Egyptian universities and project partners in order to participate in institutional capacity building. Moreover, the training materials will be available online on the PHE website, www.Pathways-Egypt.com.

In the coming phases, the partners and project management team plan to widen project scope to cover graduates of all Egyptian universities. It is also planned that underprivileged distinguished senior undergraduates will be included in the targeted trainees in order to enable their speedy participation in development of society.

Finally, we would like to thank the authors and colleagues who exerted enormous efforts and continuous work to publish this book. Special credit goes to Prof. Fouad Khalaf for playing a major role in the development phases and initiation of this project. We greatly appreciate the efforts of all members of the steering committee of the project.

Dr. Sayed Kaseb

Project Manager

Dr. Mohsen Elmahdy Said

Project Coordinator