**National Research Centre** **Egyptian American Scholars**

**Association of Egyptian American Scholars 39th, Annual Conference**

**رابطة العلماء المصريين بأمريكا و كندا**

***Established in the USA and Canada in 1973***

www.aeascholars.org

*Conference Theme*

"The Role of Modern Sciences and Emerging Technologies in Economic Development of the New Egypt"

***In partnership with***

**H. E. Prof. Dr. Nadia Zakhary**
Minister of Scientific Research

**H.E. Prof. Dr. Ashraf Shalaan**
President of the National Research Centre

***Conference Chairman***

**Prof. Dr. Mohamed Attalla**
McMaster University
AEAS President

***Prof.Dr. Tawfik Ayoub***
Chair, Conf. Program
University of Southern California

***Prof. Dr. Adel Talaat***
Co- Chair Scientific Program
University of Wisconsin – Madison

***Prof.Dr. Aly Mansour***
Co- Chair Scientific Program
American University in Kuwait

**Prof. Dr. Wafaa Kandeel**
Egypt Liaison
NRC, Conference Unit

**December 25-27, 2012**
**National Research Centre**
El-Behooth Street
Cairo – Egypt

## AEAS MISSION STATEMENT

*To create a forum for North American Egyptian scholars that facilitates dialogue and promotes partnerships with Egyptian counterparts to implement beneficial scholarly endeavors*

## AEAS BOARD OF DIRECTORS

# President's Message

Dear Colleagues,

I am pleased to welcome all of you to the 39th, annual conference and 40th Anniversary Celebration for the Association of Egyptian American Scholars – Inc (AEAS). I am equally pleased that this conference is conducted in the National Research Center (NRC) in partnership with H.E. Dr. Ashraf Shaalan, President of the Center. This is the third conference that is being conducted in the NRC after our two previous successful conferences in 2004 and 2006. I am sure that we will enjoy the same level of success this year.

This year we have over 50 collaborative research papers presented by colleagues in Canada and the USA in addition to our counterparts in Egypt's research centers and universities. Also Nine panel discussions are organized to facilitate the exchange of research programs between researchers in the major research clusters in the National Research Center and our members. Our distinguished scientist Dr. Mostafa El Sayed will deliver a lecture on his recent researches. This conference is timely for helping our beloved Egypt during this critical time of Egypt's history.

As part of the 40th Anniversary celebration, we are including in this book a brief about AEAS establishment its history and its By-Law.

Looking forward to meet all of you in Cairo

Dr. Mohamed Attalla, P.Eng., FCSCE
Assistant Vice President, McMaster University
President, Association of Egyptian American Scholars

***Established in Canada and USA in 1973***

## I. Name

The name of the association is "Association of Egyptian-American Scholars, Inc."

## II. Principal Office

The principal place of business of this association is Madison, Wisconsin.

## III. Nature of the Association

The Association of Egyptian-American Scholars is a non-sectarian, private, non-profit, educational, cultural, non-political, association of scholars of Egyptian origin who are either citizens or permanent residents of the United States and Canada.

## IV. Purposes

To promote and improve Egyptian-American cultural and scientific relations through the development and implementation of specific programs of interest and value to the cultural and scientific development of Egypt.

## V. Membership

1. **Classification:**
   REGULAR membership is open to those of Egyptian origin who are citizens or permanent residents of the United States and Canada, and whose background and experiences fall within the cultural and scientific purposes of the Association and whose interests coincide with those purposes.

**ASSOCIATE** membership is open to those of Egyptian origin who are on a temporary stay in the U.S. or Canada, but otherwise meet regular membership requirements.

**SPECIAL** membership is open to those not of Egyptian origin who have qualifications and interests to contribute to the purpose of the Association.

2. **Procedure:**
   To become a member, the applicant must be recommended by the local chapter, if one exists. If a local chapter does not exist, then the applications must be recommended by two regular members of the Association, and be approved by a simple majority of the Board of Directors of the Association.

3. **Dues**
   Each member shall pay annual membership dues in such an amount as fixed by the Board of Directors annually.

4. **Voting Rights**

   Voting rights are afforded only to regular members.

## VI. Programs and Activities

1. The Board shall develop programs and activities within the scope of the Association's purposes, and in particular the Visiting Scholar Program and the Science Education Fund.

2. The Visiting Scholar Program is a cultural-scientific program in which scholars of Egyptian origin who reside in the United States and Canada and who have achieved recognized academic or professional status through demonstrated expertise in their field, and whose knowledge and experience may be needed in Egypt, would be invited by Egypt to provide such services as they might be able to perform.

The Association will, in conjunction with a counterpart organization in Egypt, assist in matching registered scholars to needed expertise. The final decisions as to the number and type of scholars to be invited at any one time is up to the Egyptian authorities. The registered must also be members of the Association.

3. The Science Education Fund is established to help supply scientific equipment and material to Egyptian educational research institutions. The Fund is collected as part of the annual membership dues as well as from additional voluntary contributions.

## VII. Meetings of the Membership

1. There shall be annual meeting of the membership and such other meetings as the Board or membership may schedule.

2. Meetings may be held in Egypt or anywhere in the U.S.A. or Canada, as Membership may decide.

3. Meetings shall be called by an affirmative vote of the Board of Directors at the request of 25% of the regular members.

4. Notice of such meetings shall be in writing at least 30 days prior to any such scheduled meeting.

5. The quorum shall be 20% of the membership of which 10% must be physically present.

6. Voting by proxy is permitted provided that the proxy is in writing and verified by the Secretary.

## VIII. Financial Resources

The Association shall derive its financial resources from dues and contributions of members and other sources which are acceptable to the Board within the scope and purposes of the Association.

## IX. The Board of Directors

1. The Board of Directors shall consist of five elected regular members, and all presidents of Local Chapters ex officio. Only five elected regular members shall be voting. The outgoing president of the Association shall also be ex officio member.

2. *Officers*
   The officers shall be a president, two vice presidents, a secretary and a treasurer, who shall be elected from among the Directors by the membership.

The President shall chair all meetings of the Association or, in his absence, one of the Vice Presidents, and shall be responsible for the management of the Association within the scope of its purposes subject to the policies established by the Board.

3. *Treasurer*
   The Treasurer shall be in charge of handling all funds for the Association and shall deposit in a bank, approved by the Board, all the funds received, make all disbursements in accordance with the approved budget; have the right to sign checks. The Treasurer shall be responsible for keeping the financial records of the Association, and shall report annually to the membership.

4. *Nomination of Directors and Officers*
   A. All nominations shall be made by the regular members and sent to the Secretary who shall compile a list of nominees and a brief biographical sketch, and send a written ballot to all regular members thirty days prior to each annual meeting.
   B. Members can vote by written ballot to be sent to the Secretary who shall have the members proxy to vote in accordance with the said ballot.
   C. All written ballots shall be verified by the Board.

5. *Term of Office*

Term of Office of all Directors and Officers shall be two calendar years from the date of election. No director or officer can serve more than two consecutive terms.

6. *Local Chapters*

   A. At least ten regular members can establish a local chapter subject to the approval of the Board.

   B. Each local Chapter shall elect its own officers.

   C. Local Chapters shall act within the scope and purposes of the Association and shall be guided by the policies of the Board.

   D. Local Chapters may establish membership dues.

E. Membership in local Chapters is open only to members of the Association.

F. Members of the Association are invited to become members of local Chapters where available but are not required to do so.

G. Local Chapters may not solicit nor accept financial contributions other than membership dues except with the approval of the Board.

H. Local Chapters must submit an annual accounting to the Board.

## X. Amendments

Amendments to the Bylaws must be by a majority vote of all the regular.

# AEAS History

The idea of creating the Egyptian-American scholars association started by a discussion between Dr. Mohamed El-Wakil of Wisconsin and Dr. Ahmed Shouman of New Mexico in 1968. They both pursued the formalization of the group supported in Cairo by the Egyptian government and the Society of Friends of Egyptian Scholars Abroad. In 1971, fifteen Charter members were declared, and by 1972 the registration list reached 62 members. In 1973, the Association of Egyptian-American Scholars in the United States and Canada was formally established, and by 1974 it was officially incorporated in the State of Wisconsin, with Dr Mohamed El-Wakil as its President. Through the years close to 600 scholars have joined the Association, very many are still active and supportive.

**First Biannual Egyptian-American Scholars conference held under the auspices of President Mohamed Anwar Sadat,**

Since 1974, the Association of Egyptian-American Scholars has contributed abundantly to the scientific and cultural development of Egypt on one hand, and to the academic collaboration of its

members in North America. A few examples of these achievements are highlighted below:

- Through the affiliation of several members with research centers in US and Canada, an important link has been established between them and Egypt.

- Since its birth, the AEAS has maintained strong ties with Friends of Egyptian Scholars Abroad (FOESA) in Cairo, which helped reunite them occasionally with the local scholars.

- So far, AEAS has participated in ten of the biannual Cairo conference on "Egypt - The Year 2000," held by FOESA delivering most of the papers there from overseas and has regularly published those conference proceedings.

- Several libraries in Egypt were supplied with books, scientific periodicals and microfilms. Some members donated their own personal libraries.

- Numerous members have participated in United Nation TOKTEN program, which contributed significantly in transforming technological knowledge through Egyptian expatriates of North America.

- Through distinguished members, AEAS has placed Egypt under a program that will benefit twelve nations in family planning; has helped Egypt to benefit from several applications of the American satellite research and development; and has placed Egypt among six countries receiving technical information from the American Institute of World Resources.

- Members gave several gifts (i.e. needed equipment/spare parts) to Egypt's universities and centers; and others donated money to cultural and charitable organizations, pharmaceutical chemicals were donated to the Cairo National Research Center, a bilingual computer/printer were offered to FOESA to assist in preparing Cairo conference.

- AEAS contributed to the reconstruction of Alexandria's ancient library, and established a special fund to its project of "Dar EI-Adeeb EI-Misri" where great Egyptian writers can be displayed. This effort amount to over $10,000 cash donation to the Bibliotheca Alexandrina.

- The Association donated several computers to. Egypt's Ministry of Education to establish three Centers where secondary school teachers can be trained to use them.

- An anonymous AEAS member has donated $10,000 to the Egyptian Minister of Scientific Research restricted to cancer treatment research in Egypt.

- AEAS has conducted several conferences in North America dealing mainly with development in Egypt where the Egyptian Ambassadors in US and Canada served as guest speakers.

- AEAS has invited the two top students among Egyptian Secondary School graduates to visit US major cities and historic sites, hosted by Egyptian-American families.

- Several members participated in a study tour visiting main Egyptian cities and meeting with some dignitaries there. Besides, AEAS has donated a few scholarships to Egyptian-American students to take summer courses in Egypt.

- Some grants and research fellowships have been offered to college graduates in Egypt through AEAS members; and a pattern has been initiated to recognize and honor distinguished scholars among our members.

- AEAS has maintained a periodic newsletter including member news, opinions, abstracts, budget updates, and other concerns.

# AEAS Presidents

| | |
|---|---|
| Dr. Mohamed El-Wakil | 1975-1978 |
| Dr. M. CherifBassiouni | 1979-1980 |
| Dr. Mohamed El-Wakil | 1981-1984 |
| Dr. Ibrahim Oweiss | 1985-1988 |
| Dr. Mohamed Selim | 1989-1990 |
| Dr. Badr El-Din-Ali | 1991-1994 |
| Dr. WagihaTaylor | 1995-1998 |
| Dr. Badr El-Din-Ali | 1999-2002 |
| Dr. Ayman El Mohandes | 2003-2006 |
| Dr. Amer El Ahraf | 2007-2008 |
| Dr. Mohamed Attalla | 2009-Present |

# Dr. Mohamed El-Wakil
# FOUNDER & PRESIDENT:
# 1974-78, 1981-84

Mohamed El-Wakil, 91, a resident of Madison for nearly sixty years, diedJune 10 in Walnut Creek, California, where he had moved in 2005. He was born in Alexandria, Egypt in 1921.

He graduated from the University of Cairo in 1943 and was awarded ascholarship in mechanical engineering to study in the U.S. but was notallowed to travel until after WWII. He was sent to the University of Wisconsin-Madison where he earned a Ph.D. in 1949. In 1952, he joined the faculty of UW-Madison. He continued to teach in the Departments of Mechanical and Nuclear Engineering until he was 80 with the exception of 4 ½ years in the 1980's when he served as Chairman of Engineering and Computer Science at American University in Cairo. El-Wakil was internationally known for his four textbooks, many graduate students, and invited presentations in numerous countries. He taught workshops in India, Libya, Kuwait, Lebanon, the Philippines, Indonesia, Tunisia, and the United Arab Emirates, as well as Egypt. He loved teaching and received several teaching awards.

In 1974, he founded the Association of Egyptian-American Scholars to encourage Egyptians working in all academic fields in the U.S. to share expertise with colleagues in Egypt. He was a member of Rotary West in Madison. He is survived by his wife of 32 years, Betty, two children, Dr. Fred Wakil, Los Angeles, Dr. Leila El-Wakil, Piedmont, and two granddaughters, Sonja(Steven Magnuson), and Sophia.

# DR. M CHERIFBASSIOUNI
# PRESIDENT: 1979-80

M. Cherif Bassiouni is a Distinguished Research Professor of Law at DePaul University, where he has taught since 1964, and the President of the International Human Rights Law Institute (since 1990). He is also the President of the International Institute of Higher Studies in Criminal Sciences, Siracusa, Italy (since 1988) and the Honorary President of the International Association of Penal Law, (President 1989-2004) and holds the position of non-resident Professor of Criminal Law at The University of Cairo (since 1996). He was a Guest Scholar at The Woodrow Wilson International Center for Scholars in Washington, D.C. in 1972, Visiting Professor of Law, New York University Law School in 1971 and Fulbright-Hays Professor of International Criminal Law, The University of Freiburg, Germany in 1970, and is a frequent lecturer at universities in the U.S. and abroad.

His legal education was in Egypt, France, Switzerland and the United States where he received the following degrees: LL.B. University of Cairo; J.D. Indiana University; LL.M. John Marshall Law School; S.J.D. George Washington University. In addition, he received several honorary degrees from: National University of Ireland, Galway, Ireland (LL.D.) (2001); Niagara University, USA (LL.D.) (1997); Docteurd'Etat en Droit*honoriscausa*, University of Pau, France (1986); Dottore in Giurisprudenza*honoriscausa*, University of Torino, Italy (1981).

He is the author of 27 and editor of 48 books on International Criminal Law, Comparative Criminal Law, Human Rights, and U.S. Criminal Law; and the author of 240 articles published in law journals and books in the U.S. and other countries. These publications have been written in Arabic, English, French, Italian and Spanish. Some of them have been cited by the International Court of Justice; the International Criminal Tribunal for the Former Yugoslavia (ICTY); the International Criminal Tribunal for Rwanda (ICTR); the United States Supreme Court; the United States Circuit and Federal District Courts and various State Supreme Courts. Several of his works have been translated into: Arabic, Chinese, Farsi, French, German, Hungarian, Italian, Portuguese and Spanish.

Between 1975-2005, he served in the following United Nations positions: Independent Expert on Human Rights in Afghanistan, Commission (2004-05); Independent Expert on The Rights to Restitution, Compensation and Rehabilitation for Victims of Grave Violations of Human Rights and Fundamental Freedoms (1998-2000); Chairman, Drafting Committee, United Nations Diplomatic Conference on the Establishment of an International Criminal Court (1998); Vice-Chairman, General Assembly's Preparatory Committee on the Establishment of an International Criminal Court (1996-98); Vice-Chairman, General Assembly's Ad Hoc Committee on the Establishment of an International Criminal Court (1995); Chairman of the United Nations Commission of Experts Established Pursuant to Security Council 780 (1992) to Investigate Violations of International Humanitarian Law in the Former Yugoslavia (1993-94), and the Commission's Special Rapporteur on Gathering and Analysis of the Facts (1992-1993); Consultant to the Sixth and Seventh United Nations Congress on Crime Prevention (1980 and 1985); Consultant to the Committee on Southern African, Commission on Human Rights (1980-81); Co-chairman of the Independent Committee of Experts on drafting the Convention on the Prevention and Suppression of Torture (1978); Honorary Vice- President, Fifth United Nations Congress on Crime Prevention (1975).

He also served, between 1973-1980, as a consultant to the U.S. Departments of State and Justice on projects relating to international traffic in drugs (1973) and international control of terrorism (1975 and 1978-79) and as a consultant to the Department of State on the defense of the U.S. hostages in Iran (1979-80).

Among the distinctions and awards he received are:

- Nomination to the Nobel Peace Prize (1999)
- Special Award of the Council of Europe (1990)
- Defender of Democracy Award, Parliamentarians for Global Action (1998)
- The Adlai Stevenson Award of the United Nations Association (1993)
- The Saint Vincent DePaul Humanitarian Award (DePaul University 2000)
- The Hague Prize for International Law (2007).

# Dr. Ibrahim M. Oweiss
# PRESIDENT: 1985-86, 1987-88

Dr. Ibrahim M. Oweiss is a Professor Emeritus, Georgetown University. He is an educator and an international economic advisor. He joined the faculty of the Department of Economics at Georgetown University in 1967 after having served on the faculty of the University of Minnesota and Western Maryland College. In 1997-98, Dr. Oweiss was a visiting professor of economics at Harvard University. He also taught at Johns Hopkins University. While on leave from Georgetown University, he was appointed in the Egyptian Cabinet as First Under-Secretary for Economic Affairs inAugust 1977 and with rank of Ambassador, he held the position of the Chief of the Egyptian Economic mission to the United States headquartered in New York.

Dr. Oweiss earned his Bachelor of Commerce degree from Alexandria University in Egypt majoring in economics and political science, while his Masters and Ph.D. degrees in economics were earned from the University of Minnesota in the USA. Among the positions he held prior to his departure to the US was the Director of the Department of Industrial Projects in Cairo.

As an international economic advisor, he worked for several governments including Egypt, Kuwait, Oman, Qatar, Panama, Saudi Arabia and Taiwan and multinational corporations in the USA and abroad including Occidental Oil Company, Mobil Oil Company, United Technologies and Mawarid Holding Company.

In addition, Dr. Oweiss is the Honorary Chairman of the Council on Egyptian-American Relations which he founded in 1999. He held several volunteering positions among which the Chairman of the Board of Faith & Hope USA (1975-77) as well as that of the Foundation of the Jones Institute at Eastern Virginia Medical School in Norfolk (1983-90) after which he was voted as an Honorary Chairman for life. He was elected for two terms as the President of the Association of Egyptian-American Scholars (1984-88). Dr. Oweiss was one of the founding members of Georgetown University Center for Contemporary Arab Studies as well as the College of Commerce and Economics at Sultan Qaboos University in Oman. For a brief time, Dr. Oweiss was an advisor to

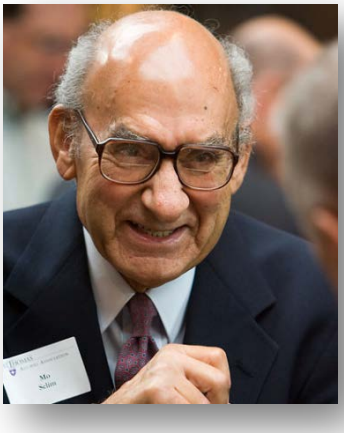
former President Jimmy Carter after having left office in 1983 and was one of the Professors of President Bill Clinton.

Dr. Oweiss authored over sixty scholarly publications among which were: *Petrodollar Surpluses*, *Arab Civilization*, *The Political Economy of Contemporary Egypt*, and in a pioneering work on oil revenues, he coined the terms "Petrodollars" and "Hostage Capital". The "Oweiss Demand Curve" was first presented at Oxford University. He expanded the well-known Newton Law to social sciences. The Newton-Oweiss states that “In social sciences every action has a reaction *not necessarily opposite in direction and not necessarily equal in force”*

In addition to other national and international honors, President Sadat awarded Dr. Oweiss with Egypt's Order of Merit, First Class. Her Majesty Queen Elizabeth sanctioned his admission to the order of St. John. In addition, he holds the Grand Cordon of the Order of Mohammed Ali Pasha and the Knight of the Order of the Queen of Sheba.

Dr. Oweiss is married to the former Miss Céline Lesuisse. They have one daughter Yasmeen and one son Kareem.

# DR. MOHAMED SELIM PRESIDENT: 1989-90



Dr. Mohamed Selim is a Professor of Economics in International Trade Finance and Economic Development. He graduated from the Faculty of Commerce in Cairo University in 1949. He worked in his Family Marine Business in Alexandria for four years. In 1953 he traveled to the USA and worked on his Masters and Ph.D. degrees in Minneapolis in the University of Minnesota. Dr. Selim obtained his Master's degree in 1955 and Ph.D. in 1959.

In 1959, Dr. Selim accepted a position as an Assistant Professor in the University of St. Thomas in Minnesota. in 1965, he became the Chair of the Department of Economics. The department at this time included three Ph.Ds. At the end of his term as a Department Chair in 1965, the department had grown to 19 Ph.Ds. During this period Dr.Selim established two centers: The Center for Economic Education, which worked with teachers in elementary and high schools to provide training on methods of teaching economics at the elementary and high school levels.

Also Dr. Selim has established the Center for Senior Citizens Education. This center has focused on areas such as Culture, Education, Social Security, Retirement and Legal Advice. The center name was changed after Dr. Selim's retirement to be Selim Center for Learning in Later Years. These centers were fully funded from the Business community.

Dr. Selim retired in 2004. He spends about two months annually in Egypt while is living in Minnesota.

# DR. BADR-EL-DIN-ALI
# PRESIDENT: 1991-94,1999-2001

Dr. Badr-El-Din Ali was a professor of Sociology at the University of Louisville and Executive Director of the International Prisoners Aid Association.
Badr-El-Din has been published in many scholarly journals discussing topics like: Islamic Law, Methodological Problems in International Criminal Justice Research and Female Criminality in Modern Egypt. He passed away in 2008.

# Dr. Wagiha Taylor

# PRESIDENT: 1995-96, 1997-98

Dr. Wagiha Taylor is Professor of International Business and Economics and Former Dean of Graduate Studies at Wilkes University. She has M.A./Ph.D. in Economics from Brown University/Clark University and teaches both graduate and undergraduate business and economics courses. Taylor has lectured to various professional and civic groups in the US, Egypt, and abroad. Taylor is an active consultant for United Nations. She has discussed educational programs with officials of the Sadat Academy of Management Sciences and presented a written report entitled, "A Final Report Resulting from a UNDP – Sponsored Consultancy Assignment with the Sadat Academy of Management Sciences."

Dr. Taylor is an active observant at the United Nations Conference on Population and Development as well as The United Nations Congress on the Prevention of Crime and the Treatment of Offenders.Taylor has been an active contributor to almost all AEAS conferences held in Cairo, Egypt and various cities and states in The United States.

Taylor has held the title of: President of the Congress of Political Economists (COPE) International; President of the Pennsylvania Economic Association; President of the Wilkes University Faculty Association; President of the Association of Egyptian American Scholars (AEAS) in the U.S. and Canada; Chair of the Board of Directors of the Middle East Development and Science Institute (MEDSI), Washington, D.C.; and President of the Northeast Pennsylvania Association of Arab-Americans.

Dr. Wagiha Taylor, President of the AEAS for the four years was assisted by hard working board members during her two terms. Dr. WaguihElMaraghy from McCaster University, Dr. FaroukHamouda from Glen Ellyn Clinic, Chicago, Dr. HodaElmaraghy Dean of Engineering at the University of Windsor, and Dr.Morcos Massoud Robert A. Day Distinguished Professor Claremont College , Clermont, California served with her as Vice Presidents. Dr. Ibrahim M. Badawi from St. Johns University, NY served as very able and capable secretary. Dr. Hassan Ali Associate Professor of Economics at Ohio State University and Dr. Azmi Mikhail from Ohio University were very helpful treasurers.

During her tenure as President Dr. Wagiha Taylor also created several committees to help with the functioning of the AEAS. Previously, she served as Vice President, Secretary, and a member of the Advisory Board for AEAS; and Vice President of the Wilkes Faculty Women's Caucus. She is a Founding and Life Member of the Eastern Economic Association and the Congress of Political Economists, International. She has traveled on business to Europe, the Middle East, the Far East, South America, South Africa, and Australia. She is married and has three children.

# Dr. Ayman El-Mohandes
# President: 2003-2006

Born in Cairo, Egypt, Dr. El-Mohandes, 57, is an educator, practitioner and researcher. He has served on the faculty of George Washington University (GWU) in Washington since 1985 after completing his training in pediatrics and neonatal medicine at DC Children's Hospital.

After serving in the School of Medicine for 12 years, he joined the School of Public Health and Health Services at GWU to become its associate dean for research and one of its founding faculties. He is currently a tenured professor and chairman of the department of prevention and community health in the School of Public Health and Health Services as well as a practicing neonatologist and a professor of pediatrics and obstetrics and gynecology in the School of Medicine and Health Sciences.

Fluent in English, Arabic and French, Dr. El-Mohandes has participated in global health projects in Egypt, Indonesia, South Africa, India and Kyrgyzstan. He will become the second dean of the UNMC College of Public Health, which became operational in January 2007. The founding dean of the college, Jay Noren, M.D., stepped down last summer to become president of Wayne State University in Detroit.

Dr. El-Mohandes has received uninterrupted research funding from the National of Institutes of Health (NIH) since 1994. During his career, he has received more than $15 million from federal agencies, including the NIH and the Centers for Disease Control and Prevention. In 2001, he received the highest award given by GWU Medical Center when he was named the Distinguished Researcher of the Year.

In 2001, Dr. El-Mohandes was selected as the executive principal investigator for the DC Initiative to Reduce Infant Mortality in Minority Populations through the National Institute of Child Health and Human Development (NICHD). This project recruited more than 1,000 pregnant mothers in the Washington area and retained more than 90 percent over three years in a randomized trial testing the efficacy of cognitive behavioral interventions delivered during prenatal care to high-risk minority women.

# Dr. Amer El Ahraf
# President: 2007-2008

Named by the *Journal of Environmental Health* as "one of the 15 Leaders of Environmental Health" ; and described by the *Orange Coast Voice* , a newspaper in California, as the " Renaissance Man of Huntington Beach" for his dual interest in science and humanities as well as his contributions to environmental and public health and the Arabic language and literature , Dr. Amer El-Ahraf is a Professor of Health Sciences and Vice President Emeritus at California State University, Dominguz Hills and an Adjunct Professor of Arabic where he also directs the Arabic Studies Program at Chapman University. He is active on national and international levels as a Permanent Guest Professor of International. Intercultural Environmental Management at Fulda University, Germany, an Honorary Professor of Environmental Sciences at Lagos State University, Nigeria and a Visiting Professor at Zagazig and Benha Universities in Egypt. He is a graduate of the Faculty of Veterinary Medicine, Cairo University where he served as a " Moeid" of Toxicology, Pharmacology and Forensic Medicine and the UCLA School of Public Health where he majored in both Environmental and Nutritional Sciences and earned his degree " With Distinction". This kind of an education characterized by breadth and depth fit in Dr. El-Ahraf's comprehensive view on Environmental and Public Health and his vision of their role in service to humanity. His research on liver cancer and Aflatoxin, an environmental carcinogen found in peanuts and other foods, was motivated by his concern for children in the United States and Africa where peanut butter or peanuts form a significant part of their diet. He is among the pioneers of exploring the role of dietary modifications, and particularly Linoleic Acid, in reducing the incidence and severity of liver cancer. After graduation from UCLA and before returning to teaching, his commitment to service led him to partnership with Compton-Willowbrook community, to improve environmental and public health conditions in one of the most disadvantaged districts in the inner city of the Los Angeles area. This work led to his invitation to speak before the U.S. President's Committee on Health Education". Besides serving the citizens of his new land , Dr. El-Ahraf wanted to draw lessons that can be helpful in serving the citizens of his homeland.

In building his distinguished career, Dr. El-Ahraf never forgot his roots. He has partnered with Egyptian universities to consult on the mission of some of the new universities at the time of their initiation .He recommended the consideration of establishing the study of wild life and its significance to the Sinai Peninsula at Suez Canal University. He established with his Egyptian colleagues new programs such the Environmental Health Research Group at the Faculty of Veterinary Medicine and the Environmental Sciences Program at the Faculty of Engineering at Zagazig University. He supervised the research of scores of Ph.D. ad Post-Doctoral Egyptian colleagues with an eye on linking their field of academic interest with that of Egypt's urgent concern with protecting the nation's environment, its historical heritage and health of its people.

As President of the Association of Egyptian American Scholars, Dr. El-Ahraf, with the support of an excellent Board of Directors, initiated a partnership with the Egyptian Ministry of Higher Education where three major sectors were selected for modernization .Included were the Commerce, Engineering and Medical Sectors where Dr. El-Ahraf also co- chaired the Medical section with Dr. Tawfik Ayoub in partnership with Dr. Rashed Barssom on the Egyptian side. Also, during his presidency, the Board of Directors engaged in developing the AEAS Strategic Plan that addressed among other things the issue of enhancing intrinsic Egyptian Research and Technology capacities , a topic that represents the theme of

this year's conference. Under his stewardship, the AES was held in California where the Association facilitated the work on Accreditation led by Dr. Salwa El-Gharib to learn from the American experience and to benefit Egyptian universities. The 2007 California Conference saw active participation by accomplished Egyptian professors, department chairs, deans and university presidents at the time including Dr. Hind Hanafy, Dr. Galal El-Said and Dr. Maher Domiaty of Alexandria, Fayoum and Zagazig respectively. During his presidency, Dr. El-Ahraf initiated new traditions for the AEAS among which is establishing Scholarship Awards named after distinguished departed presidents to be given to bright Egyptian graduate students. So far, scholarship awards have been issued in the names of Past President Dr. Badr Ewies and Founding President Dr. Mohamed El-Wakil. When the current President Dr Mohamed Attalla delivers his Address in the 2012 Conference, it will be a continuation of a tradition that Dr . El-Ahraf established in 2008 when he initiated the process of giving the AEAS President's Address in Arabic.

The son of a teacher of Arabic and a School Principal,Amer's love of Arabic poetry and commitment to academia are understandable. His Diwan " Mean Al Watan Ela Mhger " is being published in Egypt. His academic titles included those of Professor, Department Chair, Vice President and President. His academic programs are characterized by innovation and cooperation. Examples include Environmental Quality and Health at the University of California. Irvine (UCI), Health Science and Human Ecology at CSU, San Bernardino, a National Model in Health Administration and Planning , a Comprehensive Environmental Sciences Program at Zagazig University where every Faculty is encouraged to develop an environmental orientation to its major in service of Egypt.

Community service is not new to Amer. In the US, he established the "Egyptian Scientific Society" in the Los Angeles area which included recent doctoral degrees and graduate students to help Egypt, an organization that served as a precursor of the AEAS in Southern California and later on became an active part of the new Association founded by Dr. Mohamed El-Wakil . He served his local Egyptian American community as Chairman of the EAO. He plays an active role in promoting interfaith harmony through the Orange County Interfaith Collation on the Environment (OCICE) where he served as Board Member and now as an Adviser. He serves in a similar capacity to the Board of the Sister City Program ( Sonoma, California and Aswan, Egypt). And not only Egypt, He served Saudi Arabia as Consultant for the World Health Organization (WHO), Syria as as reviewer of translated environmental health material and Jordan by establishing relations with hisAmerican university. Dr. El-Ahraf has been recognized by the Los Angeles County Board of Supervisors for "Promoting a Better Understanding between the Egyptian and American Cultures". He is listed WHO's WHO AMONG ARAB AMERICANS. His own Egyptian American community honored him with the " Life Time Achievement Award".

His leadership is exemplified by holding the title of President in other professional and academic societies such as the National Environmental Health Association (NEHA), The California Environmental Health Association (CEHA), the International Environmental Health Faculty forum (IEFF) and the American-European University Consortium (AEUC).

Among the honors, awards and recognition received in his field of study are: the "Mangold Award" for Excellence in Environment Health , the "Snyder Award" for Achievements in Environmental Health, the Stuart Richardson Educational Award and a Fullbright Scholarship. He is listed in WHO'S WHO in AMERICA

His is the author of over 200 scientific papers, books, book chapters, technical reports, and keynote speeches covering the areas of public heath, Arabic and university management.

# Dr. Mohamed Attalla
# President: 2009-2010, 2011-Present

Dr. Mohamed Attalla obtained both a Master's degree and a Ph.D. in Construction Engineering and Management from the University of Waterloo in Canada. He obtained his Bachelor of Engineering from Ain Shams University.

Dr. Attalla became AEAS's Ninth president in 2009 after a very long exemplary service to AEAS. He has been an active member since 1998 and served as Secretary General 2003-2006 and Vice President 2007-2008. He also organized many AEAS conferences, served as Conferences Registrar 2001 and 2002, served as Chair, Conference Organization 2004 and 2006 and as Conference Chair 2008 – 2012. He also coordinated collaboration with the Higher Education Enhancement Program as well as collaboration with the Faculty Leadership Development Program in Egypt.

Among other AEAS services was the organization of workshops at the National Research Center, Ain Shams University, Suez Canal University, Fayoum University and Cairo University. He coordinated research activities with Egyptian institutions; worked tirelessly to increase AEAS membership and visibility; built strong ties with the Ministry of Higher Education and its programs; instituted strong channels of collaboration with the National Research Centre; contributed research papers in all conferences in the past 14 years and coordinated the massive undertaking of the Engineering Sector Modernization project between AEAS members and the Ministry of Higher Education in Egypt.

Dr. Attalla also coordinated two successful workshops in Washington and Montreal, working with the Cultural Offices, for the National Authority for Quality Assurance and Accreditation in Higher Education and served as member on the development of engineering codes with the Housing and Building Research Center. He also served as an external examiner on many Ph.D. thesis in Egyptian Universities.

Dr. Attalla, holds a Senior Executive position at McMaster University and also teaches Construction Project Management and Quality and Risk Management. He also serves as an Adjunct Professor at both University of Waterloo and Ryerson University, he delivers different construction and project management courses, serves on Masters and Ph. D. committees and supervises and co supervises advanced graduate research.

Dr. Attalla also served in different academic and professional capacities such as the Chair of the Program Advisory Council - Department of Architectural Sciences in Ryerson University,

Chair of the Construction Division, Canadian Society for Civil Engineering, and Chair of its International Construction Conference, 2005, 2011 and 2013. He is a member of the Productivity Advisory Committee for the Canadian Construction Sector Council. Dr. Attalla published over 30 papers in international journals and international refereed conferences in a wide array of topics including Construction Management, Facilities Condition Assessment, Infrastructure Management and Sustainable Construction and Green Buildings.

Dr. Attalla published over thirty papers in international journals and international refereed conferences in a wide array of topics including Construction Management, Facilities Condition Assessment, Infrastructure Management and Sustainable Construction and Green Buildings.

He received different awards including Fellow of the Canadian Society for Civil Engineering and an Award of Excellence from the Ministry of Infrastructure Renewal in Canada and the Engineering Medal in Management for the Association of Professional Engineers in Ontario, Canada.

As part of his different public service experiences, Dr. Attalla served as a Vice President of the governing Liberal Party in Canada where he lead many multicultural communities towards a common goal which was a very rewarding experience in voluntary and public offices.

# AEAS Boards

**1974-1976**

| | |
|---|---|
| **President** | Dr. M. M. El-Wakil (Founder) |
| **Vice-President** | Dr. M. CherifBassiouni |
| **Vice President** | Dr. Abdel MaguidAhmed |
| **Secretary** | Dr. Mahmoud El-Shazly |
| **Treasurer** | Dr. Samir Kamal |

**1977-1978**

| | |
|---|---|
| **President** | Dr. M. M. El-Wakil |
| **Vice-President** | Dr. M. CherifBassiouni |
| **Vice-President** | Dr. Abdel Maguid Ahmed |
| **Secretary** | Dr. Mohamed Abou-El-Seoud |
| **Treasurer** | Dr. Samir Kamal |

**1979-1980**

| | |
|---|---|
| **President** | Dr. M. CherifBassiouni |
| **Vice-President** | Dr. Salah E. Elmaghraby |
| **Vice-President** | Dr. Mostafa El-Sayed |
| **Secretary** | Dr. Alfred G. Bishara |
| **Treasurer** | Dr. M. M. El-Wakil |

**1981-1984**

| | |
|---|---|
| **President** | Dr. M. M. El-Wakil |
| **Vice-President** | Dr. Ibrahim M. Oweiss |
| **Vice-President** | Dr. Samir Kamal |
| **Secretary** | Dr. Mohamed Abou-El-Seoud |
| **Treasurer** | Dr. YounanSidky |

**1985-1986**

| | |
|---|---|
| **President** | Dr. Ibrahim M. Oweiss |
| **Vice President** | Dr. M. Cherif Bassiouni |
| **Vice President** | Dr. M. Eid Moustafa |
| **Secretary** | Dr. Wagiha Taylor |
| **Treasurer** | Dr. Albert T. Awad |
| **Ex-Officier** | Dr. M. M. El-Wakil |

**1987-1988**

| | |
|---|---|
| **President** | Dr. Ibrahim M. Oweiss |
| **Vice President** | Dr. Mohamed Abou-El-Seoud |
| **Vice President** | Dr. M. Cherif Bassiouni |
| **Secretary** | Dr. Wagiha Taylor |
| **Treasurer** | Dr. Albert T. Awad |
| **Ex-Officer** | Dr. M. M. El-Wakil |
| **Legal Counsel** | Dr. CherifSedky |

**1989-1990**

| | |
|---|---|
| **President** | Dr. Mohamed Selim |
| **Vice President** | Dr. Mohamed Abou-El-Seoud |
| **Vice President** | Dr. Badr El Din Ali |
| **Secretary** | Dr. Samir Kamal |
| **Treasurer** | Dr. Nessim Hanna |
| **Ex-Officer** | Dr. Ibrahim M. Oweiss |
| **Legal Counsel** | Cherif Sedky |

**1991-1992**

| | |
|---|---|
| **President** | Dr. Badr El Din Ali |
| **Vice President** | Dr. Wagiha Taylor |
| **Vice President** | Dr. Mohamed Osman |
| **Secretary** | Dr. Samir Kamal |
| **Treasurer** | Dr. Nessim Hanna |
| **Legal Counsel** | Dr. Cherif Sedky |

**1993-1994**

| | |
|---|---|
| **President** | Dr. Badr El Din Ali |
| **Vice President** | Dr. Khalil H. Mancy |
| **Vice President** | Dr. Mohamed Mostafa |
| **Secretary** | Dr. Mohsen Bagnied |
| **Treasurer** | Dr. Azmi D. Mikhail |

**1995-1996**

| | |
|---|---|
| **President** | Dr. Wagiha Taylor |
| **Vice President** | Dr. WaguihElmaraghy |
| **Vice President** | Dr. Farouk Hammouda |
| **Secretary** | Dr. Ibrahim Badawi |
| **Treasurer** | Dr. Azmi Mikhail |
| **Legal Counsel** | Dr. CherifSedky |

**1997-1998**

| | |
|---|---|
| **President** | Dr. Wagiha Taylor |
| **Vice President** | Dr. Farouk Hammouda |
| **Vice President** | Dr. HodaElmaraghy |
| **Secretary** | Dr. Ibrahim Badawi |
| **Treasurer** | Dr. Hassan Aly |
| **Legal Counsel** | Dr. CherifSedky |

**1999-2000**

| | |
|---|---|
| **President** | **Dr. Badr El Din Ali** |
| **Vice President** | Dr. Mohamed Shokr |
| **Vice President** | Dr. Salah Hassan |
| **Secretary General** | Dr. Amer El Ahraf |
| **Treasurer** | Dr. RagiMitias |

**2001-2002**

| | |
|---|---|
| **President** | **Dr. Badr El Din Ali** |
| **Vice President** | Dr. Mohamed Shokr |
| **Vice President** | Dr. Salah Hassan |
| **Secretary General** | Dr. Amer El Ahraf |
| **Treasurer** | Dr. RagiMitias |

**2003-2004**

| | |
|---|---|
| **President** | **Dr.Ayman El Mohandes** |
| **Vice President** | Dr. Mohsen Bagneed |
| **Vice President** | Dr. Ramses Toma |
| **Secretary General** | Dr. Mohamed Attalla |
| **Treasurer** | Mr. Abd El Wahab El Abd |

**2005-2006**

| | |
|---|---|
| **President** | **Dr. Ayman El Mohandes** |
| **Vice President** | Dr. Mohsen Bagneed |
| **Vice President** | Dr. RamsesToma |
| **Secretary General** | Dr. Mohamed Attalla |
| **Treasurer** | Mr.Abd ElWahab El Abd |

**2007-2008**

| | |
|---|---|
| **President** | **Dr. Amer El Ahraf** |
| **Vice President** | Dr. Mohamed Attalla |
| **Vice President** | Dr. Anwar Abd El Fatah |
| **Secretary General** | Dr. MohabAnis |
| **Treasurer** | Dr. LotfyGreish |

**2009-2010**

| | |
|---|---|
| **President** | **Dr. Mohamed Attalla** |
| **Vice President** | Dr. TawfikAyoub |
| **Vice President** | Dr. Aly Mansour |
| **Secretary General** | Dr. Adel Talaat |
| **Treasurer** | Dr. Mohamed Hegab |

**2011-Present**

| | |
|---|---|
| **President** | **Dr. Mohamed Attalla** |
| **Vice President** | Dr. TawfikAyoub |
| **Vice President** | Dr. Aly Mansour |
| **Secretary General** | Dr. Adel Talaat |
| **Treasurer** | Dr. Mohamed Hegab |

# Opening Ceremony

National Research Center, Cairo – Egypt
**Tuesday, December 25, 2012**

| | | From | To |
|---|---|---|---|
| Registration | | **4:30 PM** | 5:00 PM |
| Master Ceremony | | | |
| Opening & AEAS President address | Dr. Mohamed Attalla | 5:00 PM | 5:15 PM |
| AEAS Immediate Past President address | Dr. Amer El-Ahraf | 5:15 PM | 5:25 PM |
| President National Research Center | Dr. AshrafShaalan | 5:25 PM | 5:35 PM |
| Former Prime Minister | Dr. EsamSharaf | 5:35 PM | 5:45 PM |
| Minister of Scientific Research | Dr. Nadia Zakhary | 5:45 PM | 5:55 PM |
| President Academy for Science and Technology | Dr. Maged El Sherbenee | 5:55 PM | 6:15 PM |
| Presentations: | | 6:15 PM | 6:55 PM |
| Bio Control Research, NRC | Dr. Mohamed Megahed | 6:15 PM | 6:35 PM |
| Nano Technology & Advanced Materials, NRC | Dr. Ali Hebeish | 6:35 PM | 6:55 PM |
| AEAS Reception | | 6:55 PM | 8:00 PM |

# Panel Discussions

| | | | | Panel Presentations | Presenter |
|---|---|---|---|---|---|
| | | | | Title | Name |
| 1 | December 26, 2012 | 9:00 AM | 10:00 AM | Safety & sustainable water supply to small communities | Dr. Mohamed GamalEldine |
| | | | | Wastes Water Research | Dr. HayamShalaan |
| | | | | | Dr. Nasr El-Sheimy (moderator) |
| 2 | | 11:40 AM | 12:40 PM | Latest Research in Nano Technology & its application for cancer treatment | Dr. Mosatafa El Sayed |
| 3 | | 2:20 PM | 3:20 PM | Diabetes Research | Dr. Soha Abdel-Daiem |
| | | | | Approach to Diabetes management in the 21st century | Dr. FouadKandeel |
| | | | | | Dr. Tawfik Ayoub (moderator) |
| 4 | | 3:20 PM | 4:20 PM | Production of Biodiesel Fuel from industrial wastes of the Oil & Soap | Dr. Ferial Zaher |
| | | | | Biodiesel Research | Dr. Guizin El Dewani |
| | | | | | Dr. Ahmed El-Sawy (moderator) |
| 1 | December 27, 2012 | 9:00 AM | 10:00 AM | Stem Cells In Craniofacial Biology | Dr. Ali Abdel Aleem |
| | | | | Obesity Research | Dr. NagwaAbdella |
| | | | | Current directions of biomedical research in the USA | Dr. FouadKandeel (moderator) |
| 2 | | 11:40 AM | 12:40 PM | Research for sustainable economic development | Dr. Mohamed Sharkawy |
| | | | | Renewable Solar Energy | Dr. NagwaKhatab |
| | | | | | Dr. Hassan Nour (moderator) |

| Day 1 - Room 1 | | | | | |
|---|---|---|---|---|---|
| Health & Medicine | | | | | |
| | | | | | |
| | From | To | Name | Paper Title | Co-Chairs |
| | 8:00 AM | 9:00 AM | Registration | | |
| | 9:00 AM | 10:00 AM | Opening & Panel Discussion | | |
| 1 | 10:00 AM | 10:20 AM | Tawfik Ayoub | Medical Reform in Egypt - Post January 25th Revolution | Tawfik Ayoub |
| 2 | 10:20 AM | 10:40 AM | Hisham Imam | Strategic Management and Higher Education Development | Heba Ahmed Abdalla |
| 3 | 12:40 AM | 11:00 AM | Mostafa Abdel Nasser | Mini-review of “professional skills” training program | A. Abdel-Rahman |
| 4 | 11:00 AM | 11:20 AM | Fouad Kandeel | Epigenetics And Metabolic Memory | |
| 5 | 11:20 AM | 11:40 AM | Fouad Kandeel | | |
| | 11:40 AM | 12:40 PM | Coffee & Panel Discussion | | |
| 6 | 12:40 PM | 1:00 PM | Fouad Kandeel | New Paradigms In Treatment Of Type 1 Diabetes: Cellular Replacement Or Immune Modulation | Tawfik Ayoub |
| 7 | 1:00 PM | 1:20 PM | Fouad Kandeel | | Abdallah Merwad |
| 8 | 1:20 PM | 1:40 PM | Shoukry El-Kantery& Amer El-Ahraf | The Influence of Egyptian Medicine on Greek Medicine and Further Actions of Reciprocity | Gamela Nasr |
| 9 | 1:40 PM | 2:00 PM | Mostafa Abdel Nasser | Small Group Learning: A model for Implementing Curriculum of Hospital Acquired Infection | |
| 10 | 2:00 PM | 2:20 PM | Hisham Imam | Problem Based learning For Teaching main health problems in Medicine | |
| | 2:20 PM | 3:20 PM | Panel Discussion | | |
| | 3:20 PM | 4:20 PM | Lunch & Panel Discussion | | |
| | 7:00 PM | 10:30 PM | Dinner & Awards | | |

# Medical Reform in Egypt - Post January 25th Revolution

Tawfik Ayoub, MD
Keck School of Medicine, University of Southern California

Over the last few decades and due to convoluted reasons the medical service has deteriorated in Egypt. The issues becomes more complex with the approach of implementation of the General Agreement on Trade Services (GATS) and medical system that allows foreign medical doctors to practice in Egypt. The problem has obviously caught the attention of high authorities in Egypt to act on the subject. Among the various reasons for medical service deterioration is the deterioration of medical education.

The supreme council of Universities has commissioned the medical sector committee leadership to investigate the problem, and the AEAS was contacted to contribute in the efforts to advance medical education in Egypt.

Following the January 25$^{th}$ revolution, it was quite obvious that medical reform is a must, and not an option. Egyptian doctors revolted against the low salaries, poor work conditions, poor training and poor resources. All those combined require a major reform of the medical sector in its entirety.

This paper discusses some of the important issues we see important to the advancement of medical education and hence the amelioration of medical services in Egypt.

# Strategic Management and Higher Education Development

Hisham Imam [1]Gamela Nasr[2]

[1]Department of anatomy and embryology-Quality Assurance Unit, Faculty of Veterinary Medicine
[2]Department of Cardiology Faculty of Medicine, Suez Canal University, Suez Canal University

Strategic Management is considered as a base of total quality management to fulfill higher education accreditation criteria. It consists of two parts; the first is future forecasting depending upon statistical analysis while the second is the capability to face the future by a clear vision, mission and real objectives under the umbrella of active planning.

The study was carried on in different accredited medical schools to determine the important factors to achieve its success. This revealed that active stakeholders participation as well as higher administrative support and follow-up where among the most important factors encountered.

A clear understanding of the aims of higher education will also shape the responses of institutions and individuals to the need for strategic planning and management. Of these are to enable individuals to develop their capabilities to the highest potential levels throughout life, so that they grow intellectually, are well equipped for safe work, can contribute effectively to community, and achieve personal fulfillment and growth ; to Increase knowledge and understanding for their own and to foster their application to the benefit of the society . It is to achieve these ends that higher education becomes developed. To varying degrees, they provide the philosophical framework within which all institutions of higher education operate.

# Mini-review of “professional skills” training programme

Dr. Moustafa Abdel-Nasser[1], Dr.Ali Batarfi[2]

[1] Professor of Microbiology & Immunology, Faculty of Medicine Al-Azhar University
[2]Professor of Surgery, Dean of Hadhramout University College of Medicine, Yemen

Since the foundation of the Faculty of Medicine, Al-AzharUniversity , Cairo, Egypt in 1963, all efforts have been paid to graduate a competent doctor being able to cope with the national, regional and international health problems. The Medical Education Unit was founded in 1978 with one of the most important responsibilities in training staff of how to teach and train "training of trainee". In this mini-analysis it is the psychomotor domain (skills) will be carried out..

Skills training starts from the preclinical stage (first year through the second and third years) to be intensified in the clinical stage (years 4,5 and 6). The overall education objectives of the faculty were documented as follows: " At the end of the undergraduate course the potential graduate will be:

(i) Equipped with adequate knowledge and skills in the broad field of medicine,
(ii) Able to function effectively in urban as well as in rural areas of the country,
(iii) Able to carry out curative regimes as well as preventive programme,
(iv) Able to exhibit the correct attitudes towards the patients and the community he serves, and,
(v) Be imbued with the realization that the study of medicine is life-long process.

It also aimed at continuing education “ the education of a physician extends over a stage of lifetime, each stage resting upon the preceding one and each preparing him for that which follows”. In 2005 this curriculum was started to be reviewed on the faculty level and on the departmental levels. A SWAT analysis was done with improvement of the points of weakness.

**In conclusion**, training of medical student from the time of admission till the time of graduation and as a house officer represents a good investment. Our target is the patient and the quality of healthcare deserves every penny spent.

# EPIGENETICS AND METABOLIC MEMORY

Dr. Fouad R. Kandeel, M.D., Ph.D.

"Metabolic memory" refers to the phenomenon by which the body's micro- and macro-vasculature continues to respond to a previous level of glycemic control for a period long after the control has actually improved or worsened. For example, severe diabetic retinopathy or nephropathy may progress in the short- to mid-term even after glucose levels have been improved.

Large-scale clinical trials [e.g., the Diabetes Control and Complications Trial (DCCT) (1) and the Epidemiology of Diabetes Interventions and Complications (EDIC) Study (2)] have demonstrated that intensive metabolic control achieved early in the course of diabetes substantially reduces the development and progression of diabetes and its associated microvascular complications. Additionally, prospective observational studies have demonstrated that atherogenic and inflammatory mediators are elevated even prior to the onset of diabetes, and significantly contribute to the subsequent development of macrovascular complications. Collectively, these data suggest that metabolic memories are stored early in the course of diabetes.

Potential mediators of metabolic memories include "epigenetic changes." *Epigenesis* may be defined as acquired changes in DNA function without changes in the underlying DNA sequence that persist over rounds of cell division, and even transgenerationally, and thus may be known as "epigenetic inheritance." The molecular basis of epigenetic inheritance is complex, and involves the activation or modification of certain genes. In diabetes, epigenetic changes may arise from DNA damage that occurs via high levels of glucose, oxidative stress, and inflammation, and includes DNA methylation, histone methylation and acetylation, and telomere shortening. Methylation, for example, is a form of alkylation that involves the attachment or substitution of a methyl group. Methylating agents can modify DNA at many different sites, thereby producing lethal and mutagenic lesions. Telomeres are DNA sequences necessary for DNA replication which shorten during cell division at a rate that is related to the level of oxidative stress. Once telomeres are shortened to a critical length, cells are triggered into replicative senescence; this process is thought to be one of the mechanisms responsible for the formation of vascular plaques in diabetes. The effects of advanced glycation end-products (AGE) on DNA and long-lived tissues, such as vascular basement membranes, may also mediate metabolic memory. On the other hand, insulin is thought to suppress inflammation, as well as glucotoxicity and lipotoxicity (and the consequences thereof, such as the formation of AGE and epigenetic phenomena); therefore, insulin plays a highly pivotal and beneficial role in the treatment of diabetes.

A more detailed understanding of the molecular mechanisms involved in these changes would afford new opportunities to reduce the long-term effects of diabetes by utilizing the mediators of metabolic memory as therapeutic targets. Histone deacetylase inhibitors, currently being researched in human cancer trials, have shown protection against epigenetic damage and diabetic nephropathy in animal studies. Other current drugs, such as ACE inhibitors, HMG CoA reductase inhibitors (i.e., "statins"), and metformin also exhibit anti-AGE and DNA protective effects.

REFERENCES

1. The Diabetes Control and Complications Trial (DCCT) Research Group. The effect of intensive treatment of diabetes on the development and progression of long-term complications in insulin-dependent diabetes mellitus.N Engl J Med 1993;329(14):977-986.

2. The Diabetes Control and Complications Trial/Epidemiology of Diabetes Interventions and Complications (DCCT/EDIC) Study Research Group. Intensive diabetes treatment and cardiovascular disease in patients with type 1 diabetes. N Engl J Med 2005;353(25):2643-2653.

# NEW PARADIGMS IN TREATMENT OF TYPE 1 DIABETES: CELLULAR REPLACEMENT OR IMMUNE MODULATION

Dr. Fouad R. Kandeel, M.D., Ph.D.

Type 1 diabetes mellitus (T1DM) is a chronic, progressive disease that affects genetically-prone individuals, gradually reducing their ability to secrete insulin via the autoimmune destruction of the population of islet cells that reside in the pancreas. Although insulin replacement can ameliorate the endocrine symptoms of the disease, it does not affect the underlying autoimmune pathophysiology. Ideally, "curing" T1DM would require a two-step process: interference with the autoimmune processes present, and the restoration of beta cell mass. Further, by intervening early enough in the course of disease through the identification of genetically susceptible individuals who may still have normal beta cell mass, normal insulin secretion, and normoglycemia, the development of T1DM may be prevented altogether. Thus, when evaluating patients, first defining the current stage of diabetes, and/or the current level of or risk for diabetes development, is critical to determining what treatment(s) may be most appropriate. An overview of the latest state-of-the-art interventions for T1DM follows according to disease stage.

IMMUNE MODULATION – Appropriate for:
*Genetic predisposition for type 1 diabetes: Normal beta cell mass*
*Mildly decreased beta cell mass; normal insulin release; glucose normal*
*Moderately decreased beta cell mass; progressive loss of insulin; glucose normal*
*Severely decreased beta cell mass; C-peptide present; glucose abnormal*
*Severely decreased or non-existent beta cell mass; no C-peptide; glucose abnormal*

Since the discovery of insulin as a treatment for T1DM in the early part of the 20$^{th}$ century, our ability to offer treatments for T1DM based on the principles of immune modulation has advanced significantly. To date, preclinical studies in spontaneously diabetic rodents suggest that immunomodulation with autoantigens might alter the course of autoimmune T1DM [1]. It is now known that autoantibodies against GAD 65 (Mr 65.000 isoform of glutamic acid decarboxylase), IA-2 (insulinoma-associated protein IA-2), or insulin, alone or in combination, predict disease. Gad65Ab, IA-2A, and insulin autoantibodies (IAA) demonstrate not only age-dependent, high diagnostic sensitivity and specificity for T1DM [2-3], but also significant predictive value among first-degree relatives to patients with T1DM, as well as in the general population [4-6]. Islet cell autoantibody positivity is also an inclusion criterion in large intervention studies using either parenteral insulin in the Diabetes Prevention Trial-1 (DPT-1) [7] or nicotinamide in the European Nicotinamide Diabetes Intervention Trial (ENDIT) [8]. Although neither study showed any effect of the treatment, both studies demonstrated the reproducibility of islet autoantibody prediction for T1DM. TrialNet, a network of clinical centers working in cooperation with screening sites throughout the United States, Canada, Finland, the United Kingdom, Italy, Germany, Australia, and New Zealand, also uses islet cell autoantibody tests to identify subjects for immune intervention trials (www.bsc.gwu.edu/trialnet). Other studies are in the planning stages, or will soon begin under the auspices of other organizations, such as the Immune Tolerance Network (ITN, www.immunetolerance.org). For example, regulatory T lymphocytes are generating much interest in the diabetes community for their potential to prevent, downregulate, or limit aggressive autoimmune responses. Disappointingly, the phase 3 confirmatory study (DEFEND-2) of the original clinical trial (DEFEND-1) for otelixizumab, an investigational humanized anti-CD3 monoclonal antibody, was recently suspended in early 2011 because the primary efficacy endpoint of change in c-peptide at 12 months in patients with new-onset autoimmune T1DM in DEFEND-1 was not met, mainly due to dosing/administration issues. Thus, immunomodulation therapy in T1DM shows great promise, but does not yet replace life-saving insulin treatment. Safety is a major concern with these novel approaches, and further data are needed.

# The Influence of Egyptian Medicine on Greek Medicineand Further Acts of Reciprocity

Dr. Amer El-Ahraf, Professor of Health Sciences and Vice President Emeritus
California State University, Dominguez Hills, Past President, Association of Egyptian Scholars
and Dr. ShoukryHussin El-Kantery, Aswan University, Egypt

Ancient Egyptian medicine is well known for its achievements including its advances in the areas of differential diagnosis, the classification of more than 200 diseases and a robust arsenal of medicinal drugs. Egyptian medical papyri were among the important vehicles of recording such advances. Examples include the Edwin Smith Surgical Papyrus, Kahun Gynecological Papyrus and the Ebers Papyrus. The later covered a collection of medical conditions in an organized manner contained in approximately one hundred and ten pages. This excellence was not limited to the clinical aspects of medicine, but also it extended to the area of public health where advances were made in nutrition, hygiene, housing, water and waste disposal systems. Most significant was that the emphasis has extended beyond disease concerns into the concepts of health and wellbeing Furthermore, respect for the environment and particularly protection of the Nile from pollution was enshrined in the ancient Egyptian religion. This affected behavior which is today considered as an important aspect of medicine and public health.

Greek Medicine is also known for its impact on western medicine in its own right and because of the active translation movement of Moslem scientists from Greek to Arabic and the subsequent wave of translating Arabic into Latin by European scholars. Greek knowledge, along with the well developed intrinsic Arab/Moslem Medicine, were brought to the attention of Europe through Moslem Spain.

Thus Egyptian and Greek medicines have their own glorious moments in history and their major contributions to ancient medicine along with laying the foundation of today's accomplishments in this field. However, less known areas about the two is the influence of Egyptian medicine on Greek medicine and the following positive interaction between them for the benefit of humanity throughout the ages. Most telling is a statement by Burton and Smith in their discussion of the history of ancient medicine when they noted: "The main interest of Egyptian medicine lies in its great influence on the development of Greek medicine. Doubtless, the ancient Greeks learned as much of medicine as of chemistry from the civilized people of the Nile". Not only in the areas of physical medicine, surgical tools and drugs have the Greeks benefited from the Egyptians, but also the formulation of their basis for medical ethics came from Egypt.

But, such an influence was not a one way stream. The Greeks had their greatness as well. They gave the world Hippocrates( 460-377 BC) who health scientists bestowed upon him the well deserved titles such as the "Father of Clinical Medicine" and the "First Epidemiologist". In the later field, his book on “Airs, Waters and Places” remains a most intuitive classic that still resonates well in the modern halls of epidemilogy. His work on this book has perhaps laid the foundation of today's important branch of environmental epidemiology. Additionally, while Aristotle ( 384--322) is more known as a first rate philosopher, he was also a great biologist whose contributions to the areas of anatomy, biology and zoology are of equal significance to philosophy specially as they apply to the development of the concept of rationality in medicine.

But, while these areas of Greek medicine were valuable to the entire world, a specific area of reciprocity with Egyptian medicine came in the form of the establishment of a medical school in Alexandria, Egypt around 300 BC. There, prominent Greek medical personalities such as Erasistratus and Herophilus were among Alexandria's medical school' most distinguished Greek faculty. That was a significant act of Greek reciprocity for earlier Egyptian medical influences considering that Erasistratus was a scholar in physiology and Herophilus is considered to be the founder of anatomy.

Such acts of medical influences and reciprocity continued in the ancient world with further extension into the Roman Empire which will constitute the next subject of research by the authors of this paper.

# Small Group Learning:
# A model for Implementing Curriculum of Hospital Acquired Infection

Moustafa Abdel-Nasser[1], Ali Batarfi[2] and Heba Ali Mohhatdy[3]

Departments of:

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2 Surgery ( Faculty of Medicine, Hadramout University, Hadramout, Yemen),

3 Microbiology & Immunology (Faculty of Medicine, Zagazig University

Small group learning or problem-based learning (PBL) is a method of medical education using problems, which cover most of the curriculum. This method is now widely used in many countries as Netherlands, United Kingdom, Canada, USA, Australia, Egypt (Suez Canal University). Hospital acquired infection (HAI) is a block in the curriculum of Microbiology and Immunology of studied by the third year medical student. Studying of this theme can be achieved by different means one of them is the traditional lecture. As HAI is a multidisciplinary topic with some subtopics most of them related to different specialties of medicine and surgery, it is better to be studied in problem-based tutorials. These problems which will be presented and discussed in four cases namely surgical site, urinary tract, lower respiratory tract, gastrointestinal infections. These cases will be studied in 6 weeks that apply knowledge and skills collected from microbiology, epidemiology, pharmacology, surgery, medicine, etc. Referring to textbooks, journals and web sites will help the student in collecting more information. Attending lectures, seminars, and discussion with experts will help students in solving many problems. Videotapes and computer-assisted teaching will demonstrate most of the policies of prevention and control of hospital infection. Demonstrations and training on clinical and laboratory skills and hospital visits to see real patients will offer more help. In the following cases, collection and application of knowledge in the field of this type of infection will be discussed. It is also expected that students will practice skills and accept good attitudes and behaviors in this field. In conclusion, the third year students will discuss different presentations of some types of infections, which may be acquired while the patient is admitted in hospital in order to understand the methods of prevention and control of hospital infection.

## Problem Based learning For Teaching main health problems in Medicine

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Problem Based learning is a well-established learning construct within the medical programs. Many studies have been conducted to prove its efficiency and its impact on the medical student and the kind of graduate it produces.

Three levels of the knowledge structure that can be targeted by assessment of problem solving were used as the main independent variables: (1) understanding of concepts, (2) understanding of the principles that link concepts, and (3) linking of concepts and principles to conditions and procedures for application.

It was shown that there is a difference in the reported effects of PBL between each of the three levels in the knowledge structure not only in the complex levels of the knowledge structure.

Problem-based learning (PBL) represents a major development in higher educational practice that continues to have a large impact across subjects and disciplines worldwide

| Day 1 - Room 2 | | | | | |
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| Engineering | | | | | |
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| | From | To | Name | Paper Title | Co-Chairs |
| | 8:00 AM | 9:00 AM | Registration | | |
| | 9:00 AM | 10:00 AM | Opening & Panel Discussion | | |
| 1 | 10:00 AM | 10:20 AM | Said Easa & Khaled Sennha | Improving quality of undergraduate education: outcome-based assessment | Ghada El Khayat |
| 2 | 10:20 AM | 10:40 AM | Waguih ElMaraghy & Hoda ElMaraghy (El Gammal) | A New and Flexible Education Paradigm for a Sustainable Economy | Nagia Ali |
| 3 | 12:40 AM | 11:00 AM | Hossin Abdeldayem | Optical Computing | LamyaaGamalEldeen Taha |
| 4 | 11:00 AM | 11:20 AM | Hassan Mohamed-Nour | On the role of engineering student projects in enhancing the safety of ground transportation in local communities | |
| 5 | 11:20 AM | 11:40 AM | Wael Elghandour | Information Technology Applications in Construction and Egypt Economic Development – Future Vision | |
| | 11:40 AM | 12:40 PM | Coffee & Panel Discussion | | |
| 6 | 12:40 PM | 1:00 PM | Nahla El-Haggar | A Review of Watermarking Technologies For Geo-spatial Data Protection | HodaElMaraghy |
| 7 | 1:00 PM | 1:20 PM | Ghada El Khayat | Analytical Tools for RFID Based Applications | SalwaElbeih |
| 8 | 1:20 PM | 1:40 PM | Hossin Abdeldayem | A Novel Microspherical-Fiber Laser System | S.A. Sherif |
| 9 | 1:40 PM | 2:00 PM | Elsayed Orady | Future trends in Educating Engineers to face the Challenges of the New Century | |
| 10 | 2:00 PM | 2:20 PM | Naser El-Sheimy | The Potential of Smart Phones for Navigation and Mobile Mapping | |
| | 2:40 PM | 3:20 PM | Panel Discussion | | |
| | 3:20 PM | 4:20 PM | Lunch & Panel Discussion | | |
| | 7:00 PM | 10:30 PM | Dinner & Awards | | |

# IMPROVING QUALITY OF UNDERGRADUATE EDUCATION: OUTCOME-BASED ASSESSMENT

Dr. Said M. Easa and Khaled Sennah

Director of Quality Assurance Faculty of Engineering and Architectural Science Ryerson University, Toronto, Canada
Chair of Civil Engineering

A plan for assessing the Canadian Engineering Accreditation Board (CEAB) graduate attributes was developed and executed at Ryerson University. Based on the assessment results, improvements to the program were recommended and were considered for implementation. The Faculty of Engineering and Architectural Science at Ryerson University has eight engineering programs. The development of the CEAB assessment plan was driven by the Quality Assurance Council, composed of 12 working groups and various faculty administrators. There was one working group for each of the eight engineering programs, one for science programs, one for the common engineering courses, one for the NSERC Design Chairs, and one for the Teaching Chairs. The council also included representatives from the Library, Computing and Communications Services, the Learning and Teaching Office, the Health and Safety Office, and students.

This paper presents lessons learned and the best practices for graduate attribute (outcome-based) assessment based on the experience at Ryerson University and other universities in North America. The lessons and best practices are related to the assessment process (working groups and leadership), the assessment elements (development of learning objectives, curriculum mapping, schedule of assessment, courses used for assessment, and standard documents), the assessment methods (direct assessment and indirect assessment), assessment results (use of software or Blackboard, summarizing the results, and target level and threshold), and future program improvements (common engineering courses, program courses, science courses, faculty-wide improvements, and process of curriculum change implementation). Since the key theme of the CEAB assessment process is continuous improvement, the presented lessons and best practices should be useful to the engineering programs that are planning to start or have already started the assessment process.

# A New and Flexible Education Paradigm for a Sustainable Economy

Professor Waguih ElMaraghy[1] and Professor Hoda ElMaraghy[2] (ElGammal)

[1] Professor and Head (IMSE), Director (IMSC) [2] Canada Research Chair, Director (IMSC)
Intelligent Manufacturing Systems Centre (IMSC)
Department of Industrial and Manufacturing Systems Engineering (IMSE)
University of Windsor, Ontario, Canada

Engineers play a key role in our societal development, contributing to and enabling initiatives that drive economic progress, enhance social and physical infrastructures, and inspire the changes that improve our quality of life. The engineering profession is committed to helping provide the best possible quality of life for all humanity at large. Simultaneously society, education, industry and the job market for youth, are facing unprecedented challenges due to globalization and distributed manufacturing. The latter being an essential engine for wealth creation. As a result, the business environment and life in general is characterized by continuous change and increasing complexity, and the challenges for companies and society arise not only from the need for flexible technical solutions, but also from managing complex socio-technical systems.

One of the greatest challenges facing societies is modern education and training for large and expanding populations. This must include modern sciences and applied and emerging technologies as a pre-requisite for a sustainable economic development of society. This is just as true for new Egypt as it is true for elsewhere in the world, but more than ever before.

With limited resources and unlimited and expanding knowledge and emerging technologies, this paper proposes a new paradigm for tackling this problem effectively and at all levels. This new and emerging paradigm is the application of customization and personalization principles that have been applied successfully in industry in the design of products and manufacturing systems and supply chain networks. This paper will describe the body of knowledge, scientific principles and technological advances in products and systems customization and personalization, including the related research topics the emerging industrial applications, as well as the necessary infrastructure. Such infrastructure as the iFactory facility at the Intelligent Manufacturing Systems Centre (IMSC), is the first physical “plug & play” realization in North America of the emerging concepts of modular and a completely reconfigurable manufacturing system, the factory of the future. This along with the iDesign Studio and the iPlan facility are set-up in the IMS Centre situated in the new state of the Art Centre for Engineering Innovation (CEI) at the University of Windsor in Ontario, Canada.

Graduates and researchers with the ability to understand both complex technological processes and the creative arts and social skills are increasingly sought after in today's industrial and business world in areas of: Manufacturing Management, Health and Service Sectors, Product Engineering and Technical Sales, Transportation and Logistics, etc... An educational approach that is both flexible, customized and personalized as well as multi-disciplinary will be proposed in this paper to manage the current and future education challenges of a large and growing population with relatively limited resources, in a fast advancing technological world.

# Optical Computing

Dr. Hossin Abdeldayem

NASA-Goddard Space Flight Center

An optical computer is a device that uses photons to perform digital computations. Optical computation is the most feasible technology that can replace electronics, and promises impressive speeds. Lasers, fibers and optical components have already proven their reliability and high performance in many applications such as CD-ROM drives, laser printers, photocopiers and scanners, Storage Area Networks (SANs), optical switches, all-optical data networks, holographic storage devices, and biometric devices at airports. At the same time, the promise of optical computing comes from the many advantages that optical interconnections and optical integrated circuits have over their electronic counterparts. Optics is immune to electromagnetic interference, and free from electrical short circuits. Photons have low-loss transmission and provide large bandwidth. Furthermore, optical parallel data processing is easier and less expensive than electronic. In addition, optical computing systems offer computational speeds more than $10^5$ times faster than the currently fastest electronic systems, which means a computation that takes a conventional computer more than eleven years to solve, would take an optical computer less than one hour. In our laboratory, we demonstrated a few all-optical logic gates, which are the building blocks for the future optical computer.

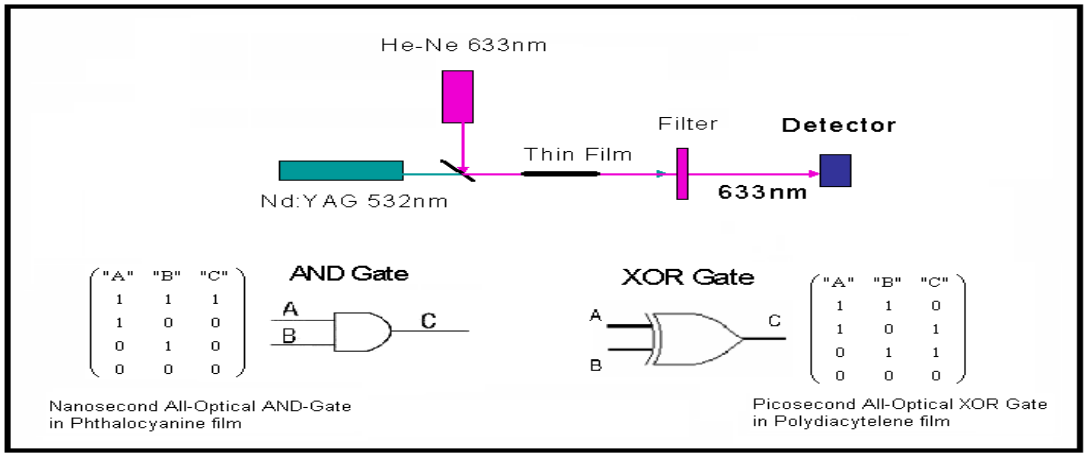


Figure (1). A schematic of an all-optical ANDand XOR logic gates in the nanosecond and picosecond regimes respectively.

An all-optical AND logic gate in the nanosecond (ns) ($10^{-9}$s) range was demonstrated in our laboratory (Fig. 1), where the ns Nd:YAG at 532 nm modulated a cw He-Ne laser at 632.8 nm in a metal-free phthalocyanine thin film. Another all-optical XOR logic gate was also demonstrated in the picosecond regime using a polydiacetylene film and a picosecond YAG laser at 532nm and a cw He-Ne laser at 633nm. The physical mechanisms for each will be discussed in the presentation.

# ON THE ROLE OF ENGINEERING STUDENT PROJECTS IN ENHANCING THE SAFETY OF GROUND TRANSPORTATION IN LOCAL COMMUNITIES

Professor Hassan Mohamed-Nour

Department of Electrical Engineering, California State University, Long Beach, USA

While the safety of passengers is a primary consideration in designing and operating transportation systems, unfortunate accidents occur and are often found avoidable with simple precautions or modifications in the system. In many situations, the cost of modifications or maintenance is a significant factor in reaching the decision on, or determining the time of, installations. This proposal is concerned with investigation of the role of student projects within engineering curricula in presenting affordable solutions to these safety problems. One type of the ever and still occurring tragedies worldwide is the rail road train accidents. In modern cities, a cause of such accidents could be as simple as distraction of the driver due to possibly involvement in text messaging or alike. In developing countries, the causes of train accidents are numerous and are primarily due to outdated equipment or the lack of proper personnel training. While human errors may not be completely avoided, simple technical solutions can, in many instances, be implemented to provide backup protection against such severe accidents.

The design element in modern engineering curricula is a necessary requirement. Furthermore, the multidisciplinary nature of protection design for ground transportation systems makes it an ideal topic for selecting term projects for students in Electrical, Mechanical and Computer Science departments. The primary objective of the present proposal is to develop a continuous process by which engineering students are probed for developing innovative skills in solving real life problems. One possible approach for this process can be a project assignment that requires students to first search for real life engineering problems posing some level of foreseen risk, starting with their neighborhood, then, seek a solution for the problem that is practical and affordable. These efforts may lead to economical solutions to many of everyday problems. By avoiding otherwise prohibitive installations or by mitigating the consequences of human errors, these solutions could offer significant contributions to economical development.

# Information Technology Applications in Construction and Egypt Economic Development – 2030 Future Vision

Wael El Ghandour Ph.D., P.Eng., PMP

Canadian Innovative Management Solutions CIMS Ltd., Edmonton, Alberta
Vice President

In recent years more and more construction projects used information technology applications to support execution and management tasks. However, construction companies in Egypt still struggle with evaluating how Information Technology applications in Construction (ITC) can be most efficiently applied on their specific projects. One main reason for this struggle is that an account about how ITC have been used in the past or could be used in the future is missing. This research aims to provide new impetus to Egypt's growth and competitiveness. The paper helps construction industry in Egypt to compete internationally, and develop its role as a world leader in this sector. It offers practitioners and researchers such an account of the application areas of ITC technologies including the purposes for which these technologies have been applied. The paper qualitatively aggregates the results of more than 280 research papers to show how ITC have been applied to address project challenges. The main finding of this analysis is that ITC could play significant role in economy growth of Egypt by opening new international markets for local construction companies
.

**Keyword**: Construction, Egypt, information technology, economic development

# A Review of Watermarking Technologies For Geo-spatial Data Protection

Dr. Nahla El-Haggar

Information Technology Department, Helwan University

**Zhoura Aborawi Aborawi**

Geographic Information System (GIS) vector map is a kind of strategic information resource that is widely used in development social economy, national defense, and commercial applications .So copyright protection of geospatial data has become a hot issue in the community of geographic information science. Digital watermarking is one of the means to protect the copyright of the data. In this study we will compare some distinct features (GIS) vector map data like special data structures and environment applications as the result applying different watermarking techniques. These distinct features will be summarized in this paper by analyzing the characters of vector map data. Furthermore, an overview of different digital watermarking techniques will be presented to show the state of the art of this study.

**KEY WORDS:** GIS, Copyright Authentication, Digital Product, Vector Data.

# Analytical Tools for RFID Based Applications

Ghada A. El Khayat and Esraa A. Abdelhalim

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RFID is not a new technology. It has passed through many decades of use in many sectors. The emergence of this technology has contributed a lot to the human well being and facilitated a lot of the processes that require labor intervention. It reduced many of the routine and repetitive work. RFID enables better human system integration and contributes to the well being of people working on information systems as well as users and clients for such systems. This happens by improving work ergonomics and by enabling automation and intelligent control. There is a wide spectrum of applications using RFID technology that are only limited to one's imagination. In this paper, the authors will introduce some of these applications and will show how RFID technology adoption contributes to enhancing operational efficiency, optimizing resource usage and minimizing waste. The real time data capturing, made possible with RFID, enables more data processing and application of analytical tools. These tools include operations research, evolutionary algorithms and other artificial intelligence techniques. The paper gives an overview of the analytical tools used in RFID based applications. The authors also show that considering RFID technology in information systems design and using the appropriate analytical tools enable better decision making in the various sectors studied in this paper. However, RFID based systems, with all their advantages; also have some limitations that are also discussed in this paper. The adoption of RFID technology draws attention to the fact that an information system necessarily includes different hybridizations of technologies at both the hardware and software levels. This impacts information system analysis and design approaches and technology evaluation and selection methods. Finally, future research directions are proposed.

***Keywords-*** *RFID-based applications, analytical tools, decision support systems, information systems, resources management*

# A Novel Microspherical-Fiber Laser System

Dr. Hossin Abdeldayem

NASA-Goddard Space Flight Center

We are introducing a novel, rugged, lightweight, durable, compact, and inexpensive microspherical-fiber laser system, which can be of potential for optical fiber communication and to be deployed as a satellite-based LIDAR transmitter. The system provides a broad tunability of laser lines. The system can be designed to replace several expensive conventional lasers in multitasking space missions. The system uses a novel coupling technique from the microspheres to the fiber and free of complicated and sensitive optical alignments. It is pumped through one end of the fiber and the lasing emission is at the other end of the fiber. The lasing power is only limited by the pumping power with expected conversion efficiency of more than 80%. It is simple in design, insensitive to vibration and much less susceptible to contamination. The viability of this proposed system has been tested in our laboratory. It does not require the use of mirrors to build a laser cavity. Every sphere is a mirrorless cavity and a gain medium. The system uses a mixture of microspheres doped with different lasing materials to lase the laser lines of interest simultaneously for multi-task missions. The microspheres and the fiber core are made of silica material with the same refractive index to achieve refractive index matching for high coupling efficiency. The coupling of the microspheres to the fiber is achieved using our novel coupling technique, which will be described in detail in the presentation.

Fig. 1. The total internal reflection of the fluorescence line within the μ-sphere.

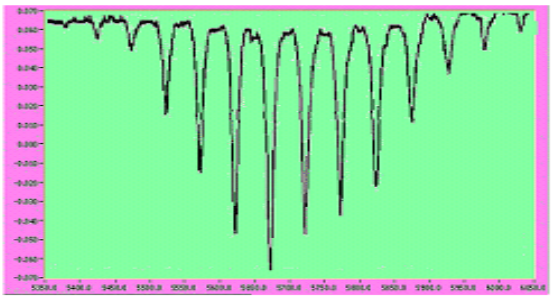

Fig. 2.The 5 microns silica spectrum.

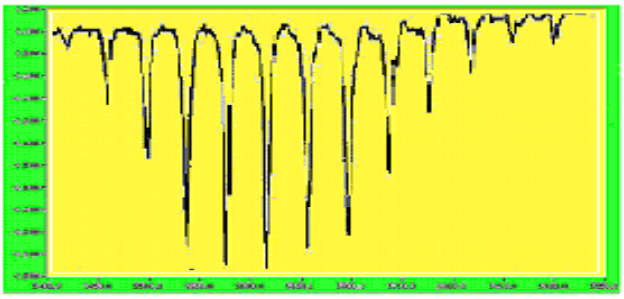

Fig. 3.The 12 microns silica spectrum.

**Future Trends in**
**Educating Engineers to face the Challenges of the New Century**

Professor Dr. Elsayed Orady

The University of Michigan-Dearborn

Technological innovations are occurring at an astonishing pace. Currently, the scientific and engineering knowledge is doubling almost every ten (10) years. With the fast pace of the technological advancements, the world is becoming a global village where it is now possible for people from all over the globe to collaborate and compete in real time. At the same time, there are many exciting breakthrough technologies including sustainable technology, nanotechnology, material science and photonics/optics, biotechnology, nanotechnology, information and communication technology, logistics and manufacturing. These developments demand adjustment of the engineering education not only to include the breakthrough technologies but also to include social and global aspects. The engineering education, therefore, have to be adjusted to provide the right education and training for future engineering students. It should provide the required knowledge and the necessary skills to face and succeed in overcoming the new challenges. Future engineers should understand the social, global and professional context of engineering practice. The presentation starts with an overview of the world reality (past and future), the emerging global world markets and engineering demands. It then discusses the development of the breakthrough technologies. The world demand, the aspirations, the attributes and the required skills of the future engineers will then be presented. It concludes with the presentation of the implications of technology and recommendations for the future curriculum and other aspects of future trends in engineering education.

## The Potential of Smart Phones for Navigation and Mobile Mapping

Dr. Naser El-Sheimy, PEng, CRC

Professor and Canada Research Chair, Scientific Director, TECTERRA , Department of Geomatics Engineering, The University of Calgary, Canada

The last decade have witness an explosive use of mobile phones. Today's mobile phones are getting ever more sophisticated and smarter reaching to close the gap between computers and mobile phones. Next generation smart phones will be equipped with navigation sensors beyond the normal GPS capabilities and remote sensing sensors beyond the normal digital cameras. Phone users across the world are beginning to find serious use for mobile phones outside the traditional voice calls, SMS etc. Mobile Phones are now getting quite popular for data collection projects including point data mapping tasks and it is not far before we see smart phones are used as mobile mappers. This presentation will address the state of the art and future of smart phones for navigation and mobile mapping applications

## Safe and Sustainable Water Supply Systems for Small and Rural Communities

Mohamed Gamal El-Din, Ph.D., P.Eng.

Department of Civil and Environmental Engineering, University of Alberta, Edmonton, Alberta, Canada

Safe and sustainable water supply systems and basic sanitation are fundamental elements for the human wellbeing. Many small and rural communities lack access to appropriate and lost-cost technologies for water and sanitation needs. The sustainability of water supply projects in low-income regions may be put into jeopardy by many factors, such as poor financial management, lack of ownership by the community, and high capital and recurrent costs. In many rural communities, there are often lacks of integrated approaches regarding water source protection and frequently deficiency in specialized personnel. Maintenance of infrastructures is frequently limited due to lack of knowledge and understanding or lack of adequate resourcing. Moreover, these communities are often more vulnerable to breakdown and contamination. Especially in rural agricultural areas, common pollution risks include elevated microbial levels, livestock, inappropriate use of pesticides and fertilizers, and inadequate manure management. Typical rural water treatment technologies rely on the use of small number of rapid treatment processes, often limited to disinfection. Slow sand filters have been successfully used to control microbiological contaminants in rural communities. Moreover, this technology does not need constant operator attention, making it an appropriate technology for small water systems. Another attractive alternative is the use of ultraviolet (UV) light for disinfection because it may be implemented with locally available materials, renewable energy sources (sunlight), and with affordable capital and operation & maintenance (O&M) costs. This presentation is designed to bring forward the recent advances in water treatment technologies applicable to small and rural communities. The challenges of water supply system in low-income regions as well as the development of affordable, efficient, and user-friendly technologies for small systems able to address health risks posed by a broad array of contaminants will also be discussed.

| Day 1 - Room 3 | | | | | |
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| Science | | | | | |
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| | From | To | Name | Paper Title | Co-Chairs |
| | 8:00 AM | 9:00 AM | Registration | | |
| | 9:00 AM | 10:00 AM | Opening & Panel Discussion | | |
| 1 | 10:00 AM | 10:20 AM | Mona Abozeid | Photodynamic Therapy with Indocyanine Green Induces DNA Damage by Comet Assay In Vitro | Yousry A. El-Kassaby |
| 2 | 10:20 AM | 10:40 AM | Mahmoud ElHefnawi | In silico design and in vitro validation of siRNAs targeting multiple hepatitis c virus genotypes | Hanaa Hamdy Ahmed |
| 3 | 12:40 AM | 11:00 AM | Riad Sedki Riad El-Mohamedy | Utilization of bio composed agricultural wastes in management of root rot disease on citrus | |
| 4 | 11:00 AM | 11:20 AM | Heba M. Abd. El-Nabi | First record of Gummy stem blight of cucumber under greenhouse conditions in Ismailia Government, Egypt | |
| 5 | 11:20 AM | 11:40 AM | Yousry A. El-Kassaby | Plant Breeding in the Genomics Era: What is Possible? | |
| | 11:40 AM | 12:40 PM | Coffee & Panel Discussion | | |
| 6 | 12:40 PM | 1:00 PM | | | |
| 7 | 1:00 PM | 1:20 PM | | | |
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| 9 | 1:40 PM | 2:00 PM | | | |
| 10 | 2:00 PM | 2:20 PM | | | |
| | 2:20 PM | 3:20 PM | Panel Discussion | | |
| | 3:20 PM | 4:20 PM | Lunch & Panel Discussion | | |
| | 7:00 PM | 10:30 PM | Dinner & Awards | | |

# Photodynamic Therapy with Indocyanine Green Induces DNA Damage by Comet Assay *In Vitro*

Sherien M. El-Daly[1], Amira M. Gamal-Eldeen[1] ,Mona A. M. Abo-Zeid [1,2]

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*Background*: Photodynamic therapy (PDT) is a therapeutic modality involving the use of a photosensitizer agent activated by light of appropriate wavelength to selectively destroy tumor cells. Indocyanine green (ICG) is a promising photosensitive agent for PDT of tumor cells. The main objective of this study is to investigate the photodynamic effect of ICG on two different cell lines: human breast adenocarcinoma cells (MCF-7) and hepatocellular carcinoma cells (HepG2).

*Methods*: The photosynthetizer ICG (200μM) was applied to MCF-7 cells and HepG2 cells in combination with laser irradiation (807 nm) exposure for 20 min and then incubated for 24h. Cell viability was evaluated using trypan blue assay and DNA damage was evaluated by comet assay.

*Results*: The results declared that neither ICG nor laser irradiation alone has cytotoxic effects on MCF-7 or HepG2 cell lines. However, ICG in combination with laser irradiation induced cytotoxicity and DNA damage detected by comet assay on MCF-7 and HepG2 cells.

*Conclusion:* ICG/PDT and has the potential to induce cytotoxic effects and DNA damage on MCF-7 and HepG2 cell lines. Therefore PDT/ICG can be used for breast cancer or hepatocellular carcinoma treatments. Further *in vivo* and *in vitro* studies are needed to evaluate ICG/PDT as a promising therapeutic approach for breast cancer or hepatocellular carcinoma.

Keywords: Photodynamic therapy, Indocyanine green, Laser, MCF-7, HepG2.

# In silicodesign and in vitro validation of siRNAs targeting multiple hepatitis c virus genotypes ( 1b, 2a and 4a)

Mahmoud ElHefnawi[1,2]*, Mona A. Kamar[2], Nafisa M. Hassan[2], Iman A El-Azab[3], Tae Kyu Kim[5], Eman El-Ahwani[4], Suher Zada4, Hee Young Kim[5], Peter Sommer[5] and Marc P. Windisch[5]*

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[2]Science and Technology Research Centre, American University in Cair
[3]Faculty of Computers and Information, Cairo University
[4]Biology Department, American University in Cairo
[5]Applied Molecular Virology Department, Institut Pasteur Korea

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**Abstract.** RNA interference (RNAi) is a post-transcriptional gene silencing mechanism that mediates sequence-specific degradation of the targeted RNA and thus provides a tremendous opportunity for the development of oligonucleotides-based drugs. Here, we report on the design of efficient small interfering RNAs (siRNAs) targeting the hepatitis C virus (HCV) IRES region and their validation in cell culture models replicating the virus. For therapeutic application, different factors such as target RNA variations, siRNA and target RNA thermodynamics and accessibility, and additionally off-target effects were considered to optimize efficacy and reduce side effects . This was sought for and implemented in our in silico design and selection protocol that was complemented with an automated MysiRNA-Designer pipeline. The protocol included design and filtration of siRNAstargetting highly conserved and accessible regions in the HCV 5'NTR and adjacent core sequences of the viral genome with high ranking efficacy scores. In addition, off-target analysis excluded siRNAs with potential binding to human mRNAs. Under this strict selection process, two siRNAs (HCV353 and HCV258) were selected, ranked being highly specific and potent; antiviral efficacy was validated in HCV genotype 1 and 2 replicon cell lines and their inhibitory effect compared to previously described siRNAs targeting the viral 5' NTR . The transfection of HCV353 into replicon cell lines resulted in a very strong inhibition of HCV RNA replication at extremely low siRNA concentrations (0.1nM) and even after short siRNA exposure time (24h) which indicates the accuracy and strength of our integrated design and selection protocol and could be used for designing future RNAi based therapeutic oligonucleotide interventions of high potency and specificity. Additional testing on subtype 4a ( the predominant subtype in Egypt) also showed a strong and dose and time-dependent decline in viral loadas measured by real-time PCR.

# Utilization of Bio Composed Agricultural Wastes in Management of Root Rot Disease on Citrus

Dr. Riad Sedki Riad El-Mohamedy

Plant Pathology Department, National Research Center

Plant diseases caused by soil borne pathogens cause greet losses in yield and products of agricultural crops. Controlling these pathogens manly depends on bromide methyl and chemical fungicides treatments that cause hazards to human health and increase environmental pollution. The modern agricultural systems aimed to reduce and/or eliminate fungicide and chemicals usages, through eco-friendly safely controlling systems and expansion in bio organic farming plantation. These systems leads to produce products free from any chemicals and fungicides (organic products) for exportation, moreover avoid environmental pollution. In this study manipulation of soil with bio compost (composted of sugarcane bagasse ,rice straw and soybean straw inoculated with spore suspension $5x10^6$cfu/mlof *T. harzianum*isolate NB10) ,*T. harzianum*(spore suspension $5x10^6$cfu / ml ) and Topsin M 70% successfully controlled *F. solani*the main pathogen of dry root rot disease on Egyptian lime . Complete reduction of the *F. solani* linear growth was recorded at 100 ppm of TopsinM and*T. harzianum* . Under Field condition, amended soil around stems of diseased lime trees by bio compost (BCAW) and Topsin-M (1 g/L) treatments as twice applications per season resulted in recovering great number of diseased trees and decreased the disease severity on others. Population density of *Fusarium spp*. were highly decreased, where population density of *Trichodermaspp* were increased in rhizosphere soil of treated trees by bio compost (BCAW) . The highest increased in fruit yield was recorded on lime trees treated with bio-compost, *T. harzianum* and Topsin M treatments as twice soil applications. It could be concluded that application of bio composed agricultural wastes could be safely used commercially as substitute of bromide methyl and fungicides for controlling soil borne plant pathogens and avoid health hazards and environmental pollution.

**Key wards** : Citrus - Root rot – *Fusariumsolani* - Control - Bio compost .

# First record of Gummy stem blight of cucumber under greenhouse conditions in Ismailia Government, Egypt

Heba M. Abd. El-Nabi

Suez Canal University, Faculty of Agriculture, Department of Plant pathology

This the first record, to isolate the fungus *Didymellabryoniae* in Egypt from cucumber plants in Ismailia.Gummy stem blight one of the diseases that attack or infect most of the cucurbits plants like water melon, mask melon, cucumber, squash in all over the world, Egypt. This disease can occur at any point in plant growth, from seedling stage to fruit in storage. The pathogen can infect all parts, except roots, of the cucumber plant at all stages of plant development. Infection at fruit development often leads to internal fruit rot that may go unnoticed at harvest.

# Plant Breeding in the Genomics Era: What is Possible?

Yousry A. El-Kassaby

Faculty of Forestry, University of British Columbia, Vancouver, BC, Canada

Traditional plant breeding programs, and forest tree in particular, are long-term and resource demanding. They involve repeated cycles (known as recurrent selection) that are characterized by rounds of breeding, testing and selection often conducted over vast geographic areas with large installations and frequent monitoring and assessment. Contemporary breeding methods require complete pedigree information that are created through the application of mating designs to develop half- and full-sib families for assessment. El-Kassaby and Lstiburek (2009) and El-Kassaby et al. (2011) introduced the **B**reeding **w**ithout **B**reeding concept and proposed the utilization of pedigree reconstruction (partial and/or full) along with a combination of complete (FS) and incomplete (HS) pedigree as an approach to simplify breeding without compromising the genetic gain as well as increased genetic parameters' accuracy. This approach was further modified using a pedigree-free approach where pedigree information is no longer required. Genomic fingerprinting information can be used to produce all possible pair-wise relationship coefficients among any group of individuals irrespective of their genealogy. The generated DNA-based pair-wise relationship coefficients are used to substitute the pedigree information needed for quantitative genetic analyses and estimating individuals' breeding values for further selection (El-Kassaby et al. 2012). This presentation will highlights the disruptive nature of genomic information and its role in drastically changing contemporary breeding methods.

| Day 2 - Room 1 | | | | | |
|---|---|---|---|---|---|
| **Health & Medicine** | | | | | |
| | | | | | |
| | **From** | **To** | **Name** | **Paper Title** | **Co-Chairs** |
| | 8:00 AM | 9:00 AM | Registration | | |
| | 9:00 AM | 10:00 AM | Panel Discussion | | |
| 11 | 10:00 AM | 10:20 AM | Mohamad Nagib Abukela | IEIP Egypt as an example of successful scientific collaboration between USA CDC and Ministry of Health and population in Cairo | Ahmed Youssef |
| 12 | 10:20 AM | 10:40 AM | Gamela Nasr | Right ventricular function in diabetics versus prediabetics | Neveen Salem |
| 13 | 12:40 AM | 11:00 AM | A. Abdel-Rahman | Estrogen: Friend or Foe of the Heart? | Hisham Imam |
| 14 | 11:00 AM | 11:20 AM | Aly Mansour and Rasha Abdelhadi | Impact of Environmental Protection on Healthcare services and Production in Misr and Arab World | |
| 15 | 11:20 AM | 11:40 AM | Fatma Bassyouni | Synthesis, biological evaluation and molecular docking of a new series of chromone derivatives with their transition metal complexes as anti-inflammatory and analgesic agents utilizing HPLC | |
| | 11:40 AM | 12:40 PM | Coffee & Panel Discussion | | |
| 16 | 12:40 PM | 1:00 PM | Ahmed Yousef | Natural antimicrobial peptides: a potential weapon against antibiotic-resistant pathogenic bacteria | FatmaBassyouni |
| 17 | 1:00 PM | 1:20 PM | Hanaa Abdel Sadek Oraby | In Vivo Investigation of the Possible Horizontal Gene Transfer from Transgenic Diet into Some Tissues, Organs and Gut-Microflora in Rats | Mona Hussein |
| 18 | 1:20 PM | 1:40 PM | Amany Sayed Maghraby | Pharmacogenomics | Mostafa Abdel Nasser |
| 19 | 1:40 PM | 2:00 PM | Khadiga Abou Ggabal | Association of IL-10-592 polymorphism with chronic hepatitis B virus infection in rural Beni-Suef, Egypt | |
| 20 | 2:00 PM | 2:20 PM | Gamela Nasr | GNASR score: a simple scoring to detect severity in rheumatic mitral stenosis | |
| 21 | 2:20 PM | 2:40 PM | Badr Eweis& Amer El-Ahraf & Mostafa Abo Gabal | The New Veterinary Medicine and its Role in National Development | |
| | 2:40 PM | 3:40 PM | Resolutions & Adjourn | | |
| | 3:40 PM | 4:40 PM | Lunch | | |

# IEIPEgypt as an example of successful scientific collaboration between USA CDC and Ministry of Health and population in Cairo

Dr. Mohamad Nagib Abukela

Executive Director of the **I**nternational **E**merging **I**nfections **P**rogram **IEIP**- Ministry of Health and Population in collaboration with CDC & NAMRU- 3

The international emerging infections program (IEIP) is a core component of CDC's Global Disease Detection Program (GDD), initiated for strengthening global capacity to identify and rapidly and effectively respond to emerging infections around the world. The IEIP sites incorporate five core activities: disease surveillance, outbreak support, public health research for disease control and prevention, training and capacity building, and networking with the other nine IEIP sites distributed worldwide. IEIP sites aim at conducting laboratory research, developing measures to prevent and control emerging infectious diseases and also serve as platforms for regional infectious disease control activities and help disseminate proven public health measures. The IEIP program headquarters is based at Cairo's Abbassia Fever Hospital in 2007 according to a memorandum of understanding between the ministry of health and CDC in 2005. In 2008 Damanhur regional lab was selected to locate the IEIP Lab and was the premier center for integrating surveillance, lab diagnostics, data management, and training. All core activities started in three governmental hospitals and two private hospitals in Damanhur site. The Population-Based Surveillance included surveying of four infections syndromes: acute Respiratory Infection, acute Infectious Neurological Disease, acute Febrile Infection, and Influenza-like Illness. Two Healthcare utilization surveys conducted in 2008 and 2012 to identify health-seeking behaviors of Damanhur residents for pneumonia and diarrheal disease. Surveillance data will help to evaluate the burden of vaccine preventable disease in Egypt; burden of notifiable diseases; pathogens at the human-animal interface; antibiotic Resistance patterns and will form a baseline data to detect outbreaks.

# Right ventricular function in diabetics versus prediabetics

Dr. Gamela Nasr and Dr. AzzaElEraky

Department of Cardiology Faculty of Medicine, Suez Canal University, Suez Canal University Egypt.

**Purpose** : Right ventricular dysfunction may occur in patients with overt diabetes . However little is known about prediabetics . The aim is to study right ventricular function by different methods in prediabetes

**Methods:** Seventy clinically stable diabetics (mean age 49±2 years) as well as seventy age and sex matched prediabetics (mean age 48±1 years, were prospectively chosen for echocardiographic evaluation . A complete transthoracic echocardiographic study for the patients along with age and sex matched controls were compared for RV size and function Myocardial Performance Index was calculated as well for the right ventricle (Total isovolumic ejection time index = IRT + ICT/ET).

**Results**: Three diabetics of the seventy had RV dilation by 2D-ECHO where prediabetics no one had RV dilation. On the other hand seven diabetics had abnormal RV systolic function while none had abnormal RV systolic function by conventional 2D-ECHO in prediabetics. By using RV Tei Index it unmasked presence of right ventricular dysfunction in twenty diabetics and seven prediabetics( RVTei Index 42±6 versus 39±6 respectively with a $P < .0001$). The combined myocardial performance unmasked the presence of right ventricular dysfunction.

**Conclusions:** Right ventricular systolic dysfunction should be focused upon in diabetics. The combined myocardial performance unmasked presence of right ventricular dysfunction in some prediabetics . It could be a useful cheap indicator of early right ventricular dysfunction in them by using conventional echocardiographic machines.

# Estrogen: Friend or Foe of the Heart?

Abdel A. Abdel-Rahman, Ph.D, FAHA

Distinguished Professor of Pharmacology, The Brody School of Medicine, East Carolina University

**Background:** The discouraging findings of the Women Health Initiative (WHI) clinical triallead to the discontinuation of hormone or estrogen replacement therapy by millions of women. Realizing some serious limitations of the WHI study, it was imperative to conduct well-controlled studies to investigate the role of estrogen in women's cardiovascular health

**Objectives:** We conducted a series of studies to investigate the impact of estrogen on a major cardiovascular reflex, the cardiac baroreflex response. Further, the studies were extended to elucidate the molecular mechanisms implicated in estrogen enhancement of the cardiac baroreflex response.

**Results:** Our clinical study revealed an unexpected lower baroreflex response in young women compared with age-matched men. These findings were replicated in experimental animals. However, we showed that the cardiac baroreflex response was reduced further in ovariectomized rats, and was restored following estrogen replacement. The beneficial effect of estrogen on the cardiac baroreflex was mediated, at least partly, at the level of the heart. Subsequent molecular studies revealed a crucial role for cardiac endothelial nitric oxide synthase (eNOS)-nitric oxide (NO) signaling in the favorable cardiac effect of estrogen.

**Conclusions:** The findings support the hypothesis that estrogen confers cardioprotective effects via enhancement of the cardiac baroreflex response. Enhancement of the cardiac eNOS-NO signaling constitutes a major molecular mechanism for the cardioprotective effect of estrogen. The estrogen receptor subtype(s) implicated in the favorable cardiac effects of estrogen remain(s) to be elucidated.

**Support**: R01 AA007839 and R01 AA14441

# Impact of Environmental Protection on Healthcare services and Production In Misr and Arab-World

Aly Mansour and Rasha Abdelhadi

American University in Kuwait

Environmental protection has been neglected on the formal and informal levels since the 60s of last century in Misr and the Arab-World, except for nominal efforts that was opposed and counteracted by entrepreneurs and businessmen for their own personal benefits. As health bills of several Arab societies have recorded billions of dollars in healthcare services in 2011, it's about time for scholars to study the impact of the lack of environmental awareness on healthcare expenses, production, and services offered to societies in Misr and within the Arab-World as a whole. This study will start by introducing the exponential growth of healthcare expenses in the past decade in selected Arab societies. The study will proceed by analyzing expected causes for deteriorating health and immunity due to pollution and lack of environmental protection in Misr and the Arab region. The study will then demonstrate forecasting figures for expected decline in health conditions over the next decade if the Arab region continues without solving the problem of lack of environmental protection. Finally, the study will propose applicable means for environmental protection that might improve societal health conditions, lessen healthcare expenses, and increase production by supplying the regional job markets with healthy workers.

# Synthesis, biological evaluation and molecular docking of a new series of chromone derivatives with their transition metal complexes as anti-inflammatory and analgesic agents utilizing HPLC

Fatma A. Bassyouni[1], Omar Fathalla[2], Khaled H. Hegab[3], Mahmoud El- Hifnawi[4], Sawsan Salah El Din[5] Mohamed Sultan[6], Ahmed El Rashydi[4] , Mohamed Abdel Rehim[7]

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Research in heterocyclic chemistry has gained momentum in recent times because more than half of the biologically active molecules belong to various classes of heterocycles, among them chromones have remained always a major source for therapeutic drugs. Also they are the building block for more naturally occurring pharmacologically active products and commercial drugs. In this study, the synthesis and complexation of a new compounds, (1H-indol-3-yl)-6-phenyl-5,6,7,8-tetrahydro-4H-chromene and 4,5,6,7,8,9-hexahydro-3H-chromeno[2,3-d]pyrimidine derivatives, toweredcertain transition metal ions such as, (Cu(II), Co(II), and Ni(II)) to form complexes compounds **17-22** , the complexes are well characterized by various spectral and physical methods. The newly synthesized compounds were evaluated for their anti-inflammatory and analgesic activities compared to indomethacine and acetyl salicylic acid as positive controls. The most active compounds were; compound **21** as anti-inflammatory agent and **2a,2b** and **3b** as analgesic agents. From molecular docking compound **21** gave a score of -21.569 kcal /mol greater than IM8 which gave a score of -16.717 kcal/mol. Docking calculation was carried out for compounds **2a, 2b, 3b** and **21** using standard default variables of the MOE program. The binding affinity evaluated by the binding free energies (S-score, kcal/mol), hydrogen bonds interaction and RMSD values.

# Natural antimicrobial peptides: a potential weapon against antibiotic-resistant pathogenic bacteria

Ahmed Yousef

Professor of Food Microbiology, The Ohio State University

The emerging and rapid dissemination of antibiotic-resistant pathogens have become a global threat to public health. It is well recognized that broad use of antibiotics in human clinical therapy and in livestock production contributes to the drug resistance by killing the susceptible microorganisms and selecting for resistant strains. Therefore, new and potent antimicrobials are needed to treat infections caused by these high-risk pathogens. Similarly, there is a need for effective preservatives that combat pathogenic and spoilage microorganisms in food.

Natural antimicrobial peptides are currently recognized as a potential solution to the multi-drug resistance. Among these peptides, lantibiotics and lipopeptides will be discussed. Lantibiotics are lanthionine-containing ribosomally-synthesized antimicrobial peptides produced by some Gram-positive bacteria, including those of food origin. Some of the newly discovered lantibiotics (e.g., paenibacillin) are effective against *Mycobacterium* and methicillin-resistant *Staphylococcus aureus*. Lipopeptides have been known for many decades, but interest in this category is on the rise. These are non-ribosomally synthesized compounds which are active against a wide range of bacteria and fungi. In addition, lipopeptides can act as antiviral and antitumor agents, immunomodulators or specific toxins and enzyme inhibitors. The newly-discovered lipopeptide, paenibacterin, is a broad-spectrum agent that may have applications in food, feed or medicine.

Research on antimicrobial peptides can be successfully executed through collaborative effort between scientists in Egypt and USA. With such collaboration, new producing strains from Egyptian food or environment may be discovered. The collaboration will make it possible to quickly identify the producer strains and to elucidate the structure of the peptides. Finally, the collaboration can expedite validating the efficacy of antimicrobial peptides in various applications that benefit both countries.

# In Vivo Investigation of the Possible Horizontal Gene Transfer from Transgenic Diet into Some Tissues, Organs and Gut-Microflora in Rats

Hanaa AS Oraby, Mahrosa Kandeal, Amal AM Hassan

Cell Biology Department, National Research Center

One of the hazards accompanying the production of genetic modification is the possible horizontal gene transfer, which is the transfer of genetic material directly to a living cell or an organism.

Some of the safety assessment studies addressed the fate of modified DNA in the digestive tract of the animals indicated that GM- DNA is not completely degraded by digestion. It has also been recognized that very little is known about the potential long- term effects of GM foods.

This work, therefore, was planned to evaluating the possibility of horizontal gene transfer of dietary DNA to the micro-flora in the gastrointestinal tract and cells of some tissues (blood, liver, brain) of male Western Albino Rats fed on diet containing genetically modified components for three months.

Cauliflower Mosaic Virus 35S promoter (CaMVP-35S -195 bp) along with two other primers, harbouring short segments (70 and 89 bp) of the Cauliflower Mosaic Virus 35S promoter, specifically designed for this study were used to detect the transfer of DNA segments from the GM diet to the genome of micro-flora present in the gut or other tissues of experimental animals.

Results indicated that segments of transgenic DNA from the GM diet were amplified in the genomic DNA extracted from some organs of animals fed on GM-diet, as well as the DNA extracted from the cultured bacteria in the animal's guts. To confirm definitively the presence of transgenic DNA in genomic DNA of rats fed on GM diet,
DNA sequencing analysis was further performed for some of the samples with positive signals for the screening primers designed for this investigation.

# Pharmacogenomics

Dr. Amany Sayed Maghraby

Department of Therapeutic Chemistry, National Research Center

Pharmacogenomics are the study of how an individual's genetic inheritance affects the body's response to drugs. Knowledge of all the human genes and their functionsmay allow effective preventive measures, and change drug researchstrategy and drug discovery development processes. Pharmacogenomics hold the promise that drugs might one day be tailored and adapted to each person's own genetic makeup. Environment, diet, age, lifestyle, and state of health all can influence a person's response to medicines, but understanding an individual's genetic makeup is thought to be the key to creating personalized drugs with greater efficacy and safety.

1.1.1 The anticipated benefits of pharmacogenomics that the pharmaceutical companies will be able to create drugs based on the proteins, enzymes, and RNA molecules associated with genes and diseases. This will facilitate drug discovery and allow drug makers to produce a therapy more targeted to specific diseases. This accuracy not only will maximize therapeutic effects but also decrease damage to nearby healthy cells. Current methods of basing dosages on weight and age will be replaced with dosages based on a person's genetics and how well the body processes the medicine and the time it takes to metabolize it. This will maximize the therapy's value and decrease the likelihood of overdose.

1.1.2 Key words: Pharmacogenomics; RNA molecules; protein; enzymes.

# Association of IL-10-592 polymorphism with chronic hepatitis B virus infection in rural Beni-Suef, Egypt

Khadiga Abou Ggabal[1], Ekram El-Shabrawy[2], Mona Zaki[1], Hanan Hosni[1]

[1]Department of Clinical and Chemical Pathology, Faculty of Medicine, Beni-Suef University
[2]Department of Public Health and Community Medicine, Faculty of Medicine, Beni-Suef University

Chronic hepatitis B is a life-long liver disease caused by infection with the hepatitis B virus (HBV). Some people who get infected never get rid of the virus. They stay infected for life, and can spread HBV to others. Our study aimed to evaluate the relationship between the polymorphism of interleukin-10 gene at position 592 (IL-10-592) and chronic carrier of HBV infection. Thirty subjects (22 males and 8 females) chronic carrier of HBV co-infection, their age ranged from 22 - 60 years with mean age (31.34±14.23 years) were selected from a rural area of Beni-Suef, Egypt hospital based study and compared with 20 subjects as a control group matched with same age and sex. The single nucleotide polymorphism of IL-10-592 was investigated by restricted fragment long polymorphism-PCR (RFLP-PCR). Hepatocellular injury was detected by alanine aminotransferase (ALT) measured with Flexor LE200 autoanalyzer. The presence of hepatitis B surface antigen (HBsAg) in serum was determined by ELISA immunoassay. Chronic carriers of HBV infection were associated with higher frequency of IL-10-592 CC genotype (60% of HBV chronic carrier subjects). Abnormal serum ALT level was associated with IL-10-592 CC mutated genotype ($P < 0.001$), but the IL-10-592 A/C allele frequency was not associated with abnormal serum ALT level ($P > 0.05$). These results suggested that the polymorphism of IL-10-592 appears to have some influences on the chronic infection of HBV infection. IL-10-592 CC genotype frequency has influence on inflammatory liver injury.

**Key words:** Chronic hepatitis; HBV carrier; IL-10-592 genotype; polymorphism.

# GNASRscore: a simple scoring to detect severity in rheumatic mitral stenosis

Dr. Gamela Nasr

Department of Cardiology Faculty of Medicine, Suez Canal University , Suez Canal University Egypt.

**Background and aim**. Rheumatic mitral stenosis is still an existing problem in many developing countries . A New scoring system GNASR ( female gender Native orifice area by planimetry<1.0 (cm2) , Anatomy more than 8/16 by Wilkins score , Separation (distance between mitral leaflets) less than 0.7 cm and presence of associated mitral regurge of more than grade II/IV were postulated to be a reliable measure of MS severity . The aim of the study is to study impact of this new scoring system upon referral for mitral valve replacement surgery and its outcome.

**Methods:** 60 patients with rheumatic mitral valve disease were included (30 males and 30 females ; aged 16-28 years, median 26.6 years). All participants were subjected to full echocardiographic study including right and Left ventricular diastolic & systolic function. Several parameters were obtained : Native orifice area by planimetry<1.0 (cm2) , Anatomy more than 8/16 by Wilkins score , Separation (distance between mitral leaflets obtained by averaging the maximal leaflet separation distance at the tips in diastole in parasternal long-axis and apical four-chamber views) less than 0.7 cm and presence of associated mitral regurge of more than grade II/IV . Scoring was done by giving one for each item . They all basically were in a regular sinus rhythm. Accordingly those diagnosed as having severe stenosis were referred for mitral valve replacement and followed up for six months. They all had preserved left ventricular systolic function and dimensions.

**Results:** Results have shown that at least three out of five score yield a favorable effect upon the choice of patients for surgery . Overall mean MVA2D was 1.1 ± 0.1 cm2, Wilkins score 10/16 ± 0.4 MLS index was 0.9 ± 0.3 cm, and associated mitalregurge was III/IV ± 0.4 . An index of 3 or more provided an excellent specificity and positive predictive value for severe MS (98% and 95%, respectively). Follow-up of patients six months after surgery revealed favorable outcome.

**Conclusion:** The simple GNASR Score could be a simple non-invasive scoring for the severity of rheumatic mitral stenosis with further favorable impact upon referral for surgery

# The New Veterinary Medicine and its Role in National Development

Dr. Amer El-Ahraf,Professor of Health Sciences and Vice President Emeritus, California State University, Dominguez Hills,Dr. Badr Eweiss, and Dr.Mostafa Abo Gabal, Emeritus Professor of Pharmacology, Iowa State University

The New Veterinary Medicine builds on the accomplishment of traditional Veterinary Medicine that contributed immensely to the society particularly in the areas of animal disease diagnosis, preventive measures and treatment; veterinary pharmaceuticals; veterinary laboratories; zoonotic diseases and public health as well as supporting poultry farms among other significant achievements such as the unprecedented expansion in schools (faculties) of Veterinary Medicine and research centers; and the highly respected policy setting organizations most prominently in the higher education area. Yet the New Veterinary Medicine is one that has the ambition to have a broader mission of contributing significantly to national development broadly defined.

In order to accomplish this formidable task, the New Veterinary Medicine will entail major steps as it recognizes the magnificent results of the hard work of Veterinary Medicine professors, administrators and professionals and establishes on a solid foundation new directions in the academic curriculum, the research orientation, practice and the building of new facilities.

In the academic area, Veterinary Medicine schools are poised for major expansion of the curriculum to include larger doses in the areas of wild life health, protection and conservation; environmental and occupational health; as well as breeding of animals along with an active role in supporting efforts to produce Egyptian feed and pharmaceuticals to provide food security in the animal protein area along with improvement in the nutritional status of Egyptians. Small animal medicine can be viewed not only in terms of its traditional value, but also from broader point of view such its role in research and its contribution to human health particularly as an adjunct to the work of physicians in the area of mental health preventive and treatment modalities.

Fortunately for Veterinary Medicine, it falls in the center between two other important fields (i.e.) Medicine and Agriculture. This is a fertile environment to expand research centers into at least five major areas. These are; 1) Zoonotic Disease Research Center in partnership between the schools of Veterinary Medicine and Medicine. 2) Also in partnership between these two schools a second research center is possible in the area of Use of Animals in Research. Closely related to this issue is the introduction of such specialty in Veterinary Medical schools not only to produce practitioners for public and private entities, but also academically trained Veterinary Medicine professor who teach that branch of knowledge in Medical and Pharmacy schools. 3) The third cooperative effort between Veterinary Medicine, Medicine and Agricultural schools would be in the area of Pesticides Research and its impact on human and animal health along with producing non-harmful alternatives to pesticides and herbicides. 4) The fourth cooperative research center would be between Veterinary Medicine and Medical schools in the area of Food Hygiene and Control. 5) The fifth research center would be one established through cooperation of the schools of Veterinary Medicine and Agriculture in the area Aquatic life, Poultry and Animal Breeding with emphasis on resurrecting the role of native breeds. All of these and similar expansion in the academic and research wings of Veterinary Medicine, some of which already in place, planned or contemplated will expand the field of Veterinary Medicine practice by creating a new breed of human recourses and expand job opportunities of graduates The new aspect in creating these research centers is that these are *not* national research centers located in the capital, but these are cooperative regional research centers located on the campuses of the universities where the schools of Veterinary Medicine, Agriculture and Medicine. Exist. Finally, in order for Veterinary Medicine to play a major role in national development it must consider building new educational, research and breeding facilities in the Sinai Peninsula, which represents one of the most beautiful areas in the country, with an accompanying program for encouraging and supporting graduates to settle and work in the areas around these facilities. That in turn will encourage the establishment of farms to contribute to human food and animal feed as well industries based on fish, poultry and animal products.

These are necessary steps not only for enhancing employment of the youth, better distribution of the population and other scientific benefits, but also will make a major contribution to the country's national development through a progressive form of a New Veterinary Medicine.

| Day 2 - Room 2 | | | | | |
|---|---|---|---|---|---|
| **Engineering** | | | | | |
| | **From** | **To** | **Name** | **Paper Title** | **Co-Chairs** |
| | 8:00 AM | 9:00 AM | Registration | | |
| | 9:00 AM | 10:00 AM | Panel Discussion | | |
| 11 | 10:00 AM | 10:20 AM | Tarek ElMekkawy* | Developing an Efficient Scheduling Template For Chemotherapy Treatment Unit Considering Dual Resources | Ahmed Elsawy |
| 12 | 10:20 AM | 10:40 AM | Ashraf Salah Eldin | Predicting the Future With Social Media Networks | Hany H Ammar |
| 13 | 12:40 AM | 11:00 AM | Mokhtar El-Homossani | The Contributions of Advanced Textile Materials to Green-Architecture | HossinAbdeldayem |
| 14 | 11:00 AM | 11:20 AM | Lamyaa Gamal Eldeen Taha | Optimizing the workflow of large scale planimetric map revision and updating using manual digitizing of true digital Orthophoto& supervised maximum likelihood classification of multi channels (Texture and pan | |
| 15 | 11:20 AM | 11:40 AM | Samir Arafeh&TarikFathy | On The Means to Mitigate Traffic Congestion in Egypt | |
| | 11:40 AM | 12:40 PM | Coffee & Panel Discussion | | |
| 16 | 12:40 PM | 1:00 PM | T. I. Zohdi and K. Mosalam | Computational Design of Flexible, Electromechanically-Actuated, Micro-shutter Materials for Efficient Incident Solar/Radiative Energy Control | TarikFathy |
| 17 | 1:00 PM | 1:20 PM | LamyaaGamalEldeen Taha | Towards digital photogrammetry center of scientific excellence | Mokhtar El-Homossani |
| 18 | 1:20 PM | 1:40 PM | Ahmed Elsawy | Production of Biodiesel from WVO Using Programmable Logic Controller and Small Scale Continuous Ultrasonic Processor | WaguihElMaraghy |
| 19 | 1:40 PM | 2:00 PM | S.A. Sherif | Frost and Ice Formation under Extreme Humidity and Low Temperatures | |
| 20 | 2:00 PM | 2:20 PM | Adel S. Elmaghraby | Big Data: Opportunities and Challenges | |
| 21 | 2:20 PM | 2:40 PM | EsraaAdbelhalim, Ghada El Khayat | RFID in Universities: Review and Proposed Application | |
| | 3:00 PM | 3:40 PM | Resolutions & Adjourn | | |
| | 3:40 PM | 4:40 PM | Lunch | | |

# Developing an Efficient Scheduling Template For Chemotherapy Treatment Unit Considering Dual Resources

Tarek Y. ElMekkawy, Sanjana Shahnawaz

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The objective of this paper is to develop an efficient scheduling template of a chemotherapy unit with dual resources (Chairs and Nurses). Three approaches are proposed to solve the problem. First, combinations of heuristic rules have been simulated and the best combinations have been identified. Second, a Tabu Search algorithm that considers assigning and sequencing the patients to the chairs only is developed. Then the obtained schedule is adjusted using a heuristic algorithm to consider the second resource (nurses). This algorithm is denoted as Tabu search algorithm with heuristic (TSHu). Finally, the former TS algorithm is modified to consider scheduling the patients using both resources simultaneously. This algorithm is denoted as Tabu search algorithm for dual resources (TSD). The considered objective is minimizing the total flow time of patients within the system. An extended comparison study has been performed. It is found that the TSD outperforms the other two approaches. Finally a template is built for an actual chemotherapy treatment unit using the TSD.

# Predicting the Future With Social Media Networks

Ashraf Salah Eldin

President, High Tech Vision

In recent years, social media networks have become ubiquitous and important for social networking and content sharing. And yet, the content that is generated from these websites remains largely untapped.

In this paper, we demonstrate how social media content can be used to predict real-world outcomes. In particular, we use the chatter from Twitter.com to forecast box-office revenues for movies.

We show that a simple model built from the rate at which tweets are created about particular topics can outperform market-based predictors. We further demonstrate

how sentiments extracted from Twitter can be further utilized to improve the forecasting power of social media networks.

Social media has exploded as a category of online discourse where people create content, share it, bookmark it and network at a prodigious rate. Examples include Facebook, MySpace, Digg, Twitter and Linkedin. Because of its ease of use, speed and reach, social media is fast changing the public discourse in society and setting trends and agendas in topics that range from the environment and politics to technology and the entertainment industry.

Since social media can also be construed as a form of collective wisdom, we decided to investigate its power at predicting real-world outcomes. Surprisingly, we discovered

that the chatter of a community can indeed be used to make quantitative predictions that outperform those of artificial markets. These information markets generally involve the

trading of state-contingent securities, and if large enough and properly designed, they are usually more accurate than other techniques for extracting diffuse information, such as surveys and opinions polls. Specifically, the prices in these markets have been shown to have strong correlations with observed outcome frequencies, and thus are good indicators of future outcomes.

In the case of social media, the enormity and high variance of the information that propagates through large user communities presents an interesting opportunity for harnessing that data into a form that allows for specific predictions about particular outcomes, without having to institute market mechanisms. One can also build models to aggregate the opinions of the collective population and gain useful insights into their behavior, while predicting future trends. Moreover, gathering information on how people converse regarding particular products can be helpful when designing marketing and advertising campaigns

# The Contributions of Advanced Textile Materials to Green-Architecture

Mokhtar El-Homossani[1], Nahla Abd El-Mohsen Hassan[2]

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Architecture design has become a significant part of the path to a sustainable green society. A green building serves the needs of the people who inhabit it. From this perspective, Green-Architecture presents a new array of choices, opportunities, priorities, and values not only to the form and space that a building construction occupies, but also to the climatic comfort,environmental sensitivity, economic, and socio-cultural well-being of the immediate and beyond surroundings.

Textiles are one of the fastest growing materials in architectural design, because of their unique characteristics, which complement the architects' quest for the realization of green-architecture. A new generation of high-performance engineered textiles is increasingly employed in modern architecture. The results can be seen in new forms and functions that have been evolving in public and private buildings. The realization of additional benefits to environment protection has increased the interest and research activities in this relatively new field. Conservation of energy due to efficient insulation; natural light transmission, light diffusion and solar control; self-cleaning, are some of the benefits that make architectural textiles an important ecological element in escalating the demands for green-architecture.

This paper covers the developments of textile materials, which make it possible to build strong, but lightweight supported structures, easily maintained and viably economical buildings. It also emphasizes the interconnection between the new innovations in textile materials and Nano-technology, and achieving green-architecture. The paper concludes with connecting the conditions in Egypt, and the potential of employing some of the presented concepts and principles in search for alternative building materials for urban expansions beyond the narrow valley. The impact on environment sustainability and improving the quality of life are factors that are also highlighted.

Key words: Green-Building, Green-Architecture, Architextiles, Architectural Textiles, Sustainability, Technical textile, Pneumatic and Tensile structures, Coated fabrics, Photocatalytic Membrane, Nano-Gel.

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# Optimizing the Workflow of Large Scale Planimetric Map Revision and Updating Using Manual Digitizing of True Digital Orthophoto& Supervised Maximum Likelihood Classification of Multi Channels (Texture and Pan)

Dr. Eng. Lamyaa Gamal El-deen Taha Solyman and Eng. Amany Samir Mahmoud

National Authority of Remote Sensing and Space Science (NARSS)

The aim of this research is to find an alternative map revision and updating methods (monoplotting) from aerial photos, which is faster, but as effective and accurate as stereo methods for large scale planimetric map revision and updating. Two methods for planimetric map revision and updating based on aerial photos have been performed. The first method is map revision and updating using manual digitizing of true digital orthophoto. True digital orthophoto was generated by orthorectification of scanned aerial camera photos using DSM generated from aerial photos. This method has been done using Leica Photogrammetric Suite( LPS). The second method is map revision and updating using supervised maximum likelihood classification. Supervised maximum likelihood classification was performed using two different feature sets. Firstly, textural feature was extracted from panchromatic high resolution aerial photos then combined pan and texture data (mean) were fed into the classifier. The overall accuracy of this method was 92%, and kappa coefficient was 0.84 .This method has been performed using Erdas Imagine. Both methods were compared to map revision and updating from stereo digitizing.

It was found that the second method is better than the first method.

***Key-Words***: Map revision and updating -Large scale planimetric maps - image matching- automatic DSM generation-scanned aerial photos- digital photogrammetric workstation- true digital Orthophoto -multi-channel image Analysis- texture analysis.

# On The Means to Mitigate Traffic Congestion in Egypt

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Transportation and Communication were seen as synonymous along the history of mankind. They used to overlap and one activity seemed to replicate the other with no distinction.
The fundamental change of information revolution starting from the mid of last century, and the vast development of service economy created, for the first time, a trade off of these vehicles of transmitting goods or information. The spread of personal computers and hand held mobile devices have altered human behavior and activities permanently. The essential blend of computers (different scale and use) and telecommunication (technology and infrastructure) paved the way to use these technologies, techniques, and protocols to mitigate, or even solve, some inherited persistent urban problems. Traffic congestion is the highlight of these problems.
Traffic congestions resolutions schemes could be utilized to reduce, or divert crowdedness during rush hours and replace partially the physical transportation networks with virtual information webs. Adopting specific initiatives would result in direct impact on people health, economy, non-productive time, energy and the reduction of transportation systems maintenance costs.
Suggestions of some of these initiatives are:

- Activations of navigation systems and mobile information system
- Broadcasting traffic information online and other public channels
- Arial monitoring and redirection of traffic flows
- Application of a adequate street/road traffic signs and direction for drivers
- Encouraging teleworking/telecommuting and the use of online economy
- Relocation of economic/services activities to a simpler more efficient land uses
- Decentralization & redistribution of population independent of geographical locations
- Fixing, Upgrading and Maintaining existing traffic infrastructure facilities
- Educate & Spread populous awareness to become part of the solution not the problem
- Revise existing strategic residential, commercial mass transits projects plans
- Educate and enforce traffic discipline, laws, rules & apply proportional violation fines
- Stagger business work schedule and possible rotating three-days weekends

While these potential initiatives might appear overwhelming in terms of knowledge, feasibility, priority, effectiveness, cost, schedule and timeliness, this presentation introduces first a brief survey on published studies and planning activities conducted for Egypt, locally and abroad. Secondly, we introduce a Systems Analysis and Resolutions approach derived from three bodies of knowledge. Namely; Business Analysis, Systems Engineering and Operations Management. An attempt to quantify the effect of traffic congestions in Cairo and most other major metropolitan centers is presented with a consideration leading to an effective conceptual action plan.

# Computational Design of Flexible, Electromechanically-Actuated, Micro-shutter Materials for Efficient Incident Solar/Radiative Energy Control

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Berkely University

In a variety of emerging energy applications such as photovoltaics, thermoelectrics, thermal barriers, optical barriers, etc., the control of incident light on a surface, whether reflection, absorption or conversion,is a critical first step in a multistage process. The work pursues the active control of flexible surface coatings for desired thermo-optical energy management via energy-efficient electromechanical actuation. These coatings will be comprised of flexible modular tiles, embedded with optical, microscale, energy-controlling surface actuators. The tiles can be individually replaced when damaged. The functionalization of a surface will be pursued by adding small-scale surface features, electromechanically-actuatable rods, to manipulate incoming light. The small scale-features orientation will be controlled by energy-efficient electromagnetic fields, leading to an overall, user-specified, adjustable, reflective-to-transparent surface (or any state in between).

In a sense, these actuated rods are ``micro-shutters''. One goal of this work is to develop a readily available computational tool, guided by careful experiments, that allows analysts to quickly study the response of a wide variety of electromechanically-actuated rod-like surface microstructures.

Prototypes will be built, tested and refined, guided by computational design, with the overall objective being to design inexpensive adaptive coatings, in order to control incoming optical energy for large-surface area coverage.

# Toward Digital Photogrammetry Centre of Scientific Excellence

Dr. Eng. Lamyaa Gamal El-deenTaha Solyman

National Authority of Remote Sensing and Space Science (NARSS)

The proposed centre of Scientific excellence (CSE) concerned with digital photogrammetry it will perform aerial photography and aerial scanning of regions of interest using the sheet film camera, digital camera ,lidar scanner and Hyper-spectral camera also it will make mapping from these technologies as well as from stereo satellite images and Radar data. The Vision of the proposed CSE is to enable Egypt becoming global knowledge power by promoting research, development of technologies and innovation for globally competitive and inclusive growth to power technology led economic progress of the society.

The mission of the proposed CSE to strengthen the R&D base of the country through funding, development and utilization of technologies, building entrepreneurship and innovation, fostering international cooperation, popularization and demonstration, mounting mission mode initiatives, attracting talent to science and rejuvenating research and promotion of public-private partnerships. One of the objectives is to create a sustainable networking structure that integrates all sectors of the Egyptian geomatics community

New mechanisms and structures for supporting research will be developed. Large scale national programmes for attraction of talent to study of science and careers with research will be promoted. Capacity and expertise building for research and development will be focused. Fast track young scientist scheme will be revised based on stake holder value appraisal.

Roles for supporting research through competitive grants are being segregated from the developmental and promotional roles of the CSE in a structured manner and research Board will be notified. The CSE will be drafted a Science, Technology and Innovation policy for wider consultation and adoption.

Data sharing and access policy will be approved by the cabinet and is being formulated into a framework document.

***Key-Words***: center of scientific excellence- digital photogrammetry- Lidar- Capacity building- knowledge transfer- Organization-, management and infrastructure- Promotion of young researchers.

# Production of Biodiesel from WVO Using Programmable Logic Controller and Small Scale Continuous Ultrasonic Processor

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There is a need in the USA to decrease dependency on fossil fuels. One alternative fuel that has gained much popularity in the past few years is biodiesel. Biodiesel can be produced using vegetable oil, waste vegetable oil (WVO), animal fat and yellow grease as raw materials. However, the process of converting a batch of WVO into usable biodiesel is time consuming, requires a human operator to run the system, and necessitates the performance of a chemical titration for each batch of biodiesel produced.

In the first phase of this project, toward continuous flow processor and the elimination of the titration process, the processor was designed and built utilizing a programmable logic controller (PLC) in conjunction with pumps, valves, temperature sensors, etc. to completely handle the production of biodiesel with minimum operator interaction. In the second phase of this project, a small Hielscher Ultrasound continuous processing unit was integrated to the automated system. This paper presents the newly developed system and demonstrates the design aspects of the automated biodiesel production processor using a PLC and ultrasonication (continuous processing) as well as how the chemical titration procedure for each batch is eliminated.

**Keywords**

Biodiesel, Waste Vegetable Oil,Alternative Energy, Programmable Logic Controllers, Ultrasonication.

## Frost and Ice Formation under Extreme Humidity and Low Temperatures

Dr. S.A. Sherif

Professor of Mechanical and Aerospace Engineering, University of Florida

Whenever humid air comes in contact with a cold surface whose temperature is below both the dew-point temperature of water vapor in air and below the freezing point, frost will form. The nature of the frost forming on the coil will depend to a large measure on the psychrometric conditions prevailing inside the freezer and whether the air around the coil is subsaturated or supersaturated. A multi-year experimental investigation examined this problem from the vantage point of the energy required to defrost coils operating under extreme humidity and low temperatures and devised ways to avoid this mode of frost formation. Typically, the energy used to defrost coils presents a double energy penalty in that it first disrupts the refrigeration cycle, and then introduces an additional refrigeration load that needs to be eventually extracted from the freezer. It was also found that the frost forming under extreme humidity conditions is especially hard to remove and requires an excessive amount of energy to defrost. Furthermore, the defrosting process causes a portion of the frost to sublimate back into the freezer air and thus contributes to increasing the latent load of the freezer. This in turn contributes to an accelerated frost formation process when the coil is switched back into the refrigeration mode. This presentation will discuss some of the above issues and the implications on energy efficiency, heat transfer, and the growth structure of the frost layer.

## Big Data: Opportunities and Challenges

Dr. Adel S. Elmaghraby

Professor and Chair of the Computer Engineering and Computer Science Department at the University of Louisville

This presentation will discuss challenges and opportunities created through increased data acquisition and data retention. Various sources of data and stages of data and information flow will be highlighted and addressed. The rationale for addressing Big Data as a special case requiring attention will be presented. Discussion of issues related to a) Computation for Big Data using various tools, algorithms, and architectures, b) Data Storage using cloud architecture and distributed systems, c) Data Retrieval from structured, unstructured and multimedia sources, d) Application approaches to access Big Data through mobile and other devices, e) Analytic and Data Mining techniques for big data. All these issues are wrapped with a need for increase Security and Privacy to guarantee acceptability in various areas such as financial, health and education.

# RFID in Universities: Review and Proposed Application

Esraa A. Abdelhalim[1], Ghada El Khayat[1], Tamer Fouad[2]

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The economic and resource problems that Egypt faces call for directing efforts towards better management of the resources available and reducing waste to cope with the green trend. Additionally, a great focus on promoting good educational process with the help of the emergent technologies has a direct relationship with changing culture and the way people deal with these resources. In Egypt, the higher education sector, with the large number of universities and resources it has, plays an important role in dealing with this issue. RFID as one of the emergent technologies contributes to a better organizational process and resource management through improved business process inside university campuses. It eliminates a lot of human-intensive tasks and makes real-time data about campus assets and students easily obtained. This paper gives an overview of different types of applications using RFID in universities. The paper introduces an ongoing pilot RFID experiment conducted in a small scale private institute and motivated by the idea of optimizing flow on campus during exams and improving instant decision making. The paper also proposes architecture for implementing the experiment.

*Keywords-RFID, university applications, RFID limitations, green trend, RFID experiment, university management.*

# Research for Sustainable Economic Development

Dr. Mohamed A. El-Sharkawi, Fellow IEEE

Professor of Electrical Engineering, University of Washington

he flourishing models for sustainable development in emerging economies remain essentially based on successful management of resources, knowledge, and innovation. These attributes provided the most resilient and solid foundations for economic growth through industrial diversification and modernization that lead to improvements in the standard of living.

Egypt is far from achieving its research potentials that could position itself as one of the world's innovative countries. Unfortunately, Egypt is still witnessing the developments of technology instead of actively developing the technology. Among the reasons for this problem are the inadequate allocation and placement of research funds; the decoupling between research and industrial needs of societies; the dependence on foreign resources to supply turn-key systems; and the lack of confidence in domestic skills.

Several attempts were made over the years to restart the research in Egypt by importing western models. They all produce modest success because western models are designed to fit into western societies' needs, aspirations, and visions. When these attributes are not the same for the developing country, the research efforts are often wasted or muted.

A better model for the developing countries would be the "mission research." This is a focused research niche that positions the country globally. Mission research is by far the most successful model for many developing countries. Examples are consumer electronics in South Korea, software industry in India, computer industry in Taiwan, solid-state manufacturing in Mexico, service industry in India, food industry in Brazil and Argentina, and digital storage for Singapore. In all these examples, national strategies with clear vision has propelled the education system, allocated national resources and brought business communities to achieve that central vision.

Research and development in Egypt need to be revolutionized to provide sustainable economic growth in the region. The talk addresses the viewpoints of the author on the status of research and development, the existing problems that hamper the progress in research, and finally a few recommendations to establish sustainable and effective research, development, and innovation activities.

| Day 2 - Room 3 | | | | | |
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| **Humanities** | | | | | |
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| | **From** | **To** | **Name** | **Paper Title** | **Co-Chairs** |
| | 8:00 AM | 9:00 AM | Registration | | |
| | 9:00 AM | 10:00 AM | Panel Discussion | | |
| 11 | 10:00 AM | 10:20 AM | Mohmed El Shayeib&AkmalSakr | Environmental manipulation of the house in Ancient Egypt | Mohamed El Shayeib |
| 12 | 10:20 AM | 10:40 AM | AbouBakr Selim Abdo | أهمية دول أسيا الوسطى فى العلاقات الدولية المعاصرة | Mahmoud Omar |
| 13 | 12:40 AM | 11:00 AM | Mohamed F. El-Shaieb | Land Use In Ancient Egypt | |
| 14 | 11:00 AM | 11:20 AM | Mahmoud Omar Mohamed Selim | The concept of Museums in Ancient Egypt | |
| 15 | 11:20 AM | 11:40 AM | Fatma EL Zhraa Salem Mahmoud | The role of education in solidarity with occupied Palestine territory (opt) an ethnographic study | |
| | 11:40 AM | 12:40 PM | Coffee & Panel Discussion | | |
| 16 | 12:40 PM | 1:00 PM | | | |
| 17 | 1:00 PM | 1:20 PM | | | |
| 18 | 1:20 PM | 1:40 PM | | | |
| 19 | 1:40 PM | 2:00 PM | | | |
| 20 | 2:00 PM | 2:20 PM | | | |
| 21 | 2:20 PM | 2:40 PM | | | |
| | 2:40 PM | 3:40 PM | Resolutions & Adjourn | | |
| | 3:40 PM | 4:40 PM | Lunch | | |

# Environmental manipulation of the house in Ancient Egypt

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Architect in Ancient Egypt tried to manipulate the environmental conditions surrounding him to obtain a healthy house. The architect used several manipulations for this purpose such as.

**1. Using natural building materials**: The architect used natural building material as mud brick available from Nile clay. The ancient Egyptian recognized the mechanical proprieties of mud brick block. Using of mud brick block helped the architect to divide the inner parts of the house. Mud brick has poor thermal conductivity, thus kept the heat in the houses through cold nights of the winter; it was suitable for the climate of ancient Egypt.

2. **Using Malkaf**: Malkaf was made of reed fixed with a wooden frame in the face of wind to catch the breeze and to ventilate the house. Our information about the Malkaf can be derived from different sources, papyrus of*Nakht*, XVIII dynasty, walls of the tomb of *Neb Amun*, XIX dynasty and model house in the Louvre Museum.

**3. Privacy:** the society in Ancient Egypt was a conservative one, so the architect achieved the privacy for his house through using different manipulations as separating the house using different levels. There was another manipulation for privacy by using the keel entrance in the form of letter (L), which was confirmed from analyzing the plans of house dated back to Heraknipolis from prehistory and from the houses of Illahun XII dynasty. The last interesting method for achieving the privacy for his house was using Mashrabia to enable the inhabitant of the house to see behind this Mashrabia.

**4. Using the solidarity solution:** Using the solidarity solution was a necessity imposed on the architect in ancient Egypt not to expose facades of the houses for direct sun rays. There was another reason for using this solution was limited area allocated for building to keep the cultivated land. Using this solution can be detected from different sources.

5. **Using sanitary installations:** the architect in ancient Egypt used different sanitary installations in his house as toilette, bathrooms and drainage methods to guarantee a healthy life for their inhibitors.

6. **Using the gardens**: Gardens were considered a source of pride and a symbol for richness. Gardens played an important role in the environmental manipulation of his house for providing the fresh air and to open the house in the garden not to be opened directly into the street, for achieving the privacy and achieving economic purpose as self sufficiency from fruits and vegetables.

## أهمية دول أسيا الوسطى فى العلاقات الدولية المعاصرة

ابوبكر سليم عبده

نجحت آسيا الوسطى خلال الأعوام الثمانية عشر الماضية فى لفت الانتباه إليها بشدة , فهذه المنطقة وإن كنت أكبر سجن جغرافى فى العالم , فإنه سجن انفتح بعد انهيار الاتحاد السوفيتى , لتندفع إليه قوى آسيوية كبرى , أهمها إيران وتركيا والصين والهند وقوى أخرى دولية , على رأسها الولايات المتحدة . ومنذ ذلك الانهيار الكبير , تجرى فى تلك المنطقة الحبيسة حروب صامتة , تحاول فيها كل دولة وراثة ما أمكنها من روسيا التى احتكرت السياسة , والاقتصاد , والفكر. وروسيا بدورها وإن استسلمت لخسارة المنطقة جغرافيا , فإنها لاتزال مصرة على الاستحواذ عليها استراتيجيا , فتراقب ما يجرى فيها عن كثب , وتحتفظ لنفسها بأوراق مؤثرة , أهمها عشرة ملايين روسى لايزالون يعيشون فيها , كما أنها تدخل مع قوى كبرى أخرى مهتمة بالمنطقة كثيرًا , وتحديدا مع الصين , فى ترتيبات أمنية من أجل احتواء الاندفاع الأمريكى الذى بدأ عقب نهاية الحرب الباردة , وازداد بشكل خاص بعد أحداث الحادى عشر من سبتمبر , حينما احتاجت واشنطن إلى آسيا الوسطى كواحد من منصات انطلاق حملتها العسكرية إلى أفغانستان . وآسيا الوسطى تشمل خمس دول فقط , هى : أوزبكستان , وتركمنستان وطاجيكستان , وقرغيزستان , وكازاخستان. وفى إطار التنافس الدولى على المنطقة , كان من الطبيعى أن تدفع توازنات القوى إلى ظهور محـاور , هدفها تعزيز فرص المتداخلين فى كسب السباق , فالدول التى تبحث عن أعلى العوائد وجدت أن عليها التنسيق مع فاعلية آخرين , وهو ما نشأت بسببه تحالفات وتحالفات مضادة, أبرزها محور روسى – صينى تعبر عنه منظمة شنغهاى للتعاون, والذى تنسق معه إيران بانتظام , مقابل محور آخر أمريكى , يتسق مع عدد من دول الاتحاد الأوربى والناتو , وأحيانا مع تركيا , وكثيرا مع إسرائيل , وهذا لا ينفى بطبيعة الحال أن التنافس يحدث أيضاً داخل كل محور .

# Land Use In Ancient Egypt

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The ancient Egyptians has been differentiated between different types of land according to its nature, location, ownership, topography, and these types are including :
1 – 3ht : means fields, a cultivated land on the banks of the Nile river and its distributaries.
2 – Sht : which means marshland, according to historical sources, marshes were well known in the delta in ancient times.
3 – Hrk33t : means the high land.
4 – Nhb : means newly opened up fields or newly reclaimed.
5 - The public land or medium location land, which was devoted to deities, it was called the Holy Fields.
6 – The lands lying close to the borders of the desert, And swamps, and it seems that it was belonged to the soldiers because it was close to the desert, where they can defend it against the Bedouins and they can perform their military training and moving easily across the desert roads.
This division was recorded in the inscriptions of "Senusert III" in Luxor.
The division of land according to the ancient records can be in line with the division mentioned by "Strabo," and other historians. There is growing evidence that the economic history of ancient Egypt was primarily one of continuous ecological readjustment to a variable water supply, combined with repeated efforts to intensify or expand land use in order to increase productivity. Several scholars have suggested that declining rainfall after the end of the Pleistocene forced desert populations into the Nile Valley and thus directly led to agricultural economies

By 3000 B.C. the whole of the Nile Valley and Delta was occupied from the Mediterranean to the Nubian frontier, and the oases of the Western Desert as well .

# The concept of Museums in Ancient Egypt

Prof. Mahmoud Omar Mohamed Selim

Institute of Ancient Near Eastern, Zagazig University

The Ancient Egyptians were interested in their past history, so they kept records of their science, religion and history. Although Archaeology as a science is a modern science, it is fair to say that the Ancient Egyptians were pioneers in the field of chronicles, historiography archaeology and reserving their ancient heritage for next generations.

Every King took Care of the monuments of his ancestors. They also took care of restoration and conservation of the old monuments because they considered these monuments sacred and part of their artistic, religious and scientific heritage.

The Temples and palaces were the most suitable place to exhibit and display these monuments. Although they did not have the concept of museums as it is in modern times, the monuments exhibited in temples were for religious purposes, and there was a connection and harmony between these monuments and its Landscape or its environment.

So, the idea of Museums was an ancient idea not a modern one.

# The role of education in solidarity with occupied Palestine territory (opt) an ethnographic study

Dr. Fatma EL Zhraa Salem Mahmoud
Lecturer at Ain Shams University

***Background*:-**Palestine was under attack from 1948 by Israel. The Palestinian issue was in the spot of the world from about fifty years ago. Many international institutions and organizations help Gaza as the only sector which is the Palestinian people live in. For instance; the NGOs UNESCO, UNECIF, IMF, UNRWA, In addition many eastern and western countries help Gaza with food, drugs, medical care, education curriculums, fund and so on.

The last attack up on Gaza in 13th November 2012 was after the Arabic spring revolutions, new leaders in the Middle East and defense about the Palestinian issue. Egypt after HossniMobarak stepped down and the elected president Mohamed Morsi ruled Egypt, new attitudes and trends in Egypt are appeared. Muslims brotherhood in the Islamic world plays an essential role in the political field. Especially in the Arab world that affectionate with the Palestinian issue. That is why Israel lives in a bad situation which imposes to it to follow new democratic strategies with the Islamic world nowadays. So in order to tackle this critical issue through new approaches in education based peace building, respecting the other and maintaining the land too.

***Research Objectives:-***

**First objective: -** what is the concept of peace in the mind of the Palestinians?

**Second objective:**-how education issues new approaches in education based in peace building and solidarity?

**Third objective**:-what are the relations between Israel and the Islamic world in the forthcoming years?

**Forth objective**:-what is the future of peace and solidarity in Gaza sector?

***The research Methodology***

The research used the ethnographic approach as a qualitative method. The researcher went to Gaza and stayed there and still makes a connection via the internet with many Palestinians. So the researcher utilized from her visits to Gaza and the contacts with some of its people.
are closely linked.

***Research Topics:-***

**The first topic:** - peace in the mind of the Palestinians (conceptual frame work).

**The second topic**: - New approaches in education based in peace building and solidarity.

**The third topic**: - the relations between Israel and the Islamic world in the forthcoming years

**The forth topic:** - the future of peace and solidarity in Gaza sector

***Results***

Education means a lot for Palestinians as it is like the air and water for them. Education means the future for oPt as it the peaceful transfer from the imposed blockade into the global world. So the ethnographic study up on Palestinians in Gaza showed that how the youth have the motivation to learn and self learning. They have the great ability to make empirical studies in the scientific fields. Youth both men and women need education for peaceful life and awareness to understand the others attitudes towards their identity and lands. Furthermore the religious faith doesn't prevent youth and people to learn but it encourages them to handle the knowledge as a power and weapon for resisting the foe (Israel). The peace building approach in education will create new relations with the foe based on education, technological competence, and faith of freedom, and maintaining the Palestinian's dignity and cultural identity. So the future of peace and solidarity in Gaza will depend on the education of youth who will manage to emancipate their land from the occupation and the blockade.

**Conclusion**

In conclusion this study introduced new approach in education based on peace and solidarity which should generalize in Palestinian's curriculums. So the study concluded the forthcoming visions:-

**First of all**:-there is no peace without education.

**Second**:-there is no solidarity without education.

**Thirdly**:-Education based dignity and maintaining of the cultural identity is the tool to emancipate the land. **Forth**:-The future outlook of the relations between Israel and the Islamic world will determine by education of the citizens.

**Fifth**:-The emancipation of the foe and the occupation may be finished in the near future via education based future sciences, interdisciplinary sciences and advanced technology