



SUSTAINABLE SMART CITIES INTERNATIONAL WORKSHOP

Alexandria, Egypt | May 9 – 11, 2017



The Built Environment
Urban Economic Development
Health and Quality of Life
Social Sustainability
Urban Informatics

FOUR SEASONS HOTEL AT SAN STEFANO

www.sscworkshop.com

Workshop organized and sponsored by:



الأكاديمية العربية للعلوم والتكنولوجيا والنقل البحري
Arab Academy for Science, Technology & Maritime Transport





SUSTAINABLE SMART CITIES INTERNATIONAL WORKSHOP

Alexandria, Egypt | May 9 – 11, 2017

Table of Content

Chairman’s welcome message	1
Welcome message from Egyptian Scientific Coordinator	2
Welcome message from the President of Alexandria University	3
Welcome message from the President of the Arab Academy for Science, Technology and Maritime Transport (AASTMT)	4
Keynote Address	5
Steering Committee	6
Thematic Areas	7
Workshop Program – Day 1	9
Workshop Program – Day 2	12
Workshop Program - Day 3 (closed session)	14
Speakers Profiles	15
Alexandria Landmarks	31
Collaborating Organizations and Sponsors	33



SUSTAINABLE SMART CITIES INTERNATIONAL WORKSHOP

Alexandria, Egypt | May 9 – 11, 2017

Chairman's Welcome Message



Fouad H. Fouad, PhD

Professor & Chair
Department of Civil,
Construction and
Environmental Engineering

Director
UAB Sustainable Smart
Cities Research Center

University of Alabama at
Birmingham, USA

ffouad@uab.edu
www.uab.edu/smartcities

Dear Colleagues,

On behalf of the University of Alabama at Birmingham (UAB), it is a tremendous pleasure and privilege for me to welcome you to the ***NSF Sustainable Smart Cities International Workshop, May 9-11, 2017***. We are excited to have you here in Alexandria, Egypt -cradle of civilization- at this tipping point of urban development when more than half of the world's population (3.5 billion) lives in cities.

Funded by the National Science Foundation (NSF), this workshop promotes interdisciplinary collaboration and exchange of knowledge and technology related to advancing sustainable urbanization and smart cities. This event will help establish future directions of research at the global level and enhance the potential for collaboration between our countries.

According to the United Nations' Commission on Sustainable Development, the current pace of urbanization is highest in developing countries, where one billion people live in urban slums lacking basic services and generating environmental degradation. However, the increased density in cities, also improves efficiency, spurs productivity and innovation. With the growing capacity for big data generation and analytics, as well as the advancement of information communication technologies and the Internet-of-Things – now more than ever we have the opportunity to understand and address the many challenges of urban life today and for the future.

The Sustainable Smart Cities Research Center at the University of Alabama at Birmingham (UAB SSCRC) provides an enabling platform to understand and transform the impact of urbanization at the scientific, economic, and human levels.

I want to thank our collaborating leaders and participating entities for the important contributions to make this, a successful event; especially, Alexandria University, and the Arab Academy for Science, Technology & Maritime Transport (AASTMT).

Alexandria is where *“the true foundations of the modern world were laid - not in stone, but ideas”*. This is a symbolic scenario to continue advancing knowledge and the science of sustainable, smart cities.

I warmly welcome all of you and wish you a pleasant stay in ancient and beautiful Alexandria.



SUSTAINABLE SMART CITIES INTERNATIONAL WORKSHOP

Alexandria, Egypt | May 9 – 11, 2017

Welcome Message from Egyptian Scientific Coordinator



M. Nasser Darwish, PhD

Professor
Civil & Structural Engineering
Department
Alexandria University
EGYPT

It is a great pleasure to welcome you all to our great city Alexandria and to have the opportunity to meet several distinguished scholars and experts in this important ***International Workshop on Sustainable Smart Cities***.

The choice of the city of Alexandria to host such international workshop is itself a *smart* idea. Here, the ancient embraces the present and future. Smart cities need smart people, smart ideas and not only smart stone or machines. Being smart is not solely related to advanced technology but to indigenous technology and the optimum use of resources and culture conservation. This emphasizes the importance of social, human and economical development in addition to other aspects.

I have been privileged to share in this workshop and to coordinate the Scientific Egyptian participation. The choice of Egyptian distinguished speakers was a mixture of academia, practitioners, professionals, executives, policy makers and politicians and the industry to cater for the workshop different aspects.

There will be ample opportunities to meet several distinguished scholars and experts in this important international workshop and to discuss, share the latest research, boost research potentials, and disseminate technical information and hence, highlight needs, prioritize recommendations, and discuss and activate future international collaboration scientific opportunities.

It is my pleasure to thank you all, especially the organizing entities particularly the University of Alabama at Birmingham (UAB) and NSF, all contributing and sponsoring universities, researchers, keynote speakers, presenters, panelists, and all contributors for their precious time and efforts. We look forward towards a smart event with fruitful practical outcomes. These may include for example, a Consulting Body, especially as Alexandria University is the General Consultant for Alexandria Governorate; and new international research opportunities and programs.

Special thanks are due to Professor Fouad H. Fouad of UAB for his ideas, time and efforts, without which such event would not have been possible. He is one of the prestigious graduates of Alexandria University.

We hope that you enjoy your visit and discover the beauty of our city and our country, and the depth of its culture, meet old colleagues and make new encounters. Have a safe enjoyable trip.

Again, welcome and thank you.



SUSTAINABLE SMART CITIES INTERNATIONAL WORKSHOP

Alexandria, Egypt | May 9 – 11, 2017

Welcome message from the President of Alexandria University

As President of Alexandria University (AU) it gives me great pleasure to welcome you to our university and to our great city.



Essam ElKordi, PhD

President
Alexandria University
EGYPT

Alexandria University is a leading university and serves the needs and aspirations of three important Governorates: Alexandria, Behiera and Matrouh, besides the whole of Egypt. The University is celebrating, this year, its 75 anniversary of excellent service to its community, environment, nation and region. Besides, AU is expanding in branches and participation in Africa, the Middle East and elsewhere. In addition, we have strong ties and agreements with several leading universities and research institutions and international scientific funding agencies throughout the entire world, and our alumni are globally spread and are gracefully catering for their communities needs and many are in key positions.

We are proud of our successful academic and research affiliation with the University of Alabama at Birmingham (UAB) in several fields, and especially with the School of Engineering a collaboration that provides access to Biomedical & Civil Engineering doctoral programs for AU students and students from all Egypt, to graduate with degrees from both our institutions. We look forward to broadening the educational and cooperation programs with UAB to include also undergraduate programs, joint degrees, credit transfer, exchange of students in several other disciplines and currently we are effectively jointly working on that.

Expanding this UAB-AU scholarly partnership to develop joint research programs is a priority for us and this **International Workshop on Sustainable Smart Cities** is an important step towards such goal, and fostering cooperation with international funding scientific agencies. AU is pleased to have organized and catered for all the scientific Egyptian contributions to this international workshop.

The importance of **Sustainable Smart Cities** is profound, especially in a time where Egypt is in the process of establishing several new smart cities and also to improve the quality of life and services in existing cities.

We thank and welcome the organizing entities especially University of Alabama at Birmingham (UAB) and NSF, the steering committee and all contributing and sponsoring universities, researchers, keynote speakers, technical papers presenters and the leaders and panelists, and all contributors for all their precious time and efforts. We look forward towards a successful event with sustainable outcomes.

We hope that you enjoy your visit and discover the beauty of our country and have an enjoyable trip.





SUSTAINABLE SMART CITIES INTERNATIONAL WORKSHOP

Alexandria, Egypt | May 9 – 11, 2017

Welcome message from the President of the
Arab Academy for Science, Technology & Maritime Transport



Prof. Dr. Ismail Abdel Ghafar Ismail Farag

President
Arab Academy for
Science, Technology &
Maritime Transport
(AASTMT)
EGYPT

It is my honor to welcome you to the city of Alexandria, and to the Arab Academy for Science, Technology and Maritime Transport (AASTMT). Since its inception in 1972, AASTMT has fostered a highly professional environment of advancing knowledge, developing human potential, and breaking new academic ground on improving the lives of communities in the Arab world and beyond.

Our affiliation with the University of Alabama at Birmingham (UAB) School of Engineering spans almost a decade. Through our longstanding partnership, UAB offers our students access to graduate and postgraduate education in five engineering disciplines: biomedical, civil, electrical, materials, and mechanical. This has been a very important collaboration for our institutions and our community.

We look forward to broadening the UAB-AASTMT training and research portfolio with an emphasis on sustainable urban development and smart, resilient cities. We are pleased to support the NSF Sustainable Smart Cities International Workshop and the formation of the Sustainable Smart Cities International Consortium in pursuit of this goal.

Thank you for your visit!



الأكاديمية العربية للعلوم والتكنولوجيا والنقل البحري

Arab Academy for Science, Technology & Maritime Transport

Ismail Serageldin, PhD

Founding Director, Bibliotheca Alexandrina



Dr. Ismail Serageldin is the Founding Director of the Bibliotheca Alexandrina (BA), the new Library of Alexandria, inaugurated in 2002. He also chairs the Boards of Directors for each of the BA's affiliated research institutes and museums. He is advisor to the Egyptian Prime Minister in matters concerning culture, science and museums. He serves as Chair or Member of a number of advisory committees for academic, research, scientific and international institutions and civil society efforts, including as co-Chair of the Nizami Ganjavi International Center (NGIC), and serves on the Advisory Committee of the World Social Science Report for 2013 and 2016, as well as the UNESCO-supported World Water Scenarios (2013) and the executive council of the Encyclopedia of Life (2010) and Chairs the Executive Council of the World Digital Library (2010). Serageldin is a member in the National Academy of Sciences (NAS) and the National Academy of Medicine's (NAM) Committee studying Human Gene Editing: Scientific, Medical and Ethical Considerations. He also co-chaired the African Union's high level panel for Biotechnology (2006) and again for Science, Technology and Innovation (STI) in 2012-2013, and was a member of the ICANN Panel for the review of the internet future (2013).

He notably co-chaired the Inter-Academy Panel on Capacity Building for Science and was a member of the High Level group for the Alliance of Civilizations convened by the Secretary General of the United Nations (2006-2007). He has held many important international positions, including Vice President of the World Bank, and Chairman Consultative Group on International Agricultural Research (CGIAR), founder and former Chairman of the Global Water Partnership (GWP) and the Consultative Group to Assist the Poorest (CGAP), a microfinance program and was professor of the International Savoirs Contre Pauvreté (Knowledge Against Poverty), at Collège de France, Paris, and distinguished professor at Wageningen University in the Netherlands.

He has received the Order of the Rising Sun from Japan and the Legion d'Honneur from France and is a Commandeur of Arts and Letters of the French Republic. In 2013, Serageldin and the Bibliotheca Alexandrina received the Calouste Gulbenkian International Prize for thoughts and actions that make a decisive contribution to, and have significant impact on understanding, defending and fostering the universal values of respect for diversity and difference, a culture of tolerance and the conservation of the environment. He has also received the Pablo Neruda Medal from Chile, India's Bajaj Prize for upholding Gandhian values outside India, and was the first recipient of the Grameen Prize for lifelong efforts to fight poverty.

Serageldin has published over 100 books and monographs and over 500 papers on a variety of topics, including biotechnology, rural development, sustainability, and the value of science to society. He holds a Bachelor of Science Degree in Engineering from Cairo University and a Master's Degree and a Ph.D. from Harvard University and has received 35 honorary doctorates.



SUSTAINABLE SMART CITIES INTERNATIONAL WORKSHOP

Alexandria, Egypt | May 9 – 11, 2017

Steering Committee



J. Iwan Alexander, PhD
Dean
School of Engineering
University of Alabama at Birmingham
USA



Abdel Aziz Konsowa, PhD
Dean
Faculty of Engineering
Alexandria University
EGYPT



Lara Campbell, PhD
Program Director
National Science Foundation (NSF)
USA



Patricia J. Culligan, PhD
Professor
Civil Engineering & Engineering
Mechanics
Columbia University
USA



Nasser Darwish, PhD
Professor, Civil and Structural
Engineering Department
Alexandria University
EGYPT



Amr Elhelw, PhD
Director of International Agreements and
Cooperation Unit (IACU)
Arab Academy for Science, Technology
& Maritime Transport
EGYPT



Fouad H. Fouad, PhD
Professor and Chair
Department of Civil, Construction, and
Environmental Engineering
University of Alabama at Birmingham
USA



Mona N. Fouad, MD, MPH
Professor & Director
Division of Preventive Medicine
School of Medicine
University of Alabama at Birmingham
USA



Amr A. Hassan, PhD
Dean, College of Engineering &
Technology
Arab Academy for Science, Technology
and Maritime Transport
EGYPT



Maria C. Noreña
Associate Center Director
Sustainable Smart Cities Research Center
University of Alabama at Birmingham
USA



Robert W. Peters, PhD
Professor Department of Civil,
Construction and Environmental
Engineering
University of Alabama at Birmingham
USA



Paula Alvarez Pino
Program Director I
Sustainable Smart Cities Research Center
University of Alabama at Birmingham
USA



Anu Ramaswami, PhD
Charles M. Denny, Jr., Chair in Science,
Technology, and Environmental Policy
University of Minnesota
USA



Armistead G. Russell, PhD
Howard T. Tellepsen Chair & Regents'
Professor Environmental Engineering
Georgia Tech
USA



Andrew Sullivan, MSCE
Assistant Professor
Department of Civil, Construction and
Environmental Engineering
University of Alabama at Birmingham
USA



Thematic Areas

1. The Built Environment

***Transportation, Water Sustainability, Waste Management, Slum Upgrading,
Sources of Energy and Energy-efficient affordable housing***

This thematic area analyses all the physical structures engineered with the main purpose of improving the community's well-being by implementing construction of aesthetically, health improved, and environmentally enhanced landscapes and living structures. The infrastructure includes the basic physical and organizational structures necessary for the operations of society/enterprises and the services/facilities that keep the economy functional .

A sustainable and smart infrastructure is key in order to connect and integrate cities to better serve their citizens. Infrastructure design and construction of sustainable smart cities should allocate energy resources and take into consideration the impact on the natural environment. This thematic area will focus on the design, construction and planning techniques of infrastructure such as roads, bridges, water supply, sewers, landfills and other components that enable cities to function as a sustainable smart system.

2. Urban Economic Development

Wealth and Distribution, Labor, Welfare, Policies and Regulations

Economic development includes the process and policies by which a nation improves the economic, political, and social well-being of its people. This thematic area will investigate the elements needed for a sustainable smart city to have urban sustainable development and economic growth. The tools of economics will be applied to analyze different areas such as workforce development and employment, land use policy, business development and entrepreneurship, crime, public transit, housing, and local government finance.



Thematic Areas

3. Health and Quality of Life

Quality of life, Water and Air quality

The World Health Organization (WHO) defines quality of life as individuals' perception of their position in life in the context of the culture and value systems. These include their location in relation to goals, expectations, and concerns. This thematic area will focus on the direct impact that sustainable smart cities have on the individual's health and well-being by studying and analyzing the individual's physical health, psychological state, personal beliefs, social relationships and their relationship to salient features of their environment.

4. Social Sustainability

Social Equity, Diversity, Community Development and Education, Governance Structures

Social sustainability encompasses human rights, labor rights, and corporate governance. In common with environmental sustainability, social sustainability is the idea that future generations should have the same or greater access to social resources as the current generation, while there should also be equal access to social resources within the current generation. This thematic area will investigate how to make sustainable smart cities equitable, diverse, connected, educated and democratic.

5. Urban Informatics

Information Communication Technologies (ICT), Internet of Things (IoT)

Urban informatics refers to the study of people creating, applying and using information and communication technology and data in the context of cities and urban environments. It is a trans-disciplinary field of research and practice that draws on three broad domains: people, place and technology.



SUSTAINABLE SMART CITIES INTERNATIONAL WORKSHOP

Alexandria, Egypt | May 9 – 11, 2017

TUESDAY, MAY 9 – WORKSHOP DAY 1	
8:30 am – 9:30 am	Registration
9:30 am – 10:15 am	ORIENTATION AND WORKSHOP OBJECTIVES
	<p>Lara Campbell, PhD <i>Program Director, National Science Foundation, USA</i></p> <p>Nasser Darwish, PhD <i>Professor, Civil and Structural Engineering Department Alexandria University</i></p> <p>Fouad H. Fouad, PhD <i>Professor and Chair, Civil, Construction and Environmental Engineering at University of Alabama at Birmingham</i></p>
10:15 am - 10:45 pm	WELCOME AND OPENING REMARKS
	<p>Essam Elkordi, PhD <i>President, Alexandria University</i></p> <p>Ismail Abdel Ghafar, PhD <i>President, Arab Academy for Science, Technology & Maritime Transport</i></p> <p>Mohamed Sultan <i>Alexandria Governor</i></p>
10:45 am - 11:30 am	SPECIAL LECTURE
	<p>Hisham El-Sherif, PhD <i>Minister of Local Development</i></p>
11:30 am - 12:00 pm	Coffee Break
12:00 am – 12:45 pm	KEYNOTE ADDRESS
	<p>The Cities of Tomorrow</p> <p>Ismail Serageldin, PhD <i>Founding Director, Bibliotheca Alexandrina</i></p>



**SUSTAINABLE SMART CITIES
INTERNATIONAL WORKSHOP**
Alexandria, Egypt | May 9 – 11, 2017

TUESDAY, MAY 9 – WORKSHOP DAY 1	
	SESSIONS WORKSHOP DAY 1 BEGIN
12:45 pm - 1:15 pm	<p>PLENARY SESSION</p> <p>Creating Spaces of Exchange: A sustainable Model in View of the Alexandrian Experience <i>Mohamed Awad, PhD - Alexandria University (EGYPT)</i></p>
1:15 pm – 2:15 pm	THEME 1 - THE BUILT ENVIRONMENT AND INFRASTRUCTURE
	<p>Adaptation to Climate Change Impacts in Urban Environments: Use of Distributed Infrastructure as a Case Study <i>Patricia Culligan, PhD - Columbia University (USA)</i></p> <p>Smart Sustainable Cities - Broad Notions and Local Concerns <i>Hassan Abd El Salam, PhD - Alexandria University (EGYPT)</i></p> <p>Smart Infrastructure - Backbone of Sustainable Smart Cities <i>Burcu Akinci, PhD - Carnegie Mellon University (USA)</i></p> <p>Urban Interactions and Future Mobility <i>Doris Tarchopolus, PhD - Pontificia Universidad Javeriana (COLOMBIA)</i></p>
2:15 pm – 3:15 pm	Lunch (ticket holders only)
3:15 pm – 4:15 pm	THEME 2 – URBAN ECONOMIC DEVELOPMENT
	<p>The City of Columbus -Transformative Public-Private Partnerships <i>Michael B. Coleman, JD - Former Mayor Columbus, Ohio (USA)</i></p> <p>Community Development for the City of Birmingham, Alabama <i>John G. Colón - City of Birmingham, Alabama (USA)</i></p> <p>Sustainability in Birmingham - Alabama's Largest City <i>Sherri Nielson, MBA - City of Birmingham, Alabama (USA)</i></p> <p>Human Resource Development for Sustainable Economy <i>Ismail Gomaa, PhD - Alexandria University (EGYPT)</i></p> <p>Training the Smart City Workforce: A Multi-Discipline Masters Programme in Sustainable Smart Cities <i>Janet Wright, PhD – Staffordshire University (UK)</i></p>



**SUSTAINABLE SMART CITIES
INTERNATIONAL WORKSHOP**
Alexandria, Egypt | May 9 – 11, 2017

TUESDAY, MAY 9 – WORKSHOP DAY 1	
4:15 pm – 5:15 pm	THEME 3 - HEALTH AND QUALITY OF LIFE
	<p>Making Cities Healthier: Infrastructure and Air Quality <i>Ted Russell, PhD - Georgia Institute of Technology (USA)</i></p> <p>Sustainable Smart Cities and Health Implications <i>Fahmy Charl Fahmy, PhD - Alexandria University (EGYPT)</i></p> <p>Long Term Urban Sustainability Planning: Lessons on Integrative Inclusive Design and Governance, Equity, and Data in New York City <i>Nilda Mesa, JD - Columbia University (USA)</i></p> <p>City Information Modeling (CIM) Towards Smart Egyptian Cities <i>Adel Samy Menchawy, PhD - Arab Academy for Science, Technology & Maritime Transport (EGYPT)</i></p>
5:15 pm – 5:30 pm	CLOSING REMARKS DAY 1 <i>Fouad H. Fouad, PhD – University of Alabama at Birmingham (USA)</i>



**SUSTAINABLE SMART CITIES
INTERNATIONAL WORKSHOP**
Alexandria, Egypt | May 9 – 11, 2017

WEDNESDAY, MAY 10 – WORKSHOP DAY 2	
8:30 am – 9:00 am	Registration
9:00 am – 9:15 am	Welcome Day 2 <i>Amr Hassan, PhD - AASTMT (EGYPT)</i>
9:15 am – 10:15 pm	THEME 4 - SOCIAL SUSTAINABILITY
	<p>Smart Sustainable, Healthy and Equitable Cities: What are they? How do we get there? <i>Anu Ramaswami, PhD – University of Minnesota (USA)</i></p> <p>Attaining Social and Economic Sustainable Cities’ Strategic Planning <i>Doaa El Sherif, PhD - Housing & Building National Research Council (EGYPT)</i></p> <p>Participatory Governance and Its Challenges for Smart Communities <i>Nicole Peterson, PhD - University of North Carolina, Charlotte (USA)</i></p> <p>Human Rights and the City: Including Marginalized Communities in Smart Cities <i>Tina Reuter, PhD - University of Alabama at Birmingham (USA)</i></p>
10:15 am – 11:15 am	THEME 5 - URBAN INFORMATICS
	<p>Data Infrastructure for Smart Cities <i>Adel Elmaghraby, PhD - University of Louisville, Kentucky (USA)</i></p> <p>Internet of Things (IoT) for Smart Cities <i>Moustafa El Neanai, PhD - Alexandria University (EGYPT)</i></p> <p>Urban Informatics: Harnessing Data to Understand Socio-Technical Dynamics in the Urban Built Environment <i>Rishee Jain, PhD - Stanford University (USA)</i></p> <p>Smart Cities Technology as a Platform to Re-engage with Citizens <i>Walaa Sheta, PhD - Borg El Arab Scientific Research City-Alexandria (EGYPT)</i></p> <p>The New Administrative Capital of Egypt - A Smart City <i>Fadel Digham, PhD - National Telecom Regulatory Authority NTRI (EGYPT)</i></p>
11:15 am – 11:30 am	Coffee Break



**SUSTAINABLE SMART CITIES
INTERNATIONAL WORKSHOP**
Alexandria, Egypt | May 9 – 11, 2017

WEDNESDAY, MAY 10 – WORKSHOP DAY 2	
11:30 am – 11:45 am	<p>TASK GROUP ORIENTATION <i>Fouad H. Fouad, PhD - University of Alabama at Birmingham (USA)</i> <i>M.Nasser Darwish, PhD - Alexandria University (EGYPT)</i></p>
11:45 am – 1:45 pm	TASK GROUPS WORKING SESSION – <i>Simultaneous Sessions</i>
	<p>THEME 1 – The Built Environment and Infrastructure <u>LEADERS:</u> <i>Hassan Abd El Salam, PhD - Alexandria University (EGYPT)</i> <i>Patricia Culligan, PhD - Columbia University (USA)</i></p> <p>THEME 2 – Urban Economic Development <u>LEADERS:</u> <i>Michael Coleman, JD - IceMiller Legal Counsel (USA)</i> <i>Ismail Gomaa, PhD - Alexandria University (EGYPT)</i></p> <p>THEME 3 – Health and Quality of Life <u>LEADERS:</u> <i>Fahmy Charl Fahmy, PhD - Alexandria University (EGYPT)</i> <i>Ted Russell, PhD- Georgia Institute of Technology (USA)</i></p> <p>THEME 4 – Social Sustainability <u>LEADERS:</u> <i>Doaa El Sherif, PhD -Housing & Building National Research Center (EGYPT)</i> <i>Anu Ramaswami, PhD - University of Minnesota (USA)</i></p> <p>THEME 5 - Urban Informatics <u>LEADERS:</u> <i>Adel Elmaghraby, PhD - University of Louisville (USA)</i> <i>Moustafa El Naenai, PhD - Alexandria University (EGYPT)</i></p>
1:45 pm - 3:00 pm	Lunch (ticket holders only)
3:00 pm - 4:30 pm	TASK GROUPS REPORTS - <i>Plenary Session</i>
4:30 pm - 4:45 pm	<p>CLOSING REMARKS <i>Fouad H. Fouad, PhD - University of Alabama at Birmingham (USA)</i></p>



SUSTAINABLE SMART CITIES INTERNATIONAL WORKSHOP

Alexandria, Egypt | May 9 – 11, 2017

THURSDAY, MAY 11 - WORKSHOP DAY 3 (Closed Session)

8:30 am – 9:00 am	WORKSHOP SUMMARY <i>Amr Elhelw, PhD - AASTMT (EGYPT)</i> <i>Fouad H. Fouad, PhD - University of Alabama at Birmingham (USA)</i>
9:00 am – 11:00 pm	U.S. AND EGYPT TEAMS – WORKING SESSION <ul style="list-style-type: none">• Review and Prioritize Task Groups Summaries• Discuss Future Collaboration Opportunities
11:00 am - 11:30 pm	Coffee Break
11:30 pm - 1:00 pm	<ul style="list-style-type: none">• NSF Workshop Report• Workshop Assessment• Next Steps
1:00 pm – 1:30 pm	CLOSING REMARKS FINAL DAY <i>M.Nasser Darwish, PhD - Alexandria University (EGYPT)</i> <i>Fouad H. Fouad, PhD - University of Alabama at Birmingham (USA)</i>
1:30 pm – 3:00 pm	Lunch. Meeting Adjourn



Prof. Dr. Essam A. Elkordi, President of Alexandria University



Dr. Essam A. Elkordi is Professor of Structural Analysis, Faculty of Engineering - Alexandria University (AU), and holds a PhD from Northeastern University, Boston, MA, USA (1992) and BSc and MSc from AU, all in Civil Engineering.

He has held several administrative positions including: V. President, Community Service & Environment Development for AU; Consul & Director, Cultural & Educational Affairs, Consulate General of Egypt, Montreal, Canada; Supervising Cultural & Educational Affairs Office, Embassy of Egypt, Washington, USA; Secretary-General, Education Development Fund, Egyptian Cabinet of Ministers; Dean, Faculty of Engineering AU; Executive Manager, Projects Management Unit AU; Acting Chairman, Civil Eng. Dept. - Faculty of Eng.- Beirut Arab Univ., Lebanon; Head of Project to establish a new Women's Hospital, university blood bank & the new SMOUHA' University Hospital in collaboration with Ministry of Finance & World Bank, Private Public Partnership Program (PPP Program).

His past academic and administrative experience includes: Member of Supreme Committee for Evaluation the Performance of Cultural Consul & attaché abroad; Member of Scientific Research Committee; expert member of committee of fall-prone buildings grievances; Member of Committee for Evaluation the Performance of Higher Engineering Institutions; Member of Board of Trustees of E-Learning University, and Egyptian-Japanese University for Science & Technology; Member of Engineering Sector Committee of Supreme Council of Universities; a number of educational development projects, Ministry of Higher Education, TEMPUS projects such as: Member of TEMPUS project "Exchanging Experience Focusing on BOLOGNA Process at AU in EGYPT", expert member of the committee of the fall-prone buildings; and Member of the Egyptian Concrete Society.

Dr.ElKordi has participated in establishing several international agreements, projects, and partnerships, including with the:

German Development Bank to finance the construction and processing of the Integrated Technology Education Cluster (ITEC) in Assiut City; KOICA to finance Korean processing of the integrated Technology Education Cluster (ITEC) in Ramadan City; French government (French Cultural Center) to finance and provide training through the French Language Curriculum; Italian government to fund and provide technical support for its Integrated Technology Education Cluster (ITEC) in Fayoum City; VT-MENA program, which facilitates PhD students from all over Egypt to complete coursework in Alexandria University and Virginia Tech.

In addition, Dr. Elkordi is a registered Engineering Structural consultant with vast experience. He has participated in projects like the renovation & development of: Alexandria harbor with the Alexandria Harbor Authority; the Red Sea harbors, the main railway station of Cairo City, and the Sidi Gaber Railway Station of Alexandria City; and government buildings in Elnobarria city.



His Excellency Prof. Dr. Ismail Abdel Ghafar Ismail Farag



According to the decision of the General Assembly of the League of Arab States, His Excellency Prof. Dr. Ismail Abdel Ghafar Ismail Farag took office as the President of the Arab Academy for Science, Technology and Maritime Transport (AASTMT) on 25.10.2011- till present.

In recognition to the international community of his leading and pioneering role in the region, he was selected as A Member of the Board Council of the World Maritime University (WMU), Malmo, Related To International Maritime Organization (IMO), The Head of the League of Arab States official Delegation, IMO Council, (United Nation), London, UK, The Head of the Technical committee for Developing Maritime Education, IMO, (United Nation), London, UK.

He is A Member of the board Council of Arab Ministers of Transportation, Member of the Board Council of Arab Ministers of Economics, League of Arab States.

He is leading The President of the Board, Port Academy for Maritime and Technical Studies at Dammam in Saudi Arabia, The President of the Board, The Regional Center for Studies and Training in the Port of Port Sudan, The Chief Executive of the Research and Consultation Center of the Maritime Transport Sector, the Chief Executive of the Port Training Institute. He is also the Team Leader of committee responsible for implementing decisions of the Arab Economic summit related to the Arab maritime link project States.

Moreover, he is the President of the Industrial Advisory Council of International Transport and Logistics. Prof. Ismail is the President of the International Maritime Transport Forum. Prof. Dr. Ismail is also The President of the Board Integrated Solution Company, Member of the Board of the holding company for Maritime & Road Transport Prof. Ismail is a member of several professional associations, most important of which is membership of the The International Association of Maritime University (IAMU) , International Association of Universities (IAU), Association of Arab Universities (AARU) .

Prof. Dr. Ismail is a professor of electrical and computer engineering, he has acquired his PhD Degree in Electrical Engineering in 1989 from George Washington University, USA , Master Degree in Electrical Engineering in 1982 from Cairo university , Bachelor degree of Electrical Engineering (Computer Department) , Excellent with Honour , from the Military Technical College (MTC) in 1978 . He served as the Director & Dean of the Egyptian Military Technical School (MTC), 2009- 2011.

He also supervised and discussed many Master's and Ph.D. theses in Egyptian, Arab and foreign universities, such as: Ain Shams University, Cairo University, American University in Cairo, and Arab Academy for Science and Technology& Maritime Transport. He has many published scientific papers in specialized journals and international conferences.



SUSTAINABLE SMART CITIES INTERNATIONAL WORKSHOP

Alexandria, Egypt | May 9 – 11, 2017



Hassan Abdel-Salam, PhD (EGYPT)

*Professor of Architecture & Urban Planning, Architecture Engineering Department,
Alexandria University*

Dr. Abdel-Salam is Former Dean of the Faculty of Architectural Engineering at Beirut Arab University. He teaches several courses of Architectural Design, Theory of Architecture, Criticism, Urban Planning, Theory of Housing, Design Economics and Sustainability, and participates in several Academic Development and Quality Assurance programs. He also holds positions as academic consultant, advisor, and external-examiner at other universities / institutions in Egypt and Lebanon, developing a broad experience in the field of education of Architecture, Urbanism, and Environmental Sustainability. Recently, he has been involved in the review of academic curricula and standards of educational programs, in several departments of Architecture locally and regionally, and has taken part in Report Group Visits for International Validation by UNESCO-UIA. He is engaged in focused research with particular interest in Contemporary Architectural Trends, Environmentalism, Local Identity, Directions in Planning, and Contextualism. In addition, he is actively involved in scientific publishing, including editing and reviewing of research articles, through his role as member of the Editorial Board of *Urban Design International* (Palgrave MacMillan, UK), and scientific reviewer/referee for several conferences and journals: *Alexandria Engineering Journal* (Alexandria University, Egy.), *Architecture and Planning Journal* (Beirut Arab University, Leb.), *Renewable Energy and Sustainable Development Journal* (Arab Academy for Science and Technology, Egy.) .



Mohamed Awad, PhD (EGYPT)

Department of Architecture, Faculty of Engineering, Alexandria University

Dr. Awad is Architect, lecturer in the Department of Architecture at Alexandria University. He has a PhD in Architecture from Alexandria University and University College of London (UCL). He is Principal of AWAD Associates, a family firm in practice since 1911. Dr. Awad is an Urban & Architectural Historian specialized in Alexandrian Modern History. Author of several publications on the Alexandrian Built Environment. For his work in architectural and urban conservationism, he is considered as “The Defender of Alexandria’s Architectural and Urban Heritage”. He is a Member of the Board of the Archeological Society of Alexandria; Founder and Principal of the Alexandria Preservation Trust, and Founding member of the NGO-Friends of the Environment.

Dr. Awad is former Director of the Alexandria & Mediterranean Research Center, Bibliotheca Alexandrina, and former member of the Architectural Committee of the Supreme Council of Culture, and Member of the Board of Alexandria Innovation Center.

He is consultant to Bibliotheca Alexandrina since 2013, and is founder and owner of a permanent exhibition -The Awad Collection at the Bibliotheca Alexandrina since 2002.

He is author of several publications and editor of international architectural journals.

He has received prestigious medals and prizes, among them Knighthood Order of Officer by the Greek President and the Greek Ministry of Foreign Affairs (2015); Academy of Athens, Arts Distinction Award (2013), and the Hassan Fathi Award for Architecture, by the Bibliotheca Alexandrina and the Supreme Council of Culture (2010).



SUSTAINABLE SMART CITIES INTERNATIONAL WORKSHOP

Alexandria, Egypt | May 9 – 11, 2017



Nasser Darwish, PhD (EGYPT)

Professor, Civil and Structural Engineering Department, Alexandria University

Dr. Darwish holds a PhD in Civil & Environmental Engineering from Cornell Univ., NY, USA, and BSc & MSc in Civil Eng. from AU. He is a former Vice Dean Faculty of Engineering AU. He has certifications in Professional Consulting Engineer; Structural Expert; Registered Arbitrator; Real Estate Appraiser; and Expert at Economic Courts of Law. He is a Fellow of the American Concrete Institute (ACI, USA); Founder & Chairman of ACI Egypt Chapter; and Board Member & General Secretary Egyptian Concrete Association. He is considered a national and international expert in structural engineering, repair and renovation, as well as an authority in engineering and construction contracts arbitration. Dr. Darwish has performed and conducted the design, consultation and monitoring for most types of civil engineering projects in Egypt. He has investigated several major national building failures, and major projects and contracts disputes. *Dr. Darwish* initiated and coordinated several scientific and cultural agreements between AU and renowned US universities, including the University of Alabama at Birmingham (UAB). He has lead several scientific committees, and is frequently invited as keynote speaker for international conferences. *Dr. Darwish* is a Member of the Permanent Egyptian Concrete Code Committee; Permanent Egyptian Code for Advanced Composite Materials in Infrastructures; Code subcommittee for Bridges; Chairman subcommittee for FRP for Masonry Buildings. He is also a Member of ACI-325 Concrete Pavements; Egyptian delegate to ISO TC/75 2009, and leads the Egyptian side for TC/75 SC8 Environmental Management of Concrete Structures. He was selected by ISO International to evaluate international building codes. He has served as a Member of: the Egyptian Council of Engineering Sciences; the Egyptian Academy of Scientific Research; Standing Real Estate Appraisal Standards Committee; Board Supreme Council of Egyptian Syndicate of Engineers.



Fahmy Charl Fahmy, PhD (EGYPT)

Professor and Vice Dean, High Institution of Public Health, Alexandria University

Doctor Charl Fahmy is Professor of Occupational Health and Industrial Medicine and Coordinator of the Working Group of HIPH on Non-Communicable Disease Prevention. Medically Graduated, MBChB, with a Diploma in Cardiology and Angiology, Faculty of Medicine Alexandria University. He holds Master's and Doctoral Degrees in Public Health (PHD) majoring in Occupational Medicine. His doctoral dissertation "Occupational Cardiology - Section of Preventive Cardiology" was developed through a collaboration with the High Institute of Public Health, Alexandria University and Faculty of Medicine, Gothenburg University, Sweden. He has many articles and papers in national and international periodicals concerning workers' health, pollution risk for community and its health effects, and individual versus population risk control for cardiovascular diseases. He supervised many Master and Doctor theses in areas of occupational health, environmental hazards control, preventive cardiology, and healthy communities. He is acting consultant for the WHO, Military medical Academy, Health Insurance and other institutions in Public Health, Occupational Medicine and Preventive Cardiology. He presented many pieces of scientific work in different National and International Conferences concerning public health and green sustainable cities.



Fadel Digham, PhD (EGYPT)
Executive Director of Research & Development
National Telecom Regulatory Authority NTRI

Dr Fadel Digham is the Executive Director of R&D at the National Telecom Regulatory of Egypt (NTRA). He worked for the industry on the past at Alcatel installing the first mobile network in Egypt in 1996, and worked with Mitsubishi research labs in 2003. He was also affiliated with the University of Minnesota in 2005-2006 as a postdoctoral researcher and instructor. He got his PhD in Electrical Engineering from the university of Minnesota, USA in 2005 and his BSc from Cairo university in 1995.



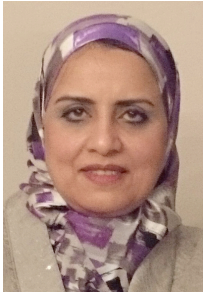
Amr M. Elhelw, PhD (EGYPT)
Director of International Agreements & Cooperation Unit (IACU)
Arab Academy for Science, Technology & Maritime Transport

Dr. Elhelw received his Ph.D. degree from Staffordshire University, Faculty of Engineering and technology, UK. He was awarded B.Sc and M.Sc degrees from Arab Academy of Science, Technology Maritime Transport, Collage of Engineering and Technology, Egypt. During his early career he worked as a Researcher and Part Time Lecturer at Staffordshire University. He was granted Gradex 2007 Award for the Best Research Done in 2007 from Staffordshire University. His research work is mainly focused on telecommunication, digital signal processing, artificial intelligence, pattern recognition, and video and image processing. He is particularly interested in developing new techniques and carrying out high quality research to emphasize real-world applications. He held the university position of quality assurance coordinator and is currently the Director of International Agreements & Cooperation.



Adel Samy El Menchawy, PhD (EGYPT)
Head of Architecture, Engineering and Environmental Design Department
Arab Academy for Science Technology and Maritime Transport

Dr. El Menchawy is Professor of Architecture, Urban Design and Planning since 2009. He holds a PhD in Architecture from Alexandria University and completed graduate studies in Architecture in Arizona State University (USA) and Alexandria University. He has diplomas in Architecture and Egyptian Architecture from Alexandria University and from Cairo University, respectively. He has been a guest lecturer at University of Western Australia (Perth); Macquarie University (Sydney); Universidad de Valladolid, Spain; Beirut Arab University, and Alexandria University. Since 2015, Dr. El Menchawy serves as President Assistant for Architectural Affairs at AASTMT.



Doaa El-Sherif, PhD (EGYPT)

Professor of Environmental Planning & Urban Management, Urban Training & Studies Institute, Housing & Building National Research Center (HBRC)

Prof. El-Sherif is an environmental management, urban planning, institutional development, training and capacity building specialist with over 32 years of academic, and professional experience. She is a Professor at the Architecture & Housing Department of the HBRC; of the Ministry of Housing, Utilities & Urban Development of Egypt. Currently she is the Executive Director for Training and International Co-operation of the Urban Training Institute “UTI”, affiliated to HBRC. In addition, she is the General Supervisor of the “Building Codes Training Department” of HBRC. Prof. El-Sherif also is a member of the Technical Secretariat of the Egyptian Green Building Council (GBC). Internationally, Prof. El-Sherif is working as a trainer & consultant for the UN-Habitat. She is also chairing the Egypt organization committee of the Urbenviron International Council “UIC”; an international entity focusing on urban environmental planning & management located in Brazil. She has been consulted for projects executed by international organizations such as Danida, GIZ, Dutch institutes, UNDP and UN-HABITAT.

As a capacity building & institutional development specialist; she has designed capacity building plans and institutional development proposals for a number of Governmental Organizations in Egypt and different Arab countries. She also advises public and private entities, NGOs, CBOs and international organizations. As a researcher; Prof. El-Sherif has authored and co-authored a number of published books and researches, several articles and training manuals, and has coordinated many international and national conferences and seminars. As an urban planner; she is the Team Leader preparing the "Egypt National Urban Sector Profile" by UN-Habitat. She has been also the team leader of the “Rural Strategic Plans” for a number of Egyptian villages within a project by HBRC and the General Organization for Physical Planning (GOPP). In addition, she is the Team Leader of the preparation of Strategic Urban Plans for a number of Small Egyptian Cities within a project by GOPP & UN-HABITAT.



Moustafa El Neanai, PhD (EGYPT)

Associate Professor, Computer Engineering Department, Faculty of Engineering Alexandria University

Dr. El Neanai is also the associate director of the Virginia Tech-Middle East and North Africa (VT-MENA) program for administration and research and adjunct faculty at Virginia Tech. He received his B.Sc. and M.Sc. in Computer Science from Alexandria University in 2001 and 2005 respectively and his Ph.D. in Computer Engineering from Virginia Tech in 2009. His research interests include wireless and mobile networks, cognitive radio and cognitive networks, and software testing automation and optimization. He is the receipt of ICDT best paper award. He is a member of IEEE and served as a reviewer for various international conferences.



SUSTAINABLE SMART CITIES INTERNATIONAL WORKSHOP

Alexandria, Egypt | May 9 – 11, 2017



Khalid El-Zahaby, PhD (EGYPT)

Chairman of the Housing & Building National Research Center (HBRC) subordinate to the Ministry of Housing, Utilities & Urban Communities

Dr. El-Zahaby is also the chairman of the Metropolis® regional branch as well the Chairman of Urban Training institute (UTI). He is the Vice-Chairman of the Egyptian Green Building council. He started as a research assistant and progressed to be a professor of geotechnical engineering then Vice Chairman of HBRC before being nominated for the post of the Chairman. He obtained his B.Sc. and M.Sc. from Cairo University, Egypt and his Ph.D. from North Carolina State University, USA.

He authored and co-authored 36 research papers published in national and international journals and/or conferences. He chaired several international conferences and presented invited keynote lectures in several countries. Moreover, Prof. El Zahaby supervised tens of theses and refereed tens of M.Sc, Ph.D. and scientific papers. He is also a member on several regional and international organizations. In his capacity as a researcher at HBRC or being a geotechnical consultant, Prof. El Zahaby prepared more than 2000 geotechnical studies in Egypt and some Arab countries including geotechnical reports, side supporting systems, dewatering, etc.



Ismail Gomaa, PhD (EGYPT)

*Professor of Accounting & Former Dean, Faculty of Commerce
Alexandria University*

Dr. Gomaa received his PhD. in accounting from the University of Florida and served as a faculty member at the University of Florida, and the Ohio State University, where he was recognized for teaching excellence. He also received the Alexandria University Award of Excellence and Taha Hussein Award for Pioneer Work.

Dr. Gomaa is currently a member of the Higher Coordinating Committee of Education Sectors, and the Chairman of e-Learning Committee at the Supreme Council of Universities. He served also as the Secretary General of the Business Education Sector at the Supreme Council of Universities in Egypt. Dr. Gomaa held positions as the Chairman of the Department of Accounting, Chairman of the Department of Information and Computer Systems, Chairman of the Board of Directors of the Institute of Accounting Studies, and a member of the Board of Directors of the Institute of Statistics and Insurance Studies at the faculty of Commerce, Alexandria University.

Dr. Gomaa held a diplomatic position as the Counselor for Cultural and Educational Affairs of Egypt in Canada, and served as the Executive Director of the Distance Learning Project at the Ministry of Higher Education. He served also as a member of the Education Committee of the American Accounting Association's International Accounting Section, and the Administrative Sciences Committee of the Supreme Council of Culture in Egypt.



Amr A. Mohamed Hassan, PhD (EGYPT)

*Dean, College of Engineering & Technology
Arab Academy for Science, Technology & Maritime Transport (AASTMT)*

Dr. Hassan holds a PhD in Computational Fluid Dynamics from University of Nottingham, UK; a Masters in Mechanical Engineering from Alexandria University, and Bachelors in Marine Engineering from the Arab Academy for Science, Technology & Maritime Transport. He was appointed Dean in the College of Engineering & Technology at AASTMT in 2015. His fields of interest are computational fluid dynamics, heat transfer and refrigeration. He has several scientific publications and co-leads a research center for computational neurovascular mechanics at AASTMT.



Rania Hedeya (EGYPT)

Programme Manager for UN-HABITAT Egypt

Rania Hedeya is an experienced executive leading several international projects in Egypt for the United Nations Human Settlements Programme (UN-HABITAT), among them: "Strengthening Development, Planning and Management in Greater Cairo"; the "Urban Mobility in Egypt: Planning, Lived Realities and Innovative Approaches"; and "Egypt Urban Forum" where she moderated the Plenary Session "Egypt's National Urban Vision-National Strategic Plan for Egypt 2052", The new "Egypt National Urban Policy" and a number of Urban Development initiatives and interventions under the framework of the UN-HABITAT country programme.



Mohamed Mehaina, PhD (EGYPT)

*Deputy Director of the Alexandria-Mediterranean Research Center (Alex-Med) at
Bibliotheca Alexandrina*

Mohamed Mehaina is an architect acquiring more than 15 years of academic knowledge and practical experiences related to GIS/RS applications in multi-disciplinary fields including regional/urban planning, heritage preservation, public health, oil and gas, climate change, and cartography. Graduated in 2001 from Faculty of Engineering, Alexandria University, where he also got his Master's degree in 2006, in the environmental planning field and in 2016, he achieved his Ph.D. in the field of regional planning with special emphasis on using composite indices and advanced spatial planning. Through his career, Dr Mehaina participated in extensive national and international strategic development projects related to governmental authorities and international entities like the UNDP, UNESCO and the UNHES. Currently he is a senior manager at Alex Med - Bibliotheca Alexandria in addition to being responsible for the GIS Diploma at the Arab Academy for Science, Technology and Maritime Transportation where he instructs GIS/RS training courses.



Walaa Sheta, PhD (EGYPT)

Dean, Informatics Research Institute, Borg El Arab City for Scientific Research Alexandria

Dr. Sheta is a professor of computer and informatics, Informatics Research Institute of the City of Scientific Research and Technology Applications (SARTACity) in Egypt, where he served as a faculty since 2001. He advised approximately 30 master's and Doctoral graduates. His research contribution and consulting spans the areas of cloud and high performance computing, 3D image processing, Human computer interaction. Professor Sheta co-chaired several international conferences sponsored by IEEE and with his research group published in top ranked peer-reviewed journals. He participated and led several national and multinational projects funded by NSF, European Commission and STDF. He completed his PhD from University of Alexandria in a frame of channel system with University of Manchester Institute of Science and Technology (UMIST), UK in 2001. He received M.Sc (1993) from Institute of graduate studies and research of university of Alexandria and B.Sc (1989) from faculty of science University of Alexandria. He is serving as adjunct professor at University of Louisville, USA and was a visiting professor at University of Salford, UK.



Khalid M. Yousri, PhD (EGYPT)

Vice-President of Housing & Building National Research Center (HBRC) and Vice-Chairman for Research & Studies Affairs at HBRC

Dr. Yousri is a Consultant Engineer with over than 25 years experience in the areas of concrete technology, construction materials, ready mixed concrete and construction methods. His expertise includes problem solving, testing and repair of different structures, rehabilitation and strengthening of corroded reinforced concrete structures, quality control & assurance, specifications, nondestructive evaluation, and research.

He is an author with numerous articles. His background as a researcher and builder provides a solid basis of technical and practical knowledge in the field of construction industry. Dr. Khalid is Author/co-author of tens of scientific papers and he is Supervised and refereed tens of Ph.D. and M.Sc. theses.



SUSTAINABLE SMART CITIES INTERNATIONAL WORKSHOP

Alexandria, Egypt | May 9 – 11, 2017

NSF TEAM



Burcu Akinci, PhD (USA)

*Professor of Civil & Environmental Engineering
Co-director of Pennsylvania Smarter Infrastructure Incubator at Carnegie Mellon University*

Dr. Akinci earned her BS in Civil Engineering (1991) from Middle East Technical University and her MBA (1993) from Bilkent University at Ankara, Turkey. After that, she earned her MS (1995) and her Ph.D. (2000) in Civil and Environmental Engineering with a specialization in Construction Engineering and Management from Stanford University.

Her research interests include development of approaches to model and reason about information rich histories of facilities, to streamline construction and facility management processes. She specifically focuses on investigating utilization and integration of building information models with data capture and tracking technologies, such as 3D imaging, embedded sensors and radio-frequency identification systems to capture semantically-rich as-built histories of construction projects and facility operations.

Dr. Akinci has one patent, two patent applications, over 60 referred journal publications, and 80 refereed conference publications. She co-edited a book on CAD/GIS Integration and another book on Embedded Commissioning. She has graduated more than 16 PhD students and 15 MS thesis students.



Lara Campbell, PhD (USA)

*Program Director in the Office of International Science and Engineering (OISE)
National Science Foundation (NSF)*

Dr. Campbell's regional portfolio is the Middle East and Africa. She also serves as the Program Director in charge of NSF's collaboration with USAID, especially on the Partnerships for Enhanced Engagement in Research (PEER) Program. She is OISE's representative on the cross-NSF working group on Innovations at the Nexus of Food, Energy and Water Systems (INFEWS), and serves as OISE's Liaison to the NSF Directorate for Engineering (ENG).

Prior to coming to NSF, Lara served as Director of the CUBRC Center for International Science and Technology Advancement, where she developed, managed and supported international cooperative research activities funded by USAID, the Department of State and the Department of Defense doing work in the Middle East as well as countries of the former Soviet Union and Russia. Lara is particularly interested in understanding the interrelationships that help connect research and education to entrepreneurship and from 2008-2009 she was a Fulbright Scholar conducting regional research on innovation development in the Middle East (in Kuwait, the United Arab Emirates, Qatar and Jordan). Prior to working for CUBRC, Lara was part of the Research Competitiveness Program at the American Association for the Advancement of Science where she led teams providing programmatic peer review advice and guidance on science and technology infrastructure improvement and capacity building in the U.S. Lara holds a BA in chemistry from Rice University in Houston, Texas and a PhD in synthetic organic chemistry and biochemistry from the University of Texas at Austin. She was an adjunct faculty member at the University of Texas at Austin and conducted postdoctoral research in the Lab of Biochemistry of the Heart, Lung and Blood Institute of the National Institutes of Health.



SUSTAINABLE SMART CITIES INTERNATIONAL WORKSHOP

Alexandria, Egypt | May 9 – 11, 2017

NSF TEAM



Emmeline Child, PhD (UK)

Researcher, The University of Northampton

Emmelie is a researcher with a background in fashion design. She completed a KTP with the Salvation Army Trading Company where she developed the upcycling label Emmeline 4 Re. Selling her collections in the UK and Europe, while establishing a sustainable boutique in London, Emmeline gained vital knowledge about the complexities of upcycling. The knowledge gained throughout this period has enabled her to become a pioneer in the field of upcycling. She has taught in the UK, India and Sri Lanka in the areas of sustainability, fashion and design. Emmeline's PhD, 'Scaling-Up Upcycling' aims to define new models for the commercial industry aiming to increase the levels of post consumer waste in reuse while reducing the amounts of textile waste sent to landfill. Using her tacit knowledge as central to her experience, gathering information from other micro pioneers to make recommendations to the high street and charity sector to increase rates of industrial recycling in the future.



Michael B. Coleman, JD (USA)

Former Mayor of Columbus, Ohio

Director of Business and Government Strategies at IceMiller Legal Counsel

He is a partner and member of Ice Miller's Public Affairs and Government Law, Internet of Things Groups, and serves as the firm's Director of Business and Government Strategies. Michael draws upon his experience as Mayor and Chief Executive Officer for the City of Columbus to guide clients through the challenges and opportunities of creating partnerships between business and government. As Mayor, Michael built Columbus' reputation as one of the best cities in the nation by building stronger, safer neighborhoods, creating jobs and maintaining a high quality of life. Columbus is the 15th largest city in the nation, the largest city in Ohio and the fastest growing city in the Midwest. Michael was the longest-serving mayor in Columbus history and the longest-serving incumbent African-American mayor among major U.S. cities.



John G. Colón (USA)

Director of the City of Birmingham's Community Development Department, Alabama

He has established several programmatic endeavors that resulted in decreased blighted, abandoned, and tax delinquent properties, as well as the adoption of a current property maintenance code, and an aggressive public education campaign focused on estate planning. This comprehensive initiative was recognized by the Harvard Kennedy School of Government and adopted by the Housing and Urban Development (HUD) regional office. He oversees federal program funding, and manages technical assistance efforts from private organizations, such as IBM. He helped identify \$27 million for special programs. He helped to strengthen relationships between the City of Birmingham and both, regional and federal entities, such as the University of Alabama at Birmingham, the department of Housing & Urban Development, and the Environmental Protection Agency. Mr. Colón attended the University of Alabama at Birmingham, and holds a certificate in Leadership and Governance from the Harvard School of Business.



SUSTAINABLE SMART CITIES INTERNATIONAL WORKSHOP

Alexandria, Egypt | May 9 – 11, 2017

NSF TEAM



Patricia J. Culligan, PhD (USA)

*The Robert, A. W. and Christine S. Carlton Professor of Civil Engineering
School of Engineering and Applied Science at Columbia University*

A leader in the field of water resources and urban sustainability, Patricia Culligan explores novel, interdisciplinary solutions to the challenges of urbanization, with a particular emphasis on the City of New York. Her research investigates the opportunities for green infrastructure, social networks, and advanced measurement and sensing technologies to improve urban water, energy, and environmental management. She is co-Director of a \$12 million research network sponsored by the National Science Foundation (NSF) to develop new models for urban infrastructure to make cities cleaner, healthier, and more enjoyable places to live. She is the founding associate director of Columbia University's Data Science Center and the co-Director of the Earth Institute's Urban Design Lab. In 2011, she was elected to the Board of Governors of the American Society of Civil Engineer's Geo-Institute. She is the author or co-author of more than 150 technical articles. Dr. Culligan received her M.Phil. and Ph.D. from the University of Cambridge.



Adel S. Elmaghraby, PhD (USA)

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

He has also held appointments at the Software Engineering Institute - Carnegie-Mellon University, the American University in Cairo and the University of Wisconsin-Madison. He advised approximately 60 master's graduates and 25 doctoral graduates. His research contributions and consulting spans the areas of: Intelligent Multimedia Systems, Cybersecurity, Smart Cities, e-Health, Medical imaging, Visualization, and Simulation. He is a well-published author (over 200 publications), a public speaker, member of editorial boards, and technical reviewer. He is a life senior member of the IEEE. He served as an elected ISCA Board member, as an Associate editor for ISCA Journal. As an active member of the IEEE-CS Technical Activities Board and chair of the emerging technologies initiatives.



SUSTAINABLE SMART CITIES INTERNATIONAL WORKSHOP

Alexandria, Egypt | May 9 – 11, 2017

NSF TEAM



Fouad H. Fouad, PhD, PE (USA)

*Professor and Chairman, Civil, Construction, and Environmental Engineering Department
The University of Alabama at Birmingham (UAB)
Director of the UAB Sustainable Smart Cities Research Center*

Dr. Fouad is a fellow of the American Concrete Institute (ACI) and the American Society of Civil Engineers (ASCE). His research interest is in the area of sustainable infrastructure design, maintenance, and rehabilitation with a focus on reinforced concrete and steel structures, as well as sustainable construction materials. He has published numerous technical papers in this field. He is well known for his work over the past 20 years in the area of highway sign and traffic signal supports, which culminated in the development of the current AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaries, and Traffic Signals. Dr. Fouad currently chairs the ASTM committee on Autoclaved Aerated Concrete, and PCI committee on Prestressed Concrete Poles. His research expertise in green materials and construction methods has a global perspective. He held three National Science Foundation (NSF) workshops in Cairo, Egypt (December 2007, March 2009, and June 2012) on Sustainable Green Building design and Construction. In 2012, Dr. Fouad established the Sustainable Smart Cities research center at UAB, the center has been active in different areas of research and education, and its annual symposia has attracted speakers and attendees from all over the world.



Rishree Jain, PhD (USA)

*Asst. Professor of Civil and Environmental Engineering
Director of the Urban Informatics Lab (UIL) at Stanford University*

Professor Jain's research focuses on the development of data-driven and socio-technical solutions to sustainability problems facing the urban built environment. His work lies at the intersection of civil engineering, data analytics and social science. Recently, his research has focused on understanding the socio-spatial dynamics of commercial building energy usage, conducting data-driven benchmarking and sustainability planning of urban buildings and characterizing the coupled dynamics of urban systems using data science and micro-experimentation. Rishree earned his BS in Civil & Environmental Engineering from the University of Texas at Austin and his MS/PhD from Columbia University as part of a joint a IGERT program between civil engineering and urban planning.



SUSTAINABLE SMART CITIES INTERNATIONAL WORKSHOP

Alexandria, Egypt | May 9 – 11, 2017

NSF TEAM



Nilda Mesa, JD (USA)

*Director of Urban Sustainability and Equity Planning
The Urban Design Lab at Columbia University's Earth Institute*

Most recently director of the New York City Mayor's Office of Sustainability, Mesa led **OneNYC**, the city's path-breaking long-term sustainability plan, overseeing environmental reviews and citywide policy development and implementation on such areas as energy, climate change, green building standards, recycling and the circular economy, environmental justice, air quality, water, parks and natural resources, and sustainable transportation.

Previously, Mesa served in the Clinton Administration in key environmental policy roles at the White House Council on Environmental Quality, the U.S. Air Force, and at the U.S. Environmental Protection Agency as counsel to the NAFTA Taskforce, where she led U.S. legal negotiations with Canada and Mexico and implemented legislation related to trade and the environment. Mesa began her career at the California Attorney General's Office enforcing toxic waste and natural resources laws. She has served on boards including the NYC Energy Efficiency Corporation, the Urban Green Council and Second Nature. She is a graduate of Harvard Law School and Northwestern University. She was born in Cuba, and has lived in Harlem since 2001.



Sherri Nielson (USA)

Director of Capital projects and special projects for the Mayor of Birmingham, Alabama

In her position with the City of Birmingham, she is currently managing over \$100 million of sustainability projects that include energy savings upgrades and developing infrastructure that contributes to Birmingham's Smart City goals. Sherri is a graduate of UAB with a B.S. in Management and an MBA.



Nicole Peterson, PhD (USA)

Associate Professor of Anthropology at UNC Charlotte

Dr. Peterson is an environmental and economic anthropologist who studies how communities respond to changes in resource availability and how to improve adaptation and resource management. After receiving her Ph.D. from UC San Diego for her work focusing on a Mexican marine protected area, she joined the Center for Research on Environmental Decisions at Columbia University to study decision-making under uncertainty, including climate change adaptation in Ethiopian and Argentinian agriculture. She is an Associate Professor of Anthropology at UNC Charlotte, and held a AAAS Science and Technology Policy Fellowship in 2015. Dr. Peterson now focuses on Charlotte area food security, and is part of the Integrated Network for Social Sustainability, a diverse and open community focused on the value of understanding social aspects of sustainability for planning and practice.



SUSTAINABLE SMART CITIES INTERNATIONAL WORKSHOP

Alexandria, Egypt | May 9 – 11, 2017

NSF TEAM



Anu Ramaswami, PhD (USA)

*The Charles M. Deny, Jr., Chair of Science, Technology, and Public Policy
Humphrey School of Public Affairs; and Professor in the Department of Bioproducts
and Biosystems Engineering at University of Minnesota*

Dr. Ramaswami is among the leading scholars on sustainable urban infrastructure and has seen her work adopted as policies and protocols for developing sustainable cities in the United States and internationally. Her research spans environmental modeling, environmental technologies, industrial ecology, sustainable infrastructure design, urban systems analysis, and integration of science and technology with policy and planning for real-world implementation in communities. She has developed novel interdisciplinary education programs and resources in these diverse areas. She is the lead author of a graduate-level textbook on integrated environmental modeling.

She earned her B.S. in chemical engineering from the Indian Institute of Technology–Madras, India, and her M.S. and PhD in civil and environmental engineering from Carnegie Mellon University in Pittsburgh. She serves as chair of the newly founded Sustainable Urban Systems section at the International Society of Industrial Ecology, and represents the United States in various international urban sustainability networks.



Tina Kempin Reuter, PhD (USA)

Director of the Institute for Human Rights, University of Alabama at Birmingham (UAB)

Dr. Kempin Reuter is Associate Professor in the Departments of Government and Anthropology specializing in human rights, peace studies, and international politics. Her research focuses on human rights with a particular emphasis on the struggle of vulnerable and marginalized populations, including minorities, persons with disabilities, refugees and migrants, women, children, the LGBTQ community, and people dealing with the consequences of poverty. She is also an expert on ethnic conflict and peace making with a geographical focus on Europe and the Middle East.

Dr. Kempin Reuter holds a PhD in International Relations and International Law and a MA in Contemporary History, Economics, and International Law from the University of Zurich, Switzerland. She is the author of numerous publications in her field and has been awarded multiple prizes and grants to expand her research and teaching.



Armistead (Ted) Russell, PhD (USA)

Professor of Civil and Environmental Engineering at Georgia Tech

Dr. Russell's research is aimed at better understanding the dynamics of air pollutants at urban and regional scales and assessing their impacts on health and the environment. He earned his M.S. and Ph.D. degrees in Mechanical Engineering at the California Institute of Technology, and his B.S. is from Washington State University. Dr. Russell was a member of EPA's Clean Air Science Advisory Committee (CASAC) and of the National Research Council's Board on Environmental Studies and Toxicology where he continues to serve on associated NRC committees. He previously served on the Health Effects Institute's Report Review Committee.



SUSTAINABLE SMART CITIES INTERNATIONAL WORKSHOP

Alexandria, Egypt | May 9 – 11, 2017

NSF TEAM



Doris Tarchopolus, PhD (COLOMBIA)

*Associate Professor and Director of the Master in Urban and Regional Planning
School of Architecture at Pontificia Universidad Javeriana*

Dr. Tarchopolus has an Urbanism and Extraordinary Ph.D. Award from the University Polytechnic of Catalonia, and Masters degree in Housing from the National Autonomous University of Mexico. Extensive experience in teaching, research and consulting in urban planning, housing, and urban growth forms in Colombia and several cities in Latin America. Presently she is in Bogotá, Colombia. She is a member of the Chapter Team led by Saskia Sassen in the frame of the International Panel of Social Progress IPSP. Also, she is part of the Seminar of the Global City Chair, lead by Saskia Sassen and Richard Sennet at *Fondation Maison des Sciences de l'Homme FMSH*.



Janet Wright, PhD (UK)

*Principal Lecturer and Academic Group Leader for Geography and the Environment at
Staffordshire University*

Dr. Wright is a member of the Faculty of Computing Engineering and Sciences Learning Teaching and Student Experience Committee; the Faculty of Computing Engineering and Sciences Scholarship Development Group; and the School of Sciences Management Team. Dr. Wright is responsible for managing the development and delivery of all the undergraduate and postgraduate awards delivered by the subject area as well as leading on curriculum design and development.

Dr. Wright is Co-Director of the Dual Master's in Sustainable Smart Cities offered by the University of Alabama at Birmingham (UAB) and Staffordshire University.



Marcus Dillavou (USA)

Co-Founder and Lead Software Engineer, Co-Founder Code for Birmingham

Co-founder at a technology startup in Birmingham, Alabama. He received his B.S. in Computer Science from the University of Alabama at Birmingham. Marcus's current interests revolve around augmented reality, civic hacking, open data, and smart cities. In his spare time, he is also the co-founder of Code for Birmingham, a civic hacktivist group, where he focuses on building software to help citizens connect with their community. He is currently working on his masters degree in Sustainable Smart Cities through the University of Alabama at Birmingham and Staffordshire University.



Robert Elliott, PhD (USA)

Post-doctoral Fellow, Columbia University's Earth Institute

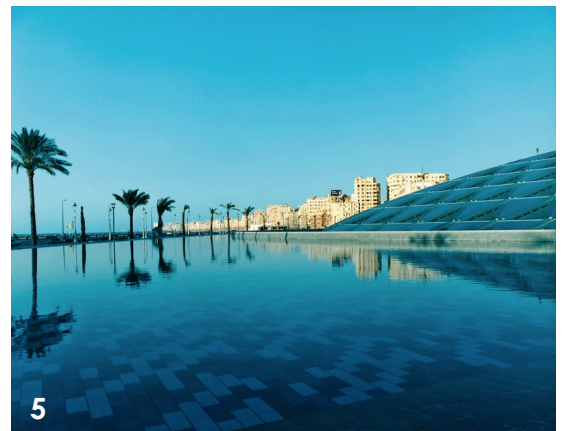
His research focuses on how to update contemporary infrastructure with eco-technical systems and apply engineering principles observed in living systems to develop more sustainable environments. Specifically, he works with an interdisciplinary team of scientists to focus on the ability of green infrastructure to improve urban health and livability while mitigating environmental pollution. Projects include designing next-generation green infrastructure components, measuring the efficacy of extant green infrastructure, and multi-scale modeling of various ecosystem services.



SUSTAINABLE SMART CITIES INTERNATIONAL WORKSHOP

Alexandria, Egypt | May 9 – 11, 2017

Alexandria Landmarks



1. **Ras el-Tin Palace** - summer escape for Egypt's sultans. Today used by Egyptian navy.
2. **Abu Abbas al-Mursi Mosque** - built in 1796 over the tomb of the 13th-century Sufi holy man.
3. **Fort Qaitbey** - built in 1480 was once the site of the mighty Pharos Lighthouse, one of seven wonders of the ancient world.
4. **Corniche** - Downtown Alexandria's wide waterfront road. Cecil Hotel and Windsor Palace Hotel.
5. **Bibliotheca Alexandrina** - cultural center, museums, libraries hold eight million volumes.



1075 Thirteenth Street South
Birmingham, Alabama 35294-4461, USA
ffouad@uab.edu
205.934.8431

Web
www.uab.edu/smartcities

Facebook and Twitter
<https://www.facebook.com/UABsmartcities>
<https://twitter.com/uabssc>



SUSTAINABLE SMART CITIES INTERNATIONAL WORKSHOP

Alexandria, Egypt | May 9 – 11, 2017

Organizers and Participating Entities



Sponsors

