

## **SAFAA ZAKARIA KARAKI ALDWAIK**

Ramallah, Palestine

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### **EXPERTISE**

**Geographic Information Science (GIS)**

**Coupled Human and Natural Systems**

**Quantitative Ecological Modeling**

**Land Change Science**

**Spatial Statistics**

**Remote Sensing**

### **EDUCATION**

**Doctor of Philosophy in Geography, 2012**

*Major: Geographic Information Sciences, First Minor: Land Use/Cover Change Analysis, Second Minor: Remote Sensing*

Clark University

The Graduate School of Geography

Worcester, MA, USA

authored dissertation entitled “Fundamental Concepts of Intensity Analysis to Understand Changes Among Categories”

**Master of Arts - Geography, 2010**

Clark University

The Graduate School of Geography

Worcester, MA, USA

authored proposal entitled “Measurement of Land Transformation Over Time”

**Master of Arts - Geographic Information Sciences for Development and Environment (GISDE), 2007**

Clark University

Department of International Development, Community, and Environment (IDCE)

Worcester, MA, USA

authored thesis entitled “The Corridor: Using GIS to Propose Satisfactory Transportation Paths between the West Bank and Gaza”

**Bachelor of Engineering - Architectural Engineering, major: Urban planning, 2002**

Birzeit University

College of Engineering

Ramallah, West Bank

### **PROFESSIONAL SKILLS**

**GIS:** ArcGIS, IDRISI, ERDAS, DIVA-GIS, Global Positioning System, GeoDa

**Graphic applications:** AutoCAD, 3D Max, Volo View Express, Ulead photoimpact, Adobe Acrobat, Adobe PhotoShop, Photo Express

**MS Office applications:** Word, Excel, Access, PowerPoint, Front Page

**Programming Languages:** C+, Microsoft VBA, VBA programming language in GIS, Flex

**Open Source Internet GIS and Mapping:** PHP, HTML, MySQL, XML, Geographic Markup Language, Building an Open Source Web Mapping Applications, Google API, MyMap

## **WORK EXPERIENCE**

### **Head of Geographic Information System & Information Technology Sections, 2011 - present**

Ramallah Municipality

Ramallah, West Bank

Manage 5 Units: GIS Unit, Naming and Numbering Unit, Statistics Unit, Management and Information Systems Unit, E-Services Unit

### **Project Supervisor: Buildings Comprehensive Survey, 2011 - present**

Ramallah Municipality

Ramallah, West Bank

- utilize various spatial analysis theories, mapping, programming, database, and principles of GIS to support planning, scheduling, and coordinating the survey
- perform quality assurance on GIS deliverables, and GIS processing

### **Head of GIS Solutions Section, 2010 - 2011**

Ramallah Municipality

Ramallah, West Bank

- develop detailed work plans and procedures to convert the entire municipal plans into geo-database (Master plans, properties, buildings, landuse, road network, electricity lines, Sewage lines, solid waste disposal, ...)
- prepare OrthoMaps and Raster maps for analyzing and planning purpose
- develop VBA codes to automate some complex GIS processes; create ArcObjects for query
- utilize ArcGIS Network Analyst methods to create network-based spatial tool for routing, travel directions, closest facility detector, and location-allocation
- design and create the Municipal GIS Website and embed Google map in the site with tools for facility detector ([www.ramallah-gis.ps](http://www.ramallah-gis.ps))
- oversee the production of GIS deliverables in both hardcopy and digital format

### **Teaching Assistant for Professor Gil Pontius, Spring 2010**

Advanced Raster GIS (IDCE396)

Clark University

Worcester, MA, USA

### **Research Assistant for Professor Gil Pontius, Fall 2009**

Clark University

Worcester, MA, USA

- perform cross-site comparison to characterize the land cover changes and identify stationarity of transitions over time for several sites of the National Science Foundation's Long Term Ecological Research network
- create computer codes using VBA programming language to perform the same quantitative analysis for all participating sites (being used for nine different sites in the USA and three sites internationally, in Spain, Australia and China)

### **Teaching Assistant for Professor Yelena Ogneva-Himmelberger, Spring 2009**

Advanced Topics in GIS (GEOG 397)

Clark University

Worcester, MA, USA

### **Architect and Site Manager, 2005 - 2006**

Palestine Red Crescent Society (PRCS)

Al Bireh, West Bank

### **Junior Architect and Interior Designer, 2003 - 2005**

Al-Moghrabi Engineering Consultant Office

Ramallah, West Bank

**Full time Lecturer, 2002 - 2003**

Palestine Polytechnic University  
Hebron, West Bank

- taught Principles of Planning and Design, Building Constructions, Construction Management, and Architectural Design
- participated in designing the curriculum for Graphic Design Course

**AWARDS AND HONORS**

**Graduate Fellowship, Graduate School of Geography at Clark University**

Awarded tuition fellowship and support stipend to earn PhD's Degree at Clark University, 2008 – 2012

**Conference Fund, Graduate School of Geography at Clark University**

Awarded fund to participate in the AAG meeting in Seattle WA USA, 2011

**Conference Fund, Graduate School of Geography at Clark University**

Awarded fund to participate in any meeting within the USA, 2010

**CHANS Fellowship, International Network of Research on Coupled Human and Natural Systems; supported by the U.S. National Science Foundation**

Awarded an Outstanding Junior Scholar certificate and fund to participate in the 2010 Association of American Geographers meeting to present my method for cross-site comparison, October 2009 Washington DC, USA

**Site Participant Award, Long Term Ecological Research network**

Awarded full fund to participate in the ALL scientists meeting to present my method that perform quantitative analysis for land transitions; in addition to present three posters, September 2009 Denver, Co, USA

**1<sup>st</sup> Place in the 2007 First Annual URISA Student Paper Competition, Urban and Regional Information Systems Association, USA**

Received cash award

Awarded free conference registration and recognition at the URISA 2007 Annual Conference in Washington DC

**Conference Fund, U.S. Agency for International Development**

Awarded full fund to participate in the Association of American Geographers meeting: present a paper, 2007 San Francisco, CA, USA

**Presidential Scholarship, U.S. Agency for International Development**

Awarded full scholarship to earn Master's Degree in USA, 2006 - 2007

**Birzeit University Honor & Tuition Awards**

Received four tuition awards and honor certificates, 1998-2002

**PRESENTATIONS AT CONFERENCES AS FIRST AUTHOR**

**Fundamental Concepts of Intensity Analysis to Understand Changes Among Categories**

Clark University, 2012  
Worcester MA, USA

**Automating Category Aggregation to Focus on Important Land Transitions Over Time**

Association of American Geographers, 2011  
Seattle WA, USA

**Size, Intensity, and Stationarity of Land Changes by Interval, Category, and Transition**

1<sup>st</sup> International Conference on Education and Management Technology, 2010  
Amman, Jordan

**Stationarity of Land Changes across Time, Category, and Transition**

GLP Open Science Meeting, 2010  
Tempe, Arizona, USA

**Identifying Stationarity of Transitions Among Land Categories Over Time for Cross-site Comparison.**

Association of American Geographers, 2010  
Washington DC, USA

**Stationarity of Land Changes across Time, Category, and Transition**

ALL scientists meeting, 2009  
Denver, Co, USA

**The Corridor: Using GIS to Propose Satisfactory Transportation Paths between the West Bank and Gaza.**

Clark University, 2008  
Worcester MA, USA

**The Corridor: Using GIS to Propose Satisfactory Transportation Paths between the West Bank and Gaza.**

Association of American Geographers, 2007  
San Francisco, CA, USA

**PUBLICATIONS**

Aldwaik S. Z. and R. G. Pontius (under revision) *How much error can explain non-uniform results from Intensity Analysis?* International Journal of Geographical Information Science

Aldwaik S. Z., R. G. Pontius and J. A. Onsted (under revision) *Sequential Land Category Aggregations to Maintain Maximum Change Over Time.* Computers, Environment and Urban Systems

Villamor G.B, M. Noordwijk, S. Z. Aldwaik, A. Ekadinata, and P. L. Vlek (under revision) *Landcover Change in Lowland Tropical Forest In Jambi (Sumatra), Indonesia: Intensity of Change, Speed, Transition and Carbon Emissions.* Landscape Ecology

Aldwaik S. Z. and R. G. Pontius Jr (2012). *Intensity Analysis to Unify Measurements of Size and Stationarity of Land Changes by Interval, Category, and Transition.* Landscape and Urban Planning, Vol. 106, pp. 103-114

Aldwaik, Safaa Zakaria (2007) *The Corridor: Using GIS to Propose Satisfactory Transportation Paths between the West Bank and Gaza.* The Arab World Geographer, Vol. 10, no. 1

**REVIEWER FOR PROFESSIONAL SCIENTIFIC JOURNALS**

African Journal of Agricultural Research

Landscape Ecology

Remote Sensing of Environment

The Professional Geographer

**PROJECTS**

House Numbering of Ramallah's Buildings (2012-2013)

Automating Category Aggregation to Focus on Important Land Transitions Over Time (2009 - 2011)

Identifying Stationarity of Transitions Among Land Categories Over Time (2008 - 2010)

Let Them See: Browser-based Visualization of User Query of Large Geographic Datasets (2009)

Random Number Generator for HERO's Social Science Surveys (2008)

The Corridor: Using GIS to Propose Satisfactory Transportation Paths between the West Bank and Gaza Strip (2006 - 2007)

**An Evacuation Model for Cape Cod, Massachusetts: Evaluating Three Scenarios (2006)**

**Controlling Development: The Contradictory Effects of the Creation of the Palestinian National Authority on the Land Use/Cover in Ramallah and East Jerusalem, 1987 - 1999 (2006)**

**A Cleaner Worcester (2006)**

**Safaa designed Residential and Public Buildings, and Interior Spaces using AutoCAD 2d & 3d (2003 - 2006)**

**East Jerusalem: The Importance of Combining the Preservation of Cultural Identity and Heritage with the Development Required to Absorb Fast-Growing Population (2001 - 2002)**

**PROFESSIONAL MEMBERSHIPS**

Association of American Geographers

Long Term Ecological Research network

International network of research on Coupled Human and Natural Systems

Human Dimensions of Global Change Specialty Group

Arab World Geographer

Palestinian American Research Center

Jordan Engineers Association

Palestine Red Crescent Society

**LANGUAGES**

Arabic (native), English (very good in reading, writing, and speaking), Hebrew (fair)

**REFERENCES**

Available Upon Request