

# WALLIED ORABI, Ph.D.

Assistant Professor, Department of Construction Management  
Florida International University

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## EDUCATION

**University of Illinois at Urbana-Champaign, Urbana, Illinois**

**Ph.D. in Civil Engineering** with Computational Science and Engineering Option, 2010

- *Dissertation Title: "Optimizing Highway Reconstruction and Rehabilitation Projects"*

**The American University in Cairo, Cairo, Egypt**

**M.Sc. in Construction Engineering, 2004**

- *Thesis Title: "Risk Identification and Response Methods in the Egyptian Construction Industry: Views of Large Scale Contractors"*

**Graduate Diploma in Construction Engineering, 2002**

**Cairo University, Cairo, Egypt**

**B.Sc. in Civil Engineering, 1996**

## WORK EXPERIENCE

**Assistant Professor, 2010 to Date**

Department Construction Management, Florida International University

**Graduate Research and Teaching Assistant, 2005 to 2010**

Department Civil and Environmental Engineering, University of Illinois at Urbana-Champaign

**Sargent and Lundy Pre-Doctoral Fellow, 2004 – 2005**

Department Civil and Environmental Engineering, University of Illinois at Urbana-Champaign

**Senior Project Controls Engineer, 2003 – 2004**

Technical Department, Canal Branch, Arab Contractors, Ismailia, Egypt

**Contract Administrator, 2003**

Suez Canal Container Terminal Project, Archirodon Construction (Overseas) Co., Port Said, Egypt

**Project Control Engineer, 2002 – 2003**

El Nour City Housing Project, Arab Contractors, Suez, Egypt

**Teaching Assistant, 2001 – 2002**

Interdisciplinary Engineering Department, American University in Cairo, Cairo, Egypt

**Project Control Engineer and Contract Administrator, 1997 – 2002**

Ayoun Moussa Power Plant Project, Arab Contractors, Ayoun Moussa, Suez, Egypt

**Estimator, 1996 – 1997**

Projects Department, Head Office, Ferrometalco (DSD Egypt), Cairo, Egypt

## AWARDS AND HONORS

### **Best Journal Paper Award, 2009**

Journal of Construction Engineering and Management, ASCE, Reston, Virginia

For the paper entitled “Optimizing Post-Disaster Reconstruction Planning for Damaged Transportation Networks.” This paper was selected from a pool of over 143 highly qualified papers published in 2009. The selection was made because the paper presented high impact and high intellectual merit work.

### **Citation in Who’s Who of Emerging Leaders, 1st Edition, 2007**

Marquis Who’s Who, New Providence, New Jersey

### **Graduate Research and Teaching Assistantships, 2005 – Present**

Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign

### **Citation in Who’s Who in Science and Engineering, 8th Edition, 2005 - 2006**

Marquis Who’s Who, New Providence, New Jersey

### **Citation in the Chancellor’s List, 2005**

Annually honors outstanding graduate students for their academic achievements.

### **Sargent and Lundy Pre-Doctoral Fellowship, 2004 – 2005**

Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign

### **Laboratory Instruction Graduate Fellowships in Engineering, 2001 – 2002**

The American University in Cairo, Cairo, Egypt

A merit-based fellowship awarded to graduate students based on their academic achievements.

### **Osman Ahmed Osman Scholarship, 1999**

The American University in Cairo, Cairo, Egypt

A merit-based scholarship awarded to one applicant to the ASCE sponsored program of “Certified Construction Project Supervisor”. The recipient is selected from a large pool of applicants who were graduated from national universities during a five years span prior to the application deadline.

## SELECTED PUBLICATIONS

### REFEREED JOURNALS

1. **Orabi, W.**, El-Rayes, K., Senouci, A., and Al-Derham, H. (2009). “Optimizing Post-Disaster Reconstruction Planning for Damaged Transportation Networks,” *Journal of Construction Engineering and Management*, ASCE, **135(10)**, 1039-1048. (**Winner of the 2009 Best Journal Paper Award from the ASCE Journal of Construction Engineering and Management**).
2. **Orabi, W.**, El-Rayes, K., Senouci, A., and Al-Derham, H. (2010). “Optimizing Resource Utilization during the Recovery of Civil Infrastructure Systems,” *Journal of Management in Engineering*, ASCE, **26(4)**, 237-246.
3. **Orabi, W.**, and El-Rayes, K. (2010). “Optimizing the Rehabilitation Efforts of Aging Transportation Networks,” *Journal of Construction Engineering and Management*, ASCE, under review.
4. **Orabi, W.**, and El-Rayes, K. (2010). “Planning Highway Construction under Lane Rental Contracts,” *Journal of Construction Engineering and Management*, ASCE, in progress.
5. **Orabi, W.**, and El-Rayes, K. (2010). “A Framework for Planning Recovery Efforts of Damaged Transportation Networks after Natural Disasters,” *Journal of Construction Engineering and Management*, ASCE, in progress.

## BOOK CHAPTERS AND REFEREED CONFERENCE PROCEEDINGS

6. Ezeldin, A. S., and **Orabi, W.** (2006). "Risk Identification and Response Methods: Views of Large Scale Contractors Working in Developing Countries." *Advances in Engineering Structures, Mechanics & Construction*, Solid Mechanics and its Applications, Springer Netherlands, 781-792.
7. **Orabi, W.**, El-Rayes, K., Senouci, A., and Al-Derham, H. (2009). "Planning Post-Disaster Reconstruction Efforts of Damaged Transportation Networks." Proceedings of the 2009 Construction Research Congress, ASCE, Seattle, Washington, April 5-7, 2009.

## PRESENTATIONS AND INVITED TALKS

8. **Orabi, W.** (2010). "Optimizing Highway Reconstruction and Rehabilitation Projects." Florida International University, Miami, Florida.
9. **Orabi, W.** (2010). "Optimizing Highway Reconstruction and Rehabilitation Projects." Ball State University, Muncie, Indiana.
10. **Orabi, W.** (2009). "Optimizing Post-Disaster Reconstruction of Damaged Transportation Networks." Southern Illinois University at Edwardsville, Edwardsville, Illinois.
11. **Orabi, W.** (2008). "Optimizing the Reconstruction Efforts for Damaged Transportation Networks in the Aftermath of Natural Disasters." Poster Presentation, Construction Research Congress Meeting, ASCE, Chicago, Illinois, June 10, 2008.

## RESEARCH PROPOSALS

1. **Resource Allocation Framework to Meet Highway Asset Preservation Needs:**  
Actively participated in writing this research proposal, which is submitted to the National Cooperative Highway Research Program, Transportation Research Board. PI: Khaled El-Rayes.
2. **Clearview Font in Traffic Signs – Assessing IDOT Experiences and Needs:**  
Actively participated in writing this research proposal, which is submitted to the Illinois Department of Transportation (IDOT). PI: Khaled El-Rayes and Co-PI: Liang Liu.
3. **Evaluating the Compatibility, Durability and Visibility of Pavement Markings on Portland Cement Concrete and Various Asphalt Surfaces:**  
Actively participated in writing this research proposal, which is submitted to the Illinois Department of Transportation (IDOT). PI: Khaled El-Rayes and Co-PI: Liang Liu.

## RESEARCH PROJECTS

1. **Optimizing Highway Reconstruction and Rehabilitation Projects:** This project was supported by the Qatar National Research Fund. The project focused on optimizing highway reconstruction and rehabilitation efforts with emphasis on developing multi-objective decision-support systems that seek to optimize resource utilization in highway projects. The main objectives of these systems include: (1) maximizing the functional performance of transportation networks during construction efforts; (2) minimizing public expenditures on post-disaster reconstruction of damaged transportation networks; and (3) maximizing the net social benefit of highway rehabilitation programs. These decision-support systems include newly developed models for: (1) evaluating the impact of reconstruction/rehabilitation projects on the functional performance of failing transportation networks; (2) sharing limited construction and financial resources among competing

reconstruction and rehabilitation projects; and (3) analyzing the benefits and costs of rehabilitation programs over the lifecycle of transportation networks. In order to ensure the robustness of these models, concepts and advanced technologies from multiple disciplines were employed in these research developments.

2. **Web-Based Management of Multiple Interdisciplinary and Geographically Distributed Research Projects:** This project was supported by the National Science Foundation through Mid-America Earthquake Center. The main objective of this project is to develop a robust IT-based management system for engineering research centers to ensure the accomplishment of research, educational and outreach goals on time and within budget. To this end, a web-based project management system was developed to facilitate remote and effective management of multiple interdisciplinary research projects located in different geographic regions.
3. **Risk Identification and Response Methods in the Egyptian Construction Industry:** The objectives of this research were to: (1) identify the most critical risks related to the Egyptian construction industry and their perceived criticality from the perspective of the large scale contractors; (2) identify the risk response methods currently employed by the contractors working in the Egyptian construction industry and their effectiveness; (3) compare the nature of construction risks encountered in the Egyptian construction industry to data extracted from the literature for other international construction markets; and (4) develop an advanced decision support system based on the findings of this research to aid contractors with their preparation efforts for effective risk management.

## REVIEW OF JOURNALS AND CONFERENCE PROCEEDINGS

- **Reviewer**, Journal of Construction Engineering and Management, ASCE, 2007 to present.
- **Reviewer**, Journal of Construction Management and Economics, UK, 2005 to present.
- **Reviewer**, Construction Management and Economics 25<sup>th</sup> Anniversary Conference, Reading, UK, July 16-18, 2007.

## TEACHING EXPERIENCE

### TEACHING POSITIONS

**Assistant Professor**, 2010 – Present

Department of Construction Management, Florida International University

**Teaching Assistant and Grader**, 2004 – 2010

Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign

**Teaching Assistant**, 2001 – 2002

Interdisciplinary Engineering Department, American University in Cairo, Cairo, Egypt

### COURSES TAUGHT

- **Construction Sitework**, Florida International University
- **Construction Planning**, University of Illinois
- **Construction Cost Analysis**, University of Illinois
- **Descriptive Geometry and Engineering Drawing**, The American University in Cairo
- **Drawing for Construction Engineering and Architecture**, The American University in Cairo
- **Engineering Analysis and Computation I**, The American University in Cairo
- **Engineering Economy**, The American University in Cairo
- **Methods and Equipment for Construction I**, The American University in Cairo

## **INDUSTRY EXPERIENCE**

### **Senior Project Control Engineer, 2003 – 2004**

Technical Department, Canal Branch, Arab Contractors, Ismailia, Egypt

- Monitored progress of key ongoing projects and recommended preventive and/or corrective actions to higher management.
- Reviewed and negotiated contracts for newly acquired projects in collaboration with other concerned departments.
- Examined and interpreted specific contract clauses for project manager on request basis.
- Identified, prepared and negotiated several types of claims.
- Participated in setting annual and quarterly goals for ongoing projects.
- Examined and analyzed the performance of completed projects in terms of adherence to planned schedule and budget.
- Participated in preparation of bid proposals for different types of construction projects including planning construction methods, developing baseline schedules and calculating direct and indirect cost.

### **Contract Administrator, 2003**

Suez Canal Container Terminal Project, Archirodon Construction (Overseas) Co., Port Said, Egypt

- Reported discrepancies and variations from main contract to owner and project manager.
- Examined and interpreted specific contract clauses for project management staff.
- Prepared and submitted monthly progress bills to owner and monitored collection of payments.
- Drafted and negotiated contracts with subcontractors and suppliers in collaboration with other project management staff and head office.
- Participated in preparation and negotiation of contracts for other projects.

### **Project Control Engineer, 2002 – 2003**

El Nour City Housing Project, Arab Contractors, Suez, Egypt

- Controlled and handled all scheduling tasks including preparing baseline schedules, setting periodic targets, monitoring progress, updating project schedule and reporting to project management and regional office.
- Prepared and submitted monthly progress bills to owner and monitored collection of payments.
- Coordinated with subcontractors and suppliers to ensure timely delivery and effective utilization of key construction materials and resources.

### **Project Control Engineer and Contract Administrator, 1997 – 2002**

Ayoun Moussa Power Plant Project, Arab Contractors, Ayoun Moussa, Suez, Egypt

- Developed baseline schedules for various types of construction activities.
- Planned for effective utilization of key construction crews in collaboration with the construction manager.
- Set periodic targets for construction crews, monitored progress and updated the project schedule accordingly.
- Analyzed project cost and schedule performances and promptly reported to project management and regional and head offices.
- Prepared and submitted monthly progress bills to owner and monitored collection of payments.
- Handled all tasks related to mutual debit notes for services with consortium partner including preparation of outgoing notes, examination and approval of incoming notes, and balancing outgoing and incoming notes.
- Administered the project contracts with the owner, consortium partner and select subcontractors.

- Participated in the preparation and negotiation of claims to the owner and evaluating the impact of change orders on the project's schedule and cost.
- Participated in the closeout phase of the project and the preparation of the as-built documents in collaboration with the consortium partner.

**Estimator, 1996 – 1997**

Projects Department, Head Office, Ferrometalco (DSD Egypt), Cairo, Egypt

- Prepared quantity takeoffs of structural steel works for commercial, residential and industrial buildings.
- Participated in pricing construction activities and preparing bid proposals.
- Aided the project management of ongoing projects to coordinate with the workshop.

**PROFESSIONAL MEMBERSHIPS AND ACTIVITIES**

- The American Society of Civil Engineers (ASCE), 1999 – Present
- The American Society for Engineering Education (ASEE), 2006 – Present
- Project Management Institute, 2006 – Present
- American Concrete Institute, 2006 – 2007
- Egyptian Engineering Syndicate, 1996 – Present

**PROFESSIONAL CERTIFICATIONS**

**Certified Construction Project Supervisor, 1999**

The American Society of Civil Engineers (ASCE)