

Dalia Salem, PhD, HCC

Assistant Professor & Quality Assurance Coordinator,

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▼ Highlights

- More than 13 years of academic experience in teaching, research and mentoring.
- Almost 3 years of experience in construction management industry in the USA.
- Participated in considerable externally-funded research grants, with values of up to \$44,000
- Actively contributed in a number of research papers published in peer reviewed journals, international conferences, and posters at Purdue University symposiums
- Taught to diverse groups of undergraduate and graduate level students of up to 67 students
- Certified Healthcare Construction Provider (HCC)
- Received OSHA 30-hour Construction Hazards Training Card
- Served on the editorial boards of the ASHE Abstracts reviewers of the 2018 ASHE Annual Conference that was held on July 15-18, 2018 at Seattle, WA
- Proudly organized Blood Drive event to help community during Hurricane Irma in Florida, held on October 3, 2017 at Purdue Campus
- Effectively and proactively coordinate work individually and within teams
- Contributed to the community by designing a tiny house for the benefit of homeless, battered women and people re-entering society from prison.

▼ Education

Ph.D. Technology, School of Construction Management Technology, Purdue Polytechnic Institute

Purdue University, West Lafayette, IN, USA

Jan. 2015 – Aug. 2018

Thesis: "Asset Condition Assessment Model for Healthcare Facilities"

M.Sc. Architectural Engineering, Faculty of Engineering

Assiut University, Assiut, Egypt

Aug. 2000- Aug. 2008

Thesis: "Security Considerations in designing residential communities"

B.Sc. Architectural Engineering, Faculty of Engineering

Assiut University, Assiut, Egypt

Sep. 1995- June 2000

▼ Professional Experience

Position: Construction Data Analyst I

Oct. 2018- Dec. 2019

Medxcel Planning Design and Construction, Indianapolis, IN, US

- Organized project data into numerous forms for communication with Medxcel leaders.
- Managed the approved vendor database and vendor certificates of insurance program.
- Performed various ad hoc reports from eBuilder, Excel, and Tableau or other programs.
- Identified missing project data from eBuilder and create plans for obtaining missing data.
- Worked with System Analysts on techniques created for acquiring data and making system improvements.

Position: Asset Condition Assessment Consultant

Dec. 2017- Aug. 2018

Medxcel Facilities Management Organization, Indianapolis, IN, USA

- Collaboration between Purdue University and Medxcel FM to improve the asset management process for healthcare facilities.
- Identified categories of data needed to develop a model for analysis.
- Identified the capital renewal project needs.
- Continued working in Indiana on the Asset Condition Assessment (ACA) for St. Vincent's Health System.
- Improved data in the CMMS for the evaluation of asset life cycle.
- Utilized the developed model to pull and evaluate data from CMMS.
- Evaluated the CMMS data to make decisions on the Capital renewals.
- Developed a standardized CMMs report to rank the criticality of asset.
- Worked with the programming team to move the model for analysis.
- Validated the model and program through data input during the Asset Condition Assessment.

Position: Facilities Management Intern

May- Aug. 2017

Medxcel Facilities Management Organization, Indianapolis, IN, USA

- Summer internship at the Facilities Management Dept. at St. Vincent Hospital on 86th Street, Indianapolis, IN.
- Lead an inter-disciplinary team (Computerized Maintenance Management System "CMS", Facility Improvement Projects "FIP", Infection Control Prevention, Life Safety).
- Identified the critical CMS gap analysis for the evaluation of equipment lifecycle.
- Evaluated the data to make decisions on repair/replacement of equipment.

Position: Facilities Management Intern

Jun-Aug. 2016

IU Arnett Hospital, Lafayette, IN, USA

- Summer internship at the Facilities Management Dept. of Arnett Hospital, Lafayette, IN.
- Worked on developing a strategy of repair/ replacement in the CMS of IU Health healthcare facilities.
- Worked on developing a universal code for the healthcare asset management in US.

Position: Designed and built a tiny house for people in need

Fall 2015

Purdue University, West Lafayette, IN, US

- Participated in designing and constructing a Tiny House for Graduate class.
- Designed the tiny house with environmentally friendly aspects.
- Designed the tiny house for the benefit of homeless, battered women and people re-entering society from prison.

Position: Consultant Architect & Construction Project Engineer, June 2000- July 2012
Self Employed, Assiut, Egypt

- Assisted with on-site management to ensure project success.
- Ensured project plan is moving forward to meet anticipated deadlines.

Taught Architectural Design principles, Architectural Design, Building Construction, and Working Drawings to undergraduates in the Architectural Engineering Department at Assiut University, Assiut, Egypt.

▼ Academic Experience

Assistant Professor and Quality Assurance Coordinator Sep. 2020- present
Architectural Engineering Dept., Assiut University

- Quality Assurance Coordinator.

Provides professional management and administrative support within the ambit of Quality Assurance & Enhancement. This includes (but is not limited to): annual course and module monitoring, validation and review of academic courses, participate in institutional initiatives, working parties and committees, and engage with professional expert networks within and outside the University.

- Instructor of 3rd year "Architecture Design Studio" course.

The course includes designing architectural projects with multiple components and stories, either one or more. The course focuses on finding design alternatives to circulations, form and function relationships.

- Instructor of 4th year Capstone Project

Taught to 31 undergrad students, the capstone project involves interacting with a local issue or a regional, national, or global contemporary trend. The choice of subject and size of the project reflects the diversity, accumulation and richness of the knowledge, skills and design experiences gained during the academic years. In this course, pre-design activities are undertaken, which include identifying the design issue or problem, studying and analyzing the site, analyzing similar projects, following design standards and criteria, formulating the career and surveying program in order to reach the design decisions. Graduation project activities include drafting the design idea, generating alternatives and objective weighting between them, and showing and analyzing the final design product.

- Instructor of "Fundamentals of Architecture Design and Drawings" in the Interior Design Program.

Taught to 11 undergrad students are the dimensions of various users in various positions, impacts on the design of spaces and furniture, the basics of the architectural design of simple buildings, and manual architectural presentation skills.

Teaching Assistant Jan. 2015- Aug. 2018

Purdue University, West Lafayette, IN.

During my time at the School of Construction Management at the Purdue Polytechnic Institute at Purdue University, I co-taught two undergrad courses as a Graduate Staff member: "Advanced Topics in Healthcare Construction Management" and "Construction Plans and Measurements" to undergraduate students. I also gave a lecture in Fuzzy modeling and simulation to the graduate level class "Modeling and Simulation in Construction".

In addition, I was a grader and lab assistant to the instructor for the courses Construction Mechanics and Construction Safety.

- Co-taught in Class BCM 341, Advanced Topics in Healthcare Construction Management.

Co-taught to 15 students construction principles of all facilities used in the health-care industry, ranging from hospitals and clinics to nursing homes and laboratories, emphasizing the interrelationship of planning, design, and construction. Topics included infectious materials control, disruption avoidance, rapid technology changes, and advanced/non-typical mechanical and electrical systems.

- Co-taught in Class BCM 275, Construction Plans and Measurements.

Co-taught to 67 students the principles of graphic communication that are applied to drawing and reading construction plans with emphasis on the use of computer-aided design software.

Techniques for measuring items of construction work from plans and specifications are also covered.

- Developed Knowledge Base for Class BCM 457, Construction Safety.

Helped in developing the knowledge base for the course examining the impact of safety on the construction industry, including in-depth discussions on the application of the Occupational Safety & Health Administration (OSHA) Safety and Health Standards for the construction industry.

- Grader in Course BCM 285, Construction Mechanics.

Research Assistant

Jan. 2015- Aug. 2018

Purdue University, West Lafayette, IN, USA.

School of Construction Management Technology, Purdue Polytechnic Institute

- Developed Risk Level Problems Model Affecting Microtunneling Projects Installation
- Developed Daylighting-Based Assessment of Occupant Performance in Educational Buildings
- Developed Asset Management Condition Assessment Model for healthcare facilities.
- Received two research grants with my advisor as senior researcher and grant writing assistant.
- Received Healthcare Construction Certificate (HCC) in February 2016.
- Received OSHA 30-hour Construction Hazards Training Card in May 2018.
- Served on the editorial boards of the ASHE Abstracts reviewers of the 2018 ASHE Annual Conference that was held on July 15-18, 2018 at Seattle, WA
- Awarded the Travel Grant to cover the expenses of attending conferences.
- Awarded the 2017 ILSE B. Almanza Scholarship Award to attend the 54th ASHE Annual Conference.
- Awarded ASHE and ISHE Grants to fund my summer internship 2016 at Arnett Hospital
- Lead and coordinated, on behalf of Prof. Brad Benhart, a team of 7 students at the American Society of Healthcare Engineering (ASHE) 2017 PDC Summit, that was held on March 12-15 in Orlando, Florida

Visiting Scholar

Aug. 2012 - Dec. 2014

Purdue University, West Lafayette, IN, USA.

Construction Engineering Management, Civil Engineering

- Identified the factors of Daylighting-Based Assessment model of Occupant Performance in Educational Buildings
- Attended AnyLogic training in Chicago, Illinois during July 2013

Demonstrator & Assistant Lecturer

Nov. 2000- Aug. 2012

Assiut University, Assiut, Egypt

- Co-taught in course; "Architectural Design principles"

Co-taught to 35 students concepts, theories, and practices of the discipline of architecture including study of perceptual, environmental, technical and organizational concepts through lectures and individual projects in observing architectural spaces and forms.

- Co-taught in course "Architectural Design"

Co-taught to 37 students practical and effective methods for using CAD programs to draft architectural designs, plans and blueprints for buildings, roads, bridges and other structures.

- Co-taught in course "Working Drawings"

Co-taught to 40 students the basic knowledge of structural analysis and design for buildings and other structures, emphasized the historical development of structural form and the evolution of structural design knowledge, from Gothic cathedrals to long span suspension bridges.

▼ Research Grants Received

Dec. 2017- Aug. 2018

Research: **Improve the asset management process for healthcare facilities**

Medxcel Facilities Management Organization

Fund: \$39,890

Role: Senior Researcher and Grant writing Assistant

A novel approach to develop an integrated condition assessment model of the asset in terms of the criticality. Designed the evaluation scheme for the critical asset inside healthcare facilities, which are critical in making Capital needs decisions. This model was delivered in the Computerized Maintenance Management System (CMMS) as a computer-based program that is available for the Healthcare Industry, which is one of the largest infrastructure sectors.

Aug. –Nov., 2017

Research: **ASHE Knowledge Based Designation Project**

American Society of Healthcare Engineering (ASHE)

Fund: \$4,500

Role: Senior Researcher and Grant writer Assistant

A novel approach to develop the groundwork for a knowledge-based professional designation for healthcare facilities management. Traveled to Chicago to meet with interdisciplinary teams to develop questions based on the competencies.

▼ Academic Contributions

ASHE Annual Conference Reviewer

- Served on the editorial boards of the ASHE Abstracts reviewers of the 2018 ASHE Annual Conference that will be held on July 15-18, 2018 at Seattle, WA.

The International Structural Engineering and Construction Society (ISEC 10)

- Served on the editorial boards of the ISEC 10 Abstracts reviewers of Interdependence between Structural Engineering and Construction Management that was held during May 20-25, 2019 in Chicago, Illinois.

American Journal of Civil Engineering

- Served on the editorial boards of the American Journal of Civil Engineering, <http://www.sciencepublishinggroup.com/journal/index?journalid=229>

▼ Areas of Expertise

- Construction simulation and modeling
- Data science and analytics

- Asset management
- Energy conservation buildings retrofit
- Assessment of occupant's performance in institutional buildings
- Facilities engineering & management
- Healthcare facilities & construction management
- Risk analysis and assessment using quantitative and qualitative methods
- Architectural design studios
- Facility condition index
- Information and knowledge management
- Construction safety

▼ Research Skills

- Utilizing SPSS and Minitab statistical programs extensively
- Surveying and evaluating research techniques
- Analyzing construction qualitative and quantitative data using various modeling techniques.

▼ Academic Publications

Published in peer-reviewed journals

1. Salem D., Elwakil E. (2021) "Expert-Based Approach To Rank Critical Asset Assessment Factors For Healthcare Facilities" *Facilities*, Published on the web 25 January 2021, ISSN: 0263-2772, <https://doi.org/10.1108/F-05-2020-0060>
2. Salem D., Elwakil E. (2020) "Asset Condition Assessment Model for Healthcare Facilities" *International Journal of Construction Management (TJCM)*, <https://doi.org/10.1080/15623599.2020.1857002>
3. Salem, D., Elwakil, E., Hegab, M. (2017) "Risk Level Problems Affecting Microtunneling Projects Installation" *Canadian Journal of Civil Engineering*. Published on the web 29 August 2017, https://doi.org/10.1139/cjce-2017-0176_3.
4. Salem, D., Elwakil, E. (2017) "Fuzzy-Based Model for Electric Lighting Evaluation in Institutional Buildings". *International Journal of Architecture, Engineering and Construction*, Vol 6, No 1, 01-15.
5. Salem, D., Elwakil, E. (2016) "Daylighting-Based Assessment of Occupant Performance in Educational Buildings". *Journal of Professional Issues in Engineering Education and Practice ASCE*. Vol 143, Issue 1. Pp. 01-09.
6. Salem, D., Elwakil, E. (2016) "Toward a Sustainable World Institutional Buildings" *International Journal of Architecture, Engineering and Construction*, Vol 5, No 2. Pp. 61-71, 2016.

Published in peer-reviewed conferences

7. Salem, D., Elwakil, E. (2018) "Develop an Assessment Model for Healthcare Facilities: A Framework to Prioritize the Asset Criticality for the Capital Renewals" *International Conference on Construction and Real Estate Management*, Charleston, South Carolina, US, August 9-10, 2018.
8. Salem D., Elwakil E. (2018) "Asset Condition Assessment of the Physical Condition in Healthcare Facilities" *Interdependence between Structural Engineering and Construction Management*, Chicago, Illinois, US, May 20-25, 2019

9. Salem, D., Attia, T. Elwakil, E. (2016) "A Framework for Manual Lighting Control in Commercial Buildings Using Fuzzy Hierarchical Expert Approach". International conference on Sustainability and Project Management, 10-12 March 2016, Egypt.
10. Salem, D., Elwakil, E, Kandil, A. (2015) "Building a Sustainable Occupant's Performance Based Model for Institutional Buildings" International Construction Specialty Conference, Canadian Society for Civil Engineers, Ottawa, Canada, June 08-10, 2015.
11. Salem, D., Elwakil, E, Kandil, A (2015) "Fuzzy-Based Model for Predicting Lighting Efficiency in Institutional Buildings" Special Session on Fuzzy Logic Applications in Construction Engineering and Management at NAFIPS 2015, Redmond, WA, US, August 17-19, 2015.

Published in Posters

12. Salem D., Elwakil E. (2018) "Assessment Model of Asset Management in Healthcare Facilities" Poster Presented at: Health and Disease: Science, Technology, Culture and policy Research Poster Session; 2018 March 1; Purdue University; West Lafayette, IN, US
13. Salem D., Elwakil E. (2017) "Healthcare Facilities Condition Assessment Model" Poster Presented at: Health and Disease: Science, Technology, Culture and policy Research Poster Session; 2017 March 23; Purdue University; West Lafayette, IN, US
14. Salem D., Elwakil E, Hegab M. (2017) "Assessment Model of Risk Level Problems Effect in Microtunneling Projects". Poster Presented at: Health and Disease: Science, Technology, Culture and policy Research Poster Session; 2017 March 23; Purdue University; West Lafayette, IN, US

▼ Academic Awards & Honors

Aug. 2017

American Society of Healthcare Engineering ASHE

- Awarded the Travel Grant to cover the expenses of attending conferences.
- Awarded the 2017 ILSE B. Almanza Scholarship Award to attend the 54th ASHE Annual Conference.
- Awarded the Bronze Level Award for outstanding ASHE Purdue Student Chapter.
- Awarded ASHE and ISHE Grants to fund my summer internship 2016 at Arnett Hospital.

Nov. 2000

Assiut University, Assiut, Egypt

- Awarded Outstanding Recognition Award, "Second of the class of 2000".

▼ Professional Membership

American Society of Healthcare Engineering (ASHE)	Feb. 2016- Present
<ul style="list-style-type: none"> • Healthcare Construction Certificate (HCC) • American Society of Healthcare Engineering (ASHE) member • Indiana Society of Healthcare Engineering (ISHE) member 	
Occupational Safety and Health Administration (OSHA)	May 2018- present
<ul style="list-style-type: none"> • OSHA 30-hour Construction Hazards Training Card 	
The Engineering Syndicate, Egypt	June 2000-Present
<ul style="list-style-type: none"> • A certified Engineer member 	

▼ Leadership Experience

Purdue (ASHE) Student Chapter	Aug. 2016 -2018
<ul style="list-style-type: none"> • Purdue Faculty Representative 	March 12-15, 2017

Lead and coordinated a team of 7 students to the American Society of Healthcare Engineering (ASHE) at 2017 PDC Summit held on March 12-15, 2017 in Orlando, Florida.

- Vice President Spring 2018
Assisted the president in activities, such as organized meetings, draft policies or procedures of the organizations, served as the representative of the organization to other groups and the university.

Purdue CIB Student Chapter Office Aug. 2017-Aug. 2018

- Vice President
Organized Blood Donation Event with Indiana Blood Center to support victims of Florida Hurricane Irma. The event was held on October 3, 2017 at Purdue Campus.

Purdue CIB Student Chapter May, 2015- 2016

- Academic Planner/Design
Compiled a list of all academic milestones and ensured that the graduate students were progressing as planned in their respective programs. Managed the editorial content.

University Egyptian Student Association @ Purdue [ESA-Purdue] Jan. 2015-2018

- Mentor position
Helped new Egyptian students at Purdue to engage in their student life.
Assisted and advised on matters related to Purdue (flight itineraries, transportation, housing, etc.)

▼ Volunteer Services

Klondike Elementary & Middle School, West Lafayette, IN, USA 2013-2018

- Volunteered to help during youth events held at the local school.

▼ References

- **Theodore (Ted) J. Weidner**

Position: Associate Professor, Construction Engineering and Management, Civil Engineering, Purdue University, West Lafayette, IN, USA

Address: Purdue University, Division of Construction Engineering and Management, HAMP 1245, 550 Stadium Mall Drive, West Lafayette, IN 47907-2051

Phone: +1 (765) 494-2250

Email: tjweidne@purdue.edu

- **Luciana Debs**

Position: Assistant Professor at School of Construction Management Technology, Purdue Polytechnic Institute, Purdue University, West Lafayette, IN, USA

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- **Mark Shaurette**

Position: Associate Professor (Retired) at School of Construction Management, Purdue Polytechnic Institute, Purdue University, West Lafayette, IN, USA

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- **Peter Eident**

Position: Mechanical, Electrical & Plumbing Director of Indiana Medxcel Facilities Management

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Email: peter.eident@medxcelfm.com

- **Brad Benhart**

Position: Associate Professor of Practice and Advisory Committee Liaison of School of Construction Management, Purdue Polytechnic Institute, Purdue University, West Lafayette, IN USA

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- **Kereshmeh Afsari**

Position: Assistant Professor

Virginia Tech, Myers-Lawson School of Construction, Managing Director, ARCADE Lab

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- **Bryan Hubbard**

Position: Associate Professor at School of Construction Management, Purdue Polytechnic Institute, Purdue University, West Lafayette, IN, USA

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