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EDUCATION: State University of New York at Buffalo

Department of Civil, Structural and Environmental Engineering
212 Ketter Hall, Buffalo, New York 14260

Ph.D. *Degree Conferral:* February 1, 1999 - Civil Engineering
Specialization: Infrastructure Management Systems and Risk Management
Topic: "Development of a Methodology for the Integration of Seismic Risk Mitigation Activities in Project- and Network-Level Bridge Management Systems"

M. Eng. *Degree Conferral:* September 1, 1991 - Civil Engineering
Specialization: Construction Engineering and Management
Topic: "Construction Safety Data Recording and Coding Systems"

B.S. *Degree Conferral,* June 1, 1989 - Civil Engineering
Concentration: Structural Engineering

RESEARCH, FUNDING AND SPONSORSHIP PROPOSALS (UAE and USA):

USA (at the University of Delaware)

Proposal – Grant for development of Construction Engineering and Management Graduate Program, Target - \$10 million, presented by President Assanis to the **Whiting Turner Contracting Company**.

Undergraduate CEM Student Research Award – **gBuild Construction Managers**, \$10,000. Award for summer of 2018 with expected continuing funding for future summers. Awarded.

Proposal for Undergraduate CEM Student Research Award – **gBuild Construction Managers**, \$10,000 solicited for summer of 2019. Working to develop an endowment for annual summer research experiences for undergraduate CEM students.

CEM Program Support – **Wohlsen Construction**, Support provided in the amount of \$25,000 for development of the CEM program, funded from 2017 – 2019.

CEM Program Support – **Wohlsen Construction**, Support secured in the amount of \$50,000 for development of the CEM program, funded from 2019 – 2021.

National Center for Durability and Extended Life for Local Transportation Assets (DELLTA), Sponsor – **Michigan Technological University**, Participant/Co-PI, USDOT University Transportation Center, Submitted for Review, Funding amount \$299,999.

Construction Engineering Student Scholarship Program – Received an endowment from **Frances "Skip" Gardiner & Millie Gardiner** in the amount of \$125,000 to endow and support undergraduate scholarships.

Construction Engineering Visiting Faculty Endowment – Received an endowment from **Frances “Skip” Gardiner & Millie Gardiner** in the amount of \$500,000 to endow and support visiting faculty positions within the Construction Engineering and Management Program.

Met with numerous additional construction contractors, together with representatives from UD Development, to discuss funding of needs for the Construction Engineering and Management program including Skanska USA, Turner, Bancroft, EDiS, and others. Also engaged the DCA (Delaware Contractors Association) and Delaware Chapter of the ABC (Associated Builders and Contractors) and developers, including Under Armor, in funding and partnership dialog.

United Arab Emirates (Dubai)

Shapoorji-Pallonji Consulting Services, DMCC, Development of research activities in conjunction with SPCS staff using the SPCS training center capabilities. Research performed focused on productivity of labor and productivity of equipment. Funding of 175,000 AED awarded and partially received.

ALEC, Inc., Proposal for video-based productivity studies of on-going construction activities, Grant submitted in the amount of 110,000 for one year. Grant unsuccessful.

Shapoorji-Pallonji Consulting Services, DMCC, Development of a Productivity Center of Excellence, Successful on principal but funding delayed.

AUD Faculty Teaching Offset – Project focused on MSCM program refinement and promotion. One-semester course release requested. Successful but administratively retracted due to necessity of teaching and course development responsibilities.

Emirates Foundation – Research in Energy Efficiency Grant Proposal, “Exploration of Green Construction Systems”, Submitted: February 28, 2010, Notice of award received and funds in the amount of 115,000 AED committed through the grant process.

UAE NRF Grant, Phase 2, RSA-1108-00665 – Grant proposal successful. Invited to submit detailed Phase 3 proposal, February, 2009.

UAE NRF Grant, Phase 3, RSA-1108-00665 – Phase 3 proposal submitted, “Preservation Models for Bridge and Pavement Management Systems in the United Arab Emirates,” Submitted, June 2009, Amount Requested - 977,460 AED. NRF funding discontinued. No award made.

Emirates Foundation – Science & Technology Program, Research Grants Project, Background Research and Scanning Tour Investigation of Non-Destructive Evaluation Techniques for Application within the Existing UAE Bridge Network, Submitted – November 2009, Amount requested = 200,000 AED. Proposal unsuccessful.

Dubai Contracting Company – “Proposal for Continuing Collaboration between AUD and DCC”, Student stipends, scholarships and endowment of a Chaired position requested. Unsuccessful.

AUD Faculty Teaching Offset Grant – Project focus for research and publication in infrastructure management systems. One-Semester Course Release. Awarded Spring 2010.

AUD Undergraduate Research – “The Use of Web-Cams for Construction Productivity Assessment”. Equipment Grant, Awarded - Fall 2007/Spring 2008.

EMPLOYMENT HISTORY - ACADEMIA

9/16 – Present *The University of Delaware*
Department of Civil and Environmental Engineering
Position: Associate Professor, Director of the Construction Engineering and Management Program

Primary Responsibilities:

- Develop, launch and direct an undergraduate baccalaureate program in Construction Engineering and Management as a third degree offering in the Department of Civil and Environmental Engineering.
- Liaise with potential donors and work with UD development personnel for endowments and securing of program financial support.
- Instruction of undergraduate and graduate courses, advisement of students, organization of professional seminars & field experiences.
- Research and program development and involvement in professional societies and community service

Undergraduate Courses Instructed:

- CIEG 161: Freshman Design (Spring 2017) – Co-Instructor for all CE freshman.

Undergraduate Courses Developed and Instructed:

- CIEG 467: Construction Management (Spring 2017)
- CIEG 467: Construction Equipment and Operations (Fall 2017)
- CIEG 191: Intro to Construction Engineering & Management (Spr. 2018, 2019, 2020)
- CIEG 267: Sophomore Seminar (Fall 2018, 2019)
- CIEG 292: Environment, Health and Safety (Spring 2020).
- CIEG 393: Construction Means and Methods (Fall 2019)
- CIEG 486: Engineering Project Management (Winter 2019, 2020)
- CIEG 492: International Construction (Winter 2019, 2020) (Multicultural Class)

Undergraduate Courses Developed:

- CIEG 291: CAD and BIM in construction
- CIEG 391: Construction Estimating and Cost Control
- CIEG 392: Construction Planning and Scheduling
- CIEG 394: Construction Law and Regulations
- CIEG 396: Structural Analysis and Design
- CIEG 397: Soils, Foundations and Geotechnical Engineering
- CIEG 491: Senior Design – Construction Engineering
- CIEG 493: Construction Productivity Improvement.

Graduate Courses Instructed:

- CIEG667: Project Life-Cycle Engineering for Rail and Transit (Fall 2017, Fall 2018)

Short Courses/Review Courses

- UD Continuing Education PE Review Course: Construction Engineering and Construction Management (Fall 2018)
- Chi Epsilon FE Review Course: Engineering Economics (Fall 2017, 2018, 2019), Construction Engineering and Management (Fall 2017)

PhD Committee Service

- Committee Member, Doctoral Candidate - Farzana Atique, Dissertation - "Analysis of Urban Pipe Deterioration Using Copula Method," Fall 2016

Committee Service within the Department and School

- Chair – CEM Faculty Search Committee, AY2017/2018
- Chair – CEM Faculty Search Committee, AY2016/2017
- Chair – CEM Program Development Committee, AY2016/2017
- Chair – CEM Faculty Advisory Committee, AY2017/2018
- Member – Department Undergraduate Committee, AY2016/17 to 2019/20
- Member – Department ABET Assessment Committee, AY2016/17 to 2019/20
- Member – Department Civil Engineering Undergraduate Committee, AY2019/20
- Member – Department Leadership Committee, AY 2018/19 and 2019/20

Construction Engineering and Management Program Development Activity

- Evaluated differences between ABET and ACCE accreditation and proposed a strategy for development of an ABET-based construction engineering and management degree.
 - Presented proposal to CEM Program Development Committee for feedback
 - Proposal and direction unanimously supported by committee.
- Engaged national-level and local-level contractors to solicit input and ideas on program content as well as knowledge, skills and abilities of graduates.
 - Organized industry advisory meeting and presented ideas, engaged participants and guided the discussion on the program future.
- Researched ABET accreditation criteria following EAC guidelines and research all ABET accredited program nationally and internationally to evaluate content and standards employed in achieving ABET goals and objectives.
- Communicated and discussed program and curricula with program directors from select peer institutions, including Virginia Tech and Purdue.
- Developed a comprehensive program to achieve all ABET objectives while leveraging UD breadth requirements to integrate a Certificate in Business Essentials in conjunction with the Alfred Lerner College of Business and Economics.
 - Obtained letters of support from affected supporting Departments
 - Coordinated and obtained letters of support from industry partners.
 - Develop comprehensive program proposal and successfully the proposal through the Department, College committees, and the Faculty Senate.
Provisional approval was received by the Board of Trustees in May, 2017.
- Developed strategy to integrate building information modeling (BIM) throughout the course curriculum from Sophomore year to Senior year.
- Successfully recruited 21 students for the CEM class of 2021 and 31 students for the CEM class of 2022 and 15 for the CEM class of 2023.
- Integrated an international focus and study abroad opportunities into the curriculum.
 - Developed and lead the first CEM student abroad to Dubai in Winter 2019.
- Developed annual CEM Industry Advisory Breakfast
 - Presented and guided input and involvement of contractors representatives from numerous national and local contracting companies.
 - Presented updates annually to contractors in presentations and small groups.
- Drafted a proposal for a co-operative program with Delaware Tech for construction engineering. Delivered proposal to Delaware Tech faculty in Fall 2017, Refreshed in Fall 2019.
- Developed and led annual CEM student-advisory industry nights (Feb. 2018, 19, 20).
- Developed a co-op program and connected students to employers to gain practical experience to complement the in-class knowledge obtained.

(8/07 – 8/16)

The American University in Dubai, School of Engineering

Position: Assistant Professor of Civil Engineering (Aug. 07 – Aug. 09)

Position: Associate Professor of Civil Engineering (Aug. 09 – Aug. 16)

Position: Coordinator of the Construction Mgmt Program (Aug. 11 – Aug. 16)

Primary Responsibilities:

- Program coordinator for the Masters of Science in Construction Management including recruitment, advisement, program course development and program leadership,
- Development of undergraduate and graduate-level curriculum and programs,
- Instruction of undergraduate and graduate courses
- Advisement of students, organization of professional seminars & field experiences.
- Research and program development
- Involvement professional and community service,
- Development of laboratory facilities and acquisition of equipment,
- Assisted with accreditation of programs for ABET and MOHE (Civil and Mechanical Engineering Program).
- Advise student professional society chapters (CESA – to be converted to ASCE).
- Developed a graduate-level international construction engineering and management Masters program (MSCM) and outlined structure for funded research institute on construction engineering.
- Lead the MOHE accreditation process for the graduate MSCM program

Undergraduate Courses Instructed:

2007/2008:

- CENG 331: Engineering Materials with Lab (Fall 07)
- CENG 400: Construction Management (Fall 07)
- ENGR 300: Probability and Statistics for Engineers (Fall 07)
- CENG 200: Statics (Spring 08)
- CENG 440: Structural Dynamics and Earthquake Engineering (Spring 08)
- ENGR 422: Senior Design Project (Spring 08)
- CENG 311: Dynamics (Summer 08)
- CENG 499: Field Experience (Summer 08)

Subsequent Semesters

- ECVL 310: Engineering Materials w/ Lab (Fall 08, 09, 10, 11, 12 Spring 11, 12, 13)
- ECVL 420: Construction Engineering & Management (Fall 08, 09, 10, 11, 12, 13, 14)
- ENGG 300: Probability and Statistics in Engineering (Fall 08, Fall 10)
- ECVL 260: Statics w/Lab (Spring 09, Fall 11)
- ECVL 422: Infrastructure Management Systems (Spring 09, 10, 11, 12, 13, 14, 15)
- ECVL 499: Civil Engineering Design Project (Spring 09, 10, 11, Fall 2011)
- ECVL 265: Dynamics (Summer 09, 10, 14)
- ECVL 399: Field Experience in Civil Engineering (Summer 09, 10, 11, 12)
- ECVL 462: Structural Dynamics and Earthquake Engineering (Fall 09, Spring 11)
- ENGG 200: Statistics in Engineering (Spring 11, Summer 11, 12)
- ARCH 312: Structural Design (Spring 12)

Graduate Courses Developed and Instructed:

- EICM 612: Construction Planning and Scheduling (Fall 2012, 13, 14)
- ENGG 620: Advanced Decision Analysis (Fall 2012)
- EICM 622: Construction Estimating (Spring 2013, 14, 15)
- EICM 642: Construction Equipment and Operations (Summer 2013, 15)

- EICM 616: Construction Productivity (Fall 2013, 14)
- EICM 636: Construction Safety (Spring 2014, 15)

Graduate Courses Developed:

- EICM 620: Construction Accounting and Finance
- EICM 646: Design and Construction of Temporary Facilities
- EICM 656: Computer Applications in Construction Management
- EICM 662: Sustainability in Design and Construction
- EICM 666: Lean Construction
- EICM 672: Megaproject Development and Management

Non-Engineering Courses:

- NYST 275 (2014) / CABR 275 (2015): New York Study Tour

Supervised Graduates Students:

- Zenah Ibrahim Mattar – M.S. Construction Management – Thesis: Construction Delays and their Effects on the Oil and Gas Industry's Performance and Profitability in the UAE, Scheduled completion: Fall - 2015
- Mansoor Al Mazrooei – M.S. Construction Management – Thesis: Development of a Point-Based System for Evaluation of Sustainability During Construction Operations, Scheduled Completion: Fall - 2015
- Lu'ay Ayyash – M.S. Construction Management – Thesis: Using TQM and Lean Principals for MEP Project Delivery in the UAE: Anticipated and Unexpected Impacts of Making the Job Operate as a Firm, Scheduled Completion – Spring 2016.
- Alexandra Semaan – M.S. Construction Management – Thesis: Simulation and Artificial Intelligence in Construction Planning and Scheduling, Status: Incomplete as student opted for non-thesis studies and completed degree program as MSCM valedictorian, June 2015.
- All MSCM Graduate Students - Responsible for guidance and supervision of all course and project/thesis oriented graduate students in the Masters of Science in Construction Management Masters' degree program.

Committee Service at AUD:

- Participate in numerous University committees and standing Honor Councils
- Member and Participant - School of Engineering Outreach Committee, Assessment Committee and Laboratory Committees (Academic Year 2007/08).
- Member and Participant – School of Engineering Assessment Committee, Student Affairs Committee and Laboratory Committees (Academic Year 2008/09),
- Chair – School of Engineering, Assessment Committee (AY 2008/09)
- Chair – Engineering Faculty Affairs Committee (AY 2009/10)
- Advisor – Civil Engineering Student Association (AY 2009/10)
- Faculty Advisor – American Society of Civil Engineers (AY 2012/13)
- Chair – Engineering Student Affairs Committee (AY 2010/2011)
- Chair – School of Engineering Research Committee (AY 2011/12 and 12/13)
- Member – School of Engineering Marketing Committee (AY 2011/12 and 12/13)
- Chair – Dean and Chair Evaluation Ad Hoc Committee (AY 2013/14)

Local Ph.D. Dissertation Advisor, School of the Built Environment, University of Salford, UK

Ph.D. Candidate: Mr. Ghanem Nuseibeh, Advising Period: 2008/2009. Topic: Integrating Sustainability Principals in Building Design Management for Rapid Delivery Projects

(9/00 to 10/03) **The Catholic University of America**

Department of Civil Engineering, 620 Michigan Ave, Washington, DC 20064

Position: Assistant Professor of Civil Engineering

Director – Construction Engineering & Management Program

Courses Instructed:

- CE 110 – Computer Applications
- CE 301 – Construction Systems and Planning
- CE 302 – Civil Engineering Systems
- CE 570 – Innovative Infrastructure Management
- CE 670 – Risk and Reliability in CE Systems
- ENGR 309 – Applied Math for Engineers II

Graduate Program – Responsible for curriculum, course syllabi and course materials and provided oversight and direction for adjunct professors for the following courses:

- CE 581 – Practical Construction Law
- CE 582 – Value Engineering
- CE 587 – Estimating and Bidding
- CE 588 – Construction Operational Management
- CE 589 – Construction Scheduling Techniques

Academic Interests and Pursuits:

- Transportation and construction education.
- Research and development in a wide variety of bridge, transportation, and construction engineering, including: bridge and asset management systems; Life-cycle cost analyses and predictive modeling, IT in bridge engineering; Life-cycle cost analysis
- Development of innovative graduate programs, such as dual architecture-engineering programs, and development of innovative teaching tools to enhance program delivery.

Sponsored Research and Consulting:

- Professional consulting for the USDOT/Federal Highway Administration, Office of Bridge Technology and Office of Infrastructure Research and Development.
- Funded Research Applications submitted to the D.C. Dept. of Public Works and the D.C. Department of Transportation Bridge Management Systems. Unfunded research performed on data mining for bridge element failure costs as part of class projects.

Supervised Graduates Students:

- R. Brian Pietryka – M.S. Civil Engineering, Area of focus - Infrastructure Management Systems, 2002
- Talal Al-Harbi – Ph.D., Civil Engineering, Area of focus – Infrastructure Management
- All MSCM Graduate Students - Responsible for guidance and supervision of all course and project oriented graduate students in the Construction Management Masters degree program.

Dissertation Committee/Outside Reader: Dr. Bryan Adey, Ecole Polytechnique Fédérale de Lausanne, Department of Civil and Environmental Engineering, “A Supply and Demand System Approach to the Development of Bridge Management Strategies”, 2001

(9/91 - 9/94)

State University of New York at Buffalo

Dept. of Civil, Structural and Environmental Engineering

Position: Lecturer

Courses instructed: Graduate Level Courses

- CIE 591 – Construction Estimating
- CIE 593 – Construction Planning and Scheduling
- CIE 594 – Computer Application in Construction Management
- CIE 595 – Construction Technology and Equipment
- CIE 597 – Construction Safety and Health Management

Courses instructed: Undergraduate Level Courses

- EAS 310 – Numerical Methods for Engineers (no longer offered)

Additional Responsibilities

- Developed new courses to enhance the Masters of Engineering program in construction engineering and management.
- Identify opportunities for research and develop/submit research proposals
- Work with the National Center for Earthquake Engineering Research to facilitate highway and transportation research programs at the University.
- Administered the civil engineering PC computer laboratory.

EMPLOYMENT HISTORY – GOVERNMENT AND PRIVATE SECTOR

(10/03 – 8/07)

USDOT - Federal Highway Administration, Office of Bridge Technology, FHWA, HIBT-30, 400 Seventh St., SW, Washington, DC 20590

Position: Senior Structural Engineer – Bridge Program Management

- Responsible for management of national-level bridge programs, including the Highway Bridge Program, the National Historic Covered Bridge Program, the Discretionary Bridge Program and other bridge related funding programs.
- Managed the development of new bridge inspection data specifications for national-level implementation and coordinated national-level review of the proposed NBI Specifications. (two-year effort completed August 2007).
- Interact with Congress, Congressional staff and US House and Senate Committees for the on policy impacts regarding bridge program issues.
- Respond to press inquiries in conjunction with the Office of Public Affairs
- Developed and administered proposed regulatory rulemakings and associated OMB Information Collection clearances.
- Spearhead and lead a Federal-State effort to redevelop the Recording and Coding Guide for the Inventory and Appraisal of the Nation's Bridges and guide proposed recommendations through the AASHTO approval process and the Federal Register rulemaking process.
- Manage and administer the August redistribution process for all highway bridge programs and discretionary bridge activities.
- Interact with national and international professional committees and societies on bridge program issues.

(2/97 to 9/00) **USDOT - Federal Highway Administration, Turner Fairbank Highway Research Center,** Office of Infrastructure R&D, McLean, VA 22101
Position: Research Structural Engineer
Director, Bridge Management Information Systems Lab

- Developed and direct a funded research program to address national-level research issues for Bridge Management Systems (BMS's), Asset Management Systems, Advanced Decision Support, Data Modeling and Spatial Analysis, and Information Technology for Bridge Engineering
- Established and managed the FHWA Bridge Management Information Systems Lab and fostered partnerships with core business units to develop long-range research program to in support of the FHWA strategic goals.
- Active nationally and internationally frequently presenting research results and FHWA vision to State DOT's, Universities, FHWA Offices & International Highway Agencies

(9/96 – 2/97) **PSI, Inc.,** Fairfax, Virginia
Position: Research Engineer - FHWA Turner Fairbank Highway Research Cntr

- Provided on-site research engineering support. Responsible for the assessment of Non-Destructive Evaluation techniques for application within bridge management systems and the development of a computer network to support the goals of the NDE team.
- NDE tools explored include: ground penetrating radar systems, magnetic flux, dual-band infrared thermography, coherent lasers, eddy current, and other remote sensing non-destructive evaluation techniques.

(9/94 – 9/96) **USDOT/FHWA, National Highway Institute**
Position: Eisenhower Graduate Research Fellow

- Performed research to advance the 'state-of-the-art' in bridge engineering and bridge management. Efforts were undertaken to develop a GIS in support of bridge management and development of a relational databases to facilitate advanced analysis of the NBI database. These tools were utilized to perform statistical analysis of the time-series National Bridge Inventory, data mining of the bridge inventory databases to identify causes of condition and capacity based deficiencies within the network, & development of spatial deterioration models.

(5/88 - 9/91) **Various Consulting Engineering Firms in Western New York**
Position(s): Civil Engineer, Bridge Engineer, Construction Engineer

- Participated on short span bridge design projects and design of specialty structures.
- Provided construction inspection and resident engineering services for bridges, airport taxiways and aprons, commercial buildings and viaducts.
- Performed in-service structural bridge inspections, load ratings and structural integrity..
- Participated upon and performed all aspects of short span bridge design, including structural, geotechnical and foundation, hydraulic, traffic and geometric design.
- Participated within management team for complete design projects from preliminary and conceptual design through completion of plans and specifications and award of construction contract.
- Reinforced masonry design; traffic engineering and geometric design; drainage design and drainage studies.

PROFESSIONAL SOCIETIES, COMMITTEE MEMBERSHIP AND AFFILIATIONS

Member UAE Society of Engineers – Technical Committee (2008 - 12)
UAE Society of Engineers – Credentials and Accreditation Subcommittee (2008 - 12)

Associations: American Society of Civil Engineers (Associate Member)
ASCE Structural Engineering Institute and Construction Institute

Past– Int’l Association of Bridge and Structural Engineers (IABSE)
Int’l Association of Bridge Maintenance and Safety (IABMAS – Founding Member)
AACE International – 2013 to 2016
TRB Committee on Maintenance of Structures: A3C06 (through 2007)
TRB Committee on Bridge Management Systems: A3C17
ASCE Technical Committee on Bridge Management, Inspection, & Rehabilitation
ASCE Committee on Safety of Bridges
IABSE Working Commission 6 – Maintenance of Bridges
Associated Builder & Contractors – Metro Washington Student Chapter Committee
IABSE Task Commission on Younger Members, 2002
Technical Coordinating Committee - 1999 TRB Intl. Bridge Management Conference
Executive Board – International Association for Bridge Safety and Maintenance
Scientific Committee – First Intl Conference on Bridge Maintenance, Safety and Mgmt
Sci.Cmt. - 2004 IABSE Symposium: Metr. Habitats & Infrastructure, Shanghai, China
ASCE Tech. Committee on Bridge Mgmt., Inspection, & Rehabilitation (past Chair)
Assoc. Editor ASCE Journal of Bridge Engineering (1997/98 – 2003)

Service - Reviewer - SOE Arabian Tunneling Conference – 2014, 2015
Reviewer - 11th Arab Structural Engineering Conference King Fahd University Of Petroleum & Minerals, Saudi Arabia, 25-27 October 2009
Reviewer - 7th International Conference on Composite Science and Technology (ICCST/7), American University of Sharjah, Jan. 2009.
Reviewer – Third International Conference on Modeling, Simulation and Applied Optimization, American University of Sharjah, Jan. 2009
Panelist - Panel Discussion: Challenges and Lessons Learned in Mega Projects, 1st UAE Project Management Conference, May 2015
Session Chair at numerous national (US & UAE), and international conferences
Moderator - Panel Discussion on Future Construction Market Directions, PMV Live Conference, Dubai, Nov. 2015
Moderator – Panel Discussion on Sustainability in Construction, PMV Live Conference, Dubai, Nov. 2015
Organizer - Arabian Tunneling Conference Younger Engineers Forum 2014/2015
Moderator - Arabian Tunneling Conference Younger Engineers Forum 2014/2015
Moderator - Arabian Tunneling Conference Technical Sessions, 2014/2015

SELECT PRESENTATIONS:

Lean Construction and Lean Manufacturing Principles for Heavy-Lift on Construction Job-Sites, Keynote Lecture, LEEA Lifting and Rigging Conference Middle East, Dubai, December 2015

Project Management and Value Engineering for Heavy Lift Projects, Keynote Lecture, LEEA Lifting and Rigging Conference Middle East, Dubai, December 2015

Construction Risk Analysis, Professional Seminar delivered at the Big5 UAE, November 2016.

Lean Construction in Mega Project Delivery: An Exploration of Challenges and Opportunities, May 25-26, 2015, Dubai, United Arab Emirates.

Practical Information for Developing Skills for Improved Project Management – Pre-conference Professional Workshop, Building Future Learning Spaces – Designing, Building and Maintaining Educational Facilities in the MENA Region, March 23 – 25, 2015, Dubai, United Arab Emirates.

Preservation Models for Bridge and Pavement Management Systems, Keynote Lecture - International Conference on Global Technology Initiatives (ICGTI-2015), RIZVI College of Engineering, March 29 – 30, 2015, Mumbai, India

Exploration of Green Construction Systems, Keynote Lecture - International Conference on Global Technology Initiatives (ICGTI-2015), RIZVI College of Engineering, March 29 – 30, 2015, Mumbai, India

Using the Project Schedule for Variation Analysis, UAE FIDIC Conference and Exhibition, November 24 – 25, 2014, Dubai, United Arab Emirates.

The Role of Public Owners in Energizing Substantial and Sustainable Productivity Improvements, Dubai International Project Management Forum, Sept. 28 – 30, 2014, Dubai, United Arab Emirates.

Experiences using Disparate Mobile Computing Devices and Multiple Operating Systems to Enable Paperless Research Collaboration, EDULEARN 2013, July 2013, Barcelona, Spain.

Experiences using a Blended Learning Approach Facilitated with Adobe Connect to Expand Part-Time Student Options in Graduate Studies and Accommodate Remote Classroom Participation, EDULEARN 2013, July 2013, Barcelona, Spain.

SELECT PUBLICATIONS:

Small, Edgar P. Chapter 16 – Core OSM Implementation Strategies, Contribution to Offsite Production and Manufacturing for Innovative Construction: People, Process and Technology, 1st Edition. Editors – Goulding, J. and Pour Rahimian, F., Routledge Publishers, UK., 2019. ISBN 978-1138550681

Small, E.P., Bakry, I. and Ayyash, L., “Evaluating the effect of TQM on MEP construction productivity and project delivery in Dubai,” *International Journal of Construction Management*, Taylor & Francis, 2019. <https://doi.org/10.1080/15623599.2019.1602584>

Small, E.P., Ayyash, L., and Al Hamouri, K., “Evaluating Performance of TQM Management in Mechanical Construction in the UAE,” *Proceedings of the Creative Construction Conference*. Budapest University of Technology and Economics, 2019. <https://doi.org/10.3311/CCC2019-045>

Small, E.P., Hendricks, J., and Woodacre, K., “Effectiveness of Drone-Based Photogrammetry for On-Site Quantity Assessment,” *Proceedings of the Creative Construction Conference*. Budapest University of Technology and Economics, 2019. <https://doi.org/10.3311/CCC2019-042>

Small, Edgar P. “Opportunities for UAV’s in Construction Planning, Performing and Contract Close-Out.” In *Creative Construction Conference 2018 - Proceedings*. Budapest University of Technology and Economics, 2018. <https://doi.org/10.3311%2Fccc2018-079>

Small, Edgar P. "Using RFID's for Job-Site Productivity Evaluation of Labor and Crews." In *Creative Construction Conference 2018 - Proceedings*. Budapest University of Technology and Economics, 2018. <https://doi.org/10.3311%2Fccc2018-095>

Small, Edgar P., Khaled Al Hamouri, and Husameddin Al Hamouri. "Examination of Opportunities for Integration of Lean Principles in Construction in Dubai." *Procedia Engineering* 196 (2017): 616 – 621. <http://www.sciencedirect.com/science/article/pii/S1877705817331752>

Small, Edgar P., Luây Ayyash, and Khaled Al Hamouri. "Benchmarking Performance of TQM Principals in Electrical Subcontracting in Dubai: A Case Study." *Procedia Engineering* 196 (2017): 622 – 629. <http://www.sciencedirect.com/science/article/pii/S1877705817331776>

Small, E. and Baqer, M., Examination of Job-Site Layout Approaches and their Impact on Construction Job-Site Productivity, Accepted for the Elsevier Creative Construction Conference, Budapest, Hungary, June 2016, Published in Elsevier's *Procedia Engineering Journal*, *Procedia Engineering* 164 (2016) 383 – 388, doi: 10.1016/j.proeng.2016.11.634

Small, E. and Al Mazrooei, M., Evaluation of Construction-Specific Provisions of Sustainable Design Codes and Standards in the United Arab Emirates, Accepted for the International Conference on Sustainable Design, Engineering and Construction (ISCDEC), May, 2016 – Published in Elsevier's *Procedia Engineering Journal*, *Procedia Engineering* 145 (2016) 1021 – 1028, doi: 10.1016/j.proeng.2016.04.132

Small, E. and Al Mazrooei, M., Alternative Approaches for the Development of a Construction-Specific Decision Support Tool for Sustainable Construction Operations, Accepted for the International Conference on Sustainable Design, Engineering and Construction (ISCDEC), Published in Elsevier's *Procedia Engineering Journal*, *Procedia Engineering* 145 (2016) 1013 – 1020, doi: 10.1016/j.proeng.2016.04.131

Small, E., Kianmehr, P, Al Mazrooei, M., and Al Marashi, M.H., *Experiences using Disparate Mobile Computing Devices and Multiple Operating Systems to Enable Paperless Research Collaboration*, Proc. EDULEARN 2013. Barcelona, Spain, July 2013.

Small, E., El Arnaout, H. and Girgis, M., *Experiences using a Blended Learning Approach Facilitated with Adobe Connect to Expand Part-Time Student Options in Graduate Studies and Accommodate Remote Classroom Participation*, Proc. EDULEARN 2013. Barcelona, Spain, July 2013.

Bazzi, W. and **Small, E.**, *Learning Outcomes Assessment using Statistical Hypothesis Testing and Instant Response System Technology*, Proc. EDULEARN 2011. Barcelona, Spain, July 2011.

Small, E., and Christy, C., *Experiences with Extracurricular and Course-based Engineering Student Competitions in a Multi-Cultural Environment*, Proc. 2009 NE ASEE Conference: Engineering in the New Global Economy, American Society of Engineering Education, Univ. of Bridgeport, 2009.

Small, E., *First Year Experiences in the Development and Implementation of an Integrated Assessment Process for Program Evaluation*, Proc. 2009 NE ASEE Conference: Engineering in the New Global Economy, American Society of Engineering Education, Univ. of Bridgeport, 2009.

Small, E., *Experiences Capitalizing on the Multicultural Engineering and Construction Community of Dubai to Enhance Engineering Student Program*, Proc. 2009 NE ASEE Conference: Engineering in the New Global Economy, American Soc. of Engineering Education, Univ. of Bridgeport, 2009.

Small, E., Chapter 15 – Bridges, *2004 Status of the Nation's Highways, Bridges and Transit: Conditions and Performance – Report to Congress*, U.S. Department of Transportation, Federal Highway Administration, Federal Transit Administration, Washington, DC. <http://www.fhwa.dot.gov/policy/2004cpr/pdfs/chap15.pdf>

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