

Abdel Aziz, Ahmed M.

Associate Professor, The University of Washington

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EXPERIENCE & INTERESTS

- Excellent teacher of construction project management (planning; scheduling; control; cost estimating; time and cost management; Primavera software; MS Project software) for commercial and civil projects.
- Renowned scholar in contractual project delivery systems particularly public-private partnerships for infrastructure development and the relevant areas of life-cycle economic modeling and quantitative risk analysis.

EDUCATION

Ph.D. in Civil Engineering (Major - Construction Engineering & Management) May 2000
Department of Civil Engineering, The University of British Columbia, Vancouver, BC, Canada

B.Sc. and M.Sc. in Civil Engineering May 1986; May 1992
Department of Civil Engineering, Zagazig University, Egypt

ACADEMIC EXPERIENCE

The University of Washington (UW)

UW Associate Professor, Department of Construction Management (CM) Sept. 2009 - present

UW Adjunct Associate Professor, Department of Civil & Environmental Engineering Sept 2009 – 2017

UW Assistant Professor, Construction Management Jan 2003 – Sept 2009

- Courses developed and taught, and students' course evaluation

Earned *very high students' course evaluation* for the graduate and undergraduate courses per year and per course over 2012 to 2019. (Scale 0-5): average is 4.3 (CM582 Heavy Construction Estimating, CM530 Project Economics and Risk Analysis, CM450 Construction Project Management, CM422 A & B Construction Computer Applications (Primavera), CM411 A & C Project Planning and Control.

- **Notes:** Dr. Aziz records his lectures and makes them available through UW Panopto / Zoom for most of his courses. He has all his courses available through canvas for easier review and study by his students.

- **Peer-review of teaching:** Earned exceptional evaluation on teaching by the Ex-Dean, Chair, and the faculty members attending the annual peer review sessions of my courses.

- Research Developed and Supervised

Supervised students in the master's degree and chaired Ph.D. committees in CM and Civil Engineering:

. Construction Project Management: Time prediction of transportation projects; Cost prediction of transportation projects; statistical minimum bounds for contractor's performance in WSDOT highway projects; No-Damage-for-Delay analysis, Liquidated damages in Construction; Construction scheduling specifications for transportation projects.

. Alternative Project Delivery Systems: analysis and best practices of public private partnerships (P3); successful delivery of P3 in the US; impediments to P3 in the US; Force-Majeure and change-in-law risks in P3 projects; P3 in wind farms; P3 in healthcare; P3 Payment mechanisms; P3 Unsolicited Proposals; P3 and Renewable Energy; traffic safety in P3; and, P3 government units.

UW CBE, P. D. Koon Endowment Professor of Construction Management Sept 2009 – present

- Honored with the recipient of UW endowment award – PD Koon Professorship in Construction Management in recognition of teaching, service, and research. With honor, renewed to 2022.

UW Chaired Ph.D. Committees

- Chaired the Ph.D. research and dissertation work of Mr. Luming Shang. completed his Ph.D. June 2019. Mr. Luming works now a Research Scientist with Amazon.
- Chaired the Ph.D. research and dissertation work of Mr. Sohaib Gutub. completed his Ph.D. summer 2019. Mr. Sohaib works now as an Assistant Professor at King Abdul Aziz University in Jeda, Saudi Arabia.

UW CM Graduate Program Coordinator March 2009 – present

- Managed enrollment applications' review and approvals with Admissions Committee
- Advise graduate students on program requirements, study plan, and graduation requirements
- Manage students' issues, probation, resolve problems, and communications with the UW Graduate School

UW CM Undergraduate Advising Sept 2004 - present

- Undergraduates advising on curriculum and graduation requirements

UW College of Built Environment CBE, Curriculum Committee Member March 2009 – Jan 2020

- College Curriculum Committee Chair for 2 years and continued as a member. Reviewed applications for new courses, course changes, new and change programs for content and compliance with university requirements.

INDUSTRY & CONSULTING SERVICE

Project Management Training Freelancer Jan 2012 – present

Project Systematics, LLC. Redmond, WA

Training freelancer for Primavera P6, MS Project, and Construction Project Management.

- Deliver Primavera training to the Knowledge Academy training sessions.
- Deliver construction project management training to contractors.
- Deliver annual Scheduling training module for the NECA (National Electric Contractors Association) members over 2015-2019.
- Deliver MS Project software training workshop to NECA members, 2018

Scheduling Consultant May 2004 – Sept 2004

Athabasca Oil Sands Transportation Corp. (AOST) Calgary, Alberta, Canada

Commissioned by AOST to develop master schedule for the proposed North East Alberta Transportation Initiative, a \$2.5 billion road and heavy rail infrastructure between Edmonton and Fort McMurray, Alberta.

Project Analyst & Project Controls Engineer Aug 2000 – Jan 2003

Aecon Infrastructure Inc (previously SCI Infrastructure), Calgary, Alberta, Canada.

Aecon Infrastructure is known for Canada's \$1 billion BOT Confederation Bridge. Roles included *feasibility analyst* for the analysis, evaluation, and risk assessment of potential public-private partnership (PPP) projects, and *project controls engineer* for the planning and scheduling of heavy civil construction projects using Primavera

Technical Advisor Dec 97- April 98

Public-Private Partnership Advisory Committee, PPP Committee, Ministry of Finance, Victoria, BC, Canada

Commissioned to review PPP pilot project (\$28 million Burnaby High School). Reviewed the P3 implementation and decision-making; prepared detailed case study; analyzed the expressions for interest, RFP, and proposals; and, identified lessons for future PPP implementation in educational facilities.

Technical Advisor Jan. 93-June 94

The National Company for Development and Construction, Heliopolis, Cairo, Egypt

Executive Unit Member of the World Bank training project in Egypt; responsibilities included:

- Training engineers on planning and scheduling using Primavera Project Planner®
- Design and development of a database management information system for the project
- Teaching/training construction project management modules

SCHOLARLY AND PUBLIC SERVICE

Guest Editor to the *Sustainability* journal, Switzerland Jan. 2020-present

Special Issue on "Public-private Partnerships for Sustainable Infrastructure Development".

Associate Editor to the *Canadian Journal of Civil Engineering* Jan. 2011-present

Canadian Journal of Civil Engineers, Canada. Associate Editor, Construction Engineering specialty area.

Carry out technical reviews of proposed manuscripts. Manage and select reviewers for technical reviews. Make final recommendations of manuscripts for possible publications.

PPP Advisor to WA State PPP Committee Jan. 2015- May 2017

Public-Private Partnerships Committee of CPARB, Washington State

The 2005 WA Legislature created the Capital Projects Advisory Review Board (CPARB) and its committees including Public-Private Partnership (PPP) Committee to review alternative public works contracting procedures and provide guidance to state policymakers on ways to further enhance the quality, efficiency and accountability of public works contracting methods. Dr. Aziz participated in the PPP Committee for advising on the issues of PPPs toward drafting a WA State bill on PPP.

Panel Member on TRB Committee – NCHRP Project 20-5

Aug 2005 – July 2007

Transportation Research Board (TRB), Washington D.C.

Invited and served in the Oversight Committee of the National Cooperative Highway Research Program (NCHRP) for Synthesis Research 389 “Performance-Based Contracting for Maintenance”

Invited Presentations/Speakers

- Invited speaker to the *Conference of Construction Management Association of America – Pacific Northwest Chapter* on “Public-Private Partnerships.” April 2017
- Gave presentation to the *Associated General Contractors of America*, WA, about “public-private partnerships for the delivery of public facilities and infrastructure”. June 2016
- Gave presentation to the *Washington State Capital Projects Advisory Review Board* (CPARB) about public-private partnerships in preparation for a new state law on PPPs. May 2016
- Gave presentation to the *Northwest Construction Consumer Council* (NWCCC) about “Measuring performance and predicting time and cost using owner’s data”. June 2014
- Gave presentation to the *American Public Works Association Management and Public Administration Committee* (APWA MPAC) about “Public-Private partnerships for the delivery of public infrastructure”. Sept-2014
- Gave presentation to *Seattle Public Utilities* about “Public private partnerships in water infrastructure”. October 2014
- Invited by the *Lincoln Institute of Land Policy (Cambridge, MA)* to review and discuss a research work titled “How and why did the quality of service delivery vary within and across countries”. The research was done by Ex-World Bank’s senior analyst. June 2012

Conference Presentations

- New Frontiers in Construction Conference 2019, “Public-Private Partnerships – An Overview” UW CERC, March 21. 2019
- ASCE Construction Research Congress 2018. “The USA PPP Payment Mechanisms: A Comparison to the Canadian PPP Systems” New Orleans, Louisiana (via my Ph.D. student) 2018
- Transportation Research Board, TRB, Washington, D.C., 2017. “Investigation of Traffic Safety Performance of U.S. PPP Transportation Projects.” 2017
- The 5th International/11th Construction Specialty Conference, the Canadian Journal of Civil Engineering, Vancouver, BC, 2015. “Public-Private Partnerships – Analysis of Government Implementation Units.” 2015
- The 2nd International Conference on Public-Private Partnerships, Austin, Texas, (2015). “Comparative Analysis of P3 Availability Payments in the USA and Canada.” 2015
- Construction Research Congress, ASCE, Atlanta, GA, 2014. “Unsolicited Proposals for PPP Project: Private Sector Perceptions in the USA.” 2015
- Construction Specialty Conference, Canadian Society of Civil Engineers, Ottawa, 2011. “Unsolicited Proposals in Public-Private Partnerships Projects – Analysis of State Regulations in the USA.” 2011
- Construction Research Congress, American Society of Civil Engineers, Seattle, WA, 2009. “Time Prediction for Highway Pavement Projects using Regression Analysis.” 2009
- Construction Research Congress, American Society of Civil Engineers, Bahamas, 2007. “Contractor’s Experiences and Perceived Impediments in Public-Private Partnerships.” (*Best Paper*) 2007

- Construction Research Congress, American Society of Civil Engineers, ASCE, Bahamas, 2007. “Cost Prediction of Highway Projects using Regression.” 2007
- Annual Meeting of Transportation Research Board, Washington, D.C, 2007. “Analysis of Usage-Based Payments for Contractors Compensation in PPP projects.” 2007
- Construction Research Congress, American Society of Civil Engineers, ASCE, 2005, “Assessment of a Four Moments and Pearson Distribution Approach for Risk Analysis in Construction Estimates and Economics.” 2005

Attended Webinars

2017-present

- Build America Bureau 2019, 2-hour webinar: “An Overview of the P3 Procurement Guide.”
- Build America Bureau 2019, 2-hour webinar: “Preparing for a P3 Procurement”
- Build America Bureau 2019, 2-hour webinar: “Conducting a P3 procurement”
- ORACLE 2019 “Oracle Primavera Practice in the Classroom”
- WSDOT 2019 “Linear Scheduling – WHAT IS IT?”
- FHWA 2018 “P3 Handback Experience”
- FHWA 2018 “P3-VALUE tool for evaluation of Public-Private Partnership (P3) project delivery”
- FHWA 2018 “P3-VALUE 2.1 Benefit-Cost Analysis”
- FHWA 2017 “Guidebook on Financing of Highway P3 Projects.”
- FHWA 2017 “Use of Performance Requirements for Design and Construction in P3s.”
- FHWA 2017 “U.S. Highway Public-Private Partnership Projects since 1992.”
- TRB 2017 “Innovative Financing for Public Transportation: Value Capture and Small-and Medium-sized Public Private Partnership.”
- Lincoln Institute “Planning and Financing Successful Public-Private Partnerships: The National Development Council Model.”
- FHWA 2017 “Early Involvement of Private Sector Developers in Consideration of P3s.”
- FHWA 2017 “P3 Tax Considerations”
- BATIC Institute “Bundling Small-Scale Projects: P3 Opportunities and Challenges”

Reviewer – Journals, Books, and Grants

2003-present

- Associate Editor and manuscripts reviewer to the Canadian Journal of Civil Engineering.
- Manuscripts reviewer to the American Society of Civil Engineering journals.
- Manuscripts reviewer to the Journal of Construction Management and Economics (London, UK).
- Manuscripts reviewer to the Journal of Engineering, Construction, and Architecture Management.
- Reviewer to the biannual conference of Construction Research Congress, ASCE.
- Member of the Technical Committee of the 2009 ASCE Construction Research Conference.
- Books reviewer to Prentice-Hall publisher Inc.
- Books reviewer to John Wiley & Sons.
- Books reviewer to ASCE Press.
- Grant reviewer to Nexttrans (U.S. Department of Transportation) on research grants.
- Grant reviewer to the NY University Transportation Center (USDOT) on research grants.

Research Grants & Awards

- Principal Investigator (PI) on research with PacTrans (Federal/University Transportation District 10, funded by the US Department of Transportation) in an \$80,000 grant to investigate safety on the public-private partnership projects. (2015-2016)

- Co-PI with four CM professors on \$150,000 equipment research grant from Hewlett Packard. Research title was “*Learning to Create Sustainable Built Environments: Experiential and Contextual Learning (ECL) with Information and Communication Technology for a 21st Century Collaborative Global Education*”.
- Co-PI on the ECL grant for ~\$23,000 extension to the above ECL equipment grant.
- Co-PI on PacTrans (USDOT/UW University Transportation Center) for \$25,000 grant on “*Identifying and analyzing the relative advantages and disadvantages of public-private partnerships and traditional delivery for roadway projects*”
- PI on research grant (\$50,000) from the Washington State Department of Transportation; final report submitted July 2007. Title “*Performance Analysis and Forecasting for WSDOT Highway Projects (2005-2007)*”.
- Received the 2007 Best Paper Award from the Construction Research Congress of the American Society of Civil Engineers for the work “*Contractor’s Experiences and Perceived Impediments in Public-Private Partnerships*”

PUBLICATIONS

Book Chapters & Research Reports

- Abdel Aziz, A. M, and Migliaccio, G. C. (2016). “Public-Private-Partnerships in the USA Transportation Sector”, Chapter 22 in “Public Private Partnerships – A Global Review”, Taylor and Francis; <https://www.routledge.com/products/9780415728966>.
- Abdel Aziz, A. M., and Migliaccio, G.C. (2016). “Analysis of Roadway Safety under the Alternative Project Delivery Systems.” Pacific Northwest Transportation Consortium (PacTrans), University Transportation Center for Federal Region 10, Seattle, WA.
- Abdel Aziz, A. M. (2007) “Performance Analysis and Forecasting for WSDOT Highway Projects.” Washington State Department of Transportation (WSDOT), Report July 07, WARD 675.1, WSDOT, Olympia, WA. <https://www.wsdot.wa.gov/Research/Reports/600/675.1.htm>
- Abdel-Aziz, A. M. and Russell, A.D. (2005). “A Structure for Government Requirements in Public-Private Partnerships” (Chapter 16) in The Economics of Public Private Partnerships (The International Library of Critical Writings in Economics), Ed. by Darrin Grimsey and Mervyn K. Lewis, Edward Elgar Pub. UK.

Contractual Project Delivery Systems

- Shang, L., and Abdel Aziz, A. (2020). “Stackelberg Game Theory Based Optimization Model for the Design of Payment Mechanism in Performance-Based PPPs.” Journal of Construction Engineering and Management, ASCE, 146(4).
- Ahmed Abdel Aziz and Wenjie Shu (2020). “PPP for Healthcare Facilities in British Columbia: A Preliminary Analysis.” Construction Research Congress, ASCE, March 8-10, Tempe, AZ.
- Shang, L., and Abdel Aziz, A. (2019). “Conceptual Framework for the Design of Payment Mechanism in Transportation PPPs.” The CIB World Building Congress 2019, The International Council for Research and Innovation in Building and Construction (CIB)– Constructing Smart Cities June 17-21, Hong Kong.
- Shang, L., and Abdel Aziz, A. (2019). “An Investigation of the Contractual Roadway Safety Terms in Transportation PPPs.” The 10th International Structural Engineering and Construction Conference, May 20-25, Chicago, Illinois
- Shang, L., and Abdel Aziz, A. (2018). “The USA PPP Payment Mechanisms: A Comparison to the Canadian PPP Systems” ASCE Construction Research Congress, pp. 129-138. New Orleans, Louisiana.
- Luming Chang, Ahmed Abdel Aziz, and Giovanni Migliaccio (2017). “Investigation of Traffic Safety Performance of U.S. PPP Transportation Projects.” The 2017 Annual Meeting of the Transportation Research Board, January 8-12, 2017, in Washington, D.C.

- Abdel Aziz, A. M, and Shen, Tai-Ling (2016). “Management of Force Majeure Risks in PPP Canadian Projects” Construction Research Congress, ASCE, San Juan, Puerto Rico.
- Abdel Aziz, A. M, and Elmahdy, A. (2015). “Public-Private Partnerships – Analysis of Government Implementation Units”, Proceeding of the 5th International/11th Construction Specialty Conference, the Canadian Journal of Civil Engineering, Vancouver, BC, Canada, 8-10 June.
- Abdel Aziz, A. M, and Abdelhalim, K. (2015). “Comparative Analysis of P3 Availability Payments in the USA and Canada”, Proceeding of the 2nd International Conference on Public-Private Partnerships, Austin, Texas, USA, 26-29 May.
- Abdel Aziz, A. M, and Nabavi, H. (2014). “Unsolicited Proposals for PPP Project: Private Sector Perceptions in the USA.” Construction Research Congress, ASCE, Atlanta, GA.
- Abdel Aziz, A. M. (2013) “Commentary on how and why did the quality of service delivery vary within and across countries”, Ch 14 of “Infrastructure and Land Policies” by Lincoln Institute of Land Policy, Cambridge, MA.
- Abdel Aziz, A. M. (2011). “Unsolicited Proposals in Public-Private Partnerships Projects – Analysis of State Regulations in the USA.” Construction Specialty Conference, Canadian Society of Civil Engineers, CSCE, Ottawa, Canada.
- Abdel Aziz, A. M. (2007). “Successful Delivery of Public-Private Partnerships for Infrastructure Development” Journal of Construction Engineering and Management, ASCE, 133(12), 918-931.
- Abdel Aziz, A. M. (2007). “A Survey of the Payment Mechanisms for Transportation DBFO (PPP) Contracts in British Columbia” J. Construction Management and Economics, 25(5), 492-543 (London, UK).
- Abdel Aziz, A. M, and Kangas, A. A. (2007). “Contractor’s Experiences and Perceived Impediments in Public-Private Partnerships.” Construction Research Congress, ASCE, Bahamas.
- Abdel Aziz, A. M (2007). “Analysis of Usage-Based Payments for Contractors Compensation in PPP projects.” Transportation Research Board (TRB) Annual Meeting, Washington, D.C.
- Abdel-Aziz, A. M. and Russell, A.D. (2001). “A Structure for Government Requirements in Public-Private Partnerships” Canadian Journal of Civil Engineering, 28(6), 891-909.
- Abdel-Aziz, A. M. (1998). *Public-Private Partnerships in Infrastructure Development: The Northeast Burnaby School Case Study*. Public-Private Partnership Advisory Committee, Ministry of Finance, B.C., Canada.
- Russell, A. D., and Abdel-Aziz, A. M. (1997). “Public-Private Partnerships and Public infrastructure.” 1st Int. Conference on Construction Industry Development, Singapore, Vol. 1, 410-419.

Project Management, Economic Modeling, and Risk Analysis

- Abdel Aziz, A. M, (2011). “A Survey on Tools for Measuring Contractors Performance by State DOTs.” 3rd Construction Specialty Conference, Canadian Society of Civil Engineers, CSCE, Ottawa, Canada.
- Abdel Aziz, A. M, (2009). “Time Prediction for Highway Pavement Projects using Regression Analysis.” Construction Research Congress, American Society of Civil Engineers, Seattle, WA.
- Abdel Aziz, A. M (2008). “Minimum Performance Bounds for Evaluating Contractors Performance during Construction of Highway Pavement Projects” J. Construction Management and Economics, 26(5), 507-529.
- Abdel Aziz, A. M, (2007). “Cost Prediction of Highway Projects using Regression.” Construction Research Congress, American Society of Civil Engineers, ASCE, Bahamas.
- Abdel Aziz, A. M. and Russell, A. D. (2006). “Generalized Economic Modeling for Infrastructure and Capital Investment Projects.” Journal of Infrastructure Systems, American Society of Civil Engineers, 12(1), 18-32.

Abdel Aziz, A. M. and Russell, A. D. (2005). "Assessment of a Four Moments and Pearson Distribution Approach for Risk Analysis in Construction Estimates and Economics." Construction Research Congress, American Society of Civil Engineers, ASCE, April 2005.

Abdel-Aziz, A. M. and Russell, A. D. (1999). "Decision Support System for Infrastructure Project Appraisal and Risk Analysis." The Canadian Society of Civil Engineers, 27th Annual CSCE Conference, June 2-5, Vol III, 359-368. Regina, Saskatchewan.