

Curriculum Vita



Salman Azhar, Ph.D.

William A. Hunt Professor and Graduate Programs Chair
McWhorter School of Building Science
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Citations: <http://scholar.google.com/citations?user=goIeAZIAAAA&hl=en&oi=ao>

April 2025

1. Education

Ph.D. Civil Engineering (December 2005)

Major: Construction Management

Department of Civil and Environmental Engineering, Florida International University, Miami, Florida, USA

Dissertation title: *Information systems to support decision-making in construction owner organizations: A data warehousing approach*

M. Eng. Structural Engineering (April 1998)

School of Civil Engineering, Asian Institute of Technology, Bangkok, Thailand

Thesis title: *Development of high performance dry premixed concrete*

B.Sc. Civil Engineering (September 1995)

Department of Civil Engineering, University of Engineering and Technology, Lahore, Pakistan

2. Executive Education/Training

Sep 2019 to Apr 2020 Provost Fellow, SEC Academic Leadership Development Program, Auburn University, Auburn, AL

3. Employment History

Oct 2020 to date William A. Hunt (Full) Professor and Graduate Programs Chair
McWhorter School of Building Science, Auburn University

Aug 2017 to Sep 2020 J. E. Wilborn (Full) Professor and Graduate Programs Chair
McWhorter School of Building Science, Auburn University

Oct 2017 to Nov 2017 Visiting Faculty, Universidad Nacional de Colombia
Sede Medellin, Colombia

Aug 2015 to Jul 2017 J. E. Wilborn Endowed Associate Professor and Graduate Program Chair, McWhorter School of Building Science, Auburn University

Apr 2013 to May 2013 Visiting Faculty, Universidad Iberoamericana (UNIBE)
Santo Domingo, Dominican Republic

Aug 2011 to Jul 2015 Associate Professor and Graduate Program Chair
McWhorter School of Building Science, Auburn University

Aug 2006 to Jul 2011 Assistant Professor
McWhorter School of Building Science, Auburn University

Jan 2006 to May 2006 Adjunct Professor
Department of Civil and Environmental Engineering
Florida International University, Miami, FL

Jan 2001 to Dec 2005 Teaching and Research Assistant
Department of Construction Management
Department of Civil and Environmental Engineering
Florida International University, Miami, FL

Jul 1999 to Dec 2000 Research Assistant
Department of Civil and Structural Engineering
Hong Kong Polytechnic University, Kowloon, Hong Kong

Apr 1998 to Jul 1999 Information Scientist
International Ferrocement Information Center
Asian Institute of Technology
Bangkok, Thailand

Sep 1996 to Apr 1998 Graduate Research Assistant
School of Civil Engineering
Asian Institute of Technology, Bangkok, Thailand

Dec 1995 to Aug 1996 Geotechnical Engineer
National Engineering Services Pakistan (NESPAK) Limited
Lahore, Pakistan

Sep 1995 to Dec 1995 Associate Engineer
Nayer Ali Dada and Associates (Architects and Engineers)
Lahore, Pakistan

4. Teaching Experience

4.1 Auburn University, Auburn, AL

1. BSCI 2400: Building Structure-I
2. BSCI 3400: Building Structure-II: Steel and Wood
3. BSCI 3430: Building Structures-III: Soils and Concrete
4. BSCI 3440: Structure of Buildings-II
5. BSCI 3500: Construction Information Technology-I
6. BSCI 3550: Construction Information Technology-II
7. BSCI 4601: Project Controls-III Lab (VDC for Scheduling)
8. BSCI 4750: Soils and Earthmoving Equipment

9. BSCI 5460/6460/6466: Planning and Decision Making in Construction (UG, G, Online)
10. BSCI 5840/6840: Multicultural Issues in Construction
11. BSCI 5960/6960: Study Abroad Preparation Class
12. BSCI 5970/6970: Cultures and Environments Abroad
13. BSCI 6970-004: Construction Jobsite Management (G)
14. BSCI 6970-005: Technology Management and Innovation (G)
15. BSCI 7030/7036: Construction Information Systems/BIM (G, Online)
16. BSCI 7060: Research Methods in Building Science (G)
17. BSCI 7100-002: CII Best Practices for Construction and Project Management (G)
18. BSCI 7100-005: IT in Construction (G)
19. BSCI 7100-009: Global Construction (G)
20. BSCI 7100-010: Construction and Culture (G)
21. BSCI 7900: Directed Reading in Construction (various topics)
22. BSCI 7950: Graduate Seminar
23. BSCI 7980/7986: Graduate Capstone Project (G, Online)
24. BSCI 8060: Advanced Research Methods in Building Science-I
25. BSCI 8950: Dissertation Seminar

4.2 Universidad Nacional de Colombia, Sede Medellin, Colombia

1. Industrial Health and Safety under BIM Methodology (UG, G)

4.3 Universidad Iberoamericana (UNIBE), Santo Domingo, Dominican Republic

1. BCN5784: Construction Information Systems (G)

4.4 Florida International University, Miami, FL

1. CCE4001: Heavy Construction
2. CCE5405: Advanced Heavy Construction Techniques
3. EGM3520L: Materials Testing Laboratory
4. BCN 5585: Sustainable Construction (G, Online)
5. BCN 5784: Construction Information Systems (G, Online)
6. BCN 5906: Modular Construction (G, Online)
7. BCN 6642: Value Engineering (G, Online)
8. BCN6775: Decision and Risk Analysis in Construction (Co-instructor)
9. MAN6758: Project Consulting (Co-instructor)

4.5 Teaching Grants

1. "Creating Augmented Reality based instructional tools to enhance students' understanding and conceptual clarity in concrete design and construction"
 PI: Amna Salman, Co-PI: **Salman Azhar**
 Funding Agency: Biggio Center for the Enhancement of Teaching and Learning, AU
 Grant Amount: \$2,500
 Period: January 2020 - December 2020 (completed)

2. "To Develop a Handbook and Guidelines for Building Information Modeling (BIM) based Special Thesis for BSCI Undergraduate Students"
 PI: **Salman Azhar**
 Funding Agency: Biggio Center for the Enhancement of Teaching and Learning, AU
 Grant Amount: \$1,000
 Period: May 2010 – August 2011 (completed)

3. "To Visit State-of-the-Art National and International Construction IT/BIM Labs and Develop a Strategic Plan for Establishing an Advanced BIM Lab at the McWhorter School of Building Science"
 PI: **Salman Azhar**
 Funding Agency: Office of the Provost and Construction Industry Fund (CIF)
 Grant Amount: \$7,500
 Period: January 2010 – December 2010 (completed)

4. "CII Products and their Academic Applicability"
 PIs: **Salman Azhar** and David Grau; Co-PIs: Edward Gibson and Richard Burt
 Funding Agency: Construction Industry Institute (CII), Austin, TX
 Grant Amount: \$50,000 (AU Share: \$25,000)
 Period: May 2009 – July 2010 (completed)

4.6 Other Contributions to Teaching

1. Program Director, Building Science Study Abroad Program to China and Europe, June 15-July 19, 2019.
2. Program Director, Building Science Study Abroad Program to Europe, June 15-July 20, 2018.
3. Program Director, Building Science Study Abroad Program to China and England, May 7-29, 2016.
4. Program Director, Building Science Study Abroad Program to China and Europe, May 10-June 19, 2013.
5. Program Co-Director, Building Science Study Abroad Program to UK, June 28-August 02, 2010.

4.7 Teaching Skills Development Courses/Workshops

1. *Blackboard Training*, Office of Information Technology, Auburn University, May 2008.
2. *WebCT Training*, Educational Technology Services, Florida International University, Miami, FL, January 2006.
3. *One Year Graduate Teaching Certificate Program*, Academy for the Art of Teaching, Florida International University, Miami, FL, June 2003.
4. *Intensive Teaching Workshop*, Two days training workshop on teaching skills, Florida International University, Miami, Florida, August 2001.
5. *Intensive Certificate Course on Basic Teaching Skills*, Three days training workshop on teaching skills, Hong Kong Polytechnic University, Hong Kong, September 1999.

5. Research

5.1 Areas of Interest

Building Information Modeling (BIM); Information, Communication, and Visualization Technologies; Decision-support systems; Energy-efficient design and construction; Risk analysis and management; Concrete technology

5.2 Publications

Citation Indices

	All	Since 2019
Total citations	13,444	7,988
h-index	37	29
i10-index	72	54

Source: <https://scholar.google.com/citations?user=goleAZIAAAAJ&hl=en>

Monograph

1. **Azhar, S.** (2008). *Data Warehousing Systems in Construction: Concepts, Architecture and Implementation*. VDM Verlag Dr. Mueller Publishing House, Saarbrücken, Germany (ISBN: 978-3-8364-3507-9)

Edited Books

1. Ahmed, S. M., Hampton, P., **Azhar, S.**, and Saul, A.D. (2020). *Collaboration and Integration in Construction, Engineering, Management and Technology*. Springer, UK.
2. Ahmed, S.M., **Azhar, S.**, Ahmad, I., Sylvester, K., Smith, N., and Briggs, K. (2014). *Construction Cost and Financial Management*, Special edition of the CITC I-VII Conference Proceedings, CITC Global, Greenville, N.C.
3. Ahmed, S.M., **Azhar, S.**, Ahmad, I., Smith, N., and Briggs, K. (2014). *Decision Analysis and Decision Support Systems in Construction*, Special edition of the CITC I-VII Conference Proceedings, CITC Global, Greenville, N.C.
4. Ahmed, S.M., **Azhar, S.**, Ahmad, I., Smith, N., and Briggs, K. (2014). *Construction Safety Management*, Special edition of the CITC I-VII Conference Proceedings, CITC Global, Greenville, N.C.
5. Ahmed, S.M., **Azhar, S.**, Ahmad, I., Smith, N., and Briggs, K. (2014). *Construction Quality Management*, Special edition of the CITC I-VII Conference Proceedings, CITC Global, Greenville, N.C.
6. Ahmed, S.M., **Azhar, S.**, Ahmad, I., Smith, N., and Briggs, K. (2014). *Internationalization, Globalization and Cultural Issues in Construction*, Special edition of the CITC I-VII Conference Proceedings, CITC Global, Greenville, N.C.

Edited Conference Proceedings (Served as Co-Editor)

1. Ahmed, S.M.; **Azhar, S.**; Saul, A.D.; Mahaffy, K.L., and Farooqui, R. (2024). Proceedings of the 14th International Conference on Construction in the 21st Century, September 2-5, Rio De Janeiro, Brazil.
2. Ahmed, S.M.; **Azhar, S.**; Saul, A.D.; Mahaffy, K.L., and Farooqui, R. (2023). Proceedings of the 13th International Conference on Construction in the 21st Century, May 8-11, Arnhem, Netherlands (ISBN: 979-1-7324416-4-4)

3. Ahmed, S.M.; **Azhar, S.**; Saul, A.D.; and Mahaffy, K.L. (2022). *Proceedings of the 12th International Conference on Construction in the 21st Century*, May 16-19, Amman, Jordan (ISBN: 979-8-9865406-1-0)
4. Ahmed, S. M., Hampton, P., Saul, A.D., **Azhar, S.**, Smith, N., Cambell, S., Mahaffy, K. (2019). *Proceedings of the 11th International Conference on Construction in the 21st Century (CITC-XI)*, London, UK, September 9-11.
5. **Azhar, S.**; Khan, M.A.; Alamgir, S; and Salman, A. (2018). *Proceedings of the First International Conference on High Performance Energy Efficient Buildings and Homes (HPEEBH 2018)*, Lahore, Pakistan, August 1-2.
6. Ahmed, S. M., **Azhar, S.**, Smith, N., Cambell, S., Mahaffy, K., and Saul, A. (2018). *Proceedings of the 10th International Conference on Construction in the 21st Century (CITC-X)*, Colombo, Sri Lanka, July 2-4.
7. Ahmed, S. M., **Azhar, S.**, Smith, N., Cambell, S., Robinson-Watts, R., and Russell, L. (2017). *Proceedings of the 9th International Conference on Construction in the 21st Century (CITC-IX): Revolutionizing the Architecture, Engineering and Construction Industry through Leadership, Collaboration and Technology*, Dubai, UAE, March 5-7.
8. Ahmed, S. M., Xenidis, Y., **Azhar, S.**, Smith, N., Yaris, C. E., and Cambell, S. (2015). *Proceedings of the 8th International Conference on Construction in the 21st Century (CITC-VIII): Changing the Field-Recent Developments for the Future of Engineering and Construction*, Thessaloniki, Greece, May 27-30.
9. Ahmed, S.M., Smith, N., **Azhar, S.**, Yaris, C., Shah, A., Farooqui, R., and Poythress, R. (2013). *Proceedings of the 7th International Conference on Construction in the 21st Century (CITC-VII)*, Bangkok, Thailand, December 19-21, 2013.
10. Choudhry, R.M.; **Azhar, S.**; Hinze, J.W.; and Din, Z.U. (2013). *Proceedings of the International Conference on Safety, Construction Engineering and Project Management: Issues, Challenges and Opportunities in Developing Countries*, Islamabad, Pakistan, August 19-21, 2013.
11. Ahmed, S.M.; Farooqui, R; **Azhar, S.**; Shah, A.; Lodi, S.; and Smith, N. (2012). *Proceedings of the Third International Conference on Construction in Developing Countries "Advancing Civil, Architectural and Construction Engineering and Management"*, Bangkok, Thailand, July 4-6.
12. Ahmed, S.M.; Adnan, H; Panthi, K.; **Azhar, S.**, Takim, R; and Bozai, G. (2011). *Proceedings of the 6th International Conference on Construction in the 21st Century: Construction Challenges in the New Decade*, Kuala Lumpur, Malaysia, July 5-7.
13. Birgonul, T.; **Azhar, S.**, Ahmed, S.M., Dikmen, I; and Budayan, C. (2009). *Proceedings of the 5th International Conference on Construction in the 21st Century: Collaboration and Integration in Engineering, Management and Technology*, Istanbul, Turkey, May 20-22.
14. Ahmed, S.M.; **Azhar, S.**, and Sherif, M. (2007). *Proceedings of the 4th International Conference on Construction in the 21st Century: Accelerating Innovation in Engineering, Management and Technology*, Gold Coast, Australia, July 11-13.
15. Ahmed, S.M.; Ahmad, I.; Pantouvakis, J-P., **Azhar, S.**, and Zheng, J. (2005). *Proceedings of the 3rd International Conference on Construction in the 21st Century: Advancing Engineering, Management and Technology*, Athens, Greece, Sep. 15-17.
16. Ahmed, S.M.; Ahmad, I.; Tang, S.L. and **Azhar, S.** (2003). *Proceedings of the 2nd International Conference on Construction in the 21st Century: Sustainability and Innovation in Management and Technology*, Hong Kong, December 10-12.

17. Ahmad, I; Ahmed, S.M.; and **Azhar, S.** (2002). *Proceedings of the 1st International Conference on Construction in the 21st Century: Challenges and Opportunities in Management and Technology*, Miami, Florida, USA, April 25-26.

Book Chapter

1. **Azhar, S.** (2016). "Information Systems to Support Planning and Decision-Making in Construction Organizations using Action Research Methodology" *Research Methodology in the Built Environment: A Selection of Case Studies*, Edited by: Vian Ahmed, Alex Opoku and Zeeshan Aziz, Routledge, London.
2. **Azhar, S.** and Ahmad, I. (2007). "A Case Study of Data Warehousing Implementation in a Public Construction Owner Organization." *Construction Data Warehouse*, 2nd ed, Edited by Sang-Hoon Song, Seoul National University, Seoul, Korea, 15-31.
3. Ahmad, I. and **Azhar, S.** (2004). "Data Warehousing in Construction: From Conception to Application." *Data Warehousing: Design and Development Perspectives*, Edited by S. J. Krishna, ICFAI Books, India, 132-144.

Journal Papers

1. Anwar, R. M. I. & **Azhar, S.** (2024). "Mixed Reality in Building Construction Inspection and Monitoring: A Systematic Review." *Virtual Worlds* 2024, 3, 319-332.
2. Yucel, B. & **Azhar, S.** (2024). "Investigating critical success factors and risks of construction technology startups: a systematic literature review." *International Journal of Construction Management*, 24(15), 1655-1667.
3. Alathamneh, S., Collins, W., and **Azhar, S.** (2024) "BIM-based quantity takeoff: Current state and future opportunities." *Automation in Construction* 165 (2024): 105549.
4. Liu, J., **Azhar, S.**, Willkens, D. and Li, B. (2023). "Static Terrestrial Laser Scanning (TLS) for Heritage Building Information Modeling (HBIM): A Systematic Review." *Virtual Worlds*, Vol. 2, No. 2, pp. 90-114.
5. Bouhmoud, H., Loudyi, D., **Azhar, S.**, & Farah, M. (2022). "COVID-19 Impacts on the AEC industry with a Focus on Africa." *Journal of Engineering, Design and Technology*. URL: <https://www.emerald.com/insight/content/doi/10.1108/JEDT-12-2021-0721/full/html>
6. Junussova, T, Nadeem, A., Kim, J. R., **Azhar, S.**, Khalfan, M., & Kashyap, M. (2022). "Sustainable Construction through Resource Planning Systems Incorporation into Building Information Modelling." *Buildings*, 12(10), 1761.
7. Hilton, B. D., **Azhar, S.**, Khalfan, M., & Ul-Haq, I. (2021). "Building information modelling (BIM) for structural components in construction." *International Journal of Sustainable Real Estate and Construction Economics*, 2(1), 20-45.
8. Akhanova, G., Nadeem, A., Kim, J. R., **Azhar, S.**, & Khalfan, M. (2021). "Building Information Modeling Based Building Sustainability Assessment Framework for Kazakhstan." *Buildings*, 11(9), 384.
9. Salman, A., Sattineni, A., **Azhar, S.**, & Leousis, K. (2021). "A systematic review of building systems and technologies to mitigate the spread of airborne viruses". *Journal of Facilities Management*, doi: 10.1108/JFM-01-2021-0015.

10. Majrouhi Sardroud, J., Fakhimi, A., Mazroi, A., Ghoreishi, S. R., & **Azhar, S.** (2021). "Building Information Modeling Deployment in Oil, Gas and Petrochemical Industry: An Adoption Roadmap." *Civil Engineering Infrastructures Journal*, doi: 10.22059/CEIJ.2020.295522.1649.
11. Briggs, P. L., **Azhar, S.**, & Khalfan, M. (2020). Veteran workforce development: how veterans can make a positive impact on workforce development in the construction industry. *International Journal of Sustainable Society*, 12(3), 220-237.
12. Akhanovaa, G., Nadeem, A., Kim, J. R., & **Azhar, S.** (2020). "A Multi Criteria Decision-making Framework for Building Sustainability Assessment in Kazakhstan." *Sustainable Cities and Society*, 52, 101842.
13. **Azhar, S.**; Riaz, Z.; and Robinson, D. (2019). "Integration of Social Media in Day-to-Day Operations of Construction Firms." *Journal of Management in Engineering, ASCE*, 35(1): [https://doi.org/10.1061/\(ASCE\)ME.1943-5479.0000660](https://doi.org/10.1061/(ASCE)ME.1943-5479.0000660).
14. Akhanova, G; Nadeem, A; Kim, J.R.; and **Azhar, S.** (2019). "A Framework of Building Sustainability Assessment System for the Commercial Buildings in Kazakhstan." *Sustainability*, 11 (17), 4754, doi:10.3390/su11174754.
15. Hale, B., **Azhar, S.**, Noor, M. A., & Khalfan, M. M. (2019). "The Solicitation, Evaluation, and Selection of Construction Contractors: A Case Study of US Army Corps of Engineers." *International Journal of Sustainable Real Estate and Construction Economics*, 1(3), 215-231.
16. Zhang, X., **Azhar, S.**, Nadeem, A., & Khalfan, M. (2017). "Using Building Information Modelling to Achieve Lean Principles by Improving Efficiency of Work Teams." *International Journal of Construction Management*, 1-8.
17. Choudhry, R.M., Gabriel, H.M., Khan, M.K., and **Azhar, S.** (2017). "Causes of Discrepancies between Design and Construction in the Pakistan Construction Industry." *Journal of Construction in Developing Countries*, 22(2), 1-18.
18. **Azhar, S.** (2017). "Role of Visualization Technologies in Safety Planning and Management at Construction Jobsites". *Procedia Engineering*, 171, 215-226.
19. Ward, A.E., **Azhar, S.** and Khalfan, M. (2017). "Construction in Occupied Spaces." *Slovak Journal of Civil Engineering*, 25(2), 15-23.
20. Ghaffarianhoseini, A., Tookey, J., Ghaffarianhoseini, A., Naismith, N., **Azhar, S.**, Efimova, O. and Raahemifar, K. (2017). "Building Information Modelling (BIM) Uptake: Clear Benefits, Understanding its Implementation, Risks and Challenges." *Renewable and Sustainable Energy Reviews*, 75, 1046-1053.
21. Fakhimi, A., Majrouhi Sardroud, J., Mazroi, A., Ghoreishi, S.R. and **Azhar, S.** (2017). "Influences of Building Information Modeling (BIM) on Oil, Gas, and Petrochemical Firms". *Journal of Science and Technology for the Built Environment*, 23(6), 1063-1077.
22. Phillips, S.B., **Azhar, S.** and Khalfan, M.M. (2016). "Application of BIM for Maintenance and Management of Academic Facilities in the USA: A Review." *International Journal of the Built Environment and Asset Management*, 2(1), 67-79.
23. **Azhar, S.**, and Choudhry, R.M. (2016). "Capacity Building in Construction Health and Safety Research, Education, and Practice in Pakistan." *Journal of Built Environment Project and Asset Management*, 6(1), 92-105.
24. **Azhar, S.**, and Abeln, J.M. (2014). "Investigating Social Media Applications for the Construction Industry" *Procedia Engineering*, 85, 42-51.

25. Deshpande, A.; Azhar, S.; and Amireddy, S. (2014). "A Framework for a BIM-based Knowledge Management System." *Procedia Engineering*, 85, 113-122.
26. Riaz, Z.; Arslan, M.; Kiani, A.K.; and **Azhar, S.** (2014). "CoSMoS: A BIM and Wireless Sensor based Integrated Solution for Worker Safety in Confined Spaces", *Journal of Automation in Construction*, 45, 96-106.
27. Arslan, M.; Riaz, Z.; Kiani, A.K.; and **Azhar, S.** (2014). "Real-time Environmental Monitoring, Visualization and Notification System for Construction H&S Management". *Journal of Information Technology in Construction*, 19, 72-91.
28. **Azhar, S.**; Grau, D.; Burt, R.; and Gibson, E. (2014). "State of the Art of Best Construction Practices Integration into Higher Education Curricula." *Journal of Professional Issues in Engineering Education and Practice*, ASCE, 140(1), 04013005.
29. **Azhar, S.**; Lukkad, M.; and Ahmad, I. (2013). "An Investigation of Critical Factors and Constraints for Selecting Modular Construction Over Conventional Stick-Built Technique." *International Journal of Construction Education and Research*, 9(3), 203-225.
30. **Azhar, S.**; Khalfan, M.; and Maqsood, T. (2012). "Building Information Modeling: Now and Beyond." *Australasian Journal of Construction Economics and Building*, 12 (4), 15-28.
31. **Azhar, S.**; Carlton, W. A.; Olsen, D; and Ahmad, I. (2011). "Building Information Modeling for Sustainable Design and LEED® Rating Analysis." *Journal of Automation in Construction (Special Issue on Building Information Modeling and Changing Construction Practices)*, 20(2), 217-224.
32. **Azhar, S.** (2011). "Building Information Modeling (BIM): Trends, Benefits, Risks and Challenges for the AEC Industry." *ASCE Journal of Leadership and Management in Engineering*, 11(3), 241-252.
33. **Azhar, S.**; Ahmad, I.; and Sein, M.K. (2010). "Action Research as a Proactive Research Method for Construction Engineering and Management." *ASCE Journal of Construction Engineering and Management (Special Issue on Research Methodologies in Construction Engineering and Management, Edited by Taylor J.E., and Jaselskis, E.J.)*, 136 (1), 87-98.
34. **Azhar, S.**, and Teel, J. (2010). "Online Bidding in Construction: Current Trends and future Prospects." *Built Environment Journal*, 7(1), 1-8.
35. **Azhar, S.**, and Brown, J. (2009). "BIM for Sustainability Analyses." *International Journal of Construction Education and Research*, 5(4), 276-292.
36. **Azhar, S.** (2008). "Impact of Data Warehouse Implementation on Organizational Design", *Projects and Profits*, 8(11), 52-57.
37. **Azhar, S.** (2008). "Risk Identification, Allocation and Response: A Case Study of Alabama Building Contractors", *Projects and Profits*, 8(9), 63-69.
38. Ahmad, I., **Azhar, S.** and Lukauskis, P. (2004). "Development of a Decision Support System using Data Warehousing to Assist Builders/Developers in Site Selection." *Automation in Construction*, 13(4), 525-542.
39. Ahmad, I. and **Azhar, S.** (2004). "Temperature Variations in Drilled Shaft Concrete and its Effect on Slump Loss." *Cement and Concrete Research*, 34(2), 207-217.
40. Ahmad, I, **Azhar, S.** and Ahmed, Syed, M. (2003). "Construction of a Bridge in a Developing Country: A Bangladesh Case Study." *Journal of Leadership and Management*, ASCE, 3(4), 177-182.

41. Poon, C.S. and **Azhar, S.** (2003). "Deterioration and Recovery of Metakaolin Blended Concrete Subjected to High Temperature." *Journal of Fire Technology*, 39(1), 35-45.
42. Poon, C.S.; **Azhar, S.**; Anson, M. and Wong, Y.L. (2003). "Performance of Metakaolin Concrete at Elevated Temperatures." *Cement and Concrete Composites*, 25(1), 83-89.
43. Poon, C.S.; **Azhar, S.**; Anson, M. and Wong, Y.L. (2001). "Comparison of the Strength and Durability Performance of Normal and High Strength Pozzolanic Concretes at Elevated Temperatures." *Cement and Concrete Research*, 31(9), 1291-1300.
44. Poon, C.S.; **Azhar, S.**; Anson, M. and Wong, Y.L. (2001). "Strength and Durability Recovery of Fire-Damaged Concrete after Post-Fire Curing." *Cement and Concrete Research*, 31(9), 1307-1318.

Papers in Refereed Conference Proceedings

1. Anwar, R. M. I., & **Azhar, S.** (2024). "Mixed Reality Visualizations for Building Construction and Operations: Concept, Applications, Benefits, and Challenges." *Proceedings of the 18th East Asia-Pacific Conference on Structural Engineering and Construction (EASEC-18)*, Chiang Mai, Thailand, November 12-15.
2. Yucel, B., Umer, M., **Azhar, S.**, and Farooqui, R. U. (2024). "Evaluating the Perception and Experience of Engineering Faculty with ChatGPT - A Case from a Developing Country." *Proceedings of the 14th International Conference on Construction in the 21st Century*, September 2-5, Rio De Janeiro, Brazil.
3. Anwar, R. M. I., Hassan, M. U., and **Azhar, S.** (2024). "BIM-based Construction Quality Control: A BIM-QRC-ACQCR Framework Development (Part - I)." *Proceedings of the 14th International Conference on Construction in the 21st Century*, September 2-5, Rio De Janeiro, Brazil.
4. Ahmad, W., and **Azhar, S.** (2023). "State-of-Art of Construction 4.0: An Academia Vs Industry Comparative Study." *Proceedings of the XVI International Conference on Durability of Building Materials and Components (DBMC 2023)*, October 10-13, Beijing, China.
5. Alathamien, S., Liu, J., **Azhar, S.**, and Burt, R. (2023). "Reality Capture (RC) Technology for Drywall Installation: A Scan-to-Prefab Approach." *Proceedings of the XVI International Conference on Durability of Building Materials and Components (DBMC 2023)*, October 10-13, Beijing, China.
6. **Azhar, S.**, and Shao, Guangyan1. (2023). "Enhancing Students' Comprehension in Building Structures: An Experimental Exploration of Augmented Reality Applications." *Proceedings of the 15th International Congress on Advances in Civil Engineering (ACE2023)*, September 6-8, Famagusta, North Cyprus.
7. **Azhar, S.**, Haroon, A., & Rabayah, H. (2022). Investigating Mixed Reality Applications in Building Inspection and Maintenance. *Transforming Construction with Reality Capture Technologies*, Conference Proceedings, Fredericton, Canada, August 23-25.
8. Adhikari, S.; **Azhar, S.**; Meadati, P; and Alaeddin, N. (2022). An Investigation on the Impact of 4D BIM on Construction Scheduling. *Proceedings of the 12th International Conference on Construction in the 21st Century*, May 16-19, Amman, Jordan.

9. Bouhroud, H; Loudyi, D.; and **Azhar, S.** (2022). Evaluation of Building's Life Cycle Carbon Emissions based on BIM and LCA: A Case Study of Affordable Housing in Morocco. Proceedings of the 12th International Conference on Construction in the 21st Century, May 16-19, Amman, Jordan.
10. Adhikari, S.; Alaeddin, N.; **Azhar, S.**; and Meadati, P. (2021). "Analyzing Barriers and Uniformity of Multi-dimensional BIM Applications." *Proceedings of the International Conference on Computing in Civil Engineering.* Orlando, FL, September 12-14.
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- International Conference on Sustainability in Construction in Developing Countries, Cape Town, South Africa, November 13-15, 239-246.*
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 131. **Azhar, S.**; Nimityongskul, P.; Poon, C.S. (2000). "Development of High Performance Dry Premixed Concrete." *Proceedings of the International Symposium on Cement and Concrete Technology in the 2000s*, Turkey, September 6-10, 2, 68-77.

Poster/Extended Abstract/Article

1. Azhar, S.; Shao, G.; and Salman, A. (2021). "Experimental Investigation to Measure Improvements in Students' Comprehension in Building Structures using Augmented and Mixed Reality Applications." *Auburn University Faculty Research Symposium*,

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2. Haroon, A., and **Azhar, S.** (2019). "Implementation of Mixed Reality Technology for Building Inspection and Maintenance." *Auburn University Faculty Research Symposium*, October 4.
 3. Han, D., **Azhar, S.**, and Dastider, S. (2019). "A VR based Construction Safety Training Game." *Auburn University Faculty Research Symposium*, October 4.
 4. **Azhar, S.**; Ishfaq, R.; and Froehlich, M.A. (2016). "Low Cost Scanning and Visualization Technologies for Design and Construction." *Auburn University Faculty Research Symposium*, September 30.
 5. **Azhar, S.**; Ahmed, A.; and Froehlich, M.A. (2015). "Virtual Reality Headsets for Immersive 3D Environment: Investigating Applications in Construction Safety and Jobsite Management." *Auburn University Faculty Research Symposium*, September 30.
 6. **Azhar, S.**; and Philips, S. (2012). "Use of Building Information Modeling Technology for Facility Management." *Auburn University Faculty Research Symposium*, April 2.
 7. **Azhar, S.** and Brown, J. (2009). Poster on "Use of Building Information Models for Sustainable Design and LEED Rating Process." *26th Construction Industry Institute (CII) Annual Conference*, Reno, NV, July 29-30, 2009.
 8. Poon, C.S. and **Azhar, S.** (2000). Poster on "Recycling and Reuse of Construction and Demolition Waste in Hong Kong." *RILEM Workshop on Use of Recycled Materials as Aggregates in the Construction Industry*, Paris, France, September 10-12.
 9. **Azhar, S.** (1999). "YANBU Tower: A Masterpiece of Ferrocement Technology for Architecture." *ACECOMS News and Views*, Bangkok, 3(1), 4.

Guest Editorial

1. **Azhar, S.**, and Ahmad, I. (2014). "Introduction to the Special Issue on Information and Communication Technology (ICT) in AEC Organizations: Assessment of Impact on Work Practices, Project Delivery, and Organizational Behavior." *Journal of Management in Engineering*, DOI: 10.1061/(ASCE)ME.1943-5479.0000345.
2. Khalfan, M. M. A, **Azhar, S.**, and Maqsood, T. (2012). "Editorial: Special Issue on BIM Technology and Processes", *Australasian Journal of Construction Economics and Building*, 12 (4) 13-14.

Technical Reports

1. **Azhar, S.** and Khan, M.A. (2018). "Capacity Building in Research, Education and Practice for High-Performance Energy-Efficient Buildings and Homes." Final Report, National Academy of Sciences, Washington D.C., October 2018.
2. **Azhar, S.**; Ries, R.; and Choudhry, R. M. (2014). "Establishment of a Center of Excellence to Conduct and Promote Construction Safety Research, Education and Training in Pakistan." Final Report, National Academy of Sciences, Washington D.C., December 2014.
3. **Azhar, S.**; Grau, D.; Burt, R.; and Gibson, E. (2010). "CII Products and Their Academic Applicability." Research Report submitted to the *Construction Industry Institute (CII)*, Austin, Texas, July 2010.
4. **Azhar, S.** (2009). "Building Information Modelling for Electrical Contractors: Benefits, Opportunities and Challenges." *National Electrical Contractors Association*, Bethesda, MD.

5. Moore, W., and **Azhar, S.** (2008). "Investigation of the Safety, Efficiency, and Cost-Effectiveness of Self-Dumping Trash Bins." *Cherokee Pumping Inc.*, Hampton, GA.
6. Ahmad, I.; Ali, H.; and **Azhar, S.** (2006). "Utilization of Maturity Meters for Concrete Quality Assurance." *Florida Department of Transportation (FDOT)*, Florida.
7. Ahmad, I., and **Azhar, S.** (2003). "Temperature Variation in Drilled Shaft Concrete and its Effect on Slump Loss." *Florida Department of Transportation (FDOT)*, Florida.
8. Ahmad, I., **Azhar, S.** and Sobanjo, J. (2002). "Lumps and Balls in High-Slump Concrete: Reasons and Remedies." *Florida Department of Transportation*, Florida.
9. Ahmed, S.M.; **Azhar, S.**; Castillo, M.; and Kappaguntulla, P. (2002). "Construction Delays in Florida: An Empirical Study." *Building Construction Industry Advisory Committee (BCIAC)*, Department of Community Affairs, Florida.
10. Ahmed, S.M.; **Azhar, S.**; Castillo, M. (2002). "Measurement of Construction Processes for Continuous Improvement." *Building Construction Industry Advisory Committee (BCIAC)*, Department of Community Affairs, Florida.
11. Ahmed, S.M.; **Azhar, S.**; Roldan, J. (2001). "Development of a Risk Management Model for Florida Contractors." *Building Construction Industry Advisory Committee (BCIAC)*, Department of Community Affairs, Florida.

6. Research Grants and Contracts

1. AI Driven Concrete Testing
 PI: **Salman Azhar**
 Funded by: Seed Grant, College of Architecture, Design, and Construction
 Grant Amount: Amount: \$5,000
 Period: November 2024 - October 2025 (in-progress)

2. Post Pandemic Buildings Redesign Using Advanced Visualization Technologies
 PI: **Salman Azhar**; Co-PI: Sanjiv Kumar
 Funded by: Seed Grant, College of Architecture, Design, and Construction
 Grant Amount: Amount: \$5,000
 Period: February 2021 - September 2022 (completed)

3. "An Experimental Investigation to Measure Improvements in Students' Comprehension in Building Structures using Augmented and Mixed Reality Applications"
 PI: **Salman Azhar**; Co-PI: Amna Salman
 Funded by: McWhorter Fund for Excellence, McWhorter School of Building Science
 Grant Amount: Amount: \$7,500
 Period: November 2019 - December 2020 (completed)

4. "Investigating Mixed Reality (MR) Applications for Buildings' Inspection and Maintenance"
 PI: **Salman Azhar**
 Funded by: Center for Construction Innovation and Collaboration (CCIC)

Grant Amount: Amount: \$14,988
Period: December 2018 - December 2019 (completed)

5. "Modular Design and Construction: Investigation of Current State-of-Art and Development of Case Studies and Educational Modules"
PI: **Salman Azhar**; Co-PI: Michael Robinson
Funded by: McWhorter Fund for Excellence, McWhorter School of Building Science
Grant Amount: Amount: \$7,500
Period: November 2018 - October 2019 (completed)
6. "Capacity Building in Research, Education and Practice for High-Performance Energy-Efficient Buildings and Homes"
PI (US Side): **Salman Azhar**; PI (Pakistan Side): Dr. Muhammad A. Khan
Funded Agency: United States Agency for International Development (USAID) and Higher Education Commission of Pakistan
Grant Amount: \$298,242 (Auburn Share: \$149, 121)
Period: September 2016 - September 2018 (completed)
7. "Investigating Applications of Mixed-Reality Headsets in Design and Construction"
PI: **Salman Azhar**
Funded by: Alabama State Licensing Board for General Contractors' Construction Industry Fund and CADC Seed
Grant Amount: Amount: \$17,742
Period: January - December 2017 (completed)
8. "Low Cost 3D Digital Scanning and Immersive Visualization Technologies for Built Environment"
PI: **Salman Azhar**; Co-PI: Rafay Ishfaq (AU College of Business)
Funded by: Alabama State Licensing Board for General Contractors' Construction Industry Fund and CADC Seed
Grant Amount: Amount: \$14,140
Period: January - December 2016 (completed)
9. "Virtual Reality Headsets for Immersive 3D Environment: Investigating Applications in Construction Safety and Jobsite Management"
PI: **Salman Azhar**, Co-PI: Anwar Ahmed
Funding Agency: Alabama State Licensing Board for General Contractors' Construction Industry Fund (CIF) and CADC Seed Grant program
Grant Amount:\$16,867
Period: January 2015 - December 2015 (completed)
10. "Investigating the Role of Social Media Technologies (SMTs) in Promoting Innovation and Collaboration in the Construction Industry"
PI: **Salman Azhar**
Funding Agency: Alabama State Licensing Board for General Contractors' Construction Industry Fund (CIF)
Grant Amount: \$9,100

Period: January 2014 – December 2014 (completed)

11. “An Exploratory Study to Investigate Value of Social Media Technology (SMT) in Construction Education, Research and Practice”
PI: **Salman Azhar**
Funding Agency: College of Architecture, Design and Construction, Auburn Univ.
Grant Amount: \$2,000
Period: November 2013 – December 2014 (completed)
12. “Establishment of a Center of Excellence to Conduct and Promote Construction Safety Research, Training and Education in Pakistan”
PIs (US side): Jimmie Hinze (UF) and **Salman Azhar** (Auburn)
PIs (Pak side): Rafiq M. Choudhry and Zainab Raiz (NUST)
Funding Agency: Pakistan-US Science and Technology Cooperation Program, National Academy of Sciences, USA and Higher Education Commission, Pakistan
Grant Amount: \$318,000 (Auburn share: Approx. \$103,750)
Period: November 2010 – August 2014 (completed)
13. “Utilizing BIM and 3D High Definition (HD) Laser Scanning for Safety Planning and Management for Renovation and Retrofitting Projects”
PI: **Salman Azhar**, Co- PI: Junshan Liu
Funding Agency: Alabama State Licensing Board for General Contractors’ Construction Industry Fund (CIF)
Grant Amount: \$7,000
Period: January 2013 – December 2013 (completed)
14. “Using Building Information Modeling (BIM) to Facilitate Construction Safety Planning and Management at Jobsites”
PI: **Salman Azhar**, Co- PI: Anoop Sattineni
Funding Agency: College of Architecture, Design and Construction and Alabama State Licensing Board for General Contractors’ Construction Industry Fund (CIF)
Grant Amount: \$15,425
Period: December 2011 – January 2013 (completed)
15. “An Investigation on Viability of BIM for Sustainability Analyses and LEED® Assessment of Buildings (Phase-II)”
PI: **Salman Azhar**, Co- PI: Darren Olsen
Funding Agency: College of Architecture, Design and Construction and Alabama State Licensing Board for General Contractors’ Construction Industry Fund (CIF)
Grant Amount: \$14,000
Period: December 2010 – January 2012 (completed)
16. “BIM for Facility Management: A Framework for AU Facilities Division”
PI: **Salman Azhar**
Funding Agency: AUIGP and CADDC Seed Grants - 2010
Grant Amount: \$4,000
Period: December 2010 – January 2012 (completed)

17. "An Investigation on Viability of BIM for Sustainability Analyses and LEED® Assessment of Buildings (Phase-I)"
PI: **Salman Azhar**, Co- PI: Darren Olsen
Funding Agency: College of Architecture, Design and Construction, Auburn University
Grant Amount: \$9,000
Period: December 2009 – January 2011 (completed)
18. "Application of RFID Tags in a Building Information Model to Monitor Construction Worker Activity on a Job Site"
PI: Anoop Sattineni, Co- PI: **Salman Azhar**
Funding Agency: College of Architecture, Design and Construction, Auburn University and Alabama State Licensing Board for General Contractors' Construction Industry Fund (CIF)
Grant Amount: \$10,833
Period: December 2009 – January 2011 (completed)
19. "CII Products and their Academic Applicability"
PIs: **Salman Azhar** and David Grau, Co-PIs: Edward Gibson and Richard Burt
Funding Agency: Construction Industry Institute (CII)
Grant Amount: \$50,000 (AU Share: \$25,000)
Period: May 2009 – July 2010 (completed)
20. "Use of Building Information Modeling (BIM) for Sustainable Design and LEED® Rating Processes"
PI: **Salman Azhar**
Funding Agency: Alabama State Licensing Board for General Contractors' Construction Industry Fund (CIF)
Grant Amount: \$14,260
Period: January 2009 – August 2009 (completed)
21. "Building Information Modeling (BIM): Benefits, Risks and Opportunities for Electrical Contractors"
PI: **Salman Azhar**
Funding Agency: National Electrical Contractors Association (NECA)
Amount: \$10,000
Period: September 2008 – August 2009 (completed)
22. "Building Information Modeling (BIM): Study of Best Practices and Development of an Integrated Cost-Benefit-Risks Model for Owners, Designers and Constructors"
PI: **Salman Azhar**, Co-PIs: Mark Taylor and Anoop Sattineni
Funding Agency: College of Architecture, Design and Construction, AU
Amount: \$15,721
Period: April 2008 – August 2009 (completed)

23. "Construction Delays: An Empirical Study of Alabama Building Construction Industry"
PI: **Salman Azhar**
Funding Agency: Office of Vice-President for Research, Auburn University
Amount: \$3,000
Period: May 2008 – April 2009 (completed)
24. "Investigation of the Safety, Efficiency, and Cost-Effectiveness of Self-Dumping Trash Bins"
PI: **Salman Azhar**
Funding Agency: Cherokee Pumping Inc., Hampton, Georgia
Amount: \$2,500
Period: May 2008 – August 2008 (completed)
25. "Building Information Modeling (BIM): Study of Best Practices and Return-on-Investment (ROI) Analysis"
PI: **Salman Azhar**
Funding Agency: UG Research Fellowship Award, McWhorter School of Building Science
Amount: \$3,000
Period: April 2008 – September 2008 (completed)
26. "Development of a Risk Management Model for Building Subcontractors"
PI: **Salman Azhar**
Funding Agency: College of Architecture, Design and Construction, Auburn University
Amount: \$15,700
Period: April 2007 – August 2008 (completed)
27. "Building Information Modeling (BIM): Development of a Strategic Framework to Identify Research and Outreach Opportunities"
PI: **Salman Azhar**, Co-PI: Michael Hein
Funding Agency: Office of Vice-President for Research, Auburn University
Amount: \$4,000
Period: May 2007 – April 2008 (completed)
28. "Development of a Risk Management Model for Alabama General Building Contractors"
PI: **Salman Azhar**
Funding Agency: Office of Vice-President for Research, Auburn University
Amount: \$3,000
Period: May 2007 – April 2008 (completed)
29. "Building Information Modeling for Constructors and Educators"
PI: James M. Taylor
Co-PIs: **Salman Azhar**, Junshan Liu, Anoop Sattineni

Funding Agency: Alabama State Licensing Board for General Contractors'
Construction Industry Fund (CIF)
Amount: \$10,000
Period: October 2006 – August 2007 (completed)

7. Outreach

7.1 Outreach Grants

1. “To Provide Seed Funding for Collaborative Research including MS Curriculum Development, Seminars in Person and Junior Faculty Training (Phase-II)”
PIs: M. Akram Tahir (Pakistan) and **Salman Azhar** (USA)
Funding Agency: Higher Education Commission, Islamabad, Pakistan
Amount: \$2,500
Period: July 2007 - August, 2007
2. “To Provide Seed Funding for Collaborative Research including MS Curriculum Development, Seminars in Person and Junior Faculty Training (Phase-I)”
PIs: Akram M. Tahir (Pakistan) and **Salman Azhar** (USA)
Funding Agency: Higher Education Commission, Islamabad, Pakistan
Amount: \$2,250
Period: May 2006 – July, 2006

7.2 Speaker/Trainer at International Continuing Education Workshops/Seminars

1. One-day Workshop on “Energy Efficient Buildings and Need for Sustainability”, Lahore, Pakistan, March 14, 2018.
2. Two-day Workshop on “High Performance Energy Efficient Building Design and Construction”, Lahore, Pakistan, March 8-9, 2017.
3. Two-day Workshop on “Energy-Efficient Building Design for Comfort, Economics, and Climate Change”, Lahore, Pakistan, March 29-30, 2016.
4. Half-day Workshop on “Building Information Modeling”, Thessaloniki, Greece, May 27, 2015.
5. One day workshop on “Emerging Trends in Construction Safety”, Islamabad, Pakistan, May 26, 2014.
6. Two days workshop on Autodesk Revit, Islamabad, Pakistan, May 27-28, 2014.
7. Half-day seminar on “Publish or Perish: How to Write a Quality Scholarly Paper”, Peshawar, Pakistan, May 30, 2014.
8. One day workshop on “Safety Together: Planning, Designing and Building a Healthy and Safe Construction Industry”, Islamabad, Pakistan, August 19, 2013.
9. Three days workshop on BIM Software, Islamabad, Pakistan, June 18-20, 2012.
10. Half-day workshop on Building Information Modeling, July 5, 2012, Bangkok, Thailand.
11. Six workshops on “Construction Safety and OSHA Standards”, May-June, 2012, Pakistan (Various Cities).
12. One day seminar on “Modern Trends in Project Management”, July 28, 2011, Islamabad, Pakistan
Trainers: **Salman Azhar (AU)**, Syed M. Ahmed (ECU) and Attaullah Shah (AIOU)

- Participants: Senior managers from public and private organizations in Pakistan
13. One day workshop on “Safety Management and OSHA Standards”, July 26, 2011, Islamabad, Pakistan
Trainers: **Salman Azhar (AU)**, Syed M. Ahmed (ECU) and Rafiq Choudhry (NUST)
Participants: Safety professionals from public and private organizations in Pakistan
 14. Half day workshop on “Action Research in Construction”, May 19, 2009, Istanbul, Turkey, Trainers: **Salman Azhar (AU)** and Maung K. Sein (University of Adger, Norway); Participants: Registered participants of the CITC-V Conference.
 15. Two days workshop on “TQM and Risk Management”, December 16-17, 2008, Karachi, Pakistan (Collaborator: NED University of Engineering and Technology, Karachi, Pakistan; Trainers: **Salman Azhar (AU)** and S.M. Ahmed (FIU);
Participants: Senior managers from public and private organizations in Pakistan
 16. Three days workshop on “Advanced Project Management”, July 23-25, 2007, Karachi, Pakistan
Collaborator: NED University of Engineering and Technology, Karachi, Pakistan
Trainers: **Salman Azhar (AU)**, S.M. Ahmed (FIU) and Rizwan U. Farouqi (FIU)
Participants: Senior managers from public and private organizations in Pakistan
 17. Three days workshop on “Advanced Project Management”, December 18-20, 2006, Karachi, Pakistan
Collaborator: NED University of Engineering and Technology, Karachi, Pakistan
Trainers: **Salman Azhar (AU)** and S.M. Ahmed (FIU)
Participants: Senior managers from public and private organizations in Pakistan
 18. Three days workshop on “Advanced Project Management”, May 29-31, 2006, Karachi, Pakistan
Collaborator: NED University of Engineering and Technology, Karachi, Pakistan
Trainers: **Salman Azhar (AU)** and S.M. Ahmed (FIU)
Participants: Senior managers from public and private organizations in Pakistan

8. Service

8.1 Major Administrative Duties

Graduate Programs Chair, PhD and Master of Building Construction programs, McWhorter School of Building Science (BSCI), August 2011 to date.

Responsibilities

- Advise graduate students on different academic and professional issues
- Market graduate programs nationally and internationally
- Administer graduate programs admissions
- Organize open houses to market graduate programs
- Continuously review/update graduate programs curriculum
- Monitor and document performance of graduate assistants
- Prepare and submit Annual Assessment Reports
- Chair graduate programs curriculum review committee meeting
- Attend various college and university committee meetings
- Meet with potential students on their campus visit
- Organize social events for the graduate students

- Review and update graduate programs website and other marketing material

8.2 University Committees

1. Employees' Salaries and Welfare Committee, Auburn University (2020 – to date)
2. Intermural Grants Program, Office of Vice-President for Research, Auburn University (2018 – to date)
3. University Graduate Council, Auburn University (2012 – 2015)
4. University Graduate Council's Curriculum Committee, Auburn University (2013 – 2015)
5. Undergraduate Research and Creative Scholarship Forum (CADC Representative), Office of Undergraduate Research (2011 – 2014)
6. University Diversity Council (CADC Representative), Office of Diversity and Multicultural Affairs (2011 – 2014)
7. Competitive Research Grants Selection Committee, Office of Vice-President for Research, Auburn University (2009 - 2013)
8. Faculty Mentoring Research Grants Selection Committee, Office of Vice-President for Research, Auburn University (2008 - 2009)

8.3 College and School Committees

1. Chair, BSCI Educational Technology Committee (November 2009 to date)
2. Member, CADC Research Council, (May 2010 to date)
3. Member, CADC T&P Guidelines Review Committee (January – April 2018)
4. Chair, BSCI T&P Guidelines Review Committee (January – April 2018)
5. Chair, CADC Diversity and Multicultural Affairs Committee (2012 – 2014)
6. Member, Search Committee for CADC Grant Writer (November 2013 to February 2014)
7. Chair, BSCI Faculty Search Committee (November 2012 to April 2013)
8. Member, Search Committee for CADC Development Manager (December 2011 to February 2012)
9. Member, BSCI Faculty Search Committee (September 2009 to May 2010)
10. Member, Unit Technology Manager Search Committee (March – May, 2010)
11. Member, New Curriculum Development Committee (IT Group) (September 2009 to May 2010)
12. Member, BSCI Graduate Program Committee (September 2006 – July 2010)
13. Member, Undergraduate Research Fellowship Committee (February 2008 – May 2009)

8.4 Associate/Assistant Editor

1. *Associate Editor*, International Journal of Construction Education and Research, Taylor and Francis, USA (January 2010 to December 2015)
2. *Assistant Editor*, Journal of Ferrocement (ISSN: 0125-1759), Published by International Ferrocement Information Center (IFIC), Bangkok, Thailand (July 1999 – March 2000)

8.5 Editorial Board Member

1. Editorial Board Member, *International Journal of 3-D Information Modeling (IJ3DIM)*, (April 2016 to date)

2. Editorial Board Member, *ASCE Journal of Management in Engineering* (September 2007 to date)
3. International Advisory Board Member, *Market Forces Journal*, (March 2008 – to date)
4. Editorial Board Member, *International Journal of Construction Education and Research* (January 2016 to December 2018)

8.6 Guest Co-Editor

1. **Azhar, S.**, and Ahmad, I., Special Issue on Information and Communication Technology (ICT) in AEC Organizations: Assessment of Impact on Work Practices, Project Delivery, and Organizational Behavior.” *Journal of Management in Engineering*, DOI: 10.1061/(ASCE)ME.1943-5479.0000345, 2014.
2. Khalfan, M. M. A, **Azhar, S.**, and Maqsood, T. Special Issue on BIM Technology and Processes”, *Australasian Journal of Construction Economics and Building*, 12 (4), 2012.

8.7 Journal Reviewer

1. ACI Materials Journal, July 2006 – to date
2. ASCE Journal of Computing in Civil Engineering, August 2014 to date
3. ASCE Journal of Construction Engineering and Management, January 2006 – to date
4. ASCE Journal of Professional Issues in Engineering Education and Practice, July 2015 – to date
5. ASCE Journal of Management in Engineering, September 2005 – to date
6. International Journal of Construction Education and Research, November 2009 – to date
7. International Journal of Construction Project Management, April 2009 – to date
8. International Journal of Information Technology and Decision-Making, September 2009 – to date
9. Journal of Automation in Construction, January 2012 – to date
10. Journal of Architectural Engineering and Design Management, March 2016 – to date
11. Journal of Building Construction and Building Materials, March 2015 – to date
12. Journal of Civil Engineering and Management, May 2015 – to date
13. Journal of Construction Management and Economics, November 2005 – to date
14. Market Forces Journal, November 2008 – to date
15. NED University Journal of Research, April 2009 – to date
16. Journal of Advanced Research, August 2010 – to date
17. NED University Journal of Research (April 2009 to date)

8.8 Book Reviewer

1. *Sustainable Building Practices and Systems in Architecture, Engineering and Construction*, Prentice Hall, January 2012.
2. *Sustainability in Construction Management*, 1st ed., Wujek, Prentice Hall, January 2011.
3. *Sustainable Construction Project Management*, 1st ed., Celik, Prentice Hall, Nov. 2010.
4. *Construction Project Management: A Managerial Approach*, 1st ed., Joe McCarthy, Pareto Building Improvement, LLC, November 2009.
5. *Soils and Foundations*, 7th ed., Liu and Evett, Prentice Hall, September 2009.
6. *Handbook of Research on Building Information Modeling and Construction Informatics: Concepts and Technologies*, Edited by Underwood, J., and Isikdag, U., IGI-Global Publishing, PA, USA, July 2009.

8.9 Conference Committees

Steering Committee

1. Technical Chair, *15th International Conference on Construction in the 21st Century (CITC-XV)*, Rabbat, Morocco, November 2025.
2. Technical Chair, *11th International Conference on Construction in the 21st Century (CITC-XI)*, London, UK, July 9-11, 2019
3. Chair, *1st International Conference on High Performance Energy Efficient Buildings and Homes (HPEEBH 2018)*, Lahore, Pakistan, August 1-2, 2018
4. Technical Chair, *10th International Conference on Construction in the 21st Century (CITC-X)*, Colombo, Sri Lanka, July 2-4, 2018
5. Technical Chair, *9th International Conference on Construction in the 21st Century (CITC-IX)*, Dubai, UAE, March 5-7, 2017
6. Technical Chair, *33rd International Symposium on Automation and Robotics (ISARC 2016)*, Auburn, Alabama, July 18-21, 2016
7. Technical Chair, *2nd International Conference on Emerging Trends in Engineering, Management, and Sciences (ICETEMS-2016)*, Peshawar, Pakistan, December 28-30, 2016
8. Technical Chair, *8th International Conference on Construction in the 21st Century (CITC-VIII)*, Thessaloniki, Greece, May 27-30, 2015.
9. Technical Chair, *7th International Conference on Construction in the 21st Century (CITC-VII)*, Bangkok, Thailand, December 19-21, 2013.
10. Technical Chair, *International Conference on Safety, Construction Engineering and Project Management "Issues, Challenges and Opportunities in Developing Countries"*, Islamabad, Pakistan, August 19-21, 2013.
11. Program Chair, *3rd International Conference on Construction in Developing Countries (ICCIDC-III)*, Bangkok, Thailand, July 4-6, 2012
12. Technical Chair, *6th International Conference on Construction in the 21st Century (CITC-VI)*, Kuala Lumpur, Malaysia, July 5-7, 2011
13. Conference Secretary, *2nd International Conference on Construction in the Developing Countries (ICCIDC-II)*, Cairo, Egypt, August 3-5, 2010
14. Technical Chair, *5th International Conference on Construction in the 21st Century (CITC-V)*, Istanbul, Turkey, May 20-22, 2009
15. Technical Chair, *4th International Conference on Construction in the 21st Century (CITC-IV)*, Gold Coast, Australia, July 11-13, 2007
16. Coordinator: *3rd International Conference on Construction in the 21st Century (CITC-III)*, Athens, Greece, September 15-17, 2005
17. Coordinator: *2nd International Conference on Construction in the 21st Century (CITC-II)*, Hong Kong, December 10-12, 2003
18. Coordinator: *1st International Conference on Construction in the 21st Century (CITC-I)*, Miami, Florida, April 25-26, 2002

Organizing Committee

Local Organizing Committee Member, *3rd International Conference on Composites in Construction (CICE2006)*, Miami, Florida, December 12-15, 2006

Technical/Scientific Committee

1. *4th International Conference on Sustainable Civil Engineering Structures and Construction Materials (SCESCM 2018)* Yogyakarta, Indonesia, September 5-7, 2018
2. *7th West Africa Built Environment Conference*, Accra, Ghana, August 12-15, 2017
3. *5th Construction Management Conference*, Port Elizabeth, South Africa, November 28-29, 2016
4. *3rd International Conference on Sustainable Civil Engineering Structures and Construction Materials (SCESCM 2016)*, Bali, Indonesia, September 5-7, 2016
5. *33rd ISARC International Conference*, Auburn, Alabama, July 18-21, 2016
6. *5th Creative Construction Conference*, Budapest, Hungary, June 25-28, 2016
7. *52nd ASC International Annual Conference*, Provo, UT, April 13-15, 2016
8. *4th Creative Construction Conference*, Krakow, Poland, June 21-24, 2015
9. *51st ASC International Annual Conference*, College Station, TX, April 22-25, 2015
10. *3rd Creative Construction Conference*, Prague, Czech Republic, June 21-24, 2014
11. *50th ASC International Annual Conference*, Washington, DC, March 26-29, 2014
12. *ASCE Construction Research Congress (CRC)*, Atlanta, GA, May 2014
13. *49th ASC International Annual Conference*, San Luis Obispo, CA, April 10-13, 2013
14. *Sixth Green International Conference in Cambridge*, Cambridge, UK, July 3-6, 2012
15. *ASCE Construction Research Congress (CRC)*, West Lafayette, Indiana, May 21-23, 2012
16. *48th ASC International Annual Conference*, Birmingham, UK, April 11-14, 2012
17. *Construction Management 40 Conference*, Port Elizabeth, South Africa, November 27-29, 2011
18. *ASCE International Workshop of Computing in Civil Engineering*, Miami, Florida, June 19-22, 2011
19. *First International Conference on Sustainable Urbanization (ICSU 2010)*, Kowloon, Hong Kong, December 15-17, 2010
20. *The 5th Built Environment Conference*, Durban, South Africa, July 18-20, 2010.
21. *5th International Conference on Project Management (PM05)*, Crete, Greece, May 2010
22. *46th ASC International Annual Conference*, Boston, MA, April 7-10, 2010
23. *2009 World Congress on Computer Science and Information Engineering (CSIE 2009)*, Los Angeles, CA, March 31-April 2, 2009
24. *45th ASC International Annual Conference*, Gainesville, Florida, April 1-4, 2009
25. *ASCE Construction Research Congress (CRC)*, Seattle, Washington, April 5-7, 2009
26. *1st International Conference on Construction in Developing Countries (ICCIDC-1)*, Karachi, Pakistan, August 4-5, 2008
27. *1st International Conference on Engineering Management (ICEM-1)*, Jamshoro, Pakistan, January 9-10, 2008
28. *44th ASC International Annual Conference*, Auburn, Alabama, April 2-5, 2008
29. *1st International Conference on Advances in Cement Based Materials and Applications to Civil Infrastructure*, Lahore, Pakistan, December 12-14, 2007
30. *43rd ASC International Annual Conference*, Flag Staff, Arizona, April 12-14, 2007
31. *CIB92 International Symposium on Sustainability and Value through Construction Procurement*, Manchester, UK, November 29-December 01, 2006

8.10 Professional Committees

1. Member, *National BIM Standard Project Committee*, National Institute of Building Sciences, Washington, D.C., September 2009 – to date.

2. Member, *Academic Committee*, Construction Industry Institute, Austin, Texas, April 2010 - to date.
3. Member, CIB Working Commission W107 – Construction in Developing Countries, April 2011 to date.
4. Chair, *ASC Research Committee*, Associated Schools of Construction (ASC), April 2013 – April 2016.
5. Voting Member, American Society of Testing and Materials (ASTM) subcommittee *D18:14 on Soils and Rocks: Geotechnics of Sustainable Construction*, July 2008 – to date.
6. Voting Member, American Society of Testing and Materials' (ASTM) subcommittee *D54:05 on Homeland Security Applications: Buildings and Infrastructure Protection*, July 2008 – to date.
7. Member, *Research Committee*, Associated Schools of Construction, April 2006 – to date.
8. Member, *Publications Committee*, Associated Schools of Construction, January 2010 – to date.

8.11 Ph.D. External Examiner

1. Sirindhorn International Institute of Technology, Thammasat University, Thailand (2024).
2. Department of Civil Engineering, University of New South Wales, Australia (2022).
3. Department of Building and Real Estate, Hong Kong Polytechnic University, Hong Kong (2023).
4. Department of Civil Engineering, Curtin University of Technology, Australia (2015).
5. Department of Architecture, University of Punjab, Lahore, Pakistan (2017, 2015).
6. Department of Civil and Environmental Engineering, University of Waterloo, Waterloo, Canada (2014).
7. Department of Civil Engineering, Mehran University of Engineering and Technology, Jamshoro, Pakistan (2012).
8. School of Property, Construction and Project Management, RMIT University, Australia (2023, 2019, 2011, 2010).
9. Department of Architectural Engineering and Design, University of Engineering and Technology, Lahore, Pakistan (2024, 2023, 2013, 2011).
10. Department of Transportation Engineering, University of Engineering and Technology, Lahore, Pakistan (2020).

8.12 International Grants Reviewer

1. Grant reviewer for *Research Grants Council of Hong Kong*, Hong Kong (March 2015 to date).
2. Grant reviewer for *Nazarbayev University*, Astana, Kazakhstan (October 2014 to date).
3. Grant reviewer for *Natural Sciences and Engineering Research Council of Canada (NSERC)*, Canada (August 2014 to date).
4. Grant reviewer for *Qatar National Research Fund (QNRF)* (www.qnrf.info), Doha, Qatar (November 2007 to date).

8.13 Student Body

1. Faculty Advisor, *Pakistan Student Association*, Auburn University, Auburn, AL

2. Vice President, *Graduate Students Association*, Florida International University, Miami, Florida (April 2001 – April 2002)
3. Graduate Students Representative, *Student Government Association*, Florida International University, Miami, Florida (April 2002 – September 2003)

9. Honors and Awards

1. *Excellence in Teaching Award*, McWhorter School of Building Science, Auburn University, Auburn, AL, September 2024.
2. *Faculty Excellence Award*, McWhorter School of Building Science, Auburn University, Auburn, AL, September 2021.
3. *ASC Outstanding Educator Award (Region-2)*, Associated Schools of Construction, USA, April 2020.
4. *Faculty Excellence Award*, McWhorter School of Building Science, Auburn University, Auburn, AL, April 2019.
5. *Best Paper Award*, 9th International Conference on Engineering, Project and Production Management (EPPM 2018), Cape Town, South Africa, September 2018.
6. *AIT Distinguished Alumni Award (Category: Research and Scholarship)*, Asian Institute of Technology, Bangkok, Thailand, November 2017.
7. *Best Paper Award (second place)*, 8th International Conference on Engineering, Project and Production Management (EPPM 2017), Amman, Jordan, September 2017.
8. *Faculty Excellence Award*, McWhorter School of Building Science, Auburn University, Auburn, AL, April 2017.
9. *Program Assessment Excellence Award*, Office of the Provost, Auburn University, Auburn, AL, November 2016.
10. *Best Paper Award*, CIB World Building Congress (WBC 16), Tampere, Finland, May 2016.
11. *Faculty Excellence Research Award in Building Science*, McWhorter School of Building Science, Auburn University, Auburn, AL, April 2016.
12. *Associated Schools of Construction (ASC) Outstanding Researcher Award*, College Station, TX, April 2015.
13. *J.E. Wilborn Emerging Endowed Professorship*, McWhorter School of Building Science, Auburn University, Auburn, AL, April 2015.
14. *Faculty Excellence Teaching Award*, McWhorter School of Building Science, Auburn University, Auburn, AL, April 2014.
15. *Best Conference Paper Award*, 49th Annual Conference of the Associated Schools of Construction, San Luis Obispo, CA, April 2013.
16. *Best Conference Paper Award*, 48th Annual Conference of the Associated Schools of Construction, Birmingham, UK, April 2012.
17. *Outstanding Faculty Member*, College of Architecture, Design and Construction, Auburn University, Auburn, AL, April 2012.
18. *Outstanding Research Award*, McWhorter School of Building Science, Auburn University, Auburn, AL, April 2011.
19. *Excellence in Teaching Award*, Associated Schools of Construction (ASC), USA, April 2009.
20. *Outstanding Research Award*, McWhorter School of Building Science, Auburn University, Auburn, AL, April 2009.

21. *Outstanding Ph.D. Graduate Award*, College of Engineering and Computing, Florida International University, Miami, Florida, December 2005.
22. *Best Research Paper Award*, Annual Scholarly Forum, Graduate Students Association (GSA), Florida International University, Miami, Florida, 2001, 2003, 2004 (3 years).
23. *Excellence in Teaching Award*, Academy for the Art of Teaching, Florida International University, Miami, Florida, April 2003.
24. *Outstanding Graduate Student of the Year*, Office of Campus Life, Florida International University, Miami, Florida, USA, 2002 and 2003 (2 consecutive years).
25. *Recognized in Who's Who among Students in American Universities and Colleges 2001-2004*, (4 consecutive years).
26. *Ralph Sanchez Scholarship for Excellent Academic Performance*, Florida International University, Miami, Florida, August 2003.
27. *AIT Alumni Association Research Award for Outstanding Research* in the field of Structural Engineering and Construction, Asian Institute of Technology, Bangkok, Thailand, April 1998.
28. *Scholarship from the Government of Japan for Master of Engineering (\$30,000)*, Asian Institute of Technology (AIT), Bangkok, Thailand, September 1996.
29. *First Position in Bachelor of Science in Civil Engineering*, University of Engineering and Technology, Lahore, September 1995.
30. *Dr. S. H. Duranni Scholarship for Best Overall Performance* during the year 1994-95, University of Engineering and Technology, Lahore, Pakistan, October 1994.

10. Professional Affiliations

1. American Society of Civil Engineers (ASCE)
2. American Society of Testing and Materials (ASTM)
3. International Association of Automation and Robotics in Construction (IAARC)
4. Chi-epsilon: Civil Engineering Honors Society (XE)
5. Phi-Kappa-Phi Honors Society

11. Professional Registration

1995 - Present Professional Civil Engineer in Pakistan (Reg.: Civil/16743)