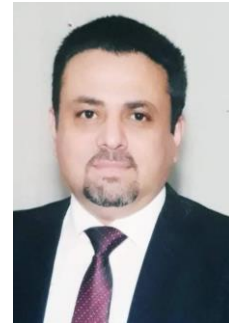


**Wasim Barham, Ph.D., PE**  
Professor of Civil Engineering  
Department of Civil Engineering/Faculty of Engineering  
Jordan University of Science and Technology  
Email: [wsbarham@just.edu.jo](mailto:wsbarham@just.edu.jo)  
Mobile: + 962 (79) 740 3666  
Nationality: American



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## SUMMARY

- Earned the Ph.D. degree in Civil Engineering from the State University of New York at Buffalo, and M.Sc. and B.Sc. Degrees in Civil Engineering from JUST.
- Taught several undergraduate and graduate civil engineering courses at JUST and Kennesaw State university over the past 13 years.
- Held several administrative positions at JUST and Kennesaw State University.
- Research interests are in the fields of strengthening and repair of reinforced concrete structures, nonlinear finite element modeling, and the application of artificial intelligence in Civil Engineering.
- Involved in several collaborative research projects with faculty members from JUST and outside JUST.
- Published a total of 36 peer-reviewed journal papers and conference papers.
- Received several funded projects from the Deanship of Scientific Research at JUST, National Science Foundation (NSF), and other agencies.
- Advised 22 graduate students in their research projects, 28% of them were females.
- Supervised graduation projects for more than 50 undergraduate students since joining JUST.
- Member of CE ABET accreditation committee since joining JUST in 2016. CE ABET accreditation was renewed in the spring of 2020 for six years.

## EDUCATION

### **Ph.D. Civil Engineering**

University at Buffalo, State University of New York, Sept. 2005

*Dissertation:* “Large Increment Method for Solving Nonlinear Structural Systems”

### **M.S. Civil Engineering**

Jordan University of Science and Technology, Jordan, Sept. 2001

*Thesis:* “Active Control of Cable-Stayed Bridges Vibrations Using Artificial Neural Networks”

### **B.S. Civil Engineering**

Jordan University of Science and Technology, Jordan, Feb. 1999

## LICENSURE

- Licensed Professional Engineer (PE) in the State of Alabama – (License # 33556-E)
- Registered Professional Engineer - Jordan Engineers Association (JEA)

## PROFESSIONAL EXPERIENCE (Academia)

### Jordan University of Science and Technology, Jordan

03/2022 – Present	Professor of Civil Engineering
09/2019 – 09/2021	Director of the Consultative Center for Science and Technology
11/2017 – 09/2019	Civil Engineering Department Chair
09/2016 – 03/2022	Associate Professor of Civil Engineering
09/2014 – 08/2015	Visiting Associate Professor of Civil Engineering
09/2001 – 12/2001	Research Assistant, Department of Civil Engineering
09/1999 – 09/2001	Teaching Assistant, Department of Civil Engineering

### Kennesaw State University, Marietta, GA, USA

08/2015 – 08/2016	Assistant Department Chair
08/2014 – 07/2016	Associate Professor of Civil and Construction Engineering
08/2012 – 07/2014	Coordinator of Construction Engineering Program
08/2008 – 07/2014	Assistant Professor of Civil and Construction Engineering

## ACADEMIC HONORS

- Outstanding Faculty Award Presented by the Vice President of Academic Affairs, Kennesaw State University, Spring 2013.
- Faculty of the Year Award presented by the Student Government Association, Kennesaw State University, Spring 2012.
- ExCEEEd 2010 Fellowship, American Society of Civil Engineers, Denver, Colorado.
- Civil, Structural and Environmental Engineering (CSEE) Graduate Fellowship- University at Buffalo, State University of New York (2002-2004).

## PROFESSIONAL EXPERIENCE (Industry)

### Weidlinger Associates Inc., Cambridge, Massachusetts

*Structural Engineer*, Oct. 2005 – July 2008

#### Duties:

- Use commercial software (RamSteel, SAP2000, ANSYS) to conduct linear and nonlinear 3D finite element analysis of structures under static and dynamic loading.

- Design of reinforced concrete buildings per ACI 318-02.
- Design of steel structures per AISC, thirteen edition manual.
- Seismic design of buildings per the AISC-05 seismic provisions using moment frames and braced frames.
  - Development of construction specifications.
- Review shop drawings.

### **Atef Almashriqi Construction Company**

*Site Engineer*, Feb 1999 – August 1999

### **TEACHING LOAD at JUST**

The teaching load per semester of the faculty member at Jordan University of Science and Technology is 12 credit hours. In addition to teaching, the faculty member must involve in other activities including student advising, service, and research. My academic load/semester over the last 4 years was distributed as follows:

- 6 credit hours for teaching 2 courses with average size of 50 students per section.
- 3 credit hours for full time administrative work.
- 3 credit hours for supervising graduate students and undergraduate students.

### **COURSES TAUGHT**

#### **University of Science and Technology (JUST)**

##### **Undergraduate Level**

CE 201–Statics                                  CE 202– Strength of Materials.  
CE 304 – Numerical Methods          CE326 - Materials Lab  
CE 332 – Structural Analysis I  
CE 432– Reinforced Concrete Design 1  
CE 535 - Computer-aided analysis and design of Civil Engineering

##### **Graduate Level**

CE 733 – Finite Element Analysis

#### **Kennesaw State University (formally known as Southern Polytechnic State University)**

##### **Undergraduate Level**

CE 1000 - Orientation to CE & CNST Engr                  CE 3201 - Structural Analysis  
CE 3202 - Design of Concrete Structures              CE 4103 - Design of Steel Structures  
CE 4800 - Senior Project  
ENGR 2214 - Engineering Mechanics-Statics  
ENGR 3131 - Strength of Materials  
ENGR 3132 - Strength of Materials Lab

## RESEARCH INTERESTS

- Structural Engineering
- Repair and Strengthening of Concrete Structures
- Artificial Intelligence in Civil Engineering
- Computational Mechanics
- Finite Element Modeling

## GRANTS

- “BIM Coordination Between Architecture, Civil, And Construction Management for Education System in Jordan, Co-PI, Deanship of Research at Jordan University of Science and Technology, October 2020, Awarded (6000 JD).
- “Behavior of Repaired Heat-Damaged Recycled Aggregate Concrete Beams with Near Surface Mounted CFRP Strips”, PI, Deanship of Research at Jordan University of Science and Technology, April 2019, Awarded (8900 JD).
- “Effect of Coarse Aggregate Size Upon Bond Behavior Between Concrete And Carbon Fiber Reinforced Polymeric Sheets”, PI, Deanship of Research at Jordan University of Science and Technology, April 2018, Awarded (5900 JD).
- “I-Corps: Commercialization of Virtual Engineering Laboratories”, Co-PI, National Science Foundation (NSF), Award number 1447218, July 2014, Awarded (\$50,000).
- “StormChamber Strength Testing”, PI, Sponsor: Practical Environmental Solutions (DBA HydroLogic Solutions) Woodbridge, VA, Spring 2014, Awarded (\$54,000).
- Sponsored Research, "Drop Prevention" at the Construction Sites, Co-PI, Sponsor: PowerBlock Industrial Supplies, Inc., Spring, 2010, Awarded (\$55,625).
- “Using a Virtual Gaming Environment in Strength of Materials: Increasing Access and Improving Learning Effectiveness” Co-PI, National Science Foundation (NSF), March 30, 2010, Awarded (\$147,000).

*This project has resulted in a reusable 3D virtual lab software for students to explore and learn strength of materials content. It is reusable at any university, thus it should positively impact access and learning within engineering specifically. The results of this study will enhance pedagogical methods within engineering as faculty adopt tools such as this software to support/augment their existing real-world labs or replace (or make access to when none are previously available) labs that are either too costly to maintain or build.*

- “Balsa Bridge Competition,” PI, the Board of Regents through the University System of Georgia STEM Initiative Program, Spring 2009, Awarded (\$5000).

## REVIEWER for INTERNATIONAL JOURNALS

- Construction and Building Materials
- KSCE Journal of Civil Engineering
- Journal of King Saud University - Engineering Sciences
- Jordan Journal of Civil Engineering
- Engineering Fracture Mechanics

## **COMPUTER SKILLS**

- Microsoft office packages: Microsoft Word, Excel, PowerPoint, Visio, and OneNote.
- AutoCAD Drawing.
- Structural Analysis and Design Software such as SAP2000, ETABS, and SAFE.
- Several tools in MATHCAD, MATLAB, and MAPLE software
- ABAQUS finite element software

## **PROFESSIONAL GROWTH and DEVELOPMENT**

### Educational Workshops

- 3-day workshop on “Basics of Distance Education”, Jordan University of Science and Technology, 12-13 April 2020
- 2-day workshop on “Scientific Research: Methods and Procedures”, Jordan University of Science and Technology, 12-13 December 2018
- The Educator Session at NASCC: The Steel Conference, “Bridge Design for the Classroom”, Wednesday, 8:00 a.m. to noon, St. Louis, April 17th, 2013
- The Educator Session at NASCC: The Steel Conference, “Stability: Using Computer Software as a Virtual Lab for Learning Structural Stability”, Wednesday, 8:00 a.m. to noon, Dallas, April 18th, 2012
- The Educator Session at NASCC: The Steel Conference, the “Simplicity of Complexity: The Road to Great Designs”, Wednesday, 8:00 a.m. to noon, Pittsburgh, May 11th, 2011
- The Educator Session at NASCC: The Steel Conference, “Sustainability in you Steel Design Class / Architecture & Construction Management Curriculums”, Wednesday, 8:00 a.m. to noon, Orlando, May 12th, 2010
- Creative Technology Uses in Instruction, USG's Faculty Development Series, Athens, 8:00am – 4:30 pm, October 14th, 2011
- Excellence in Engineering Education Teaching Workshop (ExCEED), University of Colorado at Boulder, Colorado, July 18-23, 2010.

“The ExCEED (Excellence in Civil Engineering Education Teaching) Workshop is a six-day practicum that provides Civil Engineering educators with an opportunity to improve their teaching abilities”

### Technical Workshops

- ACI Concrete Conference on Materials & Design, November 17-18, 2019, Amman, Jordan.
- 2013 NASCC: The Steel Conference, St. Louis, April 17-19. Attended the following seminars:
  - Economical Joist Selection
  - 50 Tips for Designing Constructible and Economical Steel Buildings
  - Design and Construction of Curved and/or Skewed I-girder Bridges
  - Composite Floor System Design Techniques

- “The Engineering and Economics of Reinforced Concrete Buildings”, A seminar for civil engineering educators, Skokie, Illinois, August 2-4, 2010.
- “Design of Concrete Bridges by the AASHTO LRFD Specifications”, A seminar for civil engineering educators, Skokie, Illinois, August 5-6, 2010.
- “Innovative Applications of Cement in Pavement Maintenance & Constructions”, conducted by Georgia LTAP & PCA, Gainesville, GA, December 14th, 2009.
- ACI/PCA 318 – 08 Building Code Seminar, Atlanta, GA, May 7th, 2009.

## PUBLICATIONS

### Refereed Journal Papers (Published)

1. Shbeeb, N., Katash, A., Oguzmert, M., and **Barham, W.**, “Estimation of the Bond Strength of Fiber-Reinforced Polymer Bars in Concrete Using Artificial Intelligence Systems” Buildings 14 (2), 369, 2024
2. **Barham, W.**, AL-Maabreh, A., and Latayfeh, O., “Effect of using magnetic water on the mechanical properties of concrete exposed to elevated temperature” International Journal of Building Pathology and Adaptation 41 (5), 1086-1098, 2023.
3. Obaidat, Y., **Barham, W.**, Obaidat, A., and Abuzakham, H., “Improving the Shear Capacity of Recycled Aggregate Concrete Beams with NSM-CFRP Strip” Practice Periodical on Structural Design and Construction 28 (3), 04023016, 2023.
4. **Barham, W.**, Obaidat, Y., and Qublan, A., “Effect of maximum coarse aggregate size upon shear strengthening of RC beams using NSM-CFRP strips” Structures 53, 652-663, 2023
5. Obaidat, Y., **Barham, W.**, and Hayajneh, S., “Finite element modeling of bond behavior between heat-damaged concrete and carbon fiber-reinforced polymer sheets” Journal of Structural Integrity and Maintenance 8 (2), 121-132, 2023.
6. Obaidat, Y., **Barham, W.**, and Obeidat, R., “Repair of thermally shocked reinforced concrete beams using near-surface mounted–Carbon fiber reinforced polymers ropes and strips” Construction and Building Materials 366, 130201, 2023.
7. Obaidat, Y., **Barham, W.**, and Abu libdeh, R., “Development of interaction diagrams of reinforced concrete short columns strengthened by NSM-CFRP strips using finite element method” International Journal of Building Pathology and Adaptation, 2022.
8. Obaidat, Y., **Barham, W.**, and Al-Khazaaleh, N., “Modeling of confined circular RC columns using artificial neural network and finite element method” Structures 40, 74-87, 2022.
9. Shbeeb, N., **Barham, W.**, and Brasneh, H., “Nonlinear Finite Element Analysis of Concrete Columns Confined by Carbon Fiber Reinforced Polymer Sheets” International Review of Civil Engineering (IRECE) 13(4):275, 2022.
10. **Barham, W.**, Obaidat, Y., and Alkhatatbeh, H., “Behavior of Heat Damaged Reinforced Recycled Aggregate Concrete Beams Repaired with NSM-CFRP Strips” Magazine of Civil Engineering, 111 (3), 11106, 2022.

11. **Barham, W.**, Obaidat, Y., and Abdelrahman, B., “Experimental Study on Bond Behavior between Heat-Damaged Recycled Asphalt Pavement Concrete and NSM-CFRP Strips” *Case Studies in Construction Materials*, e00543, 2021.
12. **Barham, W.** and Idris, A., “Flexibility-Based Large Increment Method for Nonlinear Analysis Of Timoshenko Beam Structures Controlled By A Bilinear Material Model” *Structures* 30, 678-691, 2021.
13. **Barham, W.**, Irshidat, M., and Awawdeh, A., “Repair of Heat-Damaged RC Beams Using Micro-concrete Modified with Carbon Nanotubes” *KSCE Journal of Civil Engineering*, 14, e00480, 2021.
14. Obaidat, Y., **Barham, W.**, and Aljarah, A., “New Anchorage Technique For NSM-CFRP Flexural Strengthened RC Beam Using Steel Clamped End Plate” *Construction and Building Materials* 263, 120246, 2020.
15. **Barham, W.**, Rabab’ah, S., Aldeeky, H., and Al Hattamleh, O., “Mechanical and Physical Based Artificial Neural Network Models for The Prediction of The Unconfined Compressive Strength Of Rock” *Geotechnical and Geological Engineering* 38 (5), 4779-4792, 2020.
16. **Barham, W.**, Albiss, B., and Lataifeh, O., “Influence of Magnetic Field Treated Water on The Compressive Strength and Bond Strength of Concrete Containing Silica Fume” *Journal of Building Engineering*, 33, 101544, 2020.
17. Obaidat, Y., **Barham, W.**, and Abdelrahman, B., “Effect of elevated temperature on the bond behavior between near Surface Mounted-Carbon Fiber Reinforced Polymers strips and Recycled Aggregate concrete” *Construction and Building Materials* 251, 118970, 2020.
18. **Barham, W.**, Obaidat, Y., and AL-Maabreh, A., “Effect of Aggregate Size on the Bond Behavior between Carbon Fiber Reinforced Polymer Sheets and Concrete” *Journal of Materials in Civil Engineering*, 31(12), 04019295, 2019.
19. Rababah, A., Bani-Hani, K., and **Barham, W.**, “Adaptive Neural Network Controller for Nonlinear Highway Bridge Benchmark” *Jordan Journal of Civil Engineering*, 13(2), 2019.
20. Irizarry, J., Meadati, P., **Barham, W.**, and Akhnouk, A., “Exploring Applications of Building Information Modeling for Enhancing Visualization and Information Access in Engineering and construction Education Environments” *International Journal of Construction Education and Research*, Volume 8, Pages 119–145, 2012.
21. **Barham, W.**, Aref, A. and Dargush, G., “On the Elastoplastic Cyclic Analysis Of Plane Beam Structures Using A Flexibility-Based Finite Element Approach” *International Journal of Solids and Structures*, Volume 45, Pages 5688–5704, 2008.
22. **Barham, W.**, Aref, A. and Dargush, G., “Development of the Large Increment Method for Elastic Perfectly Plastic Analysis of Plane Frame Structures under Monotonic Loading” *International Journal of Solids and Structures*, Volume 42, Issue 26, Pages 6586-6609, 2005.
23. **Barham, W.**, Aref, A., Dargush, G., “Flexibility-based Large Increment Method for Analysis of Elastic Perfectly Plastic Beam Structures” *Computers and Structures*, Volume 83, Issues 28-30, Pages 2453-2462, 2005.

## Conference Proceedings

1. **Barham, W.**, Bani-Hani, K., and Mohammad, M., “Derivation of the Governing Differential Equation of Vibrating Host Plate with Two Piezoelectric Patches” International Conference on Civil Infrastructure and Construction (CIC 2020), February 2-5, 2020 Doha, Qatar
2. **Barham, W.**, Obaidat, Y., and AL-Maabreh, A., “The Influence of Number of CFRP Layers on the CFRP/Concrete Bond Behavior” Sixth International Conference on Advances in Civil, Structural and Mechanical Engineering (CSM 2018), April 28-29, 2018, Zurich, Switzerland.
3. **Barham, W.**, Oncul, F., Meadati, P., and Oguzmert, O., “Three-Dimensional Displacement Response Study of a Rubble-House Using a 3D Laser Scanner.” ASCE Int’l Conference on Computing in Civil Engineering, Clearwater, June 2012.
4. **Barham, W.**, Preston, J., and Werner, J., “Using a Virtual Gaming Environment in Strength of Materials Laboratory.” The 2012 ASCE International Conference on Computing in Civil Engineering, Clearwater, June 2012.
5. Oncul, F., **Barham, W.**, and Meadati, P., “A Full-Scale Rubble-House Construction and Testing Project Powered by Undergraduate Student Volunteers Workforce.” ASEE Annual Conference and Exposition, San Antonio, June 2012.
6. Preston, J., **Barham, W.**, and Werner, J., “Using Digital Games to Improve Access and Learning.” 2012 Conference on Higher Education Pedagogy, February 2012.
7. **Barham, W.**, Meadati, P., and Irizarry, J., “Enhancing Student Learning in Structures Courses with Building Information Modeling.” ASCE Int’l Workshop on Computing in Civil Engineering, Miami Beach, June 2011.
8. Oh, I., and **Barham, W.**, “The Application of Artificial Neural Network for the Prediction of the Deformation Performance of Hot-Mix Asphalt.” The 2011 ASCE International Workshop on Computing in Civil Engineering, Miami Beach, June 2011.
9. **Barham, W.**, Aref, A. and Dargush, G., “A Finite-Element–Based Large Increment Method for Nonlinear Structural Dynamic Analysis.” Proceedings of the Tenth International Conference on Civil, Structural and Environmental Engineering Computing, Rome, Italy, 2005
10. **Barham, W.**, Dargush, G. and Aref, A., “Nonlinear Cyclic Analysis of Structures Using Large Increment Method.” Proceedings of the 2005 Joint ASME/ASCE/SES Conference on Mechanics and Materials, Baton Rouge, 2005
11. **Barham, W.**, Dargush, G. and Aref, A., “On the Flexibility-Based Solutions for Beam Elements with Bi-linear Material Model.” Proceedings of the Seventh International Conference on Computational Structures Technology, Lisbon, Portugal, September 7-9, 2004
12. **Barham, W.**, Dargush, G. and Aref, A., “Large Increment Method for Elastic Perfectly Plastic Analysis of Plane Frames Under Monotonic Loading.” Proceedings of the 17th Engineering Mechanics Conference of the American Society of Civil Engineers, University of Delaware, June 2004.



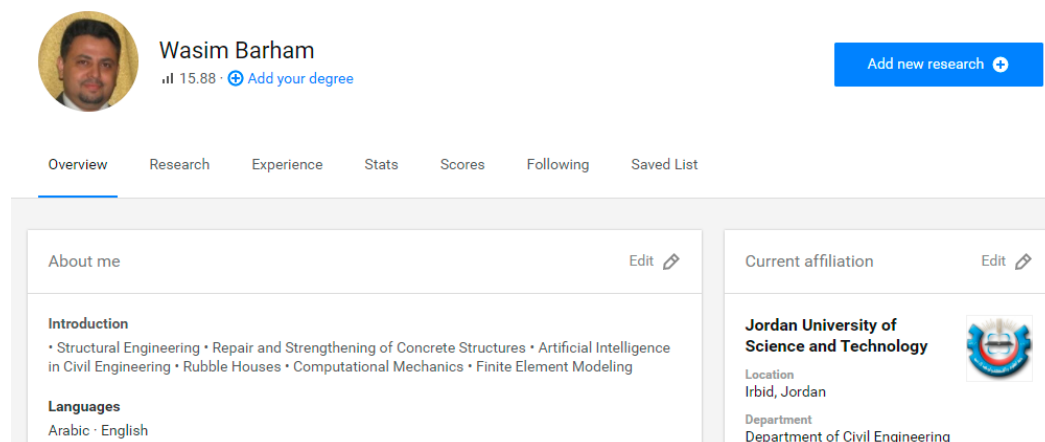
13. **Barham, W.**, Aref, A. and Dargush, G., “Derivation and Implementation of Flexibility-based Large Increment Method for Solving Nonlinear Structural Problems.” Proceedings of the Ninth International Conference on Civil and Structural Engineering Computing, Egmond-aan-Zee, The Netherlands, September 2003.

### Peer-reviewed Presentations

1. **Barham, W.**, Werner, J, Preston, J., Feng, Y., and Atkins, N., “Students' Perceptions of the Effectiveness of the use of Virtual Strength of Materials Laboratory” The 2013 Polytechnic Summit, Boston, June 2013.
2. **Barham, W.**, “A Game-Based Virtual Engineering Laboratory for Online Teaching” The Sloan Consortium and MERLOT’s Emerging Technologies for Online Learning International Symposium, Las Vegas, April 2013.
3. **Barham, W.** and Werner, J., “Web-Based Virtual Strength of Materials Laboratory” The 4th Annual Polytechnic Summit, SPSU, Atlanta, June 2012.
4. **Barham, W.** and Meadati, P., “Enhancing Student Learning in Structures Courses with Building Information Modeling” The 3rd Annual Polytechnic Summit SPSU, Atlanta, June 2011.
5. Oh, I. and **Barham, W.**, “The Application of Artificial Neural Network for the Prediction of the Deformation Performance of Hot-Mix Asphalt” The 3rd Annual Polytechnic Summit, SPSU, Atlanta, June 2011.
6. Oh, I. and **Barham, W.**, “Engineering Summer Camp for K-12 Students: Balsa Bridge Competition” The STEM Institute Conference, University of West Georgia, Carrollton, February 2010.

### RESEARCH GATE

<https://www.researchgate.net/profile/Wasim-Barham>



The screenshot shows the ResearchGate profile of Wasim Barham. At the top left is a circular profile picture. To its right, the name "Wasim Barham" is displayed, followed by a small icon and the number "15.88" and a link to "Add your degree". A blue button labeled "Add new research" with a plus icon is on the right. Below the profile information is a horizontal menu with tabs: "Overview" (selected), "Research", "Experience", "Stats", "Scores", "Following", and "Saved List". The main content area is divided into two columns. The left column has a header "About me" with an "Edit" link. Underneath, there is an "Introduction" section with a list of research interests: "Structural Engineering", "Repair and Strengthening of Concrete Structures", "Artificial Intelligence in Civil Engineering", "Rubble Houses", "Computational Mechanics", and "Finite Element Modeling". Below that is a "Languages" section listing "Arabic" and "English". The right column has a header "Current affiliation" with an "Edit" link. It lists "Jordan University of Science and Technology" with a logo, "Location: Irbid, Jordan", and "Department: Department of Civil Engineering".

### GOOGLE SCHOLAR

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## Wasim Barham

Associate Professor  
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