CURRICULUM VITAE – Nasim Uddin, PhD, PE, F.ASCE., Fulbright Scholar

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Professor and Graduate Program Director, UAB Civil, Construction, and Environmental Engineering
Editor-In-Chief, ASCE Natural Hazards Review Journal
Chair, American Society of Civil Engineers (ASCE) Walter Huber Research Award Committee
President, Bismillah LLC
Founding Research Director, Sustainable Smart City Research Center, UAB
President, Birmingham Islamic Society

I. GENERAL:

Dr. Nasim Uddin holds the position of Professor and Graduate Program Director in the Department of Civil, Construction, and Environmental Engineering (CCEE) at the University of Alabama at Birmingham (UAB). His expertise lies in the built environment and its interplay with physical infrastructure, climate readiness, resiliency, and antifragile communities. He is distinguished as one of the *top 2 percent most-cited scientists* and has received numerous awards, including the 2023 *President's Award for Excellence in Teaching* in 2023, 2017 *Dean's Excellence in Mentorship Award*, 2000 *Dean's Excellent Faculty* Award*, J William Fulbright Scholar Award* in 2007, *FEMA Project Impact Best Community* Award in 2000. He also received many best paper awards including the 2019 Winter Stimulation "*Best of Conference*" Paper award. He was a finalist for the 2022 *Canada Excellence Research Chair* (CERC) with the University of British Columbia.

Dr. Uddin has contributed significantly to academia. He chaired the *Engineering Grant Review panel* for the Louisiana Board of Regents Research & Competitiveness program. The World Bank recognized his research in their 2010 Report on *Development and Climate Change*. He has secured over $15 million in external funding from various state and federal agencies, including 10 NSF funded projects. He has been a mentor to 5 postdocs, supervised 18 PhD dissertations, and guided 37 master theses and projects. Additionally, he is the author of 7 books and has delivered 25 keynote lectures worldwide. His leadership in research efforts spans from initiatives like LOCAL: "*Birmingham 2020: Roadmap to a Model City*", a Grand Challenge finalist including 32 faculty from all UAB Schools/colleges; STATE-WIDE: "*Alabama Machine Learning Initiative in Sensing under Extreme Environments*" including all 7 engineering and science programs in Alabama; NATIONAL: UTC Center Proposals; NSF CPS, SSC, FRONTIER & COPe, DoD; and GLOBAL: a USA-UK-Ireland Collaborative Research: "*Infrastructure Health Management*" (NSF 1645863 & 1100742). His network of collaborations extends nationally and internationally, encompassing esteemed institutions Harvard University, Georgia Tech, Univ. of California, Univ. of Maryland, Univ. of Florida, Univ. of Pittsburg, Florida International University, Tufts University, Arizona State University, Purdue University, Penn State University, Ireland University College Dublin, Queen University in England to conduct multi-year and multi-million-dollar interdisciplinary collaborative research.

Dr. Uddin currently holds positions as the Chair of the ASCE *Walter Huber Civil Engineering Research Award* Committee, *Editor-In-Chief* of the ASCE Natural Hazards Review Journal, and *Chair of the Engineering Grant Review Panel* for the Louisiana Board of Regents Research & Competitiveness program. He is also the *founding research director* of the UAB Sustainable Smart City Research Center. He has previously chaired the Executive Committee for the ASCE *Council for Disaster Risk Management* (now known as ASCE *Infrastructure Resilience Division*) and organized the NSF Sponsored International Workshop on Disaster Risk Mitigation. Furthermore, he has played a pivotal role as the US Chair for the US-Bangladesh Collaborative Workshop. Currently, he serves as the *Technical Advisor*, Training and Liaison for the Government of Bangladesh for the design and implementation of the *World Bank Funded URP/RAJUK/S-6: Establishment of Urban Resilience for the Capital City Project*. Dr. Uddin holds the distinction of being a Faculty *Fulbright Scholar* and ASCE *Fellow*.

In his personal life, Dr. Uddin is married to Samina Uddin, MD, an Assistant Professor in the Division of Geriatric and Palliative Medicine at the UAB School of Medicine. They have two children, Ilma Uddin and Alley Uddin.

II. EDUCATION

1992	Doctor of Philosophy, Civil Engineering, State University of New York at Buffalo
1989	Masters of Science, Civil Engineering, University of Oklahoma
1986	Bachelor of Science, Civil Engineering, Bangladesh University of Engineering & Technology (BUET)

III. ACADEMIC/PROFESSIONAL APPOINTMENTS

2019-Present	Professor and Graduate Program Director, CCEE, UAB
2010-2019	Professor, Civil, Construction and Environmental Engineering (CCEE), UAB
2017-Present	Member, Center for Engagement in Disability Health, and Rehabilitation Sciences
2004-2010	Associate Professor, Civil, Construction and Environmental Engineering (CCEE), UAB
2004-2010	Associate Professor and Undergraduate Program Director, CCEE, UAB
2007-Present	Founding Research Director, Sustainability Smart City Research Center, UAB
2001-2004	Assistant Professor, Civil, Construction and Environmental Engineering (CCEE), UAB
1997-2001	Assistant Professor, Civil Engineering, University of Evansville (UE), Indiana
1992-1997	Project Engineer, Acres International Corporation, New York
1986-1988	Lecturer, Civil Engineering, Bangladesh University of Engineering & Technology

IV. HONORS AND AWARDS

2023	ASME Associate Editor Award (for the ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems)
2023	2023 President's Award for Excellence in Teaching
2023	Chair of the Engineering Grant Review panel for the Louisiana Board of Regents Research & Competitiveness program.
2022	Finalist for the 2022 Canada Excellence Research Chair (CERC) with the University of British Columbia.
2020	Advisor, Training and Liaison for the Government of Bangladesh for World Bank Funded URP/RAJUK/S-6: Establishment of Urban Resilience for the Capital City Project
2020	Nominated by the IRD for the ASCE Distinguished Member Award
2019	Nominated by the IRD for ASCE Richard Torrens Award (Nominated 2019, 2020, 2021)
2019	Best Conference Paper, Winter Simulation Conference, 2019
2017	UAB Dean's Excellence in Mentorship Award (2017)
2010	The World Bank published a story on Dr. Uddin's research on page 302 of Chapter 7: "*Accelerating innovation and technology diffusion*" in World Development Report 2010: Development and Climate Change.
2006	Nominated by the CCEE for the President's Excellence in Teaching Award (2012, 2016, 2018)
2006	Fellow, American Society of Civil Engineers
2006	Academy of Science Research Paper Award; TRB Research Paper Award
2006	J William Fulbright Scholar Award
2005	Center for Advanced Material Conference Paper Award 2005

2001	UE's 33rd "Outstanding Faculty of the Year Award"
2001	College of Engineering and Computer Science Dean's Teaching Award
2000	FEMA Project Impact Best Community Award; REDCROSS Recognition Award
1998	MUPEC Conference Faculty Advisor Award
1997	International Concrete Repair Institute "Project of the Year" Award
1987-1988	Australian Government Commonwealth Scholarship
1986	Colombo Plan Scholar Award
1982-1986	Dean's List
1978-1980	National Merit Scholarship

V. LEADERSHIP EXPERIENCE

Leadership in Educational Programs

- 2020-Present: Center for Engagement in Disability Health and Rehabilitation Sciences (CEDHARS)
- 2018-Present: CCEE Graduate Program Director, CCEE, UAB:
  - Helped in building and growing graduate program of the CCEE, by leading graduate admissions and the graduate program as the graduate program director, and as well as the Engineering school's Graduate Studies Committee.
  - Led the effort to develop joint UAB-degree programs in undergraduate and graduate degrees with Queens University at Belfast (in UK), Ireland University College Dublin (in Ireland), and Bangladesh Cambrian University (in Bangladesh).
  - Currently working on CCEE graduate student support for recruiting excellent graduate students
  - Updated the graduate catalog and handbooks.
  - Authored the SACS WEAVE reports for the SACS re-accreditation.
- 2014-2020: SOE Chair, School of Engineering Tenure & Promotion Committee
- 2011-2013: SOE Graduate Studies Committee Chair, School of Engineering
- 2004-2010: CCEE Undergraduate Program Director and ABET/SACS Assessment Coordinator-
  - Primary author of the CE Program ABET Self Study Report 2006.
  - Co-authored web-based self-study report for the 2005 SACS re-accreditation
- 2006-2008: Chair of the UAB University Curriculum and Research Committee
  - Led the committee effort to prepare a resolution for a single campus-wide teaching evaluation system, and successfully passed the resolution through the faculty senate.
  - Revised and updated the Faculty Development Grant guidelines including multidisciplinary proposals.
  - Number of faculty development grant proposals doubled compared to the previous years and funding level increased 50% and
  - Planned and successfully executed UAB Faculty Research Day.

Leadership in Research Programs

Professor Uddin's research is centered around developing cutting-edge technologies to enhance the resilience and antifragility of built infrastructures in the face of natural hazards. He has successfully completed numerous research projects, generously funded by organizations such as the National Science Foundation (NSF), Department of Transportation (DOT), World Bank (WB), Department of Energy (DOE), Federal Highway Authority (FHWA), and Federal Emergency Management Agency (FEMA). The total funding for these projects exceeds $15.0 million. In addition to his research endeavors, Professor

Uddin has overseen the work of 5 postdoctoral researchers, guided and chaired 18 doctoral dissertations, and supervised 37 Master's theses and projects. He has also provided mentorship for over 15 undergraduate research projects tied to sponsored research initiatives. One of his notable achievements is mentoring Dr. Amol Vaidya, who received the 2009 UAB Student of the Year Award and the UAB Academic Excellence Award in the Doctoral Category. Furthermore, Professor Uddin's students have achieved significant recognition for their work. Dr. Ahmed Hattab and Ms. Heba Elsisi secured 2nd place in the 2017 UAB Graduate School 3MT Doctoral and Master's competitions, respectively. Dr. Ahmed Hattab was also honored with the 2019 UAB Young Alumni Rising Star Award. Additionally, three of Professor Uddin's doctoral students were recipients of the UAB School of Engineering Best Graduate Student Award. His research leadership extends to various aspects of academia and beyond including

- 2022-Present: Chair of the *Engineering Grant Review panel* for the Louisiana Board of Regents Research & Competitiveness program
  - Setting goals for review committees
  - Providing leadership to collaboratively achieve goals.
- 2020-Present: leadership and team building research efforts as PI:
  - CAMPUS WIDE: "*Birmingham 2020: Roadmap to a Model City*", a Grand Challenge finalist including 32 faculty from all UAB Schools/colleges.
  - STATE-WIDE: "*Alabama Machine Learning Initiative in Sensing under Extreme Environments*" including all 7 engineering and science programs in Alabama.
  - NATIONAL: UTC Center, NSF CPS, FRONTIER & COPe; and GLOBAL: USA-UK-Ireland Collaborative Research: "*Infrastructure Health Management*" (NSF 1645863 & 1100742).
- 2019-Present: Technical Advisor, Training and Liaison for the Government of Bangladesh for the design and implementation of World Bank Funded URP/RAJUK/S-6: Establishment of Urban Resilience for the Capital City Project.
- 2018-Present: Board Member of the UAB *Conflict of Interest Review Board (CIRB)* charged with the ongoing development of procedures for identifying, reviewing, and managing financial conflicts of interest (FCOI) as they relate to extramurally funded research and all research involving human subjects regardless of the funding source.
- 2010-Present: Since 2010, Professor Uddin has been the Principal Investigator (PI) on more than 20 projects funded by NSF, DOT, and FHWA, totaling over $10 million. These projects include grants such as NSF-S&AS-1849264, NCTSPM2015-72, NCTSPM2016-48, NCTSPM2018-32, ALDOT 930-607B, DOT/FHWA 930-773R, ALDOT 930-607A, ALDOT 930-549, UTC 0365, 5228, 3229, 4210, 08204, 07212, 3405, and 10204, as well as initiatives from Federal Motor Vehicle Safety and the DOE-funded GATE Center at UAB for advanced Lightweight Materials Technologies, among others. In these projects, Professor Uddin's team has been dedicated to developing innovative solutions and providing crucial safety information. They have also established a scientific framework aimed at ensuring the productivity and safety of emergency response transportation infrastructures and vehicles, ultimately working towards the prevention of accidents.
- 2008-Present: As the Principal Investigator (PI) of three NSF-funded projects, Professor Uddin has secured over $3 million in funding (including NSF-CMMI-1100742, NSF-CNS-1645863, and NSF-IIS-181394). His team has been dedicated to developing innovative health monitoring systems for the purpose of monitoring and detecting damage in built infrastructures. These systems enable real-time performance assessment of infrastructures, utilizing novel methods such as mobile and deployable sensing units. For instance, Unmanned Aerial Vehicles (UAVs) are employed as flying sensors, collecting critical information from bridges during fly-bys. Additionally, drive-by inspection vehicles are utilized, providing a flexible system architecture in contrast to traditional static sensors. This innovative approach

allows a small number of mobile sensors to replace hundreds of static ones, leading to a significant shift in the field of infrastructure control and condition monitoring.

- 2007-Present: Founding research Director of the Sustainable Smart Cities Research Center (SSCRC)
- 2006-Present: Established collaborative research endeavors with institutions in various countries, including England (Queen's University Belfast), Ireland (National University of Ireland-University College Dublin), and Bangladesh (Bangladesh University of Engineering and Technology, Bangladesh Atomic Energy Commission, and BRAC University). These projects were funded by the National Science Foundation.
- 2005-2006: Served as the U.S. Chair for the U.S. - Bangladesh Collaborative Workshop, an interdisciplinary event aimed at identifying and prioritizing emerging issues in natural disaster mitigation and risk management. This workshop received support from both the National Science Foundation and the Government of Bangladesh.
- 2001-Present: As the Principal Investigator (PI) of four NSF-funded projects, Professor Uddin has secured over $2 million in funding (including NSF-CMMI-825938, NSF-CMS-533306, NSF-IPW-0419893, and NSF-CMS-0229631). His research team has been actively engaged in the development of High-Performance Composite Structural Insulated Panels (CSIPs) designed to enhance the resilience of built infrastructures against windstorms, floods, and wildfires. These CSIPs represent an innovative solution for creating hurricane and storm-resistant housing, as well as for constructing robust bridge superstructures. Noteworthy for both its originality and practical applications, this technology incorporates a unique combination of materials and a specialized construction system that can effectively withstand projectiles traveling at speeds exceeding 250 miles per hour. This achievement meets the stringent standards set by the Federal Emergency Management Agency (FEMA) for use in hurricane shelters.

Leadership in Professional Societies:

Served as the Chair of the Council for Disaster Risk Management (currently renamed as Infrastructure Risk Division) of the American Society of Civil Engineers (ASCE), as well as in multiple other leadership roles within the Division and on the organizing committee of annual conference. In the ASCE, led the committee that set manual of practice, standards as well as policies. Currently serving as the *Editor-in-Chief* of the *ASCE Journal of Natural Hazards Review journal Chair,* and as the *Chair* of the *ASCE Walter Huber Civil Engineering Research Award Committee.*

- 2019-2023: Chair, ASCE Walter Huber Civil Engineering Research Award Committee
  - Setting criteria for the selection of the most outstanding researchers in the civil engineering
  - Providing leadership to collaboratively achieve goals.
- 2016-present: Editor-in-Chief of the ASCE Journal of Natural Hazards Review (NHR) - Under Dr. Uddin's leadership NHR journal saw 4-fold growth in its submissions (400%), doubled its publications (250%), journal rating and ranking tripled (300% in impact factor, from Annual Impact Factor: 0.79 to 4.200 - This is 90% growth from last year and highest among all ASCE journals!), and special publications along with expansion of editorial board members (almost doubled). He established a new socioeconomic track for the journal, planned and executed inaugural IRD Research Forum "2017 Disaster" resulting in technical publications including series of NHR special publications.
- 2007-2008: Chair, ASCE Task Committee to develop guideline for Multihazard Risk assessment
- 2005-2011: ASCE Council for Disaster Risk Management (CDRM), playing a crucial role in the creation of design standards, guidelines, and manuals for disaster risk management in the built infrastructure sector. During his tenure, he held various positions within the council, including:
  - Member (2005-2006)
  - Secretary (2006-2007)

- Vice Chair (2007-2008)
- Chair (2008-2011), and
- Past Chair (2012-2014)

- 2005-2009: NSF-NEES Advisory Board for the Tsunami Resistant Structural Design, Member

Leadership in Public service:

Dr. Uddin presently serves as the President of the Birmingham Islamic Society (BIS), an organization committed to tending to the spiritual and social needs of over 10,000 Muslims in the broader Birmingham Area. His involvement with BIS began in 2011, and since then, he has ascended through various roles within the organization. He started as a member from 2011 to 2016, then served on the BIS Board of Directors from 2016 to 2019, followed by his role as Secretary of the BIS Board from 2019 to 2021. Currently, he holds the position of President from 2021 onwards.

In addition to his presidential duties, Dr. Uddin manages the operations of five masjids situated in Hoover, Homewood, Pelham, Jespar, and Fairfield areas, with annual expenses totaling in the multimillion-dollar range. Since 2001, he has also taken on the responsibility of being the Friday Jumuah Khatib.

For further details about BIS, please refer to their website at https://www.bisweb.org/.

VI. AREAS OF RESEARCH INTEREST

- **High performance built environment**: Multifunctional Composite Structural Insulated Panel (MSIPS) for bridges and buildings against windstorm, flood and wildfire; High Data Density Short Range Wireless Telemetry for Built Infrastructure
- **Infrastructure monitoring**: Bridge Weigh-in-Motion (B-WIM) Health Monitoring Systems for Bridge Infrastructure; Fly-By and Drive-by monitoring system for Bridge Network Resiliency; Fly-By Image Processing for Real Time Congestion Mitigation; Aerodynamic Intelligent Morphing System for Autonomous Smart Utility
- **Antifragile communities and community health**: Human Rights Framework for Facilitating Citizen Engagement in Smart Cities; Orchestrated Sensor Communities for Automated high-Resolution system (OSCAR).

VII. GRANTS AND CONTRACTS

Project/Date/Funding	**Source**
1. **PI**, "CPS: Breakthrough: Mobile Automated Rovers Fly-By (MARS-FLY) for Bridge Network Resiliency (Internationally collaborative research project with matching funds from Ireland SFI and UK national research agency INI) (NSF-CNS-1645863); Period of Support: 04/17- 05/22 $600,000 (NSF), $1,500,000 (Total)	NSF
2. **PI**, "High Data Density Short Range Wireless Telemetry for Next Generation IoT Applications (Co-PI) NSF-CSSR- 1813949); Period of Support: 08/18- 08/22 $500,000	NSF
3**. Co-PI,** "S&AS:INT:COLLAB: Aerodynamic Intelligent Morphing System (A-IMS) for Autonomous Smart Utility Truck Safety and Productivity in Severe Environments",	NSF

(NSF-S&AS-1849264); Period of Support: 10/19-10/23;
$1,000,000

4. **PI**, "Developing Bridge Weigh-in-Motion (B-WIM) Health Monitoring Systems for Bridge Infrastructure Safety (Internationally collaborative research project with matching funds from Ireland SFI and UK national research agency INI) — NSF
(NSF-CMMI-1100742); Period of Support: 04/11- 05/15
$350,000 (NSF), $1,500,000 (Total)

5. **PI,** "Structural Panels for Natural Hazard Resistant Structures," — NSF
(NSF-CMMI-825938); Period of Support: 10/08-10/13
(Co-PI: Fouad, Salama)
$550,900

6. **PI,** "Multifunctional Composite for Panelized Construction," — NSF
(NSF-CMMI-533306); Period of Support: 10/05-10/12
(Co-PI: Fouad, Vaidya)
$289,900

7. **PI,** "International Research for Manufacturing and Design Feasibility of Jute Fibers in Composite Construction," — NSF
(NSF-CMMI-635422); Period of Support: 10/06-12/08
$30,000

8. **PI** "Novel Building Materials for Panelized Construction," — NSF
(NSF-CMS-229631); Period of Support: 01/03-10/06
(Co-PI: Fouad, Vaidya),
$180,400

9. **PI**, "NSF International Workshop on Disaster Mitigation Construction"(NSF-CMS-4198931) — NSF
Period of Support: 10/05-10/06
$40,000

10. **PI,** "Research Experience for Undergraduates Students on Disaster Mitigation Construction", (NSF -CMS-0329213) — NSF
Period of Support: 01/03 – 10/06
$18,000

11. **PI**, "Research Experience for Undergraduates Students on Panelized Construction", (NSF - CMS-0634573) — NSF
Period of Support: 01/06 – 12/08
$18,000

12. PI, "Nondestructive Evaluation of the John Coffee Memorial Bridge Using Drones and Robotics" (FHWA HRDI 20240036 PR) — USDOT/FHWA
Period of Support: 11/24 – 1/2025

13. Co-PI, "DOE GAANN Grant for Interdisciplinary Research in Materials and Structures Under Extreme Events (DOE P200A240022) — DOE
Period of Support: 08/24 – 08/2027
$351,408

14. **PI,** "Fly-By Image Processing for Real Time Congestion Mitigation"; — USDOT
(UTC STRIDE 2012-0365);

Period of Support: 11/18- 11/21
National Transportation Center Collaborative Project
With University of Florida; US DOT
$240,000

15. **PI,** "Cost-Effective VARTM Technology for Repair and Strengthening-Phase III," Alabama DOT/FHWA 930-607B — ALDOT/ FHWA
Period of Support: 10/09-1/12
(Co-PI: Vaidya); $150,250

16. **PI**, Fulbright Scholarship, "Catalyzing US-Bangladesh Collaboration to Advance Green Building Technologies for Windstorm and Storm Surge Mitigation" — US Department of State
Period of Support: 01/08-12/09)
$50,000 (Exp. Incurred)

17. **PI**: Bridge Rail Design Procedures — USDOT
USDOT NCTSPM 2013-046
Period of Support: 01/14- 01/17; US DOT;
National Transportation Center Collaborative Project
With Georgia Institute of Technology
$300,000;

18. **PI**: Field Validation of a Drive-By Bridge Inspection System with Wireless BWIM +NDE Devices USDOT NCTSPM 2013-010 — USDOT
Period of Support: 01/14- 01/17; US DOT;
National Transportation Center Collaborative Project
With Georgia Institute of Technology;
$600,000

19. **PI,** Impact and Feasibility Study of Solutions for Doubling Heavy Vehicles; (USDOT NCTSPM 2012-60); — USDOT
Period of Support: 04/12- 01/16;
National Transportation Center Collaborative Project
With Georgia Institute of Technology
$443,648

20. **PI,** Next-Generation Wireless Bridge Weigh-in-Motion (WIM) System Incorporated with Nondestructive Evaluation (NDE) Capability for Transportation Infrastructure Safety (USDOT NCTSPM 2012-007); — USDOT
Period of Support: 04/12- 01/16; US DOT;
National Transportation Center Collaborative Project
With Georgia Institute of Technology
$797,554

21. **PI,** Consequence Based Route Selection for Hazardous Material Cargo: GIS-Based Time Progression of Environmental Impact Radius of Accidental Spills"; — USDOT
Period of Support: 04/12- 01/16 (UTC STRIDE 2012-0365);
National Transportation Center Collaborative Project
With University of Florida; US DOT
$220,000

22. **PI,** "Assessment of Long-time Behavior for Bridge Girders Retrofitted with Fiber Reinforced Polymer (FRP) Using Accelerated-time Concepts" Alabama DOT/FHWA 930-773R
Period of Support: 1/1/12 – 12/1/13
$175,000
ALDOT/ FHWA

23. **PI,** "Cost-Effective VARTM Technology for Repair and Strengthening-Phase II," Alabama DOT/FHWA 930-607A
Period of Support: 04/06-04/09
(Co-PI: Vaidya)
$140,611
ALDOT/ FHWA

24. **PI,** "Cost-Effective VARTM Technology for Repair and Strengthening-Phase I," Alabama DOT/FHWA 930-607
Period of Support: (05/05-11/06)
(Co-PI: Vaidya)
$139,380
ALDOT/ FHWA

25. **PI,** "Demonstration of Cost-effective VARTM Technology for Repair and Strengthening- A Case Study with I-565 Highway Bridge," ALDOT/FHWA 930-549
Period of Support: 03/03-02/05
(Co-PI: Vaidya)
$143,611
ALDOT/ FHWA

26. **PI,** "Anacostia River Park Pedestrian Bridge Project-Novel Technology Demonstration,"
Period of Support: 06/05 - 08/06
(Co-PI: Vaidya, Husman)
$1,000,000 (UAB $200,000)
Washington DC DOT/ FHWA

27. **PI, "**Use of WIM Data for Site-specific LRFR Bridge Rating" UTCA 10204, Period of Support: (01/10-12/10)
(Co-PI: Waldron)
$65,000
UTCA/ US DOT

28. **PI,** "VARTM Technology for Repair and Strengthening," UTCA-3405;
Period of Support: 04/03-01/05
(Co-PI: Vaidya)
$120,611 ($50k Matching)
UTCA/ US DOT

29. (**Co-PI**) "Bridge Weigh-In-Motion (BWIM) System Testing and Evaluation,"
UTCA 07212; Period of Support: 03/07-06/08
(PI: Hitchcock; co-PI: Sisiopiku, Salama, Kirby, Anderson, Toutanji)
$350,000 (with ALDOT Purchase of $200,000 Equipment)
UTCA/ DOT

30. (**Co-PI**) "Expanding Portable BWIM Technology," UTCA 08204;
Period of Support: 07/08-06/09
(PI: Hitchcock; co-PI: Sisiopiku, Salama, Kirby, Anderson, Toutangi),
$150,000
UTCA/ DOT

31. **Co-PI,** "Vestavia School Pedestrian Bridge Project-Novel Technology Demonstration," FHWA/ IBRC
Period of Support: 10/11 - 12/11
(PI: Jackson, Co-PIs: Fouad, Andrew, Vaidya)
$200,000

32. **Co-PI,** "Multidisciplinary Commercial Motor Vehicle Safety Research Program"; Federal Motor Vehicle Safety US DOT
Period of Support: 9/03-9/06
(PI: Fouad; Co-PIs: Sisiopiku, Peters)
$275,000

33. **Co-PI "**GATE Center at UAB for advanced Lightweight Materials Technologies," DOE
Period of Support: 03/06-03/12
(PI: Vaidya, Co-PI: Shih, Eberhardt)
$600,500

34. **PI**, "Low cost Composite Wrap to Enhance the Dynamic Damage Resistance of Bridges," UTCA-4210 UTCA/ DOT
Period of Support: 07/03-01/05
(Co-PI: Vaidya)
$100,000 ($50k Matching)

35. **PI**, "Vulnerability Reduction of Bridge Structure," UTCA-3229; UTCA/ DOT
Period of Support: 06/04-12/05
(Co-PI: Vaidya),
$100,000 ($50k Matching)

36. **PI**, "Cost-Effective Thermoplastic Technology for Vehicular Bridge Superstructure," UTCA- 5228, UTCA/ DOT
Period of Support: 06/05-12/06
(Co-PI: Vaidya)
$100,000 ($50k Matching)

37. **Co-PI,** "Sustainable Green Construction", STERN GRANT
Period of Support: (2009)
(PI: Robert Peters, Co-PI: Kirby, Watts)
$4,000

38. **PI,** "Homeland Security-Critical Infrastructure Protection", STERN GRANT
Period of Support: 2004
(Co-PI: Robert Peters)
$3,000

39. **PI,** "Advanced Sensor Technology for Infrastructure Protection" STERN GRANT
Period of Support: 2004
(Co-PI: Robert Peters)
$3,000

40. **PI,** "Advanced FRP Composite for Infrastructure" STERN GRANT
Period of Support: 2005
(Co-PI: Rizk, Vaidya),

$2,500

41. **PI,** "Natural Hazard Mitigation" STERN GRANT
Period of Support: 2006
$2,500

42. **PI, "**Anacostia River Trail Park Bridge Design-Preliminary Study" Washington DC DOT/ US DOT
Period of Support: 01/04 - 12/05
(Co-PI: Fouad, Vaidya)
$40,000

43. **PI,** Anacostia River Trail Park Bridge Design-Final Design, Washington DC DOT/ US DOT
Period of Support: 01/05 - 12/06
(Co-PI: Fouad, Vaidya)
$160,000

44. **PI,** UAB Bus Study, Parking and Transportation UAB
Services; Period of Support: 01/03-12/03
(Co-PI: Jones)
$40,000

45. **PI,** "Seismic Design for Concrete-Face Rockfill Dams" Faculty Development Grant
Period of Support: 1999
$50,000

46. **PI,** "Multimedia application in the Structural Design" EXCEL FIIG
Period of Support: 1999
$30,000

47. **PI,** "GPS Surveying Equipment for the HAZUS Center" FEMA
Period of Support: 2000
$10,000

48. **PI,** "Multimedia Application in the Structural Design" EXCEL FIIG
Period of Support: 2000
$30,000

49. **PI,** "Modification of Ground Motion due to Underground Mining" ARSAF
Period of Support: 2000
$17,500

50. **Co-PI,** "Develop DMS System for SW Indiana" Sandia National
Period of Support: 1999-2001 Laboratories, NM
(City of Evansville, IN).
$658,000

51. **PI,** "Assessing Seismic Vulnerability of Transmission Structures" EPRI /DRC
Period of Support: 2000
$4000

52. **Co-PI,** "Creating Inclusive Transportation Systems in Smart Cities: CAS Interdisciplinary
Team Realizing the Right to Mobility for People with Disabilities Proposal competition
in Birmingham",
Period of Support: 04/21-04/22;
$44,773

53. Co-**PI,** "Addressing Urban Heat Mitigation, Health, Equity and UAB SOE
Climate Change Issues in Birmingham, Alabama"
Period of Support: 05/22- 05/23
$50,000

VIII. TEACHING ACTIVITIES

Undergraduate Courses	*Title*	*Credit Hours*
CE 499:	Senior Design Project	3
CE 450:	Structural Steel Design	3
CE 360:	Structural Analysis	3
CE 220:	Mechanics of Solids	3

Graduate Courses	*Title*	*Credit Hours*
CE 650/750:	Advanced Steel Structure	3
CE 568/468:	Wind and Seismic Load	3
CE 567/467:	Bridge Engineering	3
CE 664	Plate & Shells	3
CE 665	Structural Stability	3

Undergraduate Senior Design Projects

2006 Federal Aviation Authority (FAA) *National Airport Design Competition*, 2nd Place Award

1997-Present Taught over 25 senior design classes topics ranging from innovative real design projects including sustainable resilient facility, airport, stadium, hydroelectric power facility etc. Some of the projects won awards because of the novelty, e.g.

1997 *MUPEC Conference* "Best Senior Design Project Award", Faculty Advisor

Below is the snapshot of IDEA survey results from most recent Year 2022 **course offerings**:

Term	Course Number	Student Numbers	Excellent Teacher	Excellent Course
Fall 2022	CE 650/750	32	5.0	5.0
Spring 2022	CE 450	38	4.8	4.6

IX. MASTER'S AND PH.D. THESES DIRECTED AND FELLOWS SUPERVISED

Postdoctoral Fellows Supervised

2018-2020 Dr. Lei Li
Assistant Professor, College of civil engineering, Zhengzhou University of Aeronautics, Zhengzhou, Henan, P.R. China

2015-2018 Dr. Wenfeng Du
Professor of Structural engineering, Henan University, China

2013-2015 Dr. Leslaw Kwasniewski
Department of Civil Engineering, University of Poland, Poland

2011-2013 Dr. Hua Zhao;
Associate Professor, Department of Structural Engineering, Hunan University, China

2009-2011 Dr. Amol Vaidya
Global Innovation Leader at Owens Corning - Owens Corning, Ohio

Doctoral Students Supervised and Directed as the Chair of the Committee

2023-	Mohab Riad Turkomany *Orchestrated Sensor Community Aerial Network for Built Infrastructure*
2020-	Muhammad Eshki *Dynamic Data Driven Systems for Adaptive Resilience*
2019-	Emad Badiee *New Bridge Rail Design Procedure*
2018-2022	AbdelAziz I. AbdelLatef (PhD, '22) *Integrated Structural Health Monitoring Techniques Using Community of Sensors*
2016-2021	Zhenhua Shi (PhD, '21) *Fly-and Drive-by Vehicle-based Structural Health Monitoring of bridges*
2015-2020	Chengjun Tan (PhD, '20) *Drive-by and Fly-by Bridge Network Damage Detection*
2014-2019	Yahya Mohamed Abd el Razek (PhD, '19) *Bridge Safety against Multihazard Extreme Events*
2014-2019	Erik G Winardi (PhD, '19) *Simulation of Dynamic Interaction of Bridge with Wind and vehicle*
2013-2018	Ahmed Hattab (PhD, '18) *Drive-by Bridge Monitoring and Damage Identification (*Won UAB student of the year 2017, won SOE best student 2017 and CCEE Best Student 2017 Awards; 2nd place winners of 2017 UAB Graduate School 3MT Doctoral and Master's competitions*)*
2011-2015	Marwan Mostafa (PhD, '15) *Sustainable Construction with Green Compressed Earth Block (GCEB)*
2010-2015	Rahul Kalyanker (PhD, '15) *Simulation of Bridge responses to Heavy Vehicles*
2009-2014	Adel A Elfayoumy (PhD, '14) *Impact and solution for doubling heavy vehicles in Roadway*
2008-2013	Li Dong *Next-Generation Wireless Bridge Weigh-in-Motion System Incorporated with Nondestructive Evaluation Capability*
2009-2013	Luis Ramos (PhD, '13) *Development of Vacuum Assisted Resin Transfer Molding (VARTM) Method for the Repairing and Strengthening of Concrete Structures*
2008-2012	Zhisong Zhao (PhD, '12) *Simulation of Bridge Weigh–in-Motion System Integrated with Bridge Safety*
2005-2012	Mohammed Shohel (PhD, '12) *Experimental Evaluation and Numerical Modeling of VARTM for Repairing and Strengthening of Concrete Structures*
2007-2011	Mohammed Mousa (PhD, '11) *Novel Structural Composite Panels for Disaster Resistant Construction*
2006-2010	Hua Zhao (PhD, '10) *Innovative Bridge Weigh-In-Motion (BWIM) System Testing and Evaluation for Highway Bridges*
2005-2009	Amol Vaidya (PhD, '09) *Multifunctional Composite for Panelized Construction (*won UAB student of the year 2009, won "Academic Excellence Award in Doctoral Category"*)*

Masters Students Supervised

2023-	Venkat Chowdary Alam (MS Thesis): "*High-Resolution System Identification Using a Sparse, configurable Sensor Array*"
2022-	Saja Hamdan *Antifragile Infrastructure Solution*
2022-	Rutvi Patel *Drone and Robotics Technology in the Construction Industry: The Future of Building*
2022-	Jaldhi Bhupendra Patel *Comparative Study of Voided Bubble Deck Slab and U-Boot Beton Deck Slab*
2022-	Chanunta Pitaksringkarn (MS): "UAVs for Congestion Management" (Graduated Spring 2023
2022-	Pradeep Kumar Varma Kothapalli (MS Thesis): "*Disaster Proof Structural Design*"
2022-2023	Jaldhi Bhupendra (MS Thesis): "*Adaptive and Resilient Structural Design*"
2021-	Pradeep Kumar Varma Kothapalli *Fly-by monitoring of bridge structures*
2021-	Jeremy Lunsford *Flood resistant structural design*
2020-2021	Sunny Dineshchandra Desai *Inspection using Drones*
2020-	Shadrack Mboya *Innovative Shell Composite Structures*
2019-2021	Sannagoudar, Linganagouda Siddanagouda *Performance based structural Design*
2019-2021	Haibo Zhu *Aerodynamic Analysis of Utility Truck Safety in Severe Environments*
2017-2019	Nathan Boswell *Issues and Challenges of AL Bridges*
2017-2019	Nainish Rajendra Munot *Mutihazard Damage Detection Framework for Earthquake and Windstorm*
2017-2019	Rushikesh Surendra Chavan *Independent and Interrelated Multi-Hazard Performance*
2016-2019	Heba Elsisi *Seismically Damaged Structure Performance Under subsequent Wind Event* (2nd place winners of 2017 UAB Graduate School 3MT Master's competitions)
2015-2017	Amin Pahlevannejad *Testing and Simulation of Reinforced Concrete Beams under Impact Loading.*
2014-2016	Yahya Mohamed Abd el Razek *Cyber-Physical System for Monitoring and Controlling Loads*
2014-2016	Chris Arias *Assessment of Long-time Behavior for Bridge Girders Retrofitted with Fiber Reinforced Polymer (FRP) Using Accelerated-time Concepts*
2013-2015	Adel Badiee *Nonlinear FE model for bridge dynamic impact*
2013-2015	Ahmed Hattab *Drive-By Bridge Damage Detection*
2012-2014	Mohamed Hindam

The Construction Workers in Gulf Cooperation Council Countries

2012-2014 Hisham Merhebi
Impact and Feasibility Study of Solutions for Doubling Heavy Vehicles

2012-2014 Emad Badiee
Bridge Rail Design Procedure

2011-2013 Martin K Waruinge
Specifications and design guidelines for VARTM Repairing and Strengthening of Concrete Structures

2011-2013 Malcolm Parrish
Innovative Processing for Bridge Repair

2010-2012 Li Dong
Wind Storm Resistance of Composite Structural Insulated Panels (CSIPs)

2009-2011 Elton D'Silva
Flood Protected Home for Hurricane Hazard Mitigation

2008-2010 Amber Greer
LRFR Bridge Rating using WIM Data

2007-2009 Anand Patel
Reliability Analyses for the Housing for Wind Strom and Strom Surge mitigation construction

2007-2009 Swapnil P Konde Deshmukh
Cost effectiveness of Thermoplastic Bridge Structures

2007-2009 Rahul Kalyanker
Green FRP Composites for Panelized Construction

2007-2009 Tonga Nguyen
Simulation of Storm Shelter against Wind Strom

2006-2008 Stephen Cauthen
Design method for Repairing of Bridge Girders using Innovative VARTM Processing

2005-2007 Mohammed Mousa
Novel Multifunctional Panels for Panelized Construction

2005-2007 Casey Brown
Thermoplastic Bridge Superstructure for Military Applications

2004-2006 Nitin Futin
Post-Fire Behavior of Fiber Reinforced Polymer Wrapped Columns

2004-2006 Abdul Moeed
Thermoplastic Composite Bridge Design for Anacostia River Trail Bridge Project

2004-2006 Kedar Sehler
A Novel Sandwich Panel for Panelized Construction

2003-2005 John D. Purdue
Ballistic Impact Performance Evaluation of Thermoplastic Reinforced Concrete Panels and Piers

2002-2004 Amol K. Vaidya
Performance Evaluation of 3D and Multifunctional Composite Structure for Infrastructure Application

2001-2003 Amol A. Khotpal
Structural Characterization of Hybrid FRP-Autoclave Aerated Concrete Panel for Disaster Mitigation Construction

1999-2000 Tim A Maurer
Innovative Seismic Retrofitting for School Structures

Undergraduate Research/Honors/NSF REUs Projects Supervised

2007-2008	Stephanie Strong
	Bridge Weigh-in-Motion Systems
2006	Sajjad Haider
	RC Mix Design for Higher Strength
2006-2007	Tujuana Shaw
	TP Technology for Building Repair
2006-2007	David Lovett
	Bridge Pier Repair with TP Wrap
2006-2007	Chelicia Hill
	Bridge Strengthening Using Composites
2006-2007	Anand Patel
	Housing for Wind Storm and Storm Surge
2005-2006	Deborah Myers
	Disaster Mitigation Construction
2005-2006	Janet Robertson
	TP Technology for Building Repair
2005	Holly A. Odom
	Multihazard Design
2005	Danielle Berry
	Panelized Construction
2004-2005	Trace Rudolph
	Nano Concrete Design for Higher Strength
2004	Dana Helton
	Nanotechnology for Infrastructure
2003-2004	Michael Gleba
	High Fidelity Bridge Truck Interaction Simulation
2002-2003	Gentry Rust
	VARTM Method for Bridge Repair
2002-2003	Stacey Solava
	VARTM Processing for Concrete
2002-2004	Malcolm Parrish
	Innovative Processing for Bridge Repair
2002-2004	Geoffrey J Collawn
	Wireless NDE Integrated BWIM System
2002-2004	Michael S Carpenter
	Innovative Processing for Bridge Repair

X. PROFESSIONAL ACTIVITIES

Professional Societies

2004-	American Composite Materials Association (ACMA)
2003-	American Society of Mechanical Engineers (ASME)
1999-	American Society of Engineering Education
1988-	American Society of Civil Engineers (ASCE)
	ASCE Council for Disaster Risk Management (CDRM), Secretary-Elect

(2006-2007), Vice Chair (2007-2008), Chair (2008-2011), and Past Chair (2012-2014)

Chair, ASCE Walter Huber Civil Engineering Research Award Committee (2019-2023)

Member, Executive Committee of ASCE Infrastructure Resilience Division (IRD)

Team Leader, ASCE CDRM Task Committee to develop webinar/short course on quantitative risk assessment (QRA) for natural hazards (2008-2012).

Member, ASCE CDRM Task Committee to develop pre-standard/guideline for Multihazard Risk assessment (2007-2008).

Editorial Boards

2020-2021	Guest Editor, Special Collection on "A Global Pandemic: Sociotechnical Perspectives on COVID-19"
2018-2020	Guest Editor, Special Collection on "2017 Disasters: Sociotechnical Perspectives"
2018-	Associate Editor, ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems
2016-	Editor-in-Chief, ASCE Journal of Natural Hazards Review Journal
2015-	Editorial Board, International Journal of Building

External Advisory Panels / Program Reviews

2006-2012	National Science Foundation Network for Earthquake Engineering Simulation
2005-2009	NSF-NEES Advisory Board for the Tsunami Resistant Structural Design: Guide and Code Development.

Leadership Training

2022	OXFORD ROUND TABLE: Global Warming and Sustainable Development: Governing a Crisis in the University of Oxford, Oxford, England
2010	NOAA (National Oceanic Atmospheric Administration) delegate for IATF panel on Mainstreaming Natural Disasters in Sustainable Development sponsored by OAS/UDSE/World Bank and NOAA Coastal Service Center, Charleston, South Carolina,

Grant Reviews

2022	Chair of the Engineering Grant Review Panel for the Louisiana Board of Regents Support Fund Research & Competitiveness program
2020-	Led the panel review of the proposals for the Oak Ridge Associated Universities
2019-	Transportation Consortium of South Central States
2006	The United States AID Program
2005-2006	The US Civilian Research & Development Foundation
2005-2007	The United Nation Development Program
2005-	National Science Foundation (NSF) (CMMS, CMMI, CNS, CPS programs)
2000	Federal Emergency Management Agency (FEMA)

External Tenure/Promotion Reviews

2000-	External Reviewers for tenure and promotion for the faculty from:
	Louisiana State University
	University of South Carolina
	University of New Mexico
	University of Florida
	Florida State University
	Florida International University

Journal Reviewer

2001-	International Journal of Natural Hazards
	Architectural Science Review (ASR)
	ACI Structural Journal
	ACI Materials Journal
	Journal for Composite Structures
	Journal of Reinforced Composite Plastics
	Journal of Engineering Structures
	International Journal of Natural Hazards
	Canadian Geotechnical Engineering Journal
	International Journal of Civil engineering Research and Practice
	International Journal of Construction & Building Materials
	ASCE Journal of Natural Hazards Review
	ASCE Journal of Composite for Construction
	ASCE Journal of Materials in Civil Engineering
	ASCE Journal of Structural Engineering
	ASCE Journal of Bridge Engineering
	ASCE Journal of Aerospace Engineering
	ASCE Journal of Management in Engineering
	ASCE Periodical of Leadership in Civil Engineering
	ASCE SEI conference papers and ASEE conference papers
	International Conference on Earthquake Engineering
	IEEE Journal
	FEMA Project Impact Publications

XI. DEPARTMENT, SCHOOL, UNIVERSITY, STATE, AND NATIONAL SERVICE

Department

2019-	Graduate Program Director
2006	ABET Visit Coordinator, Primary author of the CE Program ABET Self Study Report
2005	SACS re-accreditation Visit Coordinator
2004-	Tenure and Promotion Committee (Chair 2015-Present)
2004-2010	Undergraduate Program Director
2001-	CCEE Faculty Search Committee (2002, 2005, 2010, 2016, 2020)

School of Engineering (SOE)

2021-2022	SOE Dean Search
2018-	School of Engineering Graduate Programs Committee
2014-2018	Chair, School of Engineering Tenure & Promotion Committee
2011-2013	School of Engineering Research Compliance Committee
2006-2006	School of Engineering ABET Accreditation Committee

University Committee (UAB)

2020-2021	School of Engineering Dean Search Committee
2020-	Center for Engagement in Disability Health and Rehabilitation Sciences (CEDHARS)
2017-	Engineering Member, UAB conflict of interest review board (IRB)

2016 - UAB HPC Advisory Committee & Research Scientists
2006-2008 University of Alabama at Birmingham (UAB) Curriculum and Research Committee

National/ International

2018- Technical Advisor, Training and Liaison for the Government of Bangladesh for the design and implementation of World Bank Funded URP/RAJUK/S-6: Establishment of Urban Resilience for the Capital City Project.

2012 Led a US team (ASCE CDRM) of natural hazards experts to China to survey damage, participated in a world forum for China reconstruction, and overview of risk management activities of Wenchuan earthquake

2008-2011 Chair for the ASCE Council of the Executive Committee of ASCE Council for Disaster Risk Management (CDRM) (2008-2011)

2008-2012 Team Leader of ASCE CDRM Task Committee to develop webinar/short course on quantitative risk assessment (QRA) for natural hazards.

2008-2012 The National Earthquake Hazards Reduction Program (NEHRP) Stakeholder Community

2007 US Delegate, Global Facility for Disaster Reduction and Recovery (World Bank) and World Congress on Urban Infrastructure in Developing Countries, New Delhi, India, November 12-16

2007 ASCE CDRM delegate for Quantitative Risk Assessment (QRA) of Multihazards at International Civil Engineering Conference, Taipei, Taiwan, June 27-30, 2007.

2006-2012 National Science Foundation Network for Earthquake Engineering Simulation

2000 NOAA (National Oceanic Atmospheric Administration) delegate for IATF panel on Mainstreaming Natural Disasters in Sustainable Development – Infrastructure Vulnerability Assessment workshop sponsored by OAS/UDSE/World Bank and NOAA Coastal Service Center, March 20-24, NOAA/CSC in Charleston, South Carolina.

XII. BOOKS PUBLISHED

1. Models and Metrics for Sustainability and Resilience of Systems (ed. Uddin), (New York: ASCE 2017), ASCE-ASME Journal of Risk and Uncertainty special collection.
2. Seismic Hazard Design Issues in the Central United States (ed. Uddin), (New York: ASCE, 2013); ASCE Council for Disaster Risk Management (CDRM) Publication (2013).
3. Developments in Fiber Reinforced Polymer (FRP) Composites for Civil Engineering (London: Woodhead Publishing, 2013), (ed. Uddin); ASCE Council for Disaster Risk Management (CDRM) Publication: ISBN 0 85709 234 0; May 2013; 560 pages 234 x 156mm hardback; £170.00 / US$290.00 / €205.00
4. Quantitative Risk Assessment for Natural Hazards (ed. Uddin with Ang), (New York: ASCE, 2010) SBN 978-078441153-7, June 2011, Paperback 88 pages.
5. Blast Protection of Infrastructures and Vehicles Using Composites (ed. Uddin), (London: Woodhead Publishing, 2010): ISBN 1 84569 399 X; ISBN-13: 978 1 84569 399 2 March 2010 448 pages.
6. Wind storm and Storm Surge Mitigation Construction (ed. Uddin), (New York: ASCE, 2010) ISBN 978-0-7844-1081-3, 2010, 164 pp. (Foreword by President William J. Clinton)
7. Disaster Risk Assessment and Mitigation, (ed. Uddin with Ang), (New York: ASCE, 2008) ISBN 9 78078 4410127, December 2008 paperback, 110 pages.

XIII. PAPERS PUBLISHED OR IN PRESS

GoogleScholar profile: https://scholar.google.com/citations?user=FFgpvkcAAAAJ&hl=en

Full-Length Journal Articles (with supervised trainees)

1. Shi, Zhenhua and Mohammed, Yahya M. and Uddin, Nasim and Chen, Genda, A (2024) A vehicle-bridge interaction model considering contact patch size and vehicle self-generated excitation – A theoretical study. *J. Engineering Structures* 298(3–5):117079; DOI:10.1016/j.engstruct.2023.117079
2. Li, L.; Uddin, N.; Zhao, X.; Tian, L. (2024) Non-linear Stability of the Cylindrical Reticulated Shells with initial Damage. *J. Buildings* 2023, *13*(11), 2852; https://doi.org/10.3390/buildings13112852
3. Pedram, M., Taylor, S., Robinson, D. Uddin, N (2024). Objective characterization of reinforced concrete with progressive corrosion defects through clustering and thresholding of infrared images Measurement. *J. Measurement Volume 225, 15 February 2024, 114017*
4. Zhao, H., Zhang, B, Tan, C., Uddin, N. (2023) "Exploring Time-Varying Characteristics in Drive-by Bridge Frequency Extraction with the Second Order Synchrosqueezing Transform", ASCE *Journal of Bridge Engineering*, Volume 28, Issue 4, April 2023
5. Zhang, B, Tan, C., Zhao, H., Uddin, N. (2023) "An Extended Bridge Weigh-In-Motion System Without Vehicular Axles and Speed Detectors Using Non-Negative LASSO Regularization", ASCE *Journal of Bridge Engineering*; Volume 28, Issue 5, May 2023
6. Li, L.; Uddin, N.; Zhao, X.; Tian, L. (2023) Mechanical Property Research for CSIP Thin-Wall Box-Beams. *J. Buildings* 2023, 13, 1822. https://doi.org/10.3390/ buildings13071822
7. Shi, Zhenhua and Mohammed, Yahya M. and Uddin, Nasim and Chen, Genda, A (2023) Theoretical Vehicle-Bridge Interaction Model Considering a Tire Contact Patch and a Vehicle Self-Generated Excitation. SSRN Electronic Journal; DOI:10.2139/ssrn.4377090
8. Du, Wenfeng, Zhang, H., Zhou, Z, Wang, K, and Uddin, N. (2023) "Experiment and numerical simulation of innovative 3DPC thin shell structure"; *Buildings* 2023, *13*(1), 233; https://doi.org/10.3390/buildings13010233
9. Tan, C., Zhao, H., Uddin, N., Zhang, B. (2022) "Developing Digital Twins to Characterize Bridge Behavior Using Measurements Taken under Random Traffic", ASCE *Journal of Bridge Engineering,* November 2021; Journal of Bridge Engineering 27(1):12; DOI:10.1061/(ASCE)BE.1943-5592.0001814
10. Comfort, L., and Uddin, N. (2022) "A Global Pandemic: Sociotechnical Perspectives on COVID-19", ASCE *Natural Hazards Review*; Volume 23 Issue 4 - November 2022
11. Mohammed, Y., and Uddin, N. (2022) "Identification of bridge mode shapes using accelerometer Mounted on zero Gravity Robot", World *Journal of Engineering and Technology*, 23 (13), 2022.
12. Tan, C., Zhao, H., Uddin, N., Yan, B. (2022) "A Fast Wavelet-Based Bridge Condition Assessment Approach Using Only Moving Vehicle Measurements", *Journal: Applied Sciences*, November 2022 DOI: 10.3390/app122111277
13. Pedram, M., Taylor, S., Robinson, D. Uddin, N (2022). Experimental evaluation of heat transition mechanism in concrete with subsurface defects using infrared thermography. *Construction and Building Materials;* Volume 360, 19 December 2022, 129531
14. Pedram, M., Taylor, S., Robinson, D. Uddin, N (2022). Experimental investigation of subsurface defect detection in concretes by infrared thermography and convection heat exchange. *J Civil Struct Health Monit* (2022) 12, pages1355–1373 (2022). https://doi.org/10.1007/s13349-022-00550-y

15. Shi, Z. and Uddin, N. (2021) "Extracting multiple bridge frequencies from test vehicle - a theoretical study"; *Journal of Sound and Vibration*, (accepted for publication); Article number 115735, reference: YJSVI_115735; S0022-460X(20)30565-4
16. Shi, Z. and Uddin, N. (2021) "Theoretical vehicle bridge interaction model for bridges with non-simply supported boundary conditions", *Journal of Engineering Structures*, Volume 232, 2021, 111839, ISSN 0141-0296, https://doi.org/10.1016/j.engstruct.2020.111839.
17. Mohammed, Y., and Uddin, N. (2022) "Fly-by Bridge Inspection using UAVs (standalone portable system)", February 2021; DOI:10.1201/9780429343292-93; Life-Cycle Civil Engineering: Innovation, Theory and Practice (pp.710-716)
18. Tan, C., and Uddin, N. (2022) ""Drive-by" bridge frequency identification utilizing short data", February 2021; DOI:10.1201/9780429343292-92; Life-Cycle Civil Engineering: Innovation, Theory and Practice (pp.704-709)
19. Amgad Elbehirya, Omar Elnawawya, Magdy Kassemb, Amr Zahera, Nasim Uddin, Marwan Mostafa (2020) "Performance of concrete beams reinforced using banana fiber bars" Journal Case Studies in *Construction Materials*, Volume 13, December 2020, https://doi.org/10.1016/j.cscm.2020.e00361
20. Zhao, H.; Tan, C.; OBrien, E.J.; Uddin, N.; Zhang, B. Wavelet-Based Optimum Identification of Vehicle Axles Using Bridge Measurements. *Appl. Sci.* **2020**, *10*, 7485.
21. Tan, C., Elhattab, A., and Uddin, N. (2020) "Wavelet-Entropy Approach for Detection of Bridge Damages using Direct and Indirect Bridge Records"; *Journal of Infrastructure Systems*" Volume 26 Issue 4 - December 2020
22. Yahya M M, Nasim U, Chenjun T, Zhenhua S. (2020) "Crack Detection using Faster R-CNN and Point Feature Matching". *Civil Eng Res J.* 2020; 10(3): 555790.DOI: 10.19080/CERJ.2020.10.555790.
23. Tan, C. and Uddin, N. (2020) "Hilbert transform based approach to improve extraction of "drive-by" bridge frequency", *Smart Structures and Systems* Volume 25, Number 3, March 2020, pages 265-277; DOI: https://doi.org/10.12989/sss.2020.25.3.265
24. Tan, Chengjun, Uddin, N., Eugene J. Obrien, Patrick J McGetrick, and Chul-Woo Kim (2020). "Extracting Mode Shapes from Drive-By Measurements to Detect Global and Local Damage in Bridges." *Structure and Infrastructure Engineering*; DOI: 10.1080/15732479.2020.1817105
25. Comfort, L. and Uddin, N. (2020). "Introducing the ASCE Journals' Early Career Editorial Board" February 2020 *Natural Hazards Review* 21(1):01619001 Follow journal; DOI: 10.1061/(ASCE)NH.1527-6996.0000373
26. Shi, Zhenhua; Uddin, Nasim (2020), "Analytical solutions to VBI system (simply supported boundary condition) considering both vehicle and bridge damping effects and multiple bridge vibration modes", Mendeley Data, V4, doi: 10.17632/m4z6mkwt6k.4
27. Tan, C. and Uddin, N. (2020) "Structural Health Monitoring of Bridges – the Conflicting Challenges of Detecting Global and Local Damage", *Structure and Infrastructure Engineering*, 21(17), 2020.
28. Elhattab, A., Uddin, N., and OBrien, E., (2019) "Extraction of Bridge Fundamental Frequencies Utilizing a Smartphone MEMS Accelerometer"; *Journal Sensors*; 2019, 19(14), 3143; https://doi.org/10.3390/s19143143
29. Tan, Chengjun, Uddin, N., Eugene J. Obrien, Patrick J McGetrick, and Chul-Woo Kim (2019). "Extraction of Bridge Modal Parameters Using a Passing Vehicle Response." *Journal of Bridge Engineering* (ASCE); Volume 24 Issue 9 - September 2019
30. Mohammed, Y., and Uddin, N. (2019) "Acceleration-Based Bridge Weigh-in-Motion"; *Journal of Bridge Structures* 14(4): 131-138.
31. Mohammed, Y., and Uddin, N. (2019) "Moving Force Identification for Real-Time Bridge Weigh-In-

Motion"; *Journal of Bridge Structures*; 14(4): 139-145.

32. Qi Liu, Wenfeng DU, Uddin, N. and Zhi-yong Zhou (2019) "Experimental investigation of innovative composite folded thin cylindrical concrete shell structures"; *Journal of Thin-Walled Structures*, Thin-Walled Structures 137:224-230 · April 2019; DOI: 10.1016/j.tws.2019.01.014.
33. Sharath, P., Rajeev, A., Uddin, A., Shleke, A., and Uddin, N. (2018) "Probabilistic Contact Force Model for Low Velocity Impact on Honeycomb Structure Sustainable and Resilient Infrastructure", *Journal of Sustainable and Resilient Infrastructure*, vol.4, issue 2, pg 51-65; DOI: 10.1080/23789689.2018.1469359
34. Qi Liu, Wenfeng DU, Uddin, N. and Zhi-yong Zhou (2018) "Flexural Behaviors of Concrete/EPS-foam/Glass-fiber composite sandwich panel" *Journal of Advances in Materials Science and Engineering*, Volume 2018, Article ID 5286757, 10 pages; https://doi.org/10.1155/2018/5286757
35. Qi Liu, Wenfeng DU, Uddin, N. and Zhi-yong Zhou (2019) "Experimental investigation of innovative composite folded thin shell structures"; *Journal of Engineering Structures*, 21(8), 2019.
36. Mohammed, Y., and Uddin, N. "B-WIM System using Fewer Sensor", *J. Transportation Management* (2018) Volume 1, Issue 2, doi:10.24294/tm.v1i2.701
37. Elhattab, A., Uddin, N., and OBrien, E., (2018) "Drive-By Bridge Frequency Identification under Operational Roadway Speeds Employing Frequency Independent Underdamped Pinning Stochastic Resonance (FI-UPSR)"; *Journal Sensors*; 2018, 18(12), 4207; https://doi.org/10.3390/s18124207
38. Tan, C. and Uddin, N. (2017) ""Drive-By" Bridge Frequency Based Monitoring Utilizing Wavelet Transform", *Journal of Civil Structural Health Monitoring*, November 2017, Volume 7, Issue 5, pp 615–620.
39. Elhattab A. and Uddin, N. (2017) "Drive-by Bridge Damage Monitoring: Concise Review", *Civil Eng Res Journal*, CERJ.MS.ID.555555 (2017), Volume 1 Issue 1 - July 2017
40. Lydon, M., Robinson, D., Taylor, S., Amato, G., Brien, E. J. O. & Uddin, N. "Improved Axle Detection for Bridge Weigh-In-Motion System using Fiber Optic Sensors , 12 Jul 2017, *Journal of Civil Structural Health Monitoring*. 7(3), p. 325-332
41. Elhattab A. and Uddin, N. (2017) "Drive-by Bridge Damage Detection Using Non-Specialized instrumented vehicle", *Journal of Bridge Structures*, 12(8), 2017.
42. Elhattab, A., Uddin, N., and OBrien, E., 2016, "Drive-by bridge damage monitoring using Bridge Displacement Profile Difference," *Journal of Civil Structural Health Monitoring*, 6(5), pp. 839-850.
43. Kalyankar, R., and Uddin, N. (2017) "Axle Detection on Prestressed Concrete Bridge Using Bridge Weigh-In-Motion System", *Journal of Civil Structural Health Monitoring*, 21(7), 2017.
44. Zhao, Z. and Uddin, N. (2017) "Bridge Weigh-in-Motion Algorithms Based on the Field Calibrated Simulation Model" ASCE *Journal of Infrastructure System,* February 2016, Journal of Infrastructure Systems, Volume 23 Issue 1 - March 2017
45. Du, W. and Uddin, N. (2016) "Innovative Composite Structural Insulated Panels (CSIPs) Folded Shell Structures for Large-Span Roofs", *Journal of Materials and Structures*, February 2017, 50: 51. doi:10.1617/s11527-016-0924-3
46. Kalyankar, R. R., and Uddin, N. (2017), "Simulation of Advanced 3D Finite Element Dynamic Vehicle Bridge Interaction Using Single and Multi-Vehicle Scenario for Obtaining Dynamic Amplification Factor," *Int. Journal of Bridge Engineering*, Volume 5, Issue 2 (May. - Aug. 2017).
47. Kalyankar, R. R., and Uddin, N. (2016), "Simulating the Effects of Surface Roughness on Reinforced Concrete T Beam Bridge under Single and Multiple Vehicles," *Advances in Acoustics and Vibration*, vol. 2016, Article ID 3594148, 12 pages, 2016. doi:10.1155/2016/3594148.
48. Mostafa, M. and Uddin, N. (2016) "Experimental analysis of Compressed Earth Block (CEB) with banana fibers resisting flexural and compression forces", Journal of Case Studies in *Construction Materials*, Volume 5, December 2016, Pages 53–63.

49. Kalyankar, R. R., and Uddin, N. (2016) "Analysis of Glass Fiber Reinforced Structural Insulated Panels (GSIPs) Under High Velocity Impact Loading", *International Journal of Emerging Technology and Advanced Engineering*, Volume 6, Issue 6, June 2016
50. Pandey, S., Haider, M. and Uddin, N. (2016) "Design and Implementation of a Low-Cost Wireless Platform for Remote Bridge Health Monitoring", *International Journal of Emerging Technology and Advanced Engineering,* Volume 6, Issue 6, June 2016
51. Lydon, M., Robinson, D., Taylor, S. E., OBrien, E., Uddin, N. (2016) "Next generation bridge weigh-in-motion system: optimized using explicit finite element analysis" ASCE *Journal of Bridge Engineering*, Accepted for publication.
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Book Chapters *(with supervised trainees)*

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135. Tan, Chengjun, Nasim Uddin., and Ahmed Elhattab, "Utilizing Hilbert Transform to Assess the Bridge Health Condition Proceedings of the joint ICVRAM ISUMA UNCERTAINTIES conference. Florianopolis, SC, Brazil, April 8-11, 2018
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183. Zhao, H and Uddin, N. "Innovative bridge weigh-in-motion system for enforcement application", International Association for Bridge and Structural Engineering (IABSE-IASS) Symposium London

2011, London, Sept., pp.581

184. Zhao, H and Uddin, N. "Influence line calculation of existing bridges in BWIM system", International Association for Bridge and Structural Engineering (IABSE-IASS) Symposium London 2011, London, Sept., 2011, pp. 572
185. Zhao, H and Uddin, N. "Algorithm to identify axle weights for an innovative BWIM system- Part I", Advances in Bridge Engineering-II, 8-10 August, 2010, Dhaka, Bangladesh, pp.527-536
186. Zhao, H and Uddin, N. "Algorithm to identify axle weights for an innovative BWIM system- Part II", Advances in Bridge Engineering-II, 8-10 August, 2010, Dhaka, Bangladesh, pp.537-546.
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188. Robinson, D., Obrien, E.,Uddin, Taylor, S., Hajializade, D., and Shells, E. "Strategies for Axle Detection in Bridge Weigh-in-Motion Systems," Proceedings of the 6th International Conference on Weigh-In-Motion ICWIM6, Dallas, Texas (April 4-7, 2012).
189. Uddin, Nasim, and Mousa, Mohammed (2011) "Use of Quantitative Risk Assessment in Structural Design" International Conference on Vulnerability and Risk Analysis and Management (ICVRAM)/Fifth International Symposium on Uncertainty Modeling and Analysis (ISUMA 2011), April-2011, Hyattsville, Maryland.
190. Uddin, Nasim., Mousa, Mohammed., (2011) "Design of Composite Structural Insulated Panels (CSIPs) for Penalized Construction" Proceedings of NSF Engineering Research and Innovation Conference, Atlanta, Georgia.
191. Uddin, Nasim., Mousa, Mohammed (2010) "Life-Cycle Cost (LCC) Analysis of Thermoplastic Composites for Panelized Construction", Proceedings of CECAR 5 + ASEC 2010 Conference , 8 - 12 August (2010), Sydney.
192. Mousa, Mohammed., Uddin, Nasim (2010) "Experimental and Analytical Study of Composite Structural Insulated Floor Panels" Earth and Space 2010: Engineering, Science, Construction, and Operations in Challenging Environments, Proceedings of the 12th International Conference on Engineering, ASCE, Honolulu, Hawaii.
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194. M. Mousa, N. Uddin (2010) "Design of Composite Structural Insulated Panels (CSIPs) for Panelized Construction" COMPOSITES 2011 (ACMA) Conference, February 2-4, 2011, FT. Lauderdale, FL.
195. N. Uddin, M. Mousa, "Composite Structural Insulated Panels (CSIPs) for Hazards Resistant Structures" Proceedings of 2009 NSF Engineering Research and Innovation Conference, Honolulu, Hawaii.
196. M. Mousa, N. Uddin (2010) "Experimental and Analytical Study of Composite Structural Insulated Floor Panels" Proceedings of Earth & Space 2010 Conference, March 14 – 17, 2010 in Honolulu, Hawaii.
197. M. Mousa, N. Uddin (2010) "Global Buckling of Composite Structural Insulated Wall Panels", ASCE Engineering Mechanics Institute 2010 Conference, Los Angeles, CA, August 8-11, 2010. Abstract was accepted.
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203. *Uddin, N, Vaidya, A. and Vaidya, U. 2007 "Natural Fiber Reinforced Structural Insulated Panels for Cost-Effective Panelized Construction," Proceedings of the National Science Foundation (NSF) Grantee Conference on International Research and Education in Engineering, Purdue University, 10 pages, West Lafayette, IN, (October 30-November 2).

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216. *Uddin, N, Sehler, K., and Fouad, F. 2005 "Impact Response of Hybrid Autoclave Aerated Concrete/FRP Sandwich Structures, Proceedings of the International AAC Conference, 10 pages, London, UK, (November 18-21).

217. *Vaidya, A., Uddin, N., and Vaidya, U. 2005 "Vibration Response of Multifunctional Sandwich Composites Applicable in Commercial Motor Vehicles"; Proceedings of the SAMPE Conference, 10 pages, Long Beach, California, (August 3-11).

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222. *Vaidya, A., Uddin, N., and Vaidya, U. 2004. "Multifunctional Sandwich Materials for Mass Transit Applications", Proceedings of the Conference on Intelligent Transit, 10 pages, Miami, FL, (March 20-23).

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231. Uddin, N., 2003. "Advanced Composite Solution for Shore line Facilities", Proceedings of the Third International Coastal Structures Conference, 8 pages, Portland, OR, (December 16-18).

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234. Uddin, N., and Vaidya, U. 2003. "Potential Application of Nanoclay Relevant to Infrastructure Application". Proceedings of the NASA Nano-Technology Conference". ASCE/SEI 2004 Structures Congress, 10 pages, Nashville, TN, (June 14-15).

235. Uddin, N. 2002. "Survivability of Composite Structures for the Shore Facilities". Proceedings of the ASCE Technical Conference on Shore Engineering, 10 pages, Los Angeles, California (July 11-13).

236. Uddin, N. 2002. "Seismic Retrofitting of School System in the Mid West USA". Proceedings of the ASCE Technical Conference on Architectural Engineering Institute Annual Conference, 6 pages, Austin, TX (September 2-4).

237. Uddin, N. 2002. "Infrastructure Modeling for the Disaster Management System". Proceedings of the ASCE Technical Conference on Life Line Earthquake Engineering, 10 pages, Seattle, WA, (October 3-5).

238. Uddin, N. 2002. "Vulnerability and Survivability of Composite Structures". Proceedings of the Middle East International Composite Conference, 11 pages, Cairo, Egypt, (December 17-19).

239. Uddin, N. 2001. "Vulnerability and Survivability of Affordably Produced Infrastructure-Relevant Composite Structures". Proceedings of the Structural Engineering Congress, 8 pages, Tokyo, Japan, (May 16-19).

240. Uddin, N. 2001. "Affordably Produced Composite Materials for the Emergency Shelters and Safe Houses". Proceedings of the ASME-IMECE Conference, 10 pages, New Orleans, LA, (February 15-18).

241. Uddin, N. 2001. "Seismic Evaluation of Embankment Dam". Proceedings of the ASCE International Conference on Geotechnical Earthquake Engineering, 10 pages, San Diego, California, (March 10-17).

242. Uddin, N. 200. "Earthquake Deformation of Earth and Rockfill Dams". Proceedings of the International Conference on Structural Dynamics, 8 pages, Los Angeles, California, (February 4-7).

243. Uddin, N. 2001. "Seismic Evaluation and Remediation of Webber Dam." Proceedings of the International Conference on Soil Dynamics, 6 pages, Philadelphia, PA, (August 10-13).
244. Uddin, N. 2000. "Deep Excavation in Shale for Hydroelectric Power Facility". Proceedings of the ISCES International Conference on Computational Engineering and Sciences. UCLA, 8 pages, Los Angeles, California, (August 10-13).
245. Uddin, N. 2000. "Analysis of Underground Powerhouse Cavern against High Pressure Brine Water". Proceedings of the ISCES International Conference on Computational Engineering and Sciences. UCLA, Los Angeles, California, (August 10-13).
246. Uddin, N. 2000. "Design of Large Underground Plugs". Proceedings of the 14th ASCE EMD (Engineering Mechanics Division) Conference. University of Texas at Austin, 4 pages, Austin, Texas, (May 7-9).
247. Uddin, N. 2000. "Reliability-Based Concrete Plug Design for Mine Closure". Proceedings of the Eighth ASCE Joint Specialty Conference on Probabilistic Mechanics and Structural Reliability, University of Notre Dame, 8 pages, Notre Dame, Indiana, (July 24-26).
248. Uddin, N. 1999. "Seismic Evaluation and Remediation of Croton Dam". Proceedings of the ASCE International Conference on Hydropower WATERPOWER 99, 10 pages, Las Vegas, NM, (August 10-12).
249. Uddin, N. 1999. "Design of Concrete Face Slab for the Concrete-Face Rockfill Dams for the Strong Earthquakes". Proceedings of the International Conference on Dam Engineering, 12 pages, London, UK, (March 21-28).
250. Uddin, N. 1999. "Seismic Analysis of Concrete-face Rockfill Dams during Strong Earthquakes". Proceedings of the 11th Nonlinear Finite Element Analysis and ADINA conference, 8 pages, MIT, Cambridge, MA, (June 11-14).
251. Uddin, N. 1999. "Earthquake Forces in Slab of Concrete-Face Rockfill Dams". Proceedings of the ICOLD/USCOLD Fifth International Benchmark Workshop on Numerical Analysis of Dams, 10 pages, Denver, CO, (June 2-5).
252. Uddin, N. 1999. "Numerical Analysis of the Powerhouse Cavern Setting for a Pumped Storage Project". Proceedings of the Geo-engineering for Underground Facilities. ASCE Special Conference, 8 pages, Urbana, IL, (March 2-5).
253. Uddin, N. 1999. "An analytical Solution to Design Face Slab for Concrete-Face Rockfill Dams". Proceedings of the 13th ASCE EMD (Engineering Mechanics Division) Conference, 4 pages, John Hopkins University, Baltimore, MD, (June 7-9).
254. Uddin, N. 1998. "Southwestern Indiana HAZUS demonstration Project". Proceedings of the CUSEC (Central United States Earthquake Consortium) Conference. 6 pages, Louisville, KY, (June 14-16).
255. Uddin, N. 1998. "Teaching Structures using MATHCAD: Incorporation of Design Education and Practice". Proceedings of the ASEE (American Society of Engineering Education) '98 Conference at Carbondale, 10 pages, Illinois, (March 8-11).
256. Uddin, N. 1998. "Integration of Design in a junior level STRUCTURES course using MATHCAD". Proceedings of the ASEE (American Society of Engineering Education) '98 Central Conference at Detroit, 10 pages, Michigan, (April 21-23).
257. Uddin, N. 1998. "Lessons from the Failure of the Lower Saranac Dams. "Filter and Drainage. Proceedings of the ASCE Annual Conference, 6 pages, Boston, MA, (October 2-5).
258. Uddin, N. 1998. "Stabilization and Mine Closure Design of Salt Mine". Grout and Grouting. Proceedings of the ASCE Annual Conference, 6 pages, Boston, MA, (October 2-5).

259. Uddin, N. 1997. "A Single-Step Procedure for Estimating Seismically Induced Permanent Displacement in Earth Structures". Proceedings of the 10thNonlinear Finite Element Analysis and ADINA conference, MIT, 8 pages, Cambridge, MA, (June 18-20).

260. Uddin, N. 1997. "Dynamic Nonlinear Finite Element Analysis for Earth Dams". Proceedings of the 10thNonlinear Finite Element Analysis and ADINA conference, MIT, Cambridge, MA, (June 18-20).

261. Uddin, N., and Bond, N. 1997. "Deep Excavation for Hudson Falls Hydroelectric Power Facility". Proceedings of the 36thU.S. Rock Mechanics Symposium ISRM International Symposium, 10 pages, New York, New York, (June 29-July 2).

262. Bond, N., and Uddin, N. 1997. "Detroit Salt Mine Closure Design". Proceedings of the 36th U.S. Rock Mechanics Symposium / ISRM International Symposium, 10 pages, New York, New York, (June 29-July 2).

Editorials

2018-2020 Guest Editor, Special Collection on "*2017 Disasters: Sociotechnical Perspectives*"
2020-2021 Guest Editor, Special Collection on "*A Global Pandemic: Sociotechnical Perspectives on COVID-19*"

XIV. KEY NOTE/INVITED LECTURES / PRESENTATIONS

1. Keynote speaker at the 19th International Emergency Management Forum & the 20th Annual Conference of the Emergency Management; November 9th to 11th, 2024, at Nanjing University of Information Science and Technology, China.
2. Invited US DOT Presentation "Digital twin for bridge management and post hazard assessment"; October 17, 2023; Oklahoma Transportation Research Day October 16-19, 2023, US DOT.
3. Invited US DOT Presentation "Fly-by image processing for congestion mitigation"; November 17, 2021; https://stride.ce.ufl.edu/2021/09/2021-stride-products-showcase/
4. Organized and chaired ASCE Infrastructure Resilience Division Research Forum: 2021 Virtual Infrastructure Resilience Forum: Emerging Technologies, May 25, 2021.
5. Presentation to Alabama State DOHS "Community Opportunities and Outcomes for Antifragile Systems, Technology, and Learning Hub (COASTAL-Hub)" August 21, 2021
6. Presentation to ALDOT "Applications of Unmanned Aerial Systems Technologies for Element-Level Bridge Inspection", October 10, 2021.
7. Invited Sothern Plain UTC Presentation "Drive-by and Fly-by Bridge Monitoring and Damage Detection Technology" Wednesday, September 23, 2020, 2:00 - 3:30 p.m.; Hosted via Zoom; 1 PDH Provided; Register at https://www.eventbrite.com/e/118558570877
8. Invited US DOT Presentation "Fly-by image processing for congestion mitigation"; June 3, 2020, 12 PM EST; https://www.transportation.institute.ufl.edu/events/stride-webinar-fly-by-image-processing-for-real-time-congestion-mitigation/ https://www.youtube.com/watch?v=nGFs2B3z_cg
9. Invited for the National Science Foundation (NSF) Infrastructure and Smart Cities panel, June 19-20, 2017 at the National Science Foundation in Arlington, Virginia
10. Key Note Paper Presentation "Dynamic Resiliency Index (R) Utilizing SHM Technique" at 2017 Resilience Colloquium, Albuquerque, NM
11. Key Note Paper Presentation "Risk management framework based on monitoring and assessment of infrastructures" at 2018 ICVRAM-ISUMA-Uncertainties - 3rd International Conference on Vulnerability and risk analysis and management, 7th International Symposium on Uncertainty Modeling

and Analysis, 4th International Symposium on Uncertainty Quantification and Stochastic Modeling Conference, Florianopolis, Brazil

12. Invited for the National Windstorm Impact Reduction Program (NWIRP) Strategic Planning Stakeholders Workshop, Friday June 17-18, 2016 at the National Science Foundation in Arlington, Virginia
13. Distinguished Speaker, 1st International Conference on Advances in Civil Infrastructure and Construction Materials, Dhaka, Bangladesh jointly organized by Military Institute of Science & Technology (MIST), The University of British Columbia (UBC) and Canadian Society for Civil Engineering (CSCE), 14 - 15 Dec 2015
14. The World Bank publication of story on Dr. Uddin's research on page 302 of Chapter 7: "Accelerating innovation and technology diffusion" in World Development Report 2010: Development and Climate Change.
15. Invited as "Resource Person" by for International Jute Study Group Research Strategy Workshop (2013)
16. Invited as key note speaker and panelists for a general session on Earthquake and Tsunami in Japan - Disaster Response for 2011 ASCE National Conference, Memphis, TN.
17. Organizing committee member of a joint ASCE-ASME Symposium 'Risk of Extreme Storms Due to a Changing Climate"; April 25, 2013, Washington, DC.
18. Program Committee member of ASCE Symposium on Resilience Engineering, March 23, 2013; University of Delaware, DE.
19. Invited to organized and chair panel discussion on "The 2011 Earthquake and Tsunami in Japan: Risk Analysis and Management Perspectives" at International Conference on Vulnerability and Risk Analysis and Management (ICVRAM)/Fifth International Symposium on Uncertainty Modeling and Analysis (ISUMA 2011), April 11-13, 2011, Hyattsville, Maryland.
20. Invited and elected by ASCE to speak at the Global Facility for Disaster Reduction and Recovery (World Bank) and World Congress on Urban Infrastructure in Developing Countries, November 12-16, 2007
21. Presented invited seminar presentation on "Way Ahead: High Performance Infrastructures" in the Department of Civil and Environmental Engineering at Syracuse University, August 24, 2009.
22. Presented invited lecture in World Forum on Wenchuan Earthquake and Post-quake Reconstruction, October 10-11, 2008 at Tongji University, Shanghai, China.
23. Presented theme lecture on "US Experience with Bridge Weigh in Motion system" at International Workshop on BWIM, UAB, 2008.
24. Presented invited seminar presentation on "FRP Composites for High Performance Infrastructures" in the Department of Civil and Environmental Engineering at Northeastern University (2007).
25. Presented invited key note speech on risk assessment for wind hazards at the 4th International Civil Engineering Conference in the Asian Region, June 25-27, 2007, Taipei International Convention Center (TICC), Taipei, Taiwan.
26. Presented Invited lecture in Guest Lecture Series at Birmingham Southern College on Post-Katrina Recovery, Birmingham, Alabama, January 30, 2006.
27. Presented Invited lead-off paper at 1st Bangladesh Seismological Society Symposium on "International Symposium on Seismic Solution for Bangladesh", held in Dhaka, Bangladesh, on December 17-22, 2005.

28. Presented invited seminar presentation on "Natural Hazards: Structural Design and Construction with FRPs" in the Department of Civil and Environmental Engineering at University of Wisconsin, April 18, 2004.
29. Presented invited seminar presentation on "Seismic Retrofitting of Structures" in the Department of Civil and Environmental Engineering, Texas Tech University, Lubbock, Texas, February 18, 2001.
30. Presented invited seminar presentation on "Seismic Analysis of Dams" in the Department of Civil and Environmental Engineering, University of South Carolina, Columbia, South Carolina, January 21, 2001.
31. Presented invited seminar presentation on "Seismic Response of Structures and Natural Soil Masses" in the Department of Civil and Environmental Engineering, University of Utah, Salt Lake City, Utah, December 10, 2000.
32. Served as invited speaker and participant at the NOAA (National Oceanic Atmospheric Administration IATF panel on "Mainstreaming Natural Disasters in Sustainable Development – Infrastructure Vulnerability Assessment Workshop" sponsored by OAS/UDSE/World Bank and NOAA Coastal Service Center, NOAA/CSC in Charleston, South Carolina, March 20-24, 2000.
33. Invited and conducted a 2-day training session on "Strategic Natural Hazard Mitigation" in the FEMA (Federal Emergency Management Agency) at the National Conference Project Impact Summit '99, December 12-16, Washington, D.C., 1999.
34. Presented invited speech on "Simulation and GIS based Computer Modeling for the Natural Hazards Mitigation" in the Conference on Earthquake Hazard for the Wabash Valley Seismic Zone, Vincennes, Indiana, September 2-3, 1999.
35. Presented invited speech on "Potential for Application of HAZUS at Dhaka, Capital City of Bangladesh," University of Engineering and Technology, July 24, 1998, Bangladesh.
36. Presented invited speech on "Southwestern Indiana HAZUS demonstration Project" at the CUSEC (Central United States Earthquake Consortium) Conference, Louisville, Kentucky, June 14-16, 1998.
37. Presented invited speech on "Dynamic Nonlinear Finite Element Analysis for Dams" in the 11th Nonlinear Finite Element Analysis and ADINA conference, June 18-20, MIT, Cambridge, 1997.

XV. PROGRAM DEVELOPMENT, IMPLEMENTATION, AND MANAGEMENT

1. Organized and chaired ASCE Infrastructure Resilience Division Research Forum: 2021 Virtual Infrastructure Resilience Forum: Emerging Technologies, May 25, 2021.
2. Organized and chaired ASCE Infrastructure Resilience Division Research Forum 2017 Disaster June 11-13, 2018 at Reston, Virginia
3. Organizing committee member of a joint ASCE-ASME Symposium 'Risk of Extreme Storms Due to a Changing Climate"; April 25, 2013, Washington, DC.
4. Program Committee member of ASCE Symposium on Resilience Engineering, March 23, 2013; University of Delaware, DE.
5. Under his leadership CDRM organized First International Conference on Vulnerability and Risk Analysis and Management (ICVRAM) April 11-13, 2011 at Hyattsville, Maryland (including key note address by ASCE President Andrew W. Herrmann)
6. Organized and moderated panel discussion on "The 2011 Earthquake and Tsunami in Japan: Risk Analysis and Management Perspectives"
7. Served on the program committee, Moderated 3 sessions (TRACK: Risk methodologies and management; session multi-hazard analysis and risk assessment (also presented paper in the session);

TRACK: Infrastructure Risk, management and protection; session on infrastructure systems);

8. Received NSF Grants to organize 1st international Workshop on Wind Storm and Storm Surge Mitigation Construction, in Dhaka, Bangladesh, December 18-23, 2005.
9. Organized and moderated a 2-day Symposium on Disaster Risk Management at ASCE 2005 National Conference, Los Angeles, CA following Hurricane Katrina, October 25-27, 2005.
10. Provided a 1-day discussion meeting on ABET assessment and CQI for CEE faculty at University of Alabama at Birmingham, January 2, 2003.
11. Provided a 2-day training session on Strategic Natural Hazard Mitigation in the FEMA National Conference Project Impact Summit '99, December 24-28, Washington, D.C., 2000.
12. Provided a 1-day training on Machine Foundation and Vibration for the staff engineers of the Berry Plastic Corporation, Evansville, Indiana, 1999.
13. Provided a 2-day training session on Strategic Natural Hazard Mitigation in the FEMA National Conference Project Impact Summit '99, December 12-16, Washington, D.C., 1999.
14. Hosted FEMA/CUSEC sponsored training session on hazard mitigation at UE, Evansville, Indiana, April 12-14, 1999.
15. Hosted a workshop for local architects and civil engineers on seismic safety and design, Evansville, Indiana, March 27, 1998.

XVI. COLLABORATIVE EXPERIENCES

Professor Uddin's teaching and research interests emphasizes national and international collaborative partnership to address problems by synthesizing scientific information and contextual understanding and create actionable knowledge. To facilitate and bolster his interdisciplinary research agenda, he has developed collaborative partnerships with the faculty, students, practitioners, and industrial partners from a wide range of institutions including:

Universities

Bangladesh University of Engineering and Technology
BRAC University, Bangladesh
Columbia University
Dhaka University
Georgia Institute of Technology
Harvard University
Indian Institute of Technology, India
National Oceanic and Atmospheric Administration
Purdue University
Princeton University
Queen's University at Belfast, UK
Stanford University
United States Geological Survey
University of Maryland
University Of Michigan
University of California Berkeley
University of California, LA
University of California, San Diego
University of Florida

University of Center Florida
University of Tokyo
University College Dublin, Ireland
World Bank

Industry and National/International Laboratory partners participated in the research projects:

Atomic Energy Commission, Dhaka, Bangladesh
Argonne National Laboratory, Argonne, Illinois
CRS, Builders Inc. at Alabama
Coosa Composites, Alabama
Idaho National Laboratory, Idaho Falls, Idaho
KINGSPAN Group, London, UK
National Composite Center, Dayton, Ohio
National Science Laboratories, Dhaka, Bangladesh
MPG, Composites Inc. at Alabama
National Institute of Standard and Technology (NIST)Gaithersburg, MD
Newport Ventures, Inc., Buffalo, NY
Portage Casting and Mold, Portage, Wisconsin
Sandia National Laboratory

Visits from Industry & Venture Capitalist

KINGSPAN Group, North Yorkshire, *YO17 8PQ,* UK
[Mr. Brendan Murtagh and Dr. Malcolm Rochefort of Kingspan group]
Newport Ventures, Inc., Schenectady, NY 12305
[CEO Dr. Steven Shrader]
David Bryson, Chairman/CEO, ThermaDesigns, LLC, 1301 Co Rd 803, Wedowee, AL 36278
Randy Avery, CEO, Dome International, MS.
Gill Mike, MFG Alabama, Montgomery, AL.
Mike Ray, CEO, The Housing Group, Atlanta, GA.
Willard Brann, Attorney from Atlanta involved with the rebuilding in New Orleans.
Anthony Dwyer of COMPANEL
John Daniel of BALVAC, Buffalo, NY
Nadeem Quderi of GRG, Inc. of Montgomery, AL
Jay Kelley of the JayBlock, Birmingham, AL
Herb Margolis, CEO of InnoVida US Operations, and others.

XVII. SELECTED POPULAR PRESS COVERAGE AND TV INTERVIEWS:

TV

2007 NBC-13 lead news and interview reported (by Jon Paepcke) at Katrina Anniversary 2007 on hurricane resistant construction research, August 29, 2007.
2000 FOX affiliated WKTV-7 of Evansville; report on Disaster Resistant Community Initiatives, March 24, 2000.
2000 NBC affiliated WKTV-14 of Evansville, report on Project Impact Award, January 3, 2000.

2000 PBS affiliated WNIN-9 of Evansville, interview and report on Wabash Valley Earthquake, September 8, 2000.

1999 CBS affiliated WKTV- 44 of Evansville; report on Project Impact Project, September 23, 1999.

1999 FOX affiliated WKTV-7 of Evansville, news on interviews on the seismic retrofitting of Red Cross Building, January 11, 1999.

1998 ABC affiliated WRTV-6 of Indianapolis, lead news and interview reported (by Jack Rinehart, Senior Reporter), on disaster risk management research, September 14, 1998.

1998 NBC affiliated WKTV-14 of Evansville, news and interviews on seismic preparedness for the City of Evansville, June 13, 1998

Press/News/Media:

2022 https://www.wbrc.com/2022/01/22/experts-say-rainbow-bridge-still-safe-foot-traffic-despite-being-closed-down-vehicles/

2021 https://www.uab.edu/news/campus/item/11073-engineering-paper-on-sensor-aided-simulation-in-disaster-management-wins-best-of-conference-award

2020 https://www.uab.edu/reporter/know-more/publications/item/9116-faculty-editors-share-ways-their-journals-are-responding-to-covid-19

2020 Awarded World Bank funded Bangladesh Resilience Project (2020) as Resilience Training Team Leader http://www.uru.gov.bd/en/content/page/21-power-point-slide-package-no-urp-rajuk-s-6

2019 https://www.uab.edu/reporter/know-more/research/item/8665-uab-team-wants-to-build-a-more-equitable-birmingham-through-sensors-and-sensitivity

2019 https://www.uab.edu/engineering/home/news-events/school-of-engineering-news/two-soe-alumni-honored-with-young-alumni-rising-star-awards

2017 https://www.uab.edu/reporter/research/grants-awarded/item/9434-cas-grants-spur-interdisciplinary-research

2008 UAB Reporter: Cover Story "UAB Overseas Study Green Homes That Withstand Hurricanes", Vol. 38, No. 36, pp: 1-2, December, 2008, http://main.uab.edu/Sites/MediaRelations/articles/55613/)

2008 Birmingham News: "UAB Professor Working on Hurricane Proof Housing", December 8, 2008,(http://www.al.com/news/birminghamnews/metro.ssf?/base/news/1228727745274480.xml&coll=2)

2007 UAB Reporter: Cover Story "Researcher Develop Material to Withstand the Elements"; UAB Reporter, Vol. 31, No. 24, pp: 1-2, September, 2007.

2006 Mississippi Daily News: "Hurricane Katrina and Disaster Resistant Construction Research", Interview with the Reporter, August 12, 2006.

2006 Birmingham News: "UAB Senior Design Project Focuses on Tarrant High School", Section N, pp: 3-4, June 10, 2006.

2005 UAB Reporter: Cover Story "Stronger Material Combat Hurricane Winds", UAB Reporter, Vol. 29, No. 47, pp: 1-2, October, 2005.

2000 Scholar: "Changing the Infrastructure: A Preemptive Strike", Vol. 9, N0. 3, pp: 3-5, February 2000.

2000 Evansville Courier & Press: "UE Project Focuses on Red Cross Building", Section A, pp:1-2, April 19, 2000.

1999 Evansville Courier & Press: "Computer Estimates Quake Would Kill Thousands", Section A, pp: 3-4, November 11, 1999.

1998 Evansville Courier & Press: "UE Students, Prof to Help Make Area Nation's First Showcase Community", Section A, pp: 4, March 6, 1998.

XVIII. PROJECTS: SELECTED CONSULTING ACTIVITIES (at ACRES International Corp.)

1. Design of Tornado Shelter for the FEMA approval, Green Safe Inc., Montgomery, Alabama.
2. Served as consultant for Birmingham Water Works for repairing water tank using innovative FRP technology.
3. Served as consultant for Streamline Automation, Huntsville, AL for Union Station Turbine Plant project at Little Rock, AR.
4. Seismic Retrofitting for Fire Stations and Public School for the Office of Building Commission at the City of Evansville.
5. Campus Industries Building, Inc at Buffalo, New York. Structural assessment of industrial/manufacturing buildings and retrofitting design for the Westvaco property building and Dorothy complex.
6. New York State Department of Transportation, Buffalo, New York. Analysis and design of bridge abutments, bridge piers, permanent retaining wall, temporary retaining wall (includes raking walls, sheet pile walls with soil anchor, rock anchor and tie back wall) and cofferdams for the excavation to build the Rt. 16 bridge over Buffalo River.
7. New York State Electric & Gas Corporation (NYSEG). Conceptual and detailed structural analysis including 3D finite element analysis for design of Hornell and Perry Service Centers microwave antenna support and mounting brackets.
8. Crystal Mines Inc., Detroit Salt Mine, Detroit, MI. Structural Analysis and detailed design of a steel head frame (space truss) and large concrete shaft plugs which included thermal control measures (pre-cooling and post-cooling the 6 plugs of 23 ft diameter and 30 ft deep) and stabilizing the existing mine pillars along with detailed mine investigations.
9. Finch, Pryun and Company, Inc., Glens Falls, NY. Performed 3D finite element analysis of the head wall structure to determine criteria for remedial design against deterioration.
10. South Glens Falls hydroelectric project, Glens Falls, NY. Performed 3D finite element analysis of the 15-ft dia steel penstocks to determine critical stress locations.
11. Webber dam hydroelectric project, Lyons, Michigan. Rehabilitation of concrete dam which included stability analysis of spillway, tainter gate piers and bear trap piers during demolition, reconstruction and final conditions. Also included conceptual design and structural analysis of abutment retaining walls, structural analysis and design of trunnion pins to support tainter gate piers, and structural analysis and design of new spillway slab beam.
12. Croton dam hydroelectric project, Rapid town, Michigan. Rehabilitation of concrete dam which included stability analysis of spillway, tainter gate piers and bear trap piers during demolition, reconstruction and final conditions. Also included conceptual and detailed structural design of a new counterfort wall (40 ft deep) to increase sliding stability of the spillway, trunnion pins to support tainter gate piers, new spillway slab beam, and finite element analysis of spillway foundation using a software MATS.
13. Finch, Pruyn and Company Inc., Glens Falls, NY. Analysis and design of a concrete masonry wall, rock anchors, and fish passage structure; stability analysis of south forebay wall, structural design of concrete overlays, structural design of fish passage and trashrack structure for, including preparation of design guidelines and construction specifications.

14. Summit Underground Pumped Storage Project (1,500 MW), Norton, Ohio. Development of design criteria for powerhouse caverns and pressure tunnels, finite- and boundary-element analyses of powerhouse caverns and pressure tunnels, design of preliminary rock supports for underground rock chambers, and stability analysis of powerhouse against 1400 psi gaseous brine pressure and developed test grouting program. Performed field and analytical study for characterization of insitu rock engineering properties by Hydraulic Fracturing and Dilatometer testing methods at 2200 ft level of existing mine.
15. AKZO salt mine, Retsof, NY. Field and analytical study for characterization of in-situ rock engineering properties by Hydraulic Fracturing Method at 2000 ft below ground and set up GIS.
16. Chulabhorn Pumped Storage Project (800 MW), Chulabhorn, Thailand. Development of design criteria for powerhouse caverns and pressure tunnels, finite- and boundary-element analyses of powerhouse caverns and pressure tunnels, design of preliminary rock supports for underground rock chambers, tailrace tunnels and power tunnels.
17. Adirondack Hydro Development Corporation, NY. Developed and coded a computer program for "Beta Testing" the Adirondack Hydro Dev. Corp., NY (AHDC) - Finch, Pryun & Co., NY (FP) information management systems. This Fortran 77 program reads USGS data and simulates downstream gage, the penstocks, the intake channel flow and communication between two PC's (AHDC - FP). Output includes tables for FOXPRO.
18. Alto Cachapoal hydroelectric power project, Chile. Established seismic design criteria for the seismic design of dams, embankments, power house, and designed field monitoring instrumentation.
19. Lower Saranac hydro project, Plattsburg, New York. Field inspection and repair of embankment dam failure including stress analysis of penstocks, flow net analysis of the embankment dam, and design for repair of embankment dam failure at hydraulic intake structure and along the full length of twin 10 ft dia buried steel penstocks.
20. Sivaco Treatment Plant, Buffalo, New York. Slope failure which includes evaluation of geotechnical testing report, data, and development of geotechnical design parameters and criteria, slope stability analysis and remedial design, and construction planning and cost estimating.
21. Orleans County, New York for NY State Department of Transportation. Analysis and design of soldier pile cantilever retaining wall to support roadway embankment adjacent to Marsh Creek.
22. Toronto Transit Commission, Toronto, Canada. Analysis and remedial design of landfill including selection of geotechnical design parameters and development of design criteria and slope stability analysis of landfill.
23. Aleltu hydroelectric project, Aleltu, Ethiopia. Feasibility study including preliminary analysis and design of 65m Rikicha-Gamoro dam, preliminary analysis and design of 40m Chacha dam (main), and sensitivity analysis of geotechnical design parameters.
24. Kents Falls hydro project, Clinton county, NY. Rehabilitation of gate bulkhead structure and intake structure including stability analysis of gate bulkhead and intake structure, rock anchor design and detailing for gate bulkhead and intake structure. Performed analysis and design of a braced cofferdam to reconstruct the gate bulkhead structure.
25. South Glens Falls hydroelectric project, Glens Falls, NY. Evaluation of geotechnical testing, data and development of geotechnical design parameters and criteria, evaluation and analysis of geologic mapping data using DIPS software and stereographic plots. Also included determination of possible rock slope failure mechanisms and design of safe excavation slopes for excavation cuts up to 60 ft in height, embankment cofferdam stability analysis and design for multi phases construction, and design of stone protection (riprap) for embankment cofferdam.
26. Hudson Falls hydroelectric project, Hudson Falls, NY. Analysis and design including rock anchor and rock bolt design for 100-ft deep cut in shale powerhouse, tailrace and intake structure excavation, design of rock reinforcement utilizing DIPS software for analyzing geologic mapping data and determining possible rock slope failure mechanisms from stereographic projections, analysis and design of

embankment cofferdam, cellular cofferdam, and analysis and design of closure structure.

27. Tejas gas storage project, Tioga, PA. Induced Seismicity study and 3D geologic characterization of salt deposits for a and ridge province from geophysical logs of oil and gas exploration wells. Characterization included depicting the location of various geologic strata and probable fault.
28. Aleltu hydroelectric project, Aleltu, Ethiopia. Liquefaction and seismic deformation analysis for 65 m Kicha-Gamoro Dam, and 40 m Chacha Dam.
29. Consumers Power Inc., Michigan. Dynamic analyses to evaluate seismic stability of the Webber hydroelectric power project dams and designed remedial measures for Webber Dam at Rapid Town.
30. Consumers Power Inc., Michigan. Dynamic analyses to evaluate seismic stability of the Croton hydroelectric power project dams and designed remedial measures for Croton Dam at Lansing, Michigan.
31. Tejas gas storage project, Tioga, PA. Preliminary analysis and design for the foundations of process facilities of including machine foundation design for a large gas compressor and high capacity pumps.