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CLERK OF THE BOARD
OF COUNTY COMMISSIONERS
MIAMI-DADE COUNTY, FLORIDA

# MEMORANDUM

Agenda Item No. 8(L)(4)

| | | | |
|---|---|---|---|
| **TO:** | Honorable Chairman Jose "Pepe" Diaz and Members, Board of County Commissioners | **DATE:** | January 19, 2022 |
| **FROM:** | Geri Bonzon-Keenan County Attorney | **SUBJECT:** | Resolution waiving, by a two-thirds vote of the full membership of the Board of County Commissioners, the residency requirement of section 2-11.38 of the Code, and appointing Atorod Azizinamini, Ph.D., P.E., to serve as a member of the Miami-Dade County Environmental Quality Control Board for a three-year term |

Resolution No. R-46-22

The accompanying resolution was prepared by the Regulatory and Economic Resources Department and placed on the agenda at the request of Prime Sponsor PortMiami and Environmental Resilience Committee.

Geri Bonzon-Keenan
County Attorney

GBK/jp

# Memorandum

**Date:** January 19, 2022

**To:** Honorable Chairman Jose "Pepe" Diaz
and Members, Board of County Commissioners

**From:** Daniella Levine Cava
Mayor

**Subject:** Resolution Waiving Residency Requirement and Appointing Atorod Azizinamini, Ph.D., P.E. to the Environmental Quality Control Board

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**Recommendation**

It is recommended that the Board of County Commissioners (Board) approve the attached resolution waiving residency requirement and appointing Atorod Azizinamini, Ph.D., P.E. to the Miami-Dade County Environmental Quality Control Board (EQCB).

**Scope**

The Environmental Quality Control Board hears cases from all jurisdictional areas of Miami-Dade County.

**Fiscal Impact/Funding Source**

This resolution has no fiscal impact because members of the Environmental Quality Control Board are not compensated for their duties.

**Track Record/Monitor**

The Assistant Director of the Department of Regulatory and Economic Resources, Division of Environmental Resources Management, Lee Hefty, will monitor the outcome of this resolution.

**Background**

The EQCB is a quasi-judicial board that convenes monthly to hear cases for variances from, or time extensions to comply with, the requirements of the Environmental Protection Ordinance (Chapter 24 of the Code of Miami-Dade County), and appeals from decisions of the Director of the Division of Environmental Resources Management in the Department of Regulatory and Economic Resources. The EQCB's membership, terms of office, organization, duties and powers, and procedures are set forth in section 24-8 of the Code. Section 2-11.38 of the Code provides that "[a]ll members of County boards shall be permanent residents and electors of Miami-Dade County unless the Board of County Commissioners, by a two-thirds vote of its membership, waives this requirement."

The EQCB is composed of seven members appointed by the Board. Members serve staggered 3-year terms. Quorum requires a majority of members duly appointed to the EQCB, and four votes is required for certain types of cases within specific wellfield protection areas. Due to the highly scientific and technical nature of the matters that the EQCB reviews, the seven members of the EQCB are required to have advanced scientific or engineering qualifications as follows:

a) Two members shall be scientists possessing a master's or Ph.D. degree in biology or marine biology.

b) One member shall be a scientist possessing a master's or Ph.D. degree in biochemistry or chemistry.
c) Two members shall be licensed professional engineers in the field of chemical, civil or environmental engineering or in lieu of one licensed professional engineer, one member may have a Ph.D. degree in chemical, civil or environmental engineering or one member may be a licensed professional geologist with certain qualifications, including a Ph.D. degree.
d) Two members shall qualify as one of the following: a scientist possessing a master's or Ph.D. degree in biology, marine biology, biochemistry, or chemistry; or a licensed professional engineer in the field of chemical, civil, or environmental engineering.

Of the three current members, the EQCB has one member with a Ph.D. in biology, one member with a Ph.D. in biochemistry, and one member is a Professional Engineer with a valid license issued by the Professional Board of Engineers in the State of Florida. Dr. Azizinamini has the requisite qualifications to be a member possessing a Ph.D. in civil engineering and his curriculum vitae is attached in Exhibit A.

Dr. Atorod Azizinamini is also a licensed Professional Engineer in the State of Nebraska. Dr. Atorod Azizinamini was the previous Chairperson of the Civil and Environmental Engineering Department at Florida International University (FIU) from 2011 to 2019. In 2018, he was appointed as the FIU Director of Preeminent Institute for Resilient and Sustainable Coastal Infrastructure and in 2019 he was appointed to his current position as the FIU Director of the Moss School of Construction, Infrastructure and Sustainability. Dr. Atorod Azizinamini meets the scientific qualifications to serve on the EQCB, and is recommended for appointment. Dr. Atorod Azizinamini is a resident of Broward County but currently works in Miami-Dade County at FIU. Due to the high volume of cases heard by the EQCB, the appointment of Dr. Atorod Azizinamini is necessary to avoid possible delays.

Therefore, the attached resolution waives the residency requirement and appoints Dr. Azizinamini to the Miami-Dade County EQCB.

**Delegation of Authority**

The attached resolution does not delegate authority to the County Mayor or County Mayor's designee.

Jimmy Morales
Chief Operations Officer

# EXHIBIT A


## Atorod Azizinamini, Ph.D., P.E.

Vasant Surti Professor of Civil Engineering

Director, Moss School of Construction, Infrastructure and Sustainability

Director of Accelerated Bridge Construction University Transportation Center (ABC-UTC)

Director, Preeminent Institute for Resilient and Sustainable Coastal Infrastructure (InteRaCt)

College of Engineering and Computing

Florida International University (FIU)

Cell: 402-770-6210

Email: aazizina@fiu.edu

**Introduction-** This document provides highlights of my background and accomplishments, first, separated in several categories, followed by detail resume, at the end of the document.

## I. Special scientific, technical, engineering, team leadership accomplishments and contributions

### 1. Establishment of Major Research Entities

Throughout my career I have successfully established research centers with funding coming from industry, local agencies and federal agencies. Following is a brief summary of centers I have established.

#### a) National Bridge Research Organization (NaBRO) at University of Nebraska-Lincoln

In 1998, while still a faculty at University of Nebraska-Lincoln, I successfully competed in a call for proposals to establish a research center devoted to bridge engineering. The opportunity was created when the state of Nebraska requested submission of proposals from all universities and all disciplines for plans for establishing research centers that could be self-supporting after four years of funding from the state. Eleven proposals were selected for funding. Among the submissions, my proposal for establishing National Bridge Research Organization (NaBRO) was accepted. NaBRO, with a focus on bridge engineering and particular focus on rural areas, was born in 1998. In a short three years, NaBRO became self-supporting, capable of supporting full time secretaries, structural laboratory technicians and a large number of M.S. and Ph.D. students. The establishment of NaBRO was among several factors that served to recognize University of Nebraska-Lincoln as one of the leading institutions in Bridge Engineering.

**b) Accelerated Bridge Construction University Transportation Center (ABC-UTC), supported by U.S. DOT.**

I joined Florida International University (FIU) in January of 2011 as Chair of the Civil and Environmental Engineering (CEE) Department. In September of 2013, as Principal Investigator, I successfully proposed and established the first federally funded research center in the CEE Department at FIU. $4.5M from the U.S. DOT and another 50% in match provided the opportunity to start a process that has now placed FIU as the best university for bridge engineering in the nation. With FIU as the lead institution and Iowa State University and University of Nevada-Reno as partner university consortium, we undertook a series of activities that has allowed the CEE department to grow beyond even my expectations. In December of 2016, I was also successful in obtaining a second grant from the U.S. DOT in the amount of $7.5M over five years (2017–2023) to continue the bridge engineering activities at FIU. We added two more universities to our consortium, University of Washington in Seattle and University of Oklahoma in Norman. The activities associated with ABC-UTC since 2013 have now placed FIU as the focal point at the national level in the bridge engineering in general and accelerated bridge construction specifically.

**c) Preeminent Institute for Resilient and Sustainable Coastal Infrastructure**

In a faculty driven process, FIU, has identified several areas in which research activities warrant preeminent status. The Preeminent Institute for Resilient and Sustainable Coastal Infrastructure (InteRaCt) (https://interact.fiu.edu/) is one of the research clusters that were identified as a preeminent program (https://beyondpossible.fiu.edu/preeminent-programs/). InteRaCt includes research centers, laboratories and activities related to the development of engineering solutions for coastal infrastructure. The following chart provides current elements of InteRaCt. Description of different areas can be found using following link (https://interact.fiu.edu/research/focus-areas/index.html).

## 2. Organization of Major Events and Conferences

Throughout my academic career I have been the lead in organizing major conferences covering many engineering topics. One area includes the series of bridge engineering conferences that are supported by U.S. DOT and Federal Highway Administration. Following are examples of conferences for which I have been the lead organizer and Conference Chair.

- FHWA Bridge Engineering Conference, Baltimore MD, Dec. 2000
- FHWA Bridge Engineering Conference, with emphasis on High Performance Steel, Salt Lake City, Utah, Dec. 2002
- FHWA Bridge Engineering Conference on High Performance Steel and Accelerated Bridge Construction, San Antonio, Texas, Dec. 2004
- FHWA Bridge Engineering Conference on Accelerated Bridge Construction, San Diego California, Dec. 2005
- FHWA Accelerated Bridge Construction Conference, Baltimore MD, Dec. 2008
- FHWA Accelerated Bridge Construction Conference, Orlando, FL, Dec. 2010
- 2014 National Accelerated Bridge Construction Conference, Miami, FL, Dec. 2014 (https://abc-utc.fiu.edu/conference/2014-highlights/)
- 2015 National Accelerated Bridge Construction Conference, Miami FL, Dec. 2015 https://abc-utc.fiu.edu/conference/2015-national-accelerated-bridge-construction-conference/
- 2017 National Accelerated Bridge Construction Conference, Miami, FL, Dec. 2017 https://abc-utc.fiu.edu/conference/archives/2017-national-accelerated-bridge-construction-conference/

- 2019 International Accelerated Bridge Construction Conference: Including Automation, Service Life and Ultra High Performance Concrete (UHPC), Miami, FL, Dec. 2019 https://abc-utc.fiu.edu/conference/

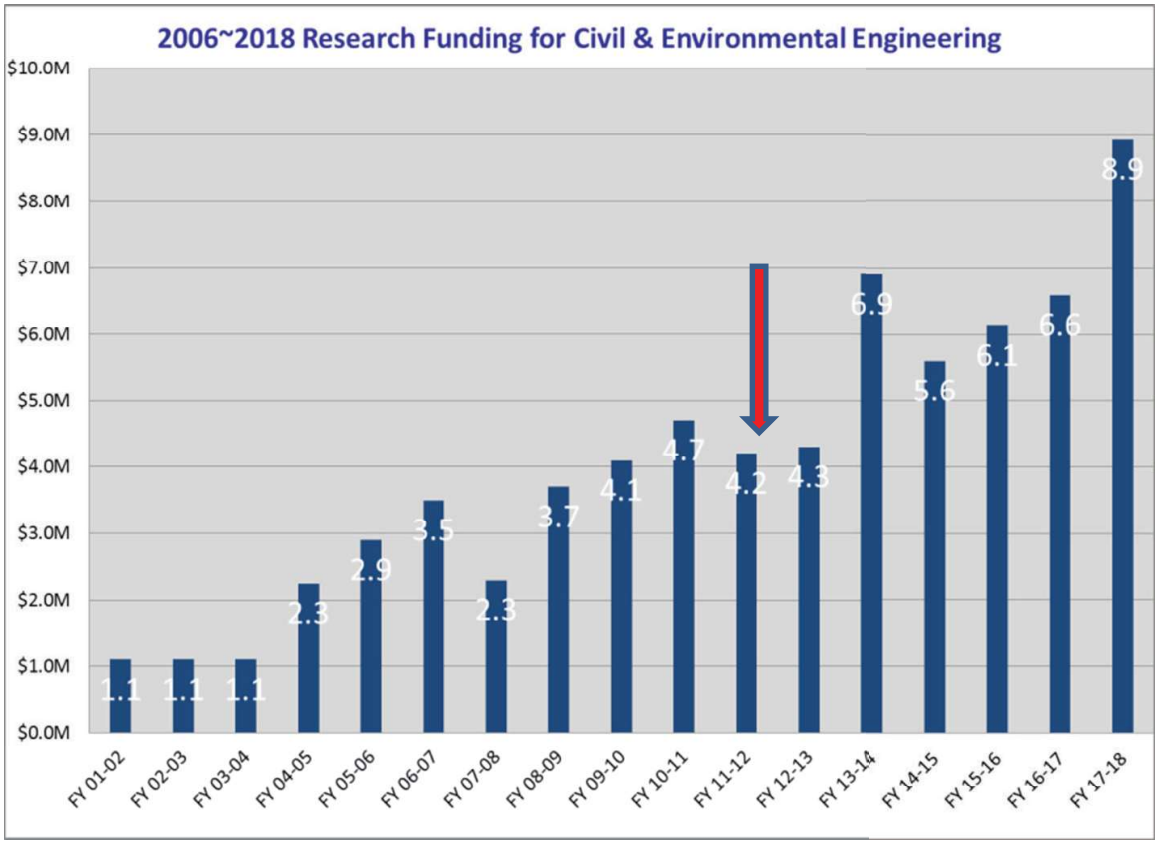
## 3. Leadership in Graduate Student Development and Providing Continuing Education Opportunities

The driving and guiding principle throughout my academic career has been my belief that everything we do in academia is to benefit our main clientele, namely our students. I strongly believe that we conduct research, not just for mere curiosity, but also rather to learn together with our students and to elevate their knowledge and together provide a safer and healthier life for people. We do service, in part in the form of participation in professional societies, so that we learn what is in the pipeline and bring those ideas to the classroom. We work closely with industry so that we create opportunities for our students. As such I have always had a large number of Ph.D. students supported through my grants. Currently (summer of 2019) I have 10 Ph.D. students, one M.S. student, and three Research Associates. I get a great joy in seeing my former graduate students moving up in their careers and working as productive citizens interested in positively changing the world around them.

I have also been very active in teaching short courses to consulting engineers and providing continuing education opportunities. To date have taught more than 40 three-day-long courses on various aspects of structural engineering, with the primary area being bridge engineering to consultants and bridge owners.

## 4. Achievements as Department Chair

In January 2011 I assumed the position of Chairperson of the Civil and Environmental Engineering Department (CEE) at Florida International University (FIU) and remained Chair continuously until July 2019. The following charts show the research productivity of the department Between the time I assumed the position of Chair, and until moving up to be Director of Moss School of Construction, Infrastructure and Sustainability.




In 2018, as seen, we hit the $8.9M research award that is the highest in the entire university per tenured and tenured-track faculty ($500,000 per faculty). Our department has 18 tenured and tenured-track faculty, three instructors, one Professor of Practice and a group of adjunct faculties.

Prior to 2014, FIU's CEE department was not ranked in any ranking system. Since 2016, US News and World Report, has been ranking CEE departments in top 100 schools. Since 2013, FIU's CEE department has been moving up in the ranking and in 2018, according to National Science Foundation, FIU's CEE Department was ranked 29 in Federal research expenditures, as seen below.

| | Table 56. Federally financed higher education R&D expenditures in engineering subfields, ranked by all FY 2017 engineering R&D: FYs 2015–17 and by subfield for FY 2017 | |
|---|---|---|
| | (Dollars in thousands) | |
| | | |
| Rank | | Civil engineering |
| 1 | U. South Florida, Tampa | 17,696 |
| 2 | U. Illinois, Urbana-Champaign | 15,616 |
| 3 | Johns Hopkins U.[b] | 14,454 |
| 4 | Georgia Institute of Technology | 14,098 |
| 5 | Iowa State U. | 12,743 |
| 6 | Texas A&M U., College Station and Health Science Center | 12,175 |
| 7 | U. Iowa | 11,513 |
| 8 | Colorado State U., Fort Collins | 11,508 |
| 9 | U. Colorado Boulder | 11,468 |
| 10 | U. Washington, Seattle | 9,840 |
| 11 | Virginia Polytechnic Institute and State U. | 9,754 |
| 12 | Arizona State U. | 9,426 |
| 13 | U. North Carolina, Chapel Hill | 9,020 |
| 14 | CUNY, City C. | 9,005 |
| 15 | U. Michigan, Ann Arbor | 8,867 |
| 16 | Clemson U. | 8,675 |
| 17 | Stanford U. | 8,468 |
| 18 | Princeton U. | 8,300 |
| 19 | U. Maryland, College Park | 8,241 |
| 20 | U. Tennessee, Knoxville | 8,047 |
| 21 | Vanderbilt U. and Vanderbilt U. Medical Center | 7,504 |
| 22 | U. California, Davis | 7,474 |
| 23 | U. Connecticut | 7,431 |
| 24 | U. Texas, Austin | 7,224 |
| 25 | U. Kentucky | 6,717 |
| 26 | U. Minnesota, Twin Cities | 6,475 |
| 27 | U. Nebraska, Lincoln | 6,396 |
| 28 | U. Delaware | 6,373 |
| **29** | **Florida International U.** | **6,149** |

In 2017 Academic Rankings of World Universities (Shanghai Ranking), FIU's CEE department was ranked 101-150. 2017 world ranking of other CEE department, which are based on quantitative data, are as follows:

**Rankings of Civil Engineering Departments**

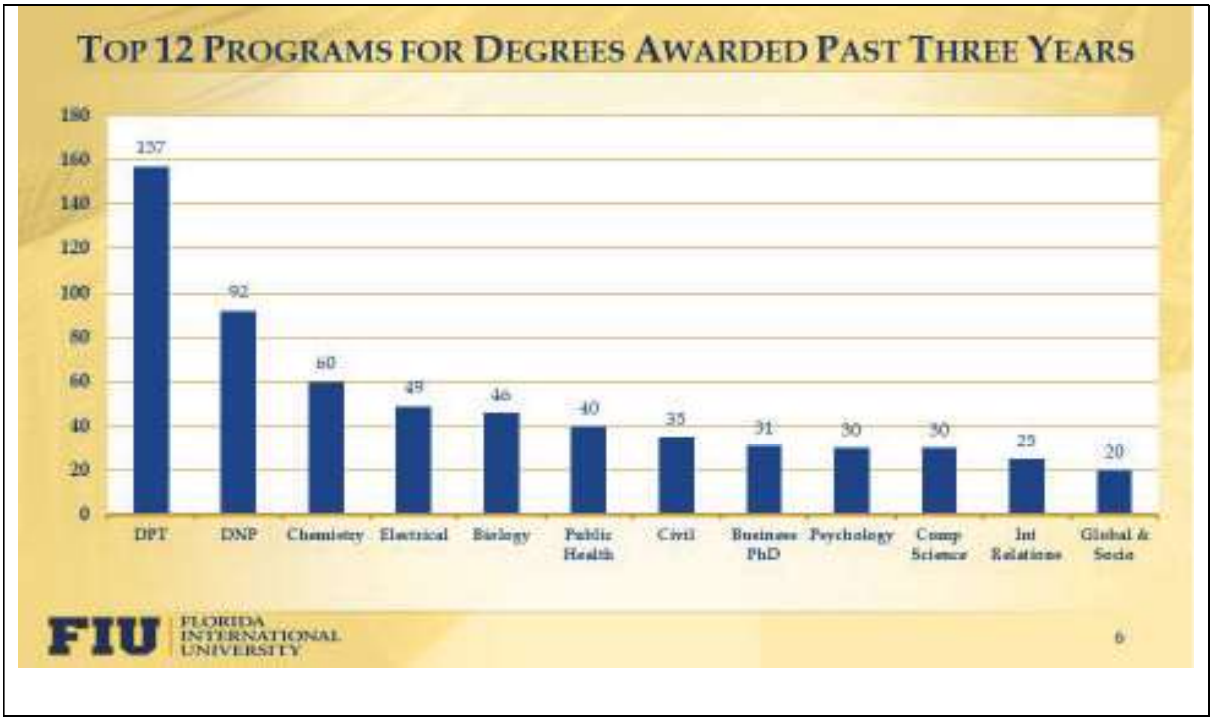
| Ranking | University Name |
|---|---|
| 76-100 | University of Florida |
| **101-150** | **Florida International University** |
| 101-150 | Iowa State University |
| 101-150 | Johns Hopkins University |
| 101-150 | University of Central Florida |
| 101-150 | University of Nebraska - Lincoln |
| 101-150 | University of Nevada - Reno |
| 101-150 | University of Southern California |
| 151-200 | Indian Institute of Technology Madras |
| 151-200 | Indian Institute of Technology Roorkee |
| 151-200 | University of Trento |
| 151-200 | University of Wisconsin - Madison |
| 151-200 | Utah State University |
| 201-300 | Auburn University |
| 201-300 | Texas Tech University |
| 201-300 | The Ohio State University - Columbus |
| 201-300 | University of Kansas |

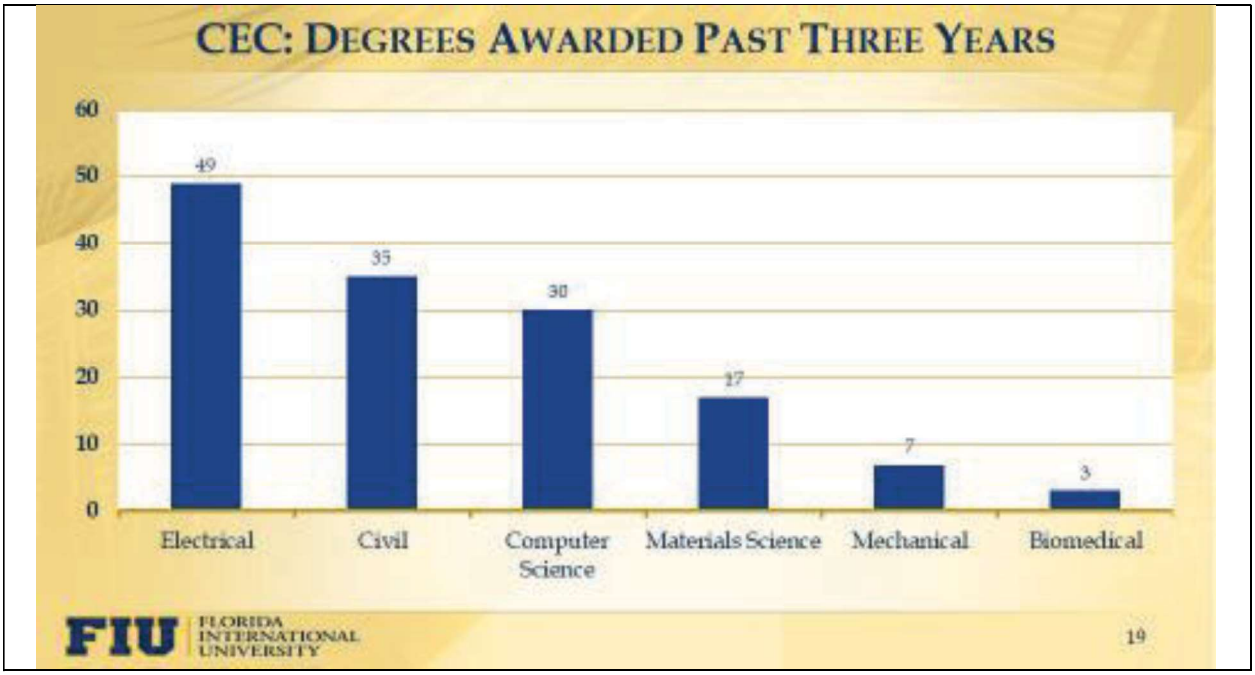
Finally the 2017 NSF ranking of our department is as follows:

- **Federally funded research projects Ranking**
  Civil and Environmental Engineering is Ranked number 29 in U.S.
  https://ncsesdata.nsf.gov/herd/2017/html/herd2017_dst_56.html

- **Doctoral Recipients in Science and Engineering**
  Civil and Environmental Engineering Department is Ranked as follows:
  Number 10 in the US
  Number 1 in FL
  8% of the total PhD graduates in the fields of Science and Engineering at FIU, coming from CEE
  https://ncses.nsf.gov/pubs/nsf19301/assets/data/tables/sed17-sr-tab007.xlsx

***PhD Production Ranking Within FIU- Data published on July 21 by Division of Research***
According to July 2019 data released by Graduate College at FIU, CEE was ranked as seventh highest and second highest department at FIU and College of Engineering and Computing (CEC), respectively in producing PhD degrees.




**5. Leadership of Mega Research Projects**

I have been Principal Investigator for several complex and multi-disciplinary research projects with multi-million dollar funding, I have participated with large numbers of researchers, and I have served as Co-Principal Investigator for projects throughout the United States and the world. Among these projects is the Strategic Highway Research Program 2, (SHRP2), R19A project. R19A was part of more than $250M initiative authorized by congress in 2006, to develop a next generation of technologies for the nation's transportation system. R19A, led by

me as Principal Investigator, was tasked to develop a comprehensive methodology and tools for designing the nation's bridges for service life and for getting most out of them. This project resulted in the development of the first and most comprehensive manual worldwide devoted to prolonging service life of bridges, *Design Guide for Bridges for Service Life* (http://www.trb.org/Main/Blurbs/168760.aspx). This document later became the foundation for development of AASHTO LRFD Guide for Service Life Design of Bridges that is scheduled for print in 2021 (https://apps.trb.org/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=4040).

Other examples of my leadership on major Mega projects includes the establishment of the Accelerated Bridge Construction University Transportation Center (ABC-UTC) at FIU, using two major Grants from US DOT in 2013 ($4.5M) and 2016 ($7.5M) (https://abc-utc.fiu.edu/). ABC-UTC is consortium of five universities led by FIU. Other partner universities are Iowa State University, University of Nevada-Reno, University of Oklahoma and University of Washington, Seattle, Washington. ABC-UTC is now viewed as the focal point for acquiring information and latest technologies, in bridge engineering, within bridge engineering community. This is evident, partly, considering that on a monthly basis more than 5000 bridge professionals listen to ABC-UTC monthly webinars (https://abc-utc.fiu.edu/webinars/). The annual conferences organized by ABC-UTC are supported by more than 30 states and are attended by more than 700 bridge professionals (https://abc-utc.fiu.edu/conference/archives/).

### 6. Formation of Major Collaboration

In order to brand-name FIU as the International focal point for developing engineering solutions for Resilient and Sustainable Coastal Infrastructure, in 2019 I formed a consortium of six universities (https://interact.fiu.edu/webinars/monthly-webinars/index.html), with FIU as lead. Group met in February of 2020 at FIU-DC and signed a formal agreement for collaborating. in Formation of Consortium between, FIU, University of Maine, University of Maryland, Texas A&M, Louisiana State University and University of Oklahoma has now created a critical mass for development of major research program. As of July 2020, this consortium is working on three major proposals for NSF and US DOT. Group is also planning to start a monthly webinars that will start on September 2020 and devoted to resilient coastal infrastructure ( https://interact.fiu.edu/webinars/index.html).

In June of 2020, I initiated a collaboration between the largest academic unit in west coast that is dedicated to research in the earthquake engineering and ABC-UTC at FIU. The Memorandum of Understanding (MOU) between the Pacific Earthquake Engineering Research Center (PEER) (https://peer.berkeley.edu/ ) and The Florida International University is near finalization. This collaboration will be providing an excellent research and education opportunities for faculty and students at FIU and exposing them to the highest research activities in earthquake engineering in the world.

### 7. Establishment of International Collaborations

Throughout my career I have strongly believed that collaborative and multi-disciplinary work goes beyond just involving faculties within one's own institution. These activities demand eliminating all boundaries. Following are few examples of collaborative international activities.

- FIU, with 57000 students, is the largest Hispanic-serving and Carnegie one (R1) research institution in the country. With its location in Miami, often called the Gateway to America, we decided to make FIU the Gateway to Graduate Programs in America. To achieve the objectives of this strategic point, I have traveled to Latin America to develop joint graduate programs. We have now established working relationships with

universities in Peru, Colombia and Brazil, have developed a joint M.S. program with CPU University in Peru and hope to develop joint Ph.D. program with Brazil and Colombia. .

- During the summer of 2017, I initiated joint research activities with the Swiss Federal Institute of Technology (considered the top technical university in Europe) for joint research in the area of repair of existing damaged concrete bridges using advanced materials.

- In 2016 I initiated a joint research activity with the Technical University of Berlin to develop non-destructive testing equipment for assessing the health of embedded steel elements in concrete, using Magnetic Flux Method, similar to MRI in medicine. We have since developed the most unique magnetic-based technology in the world to detect corrosion in embedded steel elements in concrete structure. The action plan calls for establishing a U.S.-based company for providing service to the bridge industry around the world. It is expected that this initiative will form in late 2020. This technology is also helping State of Florida. In June 2020, when Roosevelt bridge in Stuart FL was closed to traffic, because of major damage to one span, FDOT contacted us for help. We applied this technology to Roosevelt bridge to conduct preliminary work to locate damaged areas because of corrosion.

- While at University of Nebraska-Lincoln (UNL), I signed a five-year research collaboration agreement with POSCO, the largest steel producer in South Korea, to assist them in implementing the latest bridge engineering technologies in their practice. This $350,000 grant, provided to UNL, became the start of a long relationship that exists to date.

- In 1995, I received a grant from the National Science Foundation (NSF) to conduct joint research with the Japanese under Phase Five of the NSF U.S.-Japan Cooperative Program in Earthquake Engineering to develop technologies for steel-concrete composite high-rise buildings.

## 8. Major Service to College of Engineering

At the request of upper administration, I started to Co-Chairing the 2025 College of Engineering Strategic Planning in May 2020. This committee is tasked to develop College of Engineering Specific Metrics that will align with FIU strategic plan, with specific and measurable action plan.

## 9. Brief Summary of Research Background

Prior to joining FIU, I held the position of Distinguished College of Engineering Professor at the University of Nebraska-Lincoln (UNL), where I was also Director of National Bridge Research Organization (NaBRO) from 1998 to 2011. I joined UNL in August of 1989 as an Assistant Professor and was promoted to Associate Professor (1995), Full Professor (2000) and Endowed University Professor (2008). In Jan of 2011 I started my academic career at FIU as Chair of the Civil and Environmental Engineering Department, a position that I held until July 2019, before moving up to be Director of Moss School of Construction, Infrastructure and Sustainability. In 2016 I also received the Vasant Surti Professorship.

Prior to my employment at UNL I worked for two years as a full-time structural engineer with the firm of R.P. Hucks Engineering in Charleston, South Carolina, designating multi-story steel buildings, and for four years as structural research engineer with Construction Technology Laboratories (CTL) in Skokie, Illinois, conducting large-scale experimental testing, field testing

and numerical and analytical investigations. I received my B.S. in Civil Engineering from the University of Oklahoma with distinction and completed my M.S. and Ph.D. in Civil Engineering at University of South Carolina in 1982 and 1985 respectively.

My graduate work, sponsored by the NSF (Dr. Radziminski as major advisor), was related to investigating seismic behavior of semi-rigid steel beam to column connections in buildings. During my graduate work, I developed my own non-linear finite element analysis program and developed energy-based damaged models to predict fatigue life of semi-rigid steel beam to column connections. This work included a significant number of experimental tests.
While working at Construction Technology Laboratories (CTL) in Skokie Illinois (1985–1989), I conducted research studies dealing primarily with reinforced and pre-stressed concrete structures.

After joining UNL in 1989, I obtained a series of grants from NSF, DOE, Portland Cement Association (PCA) and several private industries to carry out research studies in the area of High Strength and High-Performance Concrete. These investigations were related to both material and design issues with emphasis on seismic performance of high-rise, high-strength reinforced concrete structures. My research activities from 1989 to 1995 included full-scale testing of concrete slab bridges in the field to collapse, construction and full scale testing of steel bridges in the laboratory and large-scale structural component testing in the laboratory. From 1995 to1999 I was a member of the NSF U.S.-Japan Cooperative Program in Earthquake Engineering (Phase 5, Composite Construction, P.I. of the project at UNL), working with Japanese researchers to develop technologies for the use of composite construction in high-rise buildings. Since 1995 I have investigated various aspects of steel bridges, with emphasis on High Performance Steel (HPS) and Accelerated Bridge Construction (ABC). From 1996 to 2001 my activities focused on removing the AASHTO specification limitations preventing full utilization of HPS in steel bridges. Since 2001, I have spent a significant amount of time developing new bridge systems that are better suited for use in conjunction with HPS. Some of these ideas are now patented by UNL and FIU, among them the new composite action system (HBS System), Folded Plate Technologies (first and second generations), Ultra High Performance (UHPC) Shell Technology and Hybrid Composite Sandwiched Structural elements. ASCE recognized the HPS work carried out by my graduate students and me in 1998 by giving the 1998 ASCE Charles Pankow award. This award was given to a group of us responsible for promoting HPS and included members of the steel industry and two other universities. In 2011 I received the ASCE Special Achievement award for the development of folded steel bridge system. In 2015 the White House recognized me as 2015 White House Champion of Change: Transportation Innovator, and I was presented with the award in the White House on October 13, 2015.

I work very closely with FHWA and various AASHTO committees and lead many national activities related to Accelerated Bridge Construction (ABC). Through these activities I have developed a close working relationship with the bridge community. In January 2008, I received one of three Strategic Highway Research Program (SHRP 2) projects related to bridge engineering, SHRP 2, Project R19A. The project was funded through the Transportation Research Board (TRB) of the National Academy of Sciences and is entitled Bridges for Service Life beyond 100 Years: Systems, Sub-Systems and Components. This was a five-year project with a $2 million budget and was aimed at developing technologies to make existing and new bridges to last 100-plus years. The project included ten co-investigators from around the world and demanded significant project and personnel management skills. The main product of this project, *Design Guide for Bridges for Service Life*, is available through TRB

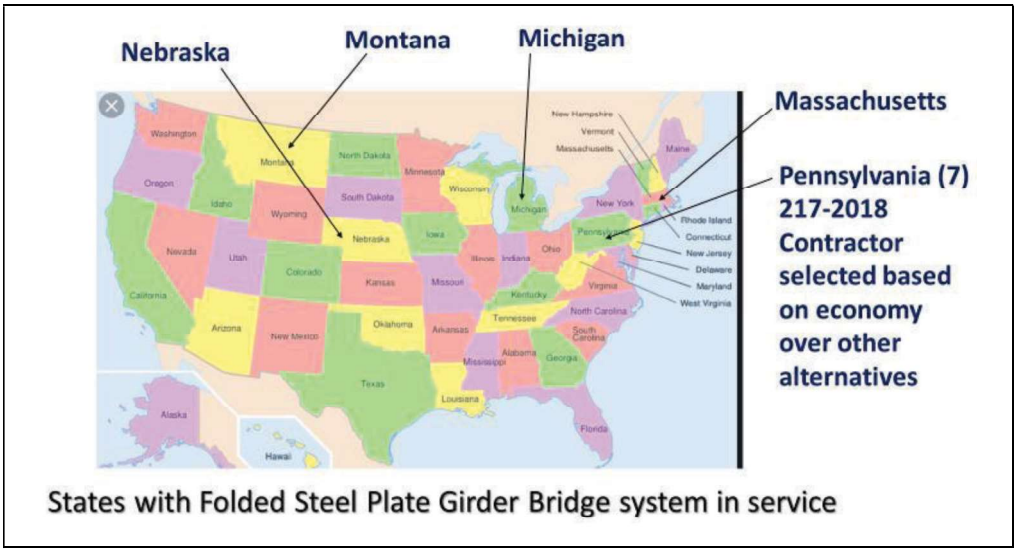
(http://www.trb.org/Main/Blurbs/168760.aspx). SHRP2, FHWA and AASHTO continued working to implement the results of this project, with a funding of $2.8M, at the national level and I was the lead technical person assisting FHWA in this effort. The results of the SHRP2 R19A project were first utilized on the Tappan Zee Bridge in New York. In 2012 I assisted the New York Throughway Authority to develop job specifications for service life design of new a Tappan Zee Bridge over Hudson Bridge, at the cost of more than $4 billion dollars. Results of SHRP2 R19A later became the foundation for development of AASHTO LRFD Guide Specification for Service Life Design of Bridges (https://apps.trb.org/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=4040)

In September 2013, through RITA of U.S. DOT, I received, as Principal Investigator, a Tier One University Transportation Center, dedicated to Accelerated Bridge Construction (ABC-UTC) (www.abc-utc.fiu.edu) with total funding of more than $4.5 million. In December of 2016 I received an additional $7.5M to continue the work at ABC-UTC. Currently, the focus of my research is on the development of next generation of bridges, use of advanced materials to develop repair technologies and automation in construction using 3D printing and robotics. Recently I developed repair technologies for damaged infrastructure using Ultra High Performance Concrete that is now patented. The focus of my current research studies includes automation in the construction industry and development of resilient and sustainable coastal infrastructure.

## II. The technical, commercial and national impact of my work

### 1. Patents and Commercialization

I have developed several patents, some of which has been very successful in generating revenue for universities at which I have been employed. Development of Folded Plate Technology is a good example. The Folded Plate Technology is currently sub-licensed to CDR Bridges (http://cdrbridges.com/) that has been very successful in marketing the technology. Folded Plate Technology was judged by the American Institute of Steel Construction, *Modern Steel Magazine* (January 2011 issue) as one of the most impactful innovations helping the steel industry in the United States. The folded plate system was used to replace seven substandard bridges in Pennsylvania in 2017 and 2018. Other states that have used folded plate bridge system are Nebraska, Montana, Michigan, Indiana, Colorado and Massachusetts.
Following map shows States that have Folded Steel Bridge System, in service that I have developed.




I have developed several other patented products that are mainly aimed at solving the challenges facing nation's substandard bridges, including:

- High performing protective shell for concrete structures,
- Folded steel plate bridge system,
- UHPC formwork shell,
- UHPC shell formwork for superstructure portion of short span bridges,
- Railing system for ABC projects utilizing Ultra High Performance Concrete, and
- Composite system.

### 2. Small Business Initiatives

In 1999 while at UNL, I established a small business, Highway Bridge Services. This small incubator business focused on providing high tech services to the bridge industry. From 2000 through 2010, the entity averaged a gross income of about $400,000 a year and had three employees.

## III. Principal professional society memberships

### 1. Select Professional Society Membership

1. **Member**, TRB committee on Accelerated Bridge Construction (2013 – present)
2. **Member**, American Iron and Steel Institute Steel Bridge Task Force (membership and attending the bi-annual meeting by invitation only), 1994 – present
3. **Chairman**, ASCE Bridge Technical Administrative Committee (Bridge TAC), responsible for overseeing the activities of the following ASCE Bridge Committees (2003 – 2006)
   - ASCE Steel Bridge Committee
   - ASCE Timber Bridge Committee
   - ASCE Concrete Bridge Committee
   - ASCCE Cable Stayed Bridge Committee
   - ASCE Bridge Management, Inspection and Maintenance Committee
   - ASCE Bridge Security Committee

4. **Member**, TRB Steel Bridge Committee, 1999 – 2012
5. **Chairman**, ASCE Steel Bridge Committee, 1997 – 2003
6. **Member**, ASCE, Bridge Security Committee, 2005 – 2012
7. **Chairman**, ACI 363 High Strength Concrete Structural Design Sub-Committee (ACI 363-1), 1996 – 1999
8. **Member**, TRB Committee A2C05, "Dynamic and Field Testing of Bridges," 1995 – 2005
9. **Corresponding Member**, Building Seismic Safety Council, TS6, 1995 – 1998
10. **Member**, CEB TG215 Task Group "Bond Models," (part of European Building Code Committee) 1995 – 2002
11. **Member**, ACI Committee on Composite Construction, 1994 – 2000
12. **Secretary**, ACI 408 Committee, 1994 – 1999
13. **Member**, ASCE Committee on Composite Construction, 1993 – 1998
14. **Corresponding Member**, Building Seismic Safety Council, TS14, 1992 – 1998
15. **Member**, Board of Directors, ACI Nebraska Section, 1992 – 1994
16. **Chairman**, ACI 408 Subcommittee on Bond in High Strength Concrete, 1991 – 1999
17. **Chairman**, ACI 441 Subcommittee on High Strength Concrete Columns, 1991 – 1999
18. **Secretary**, ASCE Committee on Load and Resistance Factor Design, 1991 – 1994
19. **Secretary**, ASCE Committee on Steel Connections, 1990 – 1992
20. **Corresponding Member**, Building Seismic Safety Council, TS11, 1990 – 1996
21. **Chairman**, ACI Nebraska Section Awards Committee, 1990 – 1992
22. **Member**, Tau Beta Pi, Chi Epsilon, PCI, ACI, ASCE

## 2. Select Service to Profession

Following is a partial list of service to professional societies.

1. **Guest Editor,** Special issue of ASCE Bridge Engineering Journal, Special Issue on Accelerated Bridge Construction, scheduled for Jan. 2020
2. **Chairman**, 2019 International Accelerated Bridge Construction Conference: Including, Automation, Service Life and Ultra High Performance Concrete (UHPC) (https://abc-utc.fiu.edu/2019-national-accelerated-bridge-construction-conference/)
3. **Chairman**, 2017 National Accelerated Bridge Construction Conference, Miami, FL, Dec. 2017
4. **Chairman**, 2015 National Accelerated Bridge Construction Conference, Miami, FL (www.2015abc.fiu.edu)
5. **Organizer and Speaker**, session on Accelerated Bridge Construction Conference – 2015 ASCE Structures Congress, April 2015, Portland Oregon
6. **Chairman**, National Accelerated Bridge Construction Conference, Dec. 2014, Miami, FL
7. **Organizer and Speaker**, ABC workshop, Ninth International Conference on Short and Medium Span Bridges, July 15-18, 2014, Calgary, Alberta, Canada
8. **Member**, NSF, U.S. delegation participating in U.S.-Japan Workshop on Sustainable Infrastructure, Japan, Oct. 2009
9. **Co-Chairman**, 2010 FHWA Bridge Engineering Conference- Highways for LIFE and Accelerated Bridge Construction, Orlando Florida, April 8, 9, 2010
10. **Co-Chairman,** 2008 FHWA Accelerated Bridge Construction Conference: Highway for Life Conference, Baltimore, Maryland, March 2008
11. **Lead Investigator**, providing advice to Republic of Korea for implementing new technologies in bridge engineering, under five year contract
12. **Member**, FHWA Bridge Expert Team, providing advice to New York DOT-Region 11 on economical retrofitting options for Brooklyn-Queens Expressway (2006)

13. **Co-Chairman** of FHWA 2005 Accelerated Bridge Construction Conference, San Diego, CA, Dec. 14 – 16, 2005
14. **Co-Chairman** of United Engineering Foundation conference, "International Conference on High Performance Materials in Bridges and Buildings," Maui, Hawaii, Aug. 2005
15. **Co-Chairman** of the Federal Highway Administration (FHWA) conference, "Steel Bridges: Emerging Technologies with Emphasis on High Performance Steel and Accelerated Bridge Construction Technologies" in San Antonio, Texas, Dec. 15 – 17, 2004
16. **Co-Organizer and lecturer** in "High Performance Steel Workshop" at the 2003 World Steel Bridge Symposium, Orlando Florida, Nov. 19 – 21, 2003
17. **Co-Chairman**, United Engineering Foundation Conference, " International Conference on Advanced Materials in Bridges and Buildings," in Davos, Switzerland, Sept. 2003
18. **Co-Chairman** of the Federal Highway Administration conference, "Steel Bridges: Emerging Technologies with Emphasis on High Performance Steel" in Salt Lake City, UT on Dec. 11 – 3, 2002
19. **Co-Chairman** of the United Engineering Foundation conference, "International Conference on High Performance Materials in Bridges and Buildings" in Kona, HI on July 29 – Aug. 3, 2001
20. **Co-Chairman** of the Federal Highway Administration conference, "Steel Bridge Design and Construction for the New Millennium with Emphasis on High Performance Steel" in Baltimore, MD on Nov. 30 – Dec 1, 2000
21. **Chairman** of the Federal Highway Administration conference, "Recent Advances in Steel Bridge Design and Construction with Emphasis on High Performance Steel" in Kansas City, Missouri, Nov. 4 – 5, 1999
22. **Founder** of National Bridge Research Organization (NaBRO), a research center devoted to bridge engineering at University of Nebraska- Lincoln (1998)
23. **Organized a session** during the 1998 Structural Congress to summarize activities of the National Science Foundation U.S.-Japan joint research projects on Earthquake Engineering
24. **Chairman**, "High Performance Steel: New Horizons in Steel Bridge Construction," in Lincoln, Nebraska, Oct. 6 – 7, 1997. The conference, sponsored by the Federal Highway Administration
25. **Co-Chairman** of the United Engineering Foundation "High Strength Concrete: First International Conference," July 13 – 18, 1997 in Kona, Hawaii. Co-chairs, Dr. David Darwin and Dr. Catherine French
26. On behalf of the ACI 441 Committee and as ***chairman of the subcommittee***, prepared a state-of-art report on high-strength concrete, published in the ACI Structural Journal, Vol. 94 No. 3, May – June 1997, pp. 323-335
27. **Organized and chaired** the session "Recent Advances in Steel Bridge Design" during the 1997 ASCE Structures Congress XV in Portland, OR, April 13 – 16, 1997
28. Nominated by the National Science Foundation to visit Japan in February 1996. The trip was sponsored by the Japanese Society for the Promotion of Science.
29. **Organized and chaired** the session "Recent Advances in Design and Construction of Steel Connections" during the 1992 ASCE Structures Congress X in San Antonio, TX, April 13-15, 1992
30. Frequent reviewer for:
    - ASCE Structural Journal,
    - AISC Engineering Journal,
    - PCI Journal,
    - ACI Structural Journal,

- National Science Foundation,
- TRB, and
- A few European journals.

# IV. Professional recognition

## 1. Awards and Recognitions

1. 2016 – **Vasant Surti Professor Civil Engineering**

2. **2015 White House Champion of Change:** Transportation Innovator, an award that was given in a ceremony in the white house on Oct. 13, 2015, recognizing my many contributions to bridge engineering.

3. 2014 AISC ***Merit Design Award***—ABC category—for first application of folded plate girder system, Uxbridge Massachusetts

4. 2011 AISC **Special Achievement Award** for development of Steel Folded Plate Bridge System

5. University Endowed Professorship, Jan. 2008 – University of Nebraska-Lincoln

6. **Partnership in Excellence Award** for "Contribution to Accelerated Bridge Construction Technology Transfer," given by FHWA, May 26, 2006

7. **2005 Prize Bridge Competition Merit Award** in recognition of outstanding design in structural steel-Medium Span Category, presented by American Institute of Steel Construction, 2005

8. **Best Paper Award** for "High Performance Steel Cost Comparison Study-Box Girders," co-authored by Richard Horton (HDR, Inc.), Edward Power (HDR, Inc.), Atorod Azizinamini and Gary Krupika (HDR Engr), presented at FHWA Steel Bridge Conference, Dec. 2004.

9. **Major Achievement Award**," presented by Federal Highway Administration (FHWA), for activities, research and educational activities for promoting use of High Performance Steel at national level, Dec. 2004

10. April 1999, **Faculty Research Award**, (Associate Professor Level) College of Engineering and Technology, UNL

11. Jan. 1998, **Innovation in Steel Bridge Award**, American Iron and Steel Institute

12. 1997, Member of the collaborative research team winning the **1997 CERF Charles Pankow Award for Innovation** (High Performance Steel Initiative) given by the ASCE Engineering Foundation, (principal investigator of the project at the University of Nebraska-Lincoln)

13. 1997, **Outstanding 100 Rural Development Initiative,** given by the Nebraska Rural Development Commission for the project "Evaluation and Retrofitting of Historic

Steel Truss Bridges," (Principal Investigator of the project at the University of Nebraska-Lincoln)

14. Nov. 1996, **FHWA Award of Appreciation** for Advancement of High Performance Concrete Technology

15. 1992, **Award for Contributions to the Chapter,** ACI-Nebraska Chapter

16. 1991, **Faculty Research Award**, (Assistant Professor Level) College of Engineering and Technology, UNL

17. 1985, **Outstanding Graduate Student of the Year Award**, College of Engineering Faculty, University of South Carolina

## V. ABET Accreditation Experience

In 2014 as Chair of Civil and Environmental Engineering Department, I successfully led the accreditation process for our Civil and Engineering Department at Florida International University and we received full six years accreditation. While at University of Nebraska-Lincoln, I participated in two successful ABET accreditation process. I have also attended, continuously the ABET training sessions, during ASCE CEE department head meetings and have kept up with latest changes.

## VI. Other Related Experiences

**Fund Raising**

The current budgetary limitations facing universities have considerably increased the important role of fundraising. Following are few examples.

- Following the establishment of several high-profile activities in the bridge engineering field at FIU, I strategically approached several FIU alumni to construct a state of the art "Clearing Facility" for marketing innovative solutions capable of solving many of the challenges we face in bridge engineering and infrastructure. This is a work in progress.
- Development of Travel Scholarship. Since 2000, I have organized major bridge engineering conferences that have attracted more than 600 engineers in each conference. These conferences were held in 2000, 2002, 2004, 2005, 2008, 2010, 2014, 2015, 2017 and the last one was held in 2019. During each conference, I led the effort to develop travel scholarships for assisting State Bridge Engineers to attend these conferences. On average we developed about $100,000 in travel scholarships for each of these conferences. Using the link shown below, view a short video clip, capturing highlights of 2019 conference (https://abc-utc.fiu.edu/2019-national-accelerated-bridge-construction-conference/).

**Compliance**

As a Principal Investigator for more than $40M in research covering many disciplines during my career, I have had the opportunity to become familiar with and educated myself, about compliance with local and federal laws. Some of these projects have required me to take special training classes on ethics and federal laws that must be followed.

**Leadership Training**

I have and continue to take short courses on leadership, among them the three day long inaugural leadership-training course that was initiated by FIU in 2015. This initiative was undertaken by FIU's provost and the inaugural workshop, held in 2015 brought together 11 invited and top leaders in the university for three-day training. Since then this group has met from time to time to further enhance their leadership skills.

**Reaching to Congressional Delegation**

I work closely with our congressional delegation in Washington DC and routinely make visits to Capitol Hill to both inform our congressmen and their staff on our activities and coordinate our research undertaking.

# Curriculum Vitae
# Atorod Azizinamini, PhD, P.E.

| | |
|---|---|
| **July 1, 2019- Present** | ***Director, Moss School of Construction, Infrastructure and Sustainability*** **–** This new school is recently formed by placing Moss School of Construction, Civil and Environmental Engineering Department and two major research center under one school, called Moss School of Construction, Infrastructure and Sustainability. |
| **2018 – Present** | ***Director,*** Preeminent Institute for Resilient and Sustainable Coastal Infrastructure (InteRaCt). |
| **2016 – Present** | ***Vasant Surti Professor of Civil Engineering*** |
| **Jan 2011 – July 1, 2019** | ***Departmental Chairperson,*** Civil and Environmental Engineering Department, Florida International University |
| **2013 – Present** | **Founding Director**, University Transportation Center for Accelerated Bridge Construction, Florida International University |
| **7/1998 – 2010** | **Founding Director**, National Bridge Research Organization (NaBRO), University of Nebraska-Lincoln |
| **1/2008 – 2010** | **College of Engineering Distinguished Professor**, University of Nebraska-Lincoln |
| **4/2000 – 1/2008** | **Professor,** Civil Engineering Department, University of Nebraska-Lincoln |
| **5/1995 – 4/2000** | **Associate Professor**, Civil Engineering Department, University of Nebraska-Lincoln |
| **8/1989 – 5/1995** | **Assistant Professor**, Civil Engineering Department, University of Nebraska-Lincoln |

## Industrial Experience

| | |
|---|---|
| **10/1985 – 8/1989** | Construction Technology Laboratories (CTL), Structural Development Section, Skokie, IL<br>**Title:** Full Time Structural Engineer<br>**Duties:** Conducting analytical and experimental research in the structural area. Evaluating damaged structures. |
| **10/1978 – 8/1980** | R.P. Hucks Engineering, Inc., Charleston, SC<br>**Title:** Full Time Structural Engineer<br>**Duties:** Layout, analysis, design and detailing of low to mid-rise Steel Buildings |

## Education

B.S. with Distinction, Civil Engineering, University of Oklahoma

M.S. Civil Engineering, University of South Carolina

Ph.D. Civil Engineering, University of South Carolina (Received University's Best Graduate Student of the Year Award)

**Registration** Registered Professional Engineer

**Consulting Activities:** Consulting work for design of steel bridges in Nebraska, Wyoming, Montana and Oregon. Field-testing of major post tension concrete bridges for detecting corrosion. Field-testing historic bridges for rating. Expert witness in bridge related cases. Rating steel bridges with fracture critical members. Consulting services related to Gusset plate and its influence on rating steel bridges. Providing economical alternatives for retrofitting bridges with damaged gusset plates

## Awards and Recognitions

1. **2015 White House Champion of Change: Transportation Innovator**, Oct. 13, 2015
2. Among 11 administrators, from across all departments and colleges at Florida international University (FIU) and selected by Provost, to participate in the FIU's inaugural three-day leadership camp, Oct., 2015
3. 2014 AISC ***Merit Design Award***—ABC category—for first application of folded plate girder system - Uxbridge Massachusetts
4. 2011 AISC ***Special Achievement Award*** for development of Steel Folded Plate Bridge System
5. University Endowed Professorship, Jan. 2008 – University of Nebraska-Lincoln
6. **Partnership in Excellence Award** for "Contribution to Accelerated Bridge Construction Technology Transfer," given by FHWA, May 26, 2006
7. 2005 **Prize Bridge Competition Merit Award** in recognition of outstanding design in structural steel-Medium Span Category- presented by American Institute of Steel Construction, 2005
8. **Best Paper Award** for "High Performance Steel Cost Comparison Study-Box Girders," co-authored by Richard Horton (HDR, Inc.), Edward Power (HDR, Inc.), Atorod Azizinamini and Gary Krupika (HDR Engr), presented at FHWA Steel Bridge Conference, Dec. 2004.
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15. April 1994, Member, **Graduate College Faculty Fellow,** University of Nebraska

16. 1992, **Award for Contributions to the Chapter**, ACI-Nebraska Chapter

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18. 1985, **Outstanding Graduate Student of the Year Award**, College of Engineering Faculty, University of South Carolina

19. 1978**, BSCE with Distinction**, University of Oklahoma

## Professional Society Membership

1. **Member**, TRB committee on Accelerated Bridge Construction (2013 – present)
2. **Member**, American Iron and Steel Institute Steel Bridge Task Force (membership and attending the bi-annual meeting by invitation only), 1994 – present
3. **Chairman,** ASCE Bridge Technical Administrative Committee (Bridge TAC), responsible for overseeing the activities of the following ASCE Bridge Committees (2003 – 2006)
4. ASCE Steel Bridge Committee
5. ASCE Timber Bridge Committee
6. ASCE Concrete Bridge Committee
7. ASCCE Cable Stayed Bridge Committee
8. ASCE Bridge Management, Inspection and Maintenance Committee
9. ASCE Bridge Security Committee
10. **Member**, TRB Steel Bridge Committee, 1999 – 2012
11. **Chairman**, ASCE Steel Bridge Committee, 1997 – 2003
12. **Member,** ASCE, Bridge Security Committee, 2005 – 2012
13. **Chairman**, ACI 363 High Strength Concrete Structural Design Sub-Committee (ACI 363-1), 1996 –1999
14. **Member**, TRB Committee A2C05, "Dynamic and Field Testing of Bridges," 1995 – 2005

15. **Corresponding member**, Building Seismic Safety Council, TS6, 1995 – 1998
16. **Member**, CEB TG215 Task Group "Bond Models," (part of European Building Code Committee) 1995 – 2002
17. **Member**, ACI Committee on Composite Construction, 1994 – 2000
18. **Secretary**, ACI 408 Committee, 1994 – 1999
19. **Member,** ASCE Committee on Composite Construction, 1993 – 1998
20. **Corresponding Member,** Building Seismic Safety Council, TS14, 1992 – 1998
21. **Member, Board of Directors**, ACI Nebraska Section, 1992 –1994
22. **Chairman**, ACI 408 Subcommittee on Bond in High Strength Concrete, 1991 – 1999
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3. Chairman, 2017 National Accelerated Bridge Construction Conference, Miami, FL, Dec 2017
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7. **Organizer and speaker**, ABC workshop, Ninth International Conference on
8. Short and Medium Span Bridges, July 15-18, 2014, Calgary, Alberta, Canada
9. Member, NSF, U.S. delegation participating in U.S.-Japan Workshop on Sustainable Infrastructure, Japan, Oct. 2009
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11. **Co-Chairman,** 2008 FHWA Accelerated Bridge Construction Conference: Highway for Life Conference, Baltimore, Maryland, March 2008
12. **Lead Investigator**, providing advice to Republic of Korea for implementing new technologies in bridge engineering, under five year contract
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28. **Organized and chaired** the session "Recent Advances in Steel Bridge Design" during the 1997 ASCE Structures Congress XV in Portland, OR, April 13-16, 1997
29. Nominated by the National Science Foundation to visit Japan in February 1996. The trip was sponsored by the Japanese Society for the Promotion of Science.

30. **Organized and chaired** the session “Recent Advances in Design and Construction of Steel Connections” during the 1992 ASCE Structures Congress X in San Antonio, TX, April 13-15, 1992
31. Frequent reviewer for:
    - ASCE Structural Journal,
    - AISC Engineering Journal,
    - PCI Journal,
    - ACI Structural Journal,
    - National Science Foundation,
    - TRB, and
    - A few European journals.

## Short Courses Taught to Practicing Engineers

Following is a list of short courses taught to DOT engineers and consultants.

1. “Design of Bridges”, UPC University, Lima Peru, July, 2017

2. “Design of Bridges,” Washington DC, Dec 2016

3. “Design of Straight and Curved Steel Girder Bridges using AASHTO LRFD Bridge Design Specifications,” Dec 2011, Miami Beach, FL

4. “Design of Straight and Curved Steel Girder Bridges using AASHTO LRFD Bridge Design Specifications,” Dec. 2010, Orlando FL

5. “Design of Straight and Curved Steel Girder Bridges using AASHTO LRFD Bridge Design Specifications,” Dec 2008, Baltimore, MD

6. “Design of Straight and Curved Steel Girder Bridges using AASHTO LRFD Bridge Design Specifications,” May 2009, Newark, NJ

7. “Design of Steel Bridge Using AASHTO LRFD Bridge Design Specifications Using 2007 Edition and Load Rating Fracture Critical Steel Bridges using LFD and LRFR,” Jan. 2008 through Nov. 2008, Nebraska Department of Roads

8. “Design of Steel Bridges Using AASHTO LRFD Bridge Design Specification” (2007), (4 hours), Baltimore, MD, March 2008

9. “Design of Steel Bridges Using AASHTO LRFD Bridge Design Specifications (2006 Interim),” Montana DOT, Dec. 3 through 5, 2006, Helena, MT (24 hours)

10. **“Design of Steel Bridges Using the Third Edition of AASHTO LRFD Bridge Design Specification,”** four hour seminar during 2005 FHWA Accelerated Bridge Construction Conference, San Diego, CA, Dec. 14, 2005

11. **“Design of Steel Bridges Using the Third Edition of AASHTO LRFD Bridge Design Specification,”** eight hour workshop, part of FHWA Bi-Annual Steel Bridge Conferences, Dec. 15, 2004, San Antonio, TX

12. **"High Performance Steel and Upcoming Changes to AASHTO Bridge Codes,"** four hour lectures to Wilbur Smith and Associates Bridge Engineers, March 26, 2004, Charleston, SC

13. "Short Course on Design of Steel Bridges Using AASHTO LRFD Bridge Design Specifications," (10.5 hours), sponsored by the National Steel Bridge Alliance, Feb 2004, Salem OR

14. **"Short Course on Design of Steel Bridges Using AASHTO LRFD Bridge Design Specifications,"** (10.5 hours), sponsored by the National Steel Bridge Alliance, June 16-17, 2003, New York, NY

15. "Short Course on Design of Steel Bridges Using AASHTO LRFD Bridge Design Specifications," (10.5 hours), sponsored by the National Steel Bridge Alliance, May, 2003, Alaska DOT

16. **"Short Course on Design of Steel Bridges Using AASHTO LRFD Bridge Design Specifications,"** (10.5 hours), sponsored by the National Steel Bridge Alliance, May 22-23, 2003, Chicago, IL

17. **"Short Course on Design of Steel Bridges Using AASHTO LRFD Bridge Design Specifications,"** (10.5 hours), sponsored by the National Steel Bridge Alliance, Nov., 18-19, 2002, St. Louis, MO

18. **"Short Course on Design of Steel Bridges Using AASHTO LRFD Bridge Design Specifications,"** (10.5 hours), sponsored by the National Steel Bridge Alliance, Oct., 28-29, 2002, New York, NY

19. **"Short Course on Design of Steel Bridges Using AASHTO LRFD Bridge Design Specifications,"** (10.5 hours), sponsored by the National Steel Bridge Alliance, Aug. 12-13, 2002, Lexington, KY

20. **"Short Course on Design of Steel Bridges Using AASHTO LRFD Bridge Design Specifications,"** (10.5 hours), sponsored by the National Steel Bridge Alliance, July 15-16, 2002, Rochester, NY

21. **"Short Course on Design of Steel Bridges Using AASHTO LRFD Bridge Design Specifications,"** (10.5 hours), sponsored by the National Steel Bridge Alliance, June 17-18, 2002, Raleigh, NC

22. **"Short Course on Design of Steel Bridges Using AASHTO LRFD Bridge Design Specifications,"** (10.5 hours), sponsored by the National Steel Bridge Alliance, March 21-22, 2002, Carson City, NV

23. **"Short Course on Design of Steel Bridges Using AASHTO LRFD Bridge Design Specifications,"** (11 hours), sponsored by the National Steel Bridge Alliance, Nov. 29-30, 2001, Dallas, TX

24. **"Short Course on Design of Steel Bridges Using AASHTO LRFD Bridge Design Specifications,"** (11 hours), sponsored by the National Steel Bridge Alliance, Montana Department of Transportation, Aug. 13-14, 2001, Helena, MT

25. **"Short Course on Design of Steel Bridges Using AASHTO LRFD Bridge Design Specifications,"** (8 hours), Sponsored by the National Steel Bridge Alliance, Nevada Department of Transportation, April 9, 2001, Las Vegas, NV

26. **"Short Course on Design of Steel Bridges Using AASHTO LRFD Bridge Design Specifications,"** (8 hours), sponsored by the National Steel Bridge Alliance, Louisiana Department of Transportation, March 19, 2001, Baton Rouge, LA

27. **"Short Course on Design of Steel Bridges Using AASHTO LRFD Bridge Design Specifications,"** (2-8 hour classes), sponsored by the National Steel Bridge Alliance, Washington Department of Transportation, March 13-14, 2001, Olympia, WA

28. **"Short Course on Design of Steel Bridges Using AASHTO LRFD Bridge Design Specifications,"** (8 hours), sponsored by the National Steel Bridge Alliance, California Department of Transportation, March 12, 2001, Sacramento, CA

29. **"Short Course on Design of Steel Bridges Using AASHTO LRFD Bridge Design Specifications,"** (8 hours), sponsored by the National Steel Bridge Alliance, Maine Department of Transportation, Feb. 26, 2001, Augusta, ME

30. **"Short Course on Design of Steel Bridges Using AASHTO LRFD Bridge Design Specifications,"** (8 hours), sponsored by the National Steel Bridge Alliance, Arizona Department of Transportation, Feb. 12, 2001, Phoenix, AZ

31. **"Steel Bridge Design Class Using AASHTO LRFD Bridge Design Specifications,"** (6 hours), short course for engineering professionals engaged in the design of steel bridges, Nov. 29, 2000, Baltimore, MD

32. **"LRFD Design of Steel Bridges,"** (11.5 hours), sponsored by National Steel Bridge Alliance, ID Department of Transportation, July 19-20, 2000, Boise, ID

33. **"Short Course on Design of Steel Bridges Using AASHTO LRFD Bridge Design Specifications,"** (6 hours), sponsored by the National Steel Bridge Alliance, Minnesota Department of Transportation, June 28, 2000, Minneapolis, MN

34. **"Basic Steel Design,"** (4 hours), Iowa Department of Transportation, May 3, 2000, Ames, IA

35. **"Design of Steel Bridges Using AASHTO LRFD Bridge Design Specifications,"** (2.5 hours), short course for engineering professionals engaged in the design of steel bridges, March 22, 2000, Minneapolis, MN

36. **"Steel Bridge Design Class Using AASHTO LRFD Bridge Design Specifications,"** (4 hours), short course for engineering professionals engaged in the design of steel bridges, Nov. 3, 1999, Kansas City, MO

37. **"AASHTO LRFD Design of Steel Bridges,"** (8 hours), Colorado Department of Transportation, presented jointly with Dr. Dennis Mertz of the University of Delaware, Oct. 15, 1999, Denver, CO

38. **"Steel Bridge Design Using AASHTO LRFD,"** (21 hours), short course for practicing engineers, Nov. 10, 1998 through Dec. 22, 1998, Omaha, NE

39. **"Design of Steel Bridges, Part II,"** (32 hours), short course for Bridge Engineers at the Nebraska Department of Roads, Spring 1998, Lincoln, NE.

40. **"Design of Steel Bridges, Part I,"** (32 hours), short course for Bridge Engineers at the Nebraska Department of Roads, Fall 1997, Lincoln, NE

41. **"Bridge Substructure Design,"** (32 hours), short course for Bridge Engineers at the Nebraska Department of Roads, Fall 1995, Lincoln, NE

42. **"Elements of Reinforced Concrete Bridge Design,"** (4 hours), short course for Bridge Engineers at the Nebraska Department of Roads, Fall 1994, Lincoln, NE

## Publications

### REFEREED JOURNAL PUBLICATIONS

1. Abbas Khodayari, Islam M. Mantawy, and **Atorod Azizinamini** "Numerical Investigation of Prefabricated Concrete Barrier System using UHPC" Submitted to Transportation Research Record (Submitted)

2. Carlos Sosa Cardenas, Islam M. Mantawy, and **Atorod Azizinamini** "Repair of Timber Piles using Ultra-High-Performance Concrete" Submitted to Transportation Research Record (Submitted)

3. Ali Javed, Islam M. Mantawy, and **Atorod Azizinamini** "3D Printing of Ultra-High-Performance Concrete for Robotic Bridge Construction" Submitted to Transportation Research Record (Submitted)

4. Morgan Dickinson, Muhammad Faheem Ud Din Afzal, Muhammad Atif Anwer, Islam M. Mantawy, and **Atorod Azizinamini** "Pneumatic Spray of Ultra-High-Performance Concrete for Bridge Repair Applications" Submitted to Transportation Research Record (Submitted)

5. Valikhani, Alireza, Azadeh Jaberi Jahromi, Islam M. Mantawy, and **Atorod Azizinamini** "An Investigation of Reinforced Concrete Beams Retrofitted with Ultra-High Performance Concrete" Submitted to Transportation Research Record (Submitted)

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## Select Presentations

1. 3D Printing of UHPC Formwork for ABC, 1st International Conference on 3D Printing and Transportation, November 20-21, 2019, Washington, DC

2. UHPC Based ABC Solutions for Existing and New Bridges: ABC-UTC Research Activities- PCI Bridge Committee Meeting - Sept. 25-28, 2019 - Rosemont, Chicago

3. Simple-Made Continuous Rolled Steel Girder Bridges- FHWA Webinar- July 2, 2019- Denver, Colorado

4. Accelerated Bridge Construction: Past, Present and Future and ABC-UTC Activities- 2nd International Bridges Workshop- June 4-8, 2019 - Puerto Vallarta, Mexico

5. Prefabricated UHPC Structural Formwork for Cap Beams- 2nd International Interactive Symposium on UHPC- June 2-5. 2019- Albany, New York.

6. UHPC shell technologies to reduce life cycle cost of ABC Projects- SEI Structures Congress Conference- April 24-26, 2019- Orlando, Florida

7. New ABC connection detail for connecting precast cap beam to precast columns with well-defined plastic hinges - SEI Structures Congress Conference-April 24-26, 2019- Orlando, Florida

8. Extending simple for dead and continuous for live load steel bridge system for ABC application in high seismic areas- SEI Structures Congress Conference - April 24-26, 2019- Orlando, Florida

9. Workshop 1069: Latest Innovations in ABC – Quality Assurance, UHPC, and Visualization / 3D Modeling / Virtual Reality Technologies- Transportation Record Board Annual Meeting- Jan 12-18, 2019, Washington DC.

10. Enhancing resiliency and delivery of bridge elements using UHPC as formwork- Transportation Record Board Annual Meeting- January 12-18, 2019, Washington DC.

11. Accelerated Bridge Construction: Trends and Opportunities- Oct 2018, Structural Engineering Association of Florida – Tampa branch

12. Bridge Engineering: Trends and Future, Centennial Talk, Civil Engineering Department, University of Arizona

13. Latest innovations and technologies in bridge engineering, Oklahoma Department of Transportation Workshop on Ultra High Performance Concrete, October, 2018

14. Accelerated Bridge Construction: Trends in U.S. and Opportunities, Simposia Internacional Disenoy Constructuccion De Puentes, Bucaramanga, Colombia, Nov 7-9, 2018

15. Why Steel Bridges for Accelerated Bridge Construction: Steel Bridge Systems Best Suited for ABC- The ISSB-Steel Bridge Conference 2018- September 10-11, 2018 - Prague, Czech Republic

16. Magnetic Flux Leakage (MFL) Method for Damage Detection in Internal Post-tensioning Tendons- NDE/NDT for Highway and Bridges - August 25-27, 2018, New Brunswick, NJ

17. Development of Quality Assurance and Quality Control System for Post Tensioned Segmental Bridges in Florida: Case of Ringling Bridge- 8th Annual Structures Research Update Meeting- August 7, 2018, Tallahassee, Florida

18. UTC-Technology Transfer Workshop- ASCE International Conference on Transportation and Development- July 15-18, 2018- Pittsburgh Pennsylvania

19. Workshops W-5 Innovations in Accelerated Bridge Construction in Seismic Regions "From Research to Practice"- International Bridge Conference IBC- June 11-14, 2018- Orlando Florida

20. Live Webinar- Owner Perspective on ABC – Spotlight on SHRP2 R04 Fort Goff Creek Project and Caltrans' Laurel Street Overcrossing Project- Caltrans- May 16-17 2018- Sacramento, California

21. Making Gains in the Short Span Market- NASCC- World Steel Bridge Symposium- April 11-13, 2018- Baltimore, Maryland.

22. Best Practices for University Transportation Centers, 2017 CUTC Summer Meeting, June 19-21, 2017, Buffalo, NY

23. Latest research results in steel bridge area at Florida International University, AISI-Steel bridge task force, July 31- Aug 3, 2017, Denver, Colorado

24. Non-destructive testing (NDT) on a segmental concrete bridge scheduled for demolition, 7$^{th}$ annual structures update, Florida DOT, Tallahassee, FL, August 15-16-2017

25. Research in ABC at FIU, 7th annual structures update, Florida DOT, Tallahassee, FL, August 15-16-2017

26. Presenting: Accelerated Bridge Construction: National Perspective, Western Bridge Engineers Seminar- September 6-8, 2017- Portland, OR

27. National Trends in Accelerated Bridge Construction, 2017 UTC Spotlight Conference: Rebuilding and Retrofitting the Transportation Infrastructure (TRB)- Sept. 26-27, 2017, Washington, DC

28. Innovative ABC solutions for High Speed Rail Applications in High Seismic areas-Sept , 2017- Sacramento, CA

29. Keynote Speaker- Accelerated Bridge Construction in U.S., 2017 Chinese Bridge Forum- November 5-8, 2017, Wuhan, China

30. "Folded Steel Plate Bridge Systems with Lengths exceeding 100 ft", 2017 National ABC Conference, Dec. 6-8, 2017, Miami, FL

31. Accelerated Bridge Construction, presentation to Florida Chamber of Commerce on Transportation, Dec 12, 2017, Port Canaveral, FL

32. Workshop Speaker, Transportation research Board (TRB), "Ultra-High-Performance Concrete Connections for Precast Bridge Elements", Jan 10, 2016.

33. Keynote speaker, 2016 Annual Structural Engineers Association of Illinois - Bridge Symposium, Thursday, April 28, 2016.
34. "Economical steel bridge systems for ABC applications," Washington State Department of Transportation, June 22, 2015.

35. "Economical steel bridge systems for ABC applications," Oregon State Department of Transportation, June 23, 2015.

36. Keynote speaker- "Accelerated Bridge Construction: State of Knowledge in U.S.," Brazilian Bridge Engineering Conference, Sao Paulo, Brazil, May, 2015.

37. "Economical steel bridge systems for ABC applications," ASCE Structures Congress, April 2015, Portland OR.

38. "Development of Innovative ABC connection for seismic regions for ABC applications," AASHTO SCOB T-3 meeting, April 2015, NY.

39. "Development of Customized manual for service life design of ABC bridges," 2015 AASHTO SCOB T-9 meeting, April 2015, NY.
40. "Status of ABC-UTC research program," AASHTO SCOB T-4 meeting, April 2015, New York

41. "Folded Plate Steel Bridge System," 2015 World of steel symposium, March, 2015, Nashville, TN.

42. "Redundancy of two steel box girder bridge systems," 2015 TRB, Washington D.C., Jan 2015.

43. "ABC-UTC research activities: update," 2015 TRB ABC Committee meeting, Washington D.C., Jan 2015.

44. " Accelerated Bridge Construction in U.S.," 2014 Istanbul Bridge Engineering Conference, Aug. 2014.

45. "Folded Plate Bridge System," Steel World Symposium, Toronto, Canada, April 2014.

46. Presentations to AASHTO T-11, "Accelerated Bridge Construction at FIU), AASHTO SCOB Annual meeting, Columbus OH, June 2014.

47. Workshop speaker- “Bridge Systems for Accelerated bridge Construction,” Ninth International Conference on Short and Medium Span Bridges, July 15-18, 2014, Calgary, Alberta, Canada.

48. “Experimental Investigation of Longitudinal Closure Pour Detail for Prefabricated Slabs Used in Modular Construction” , TRB 2014

49. “Design Guide for Bridges for Service Life,” TRB, 2014.

50. “ SHRP2- Joints and Bearings”- Presentation to AASHTO T-2 Committee (AASHTO Technical Committee for Bearings and Expansion Devices), July 7, 2009- New Orleans Louisiana

51. “ SHRP2-Status of SHRP2 project R-19A Research on Design of Bridges for 100 Year Service Life” – Presentation to AAHTO T-9 Committee for Bridge Preservation, July 6, 2009, New Orleans LA.

52. “ Design of Steel bridges- SHRP2 project”- Presentation to AASHTO T-10 Committee on Steel Bridges, July 6, 2009, New Orleans, LA.

53. “Progress on R19A Project”- Presentation to AASHTO Bridge Sub-Committee General Session, July 8, 2009, New Orleans LA.

54. Keynote talk- “Latest Development in Bridge Engineering in U.S.,” POSCO International Steel Bridge Conference, Nov. 2008, Republic of Korea.

55. Keynote Talk- “ U.S. Development in the area of High Performance Steel as Applied to Bridges,” 4$^{th}$ International Steel Conference- republic of Korea – Nov. 2006.

56. Monitoring of Two Steel Bridges Utilizing the Simple for Dead and Continuous for Live Loads Concept, 2006 NDE Conference on Civil Engineering, Aug 2006, St. Louis, MO.

57. Non-Destructive Testing of Post tensioned Concrete Bridges to Detect Corrosion, 2006 NDE Conference on Civil Engineering, Aug 2006, St. Louis, MO.

58. Measuring Available Pre-Stress in Prestressed Concrete Girders, 2006 NDE Conference on Civil Engineering, Aug 2006, St. Louis, MO.

59. Long Term Monitoring of a Steel Bridge Constructed Using Phased Construction, 2006 NDE Conference on Civil Engineering, Aug 2006, St. Louis, MO.

60. Economical Steel Bridge System, Oklahoma Transportation Center, May 17, 2006.

61. Accelerated Bridge Construction, Oregon Department of Transportation, May 16, 2006.

62. Advances in High Performance Steel, Helena MO, Jan 2006.

63. Key note speaker – “U.S. Experiences with High Performance Steel,” Republic of Korea national steel conference, Sept. 2004, Soul, Korea.

64. Steel bridge system made continuous for live load only. United Engineering Foundation conference, Switzerland, Sept. 2003.

65. Lecture on High Performance Steel presented to ASC Chicago Chapter, March 4-5, 2003.

66. Azizinamini, A., "Designing Steel Bridge Systems Made Simple for Dead Loads and Continuous for Live Loads," 2002 FHWA Steel Bridge Conference for the Western United States, Salt Lake City, UT, Dec. 12-13, 2002.

67. Several Presentations to AASHTO T-14 "Steel Bridges," since 1994.

68. Several Presentations at Regional Conferences Related to Bridges.

69. Azizinamini, A., "High Performance Steel: Research Front-An Historical Account of Research Activities," Transportation Research Board 2002 Annual Meeting, Washington, DC, Jan 13-17, 2002.

70. "Continuous for Live Load Only," Techniques for the Cost Effective Use of Steel in Bridges, Denver, CO, April 11, 2001.

71. "Continuous Steel Bridges-Continuity Only for Live Load: How to Design Them," Steel Bridge Design and Construction for the New Millennium with Emphasis on High Performance Steel, Baltimore, MD, Nov. 30-Dec.. 1, 2000.

72. "Advanced Methodology for Rating Concrete Slab Bridges," 2000 Structures Congress, Philadelphia, PA, May 8-10, 2000.

73. "Results from Latest Research Studies in the Field of High Performance Steel," Recent Advances in Steel Bridge Design and Construction with Emphasis on High Performance Steel, Kansas City, MO, Nov. 4-5, 1999.

74. "Selected Bridge Configurations for Phase IIa–Nebraska HPS Initiative," Recent Advances in Steel Bridge Design and Construction with Emphasis on High Performance Steel, Kansas City, MO, Nov. 4-5, 1999.

75. "Flexural Capacity of Compact and Non-Compact HPS Girders," 2000 TRB, Washington, DC, Jan 1998.

76. "Negative Bending Tests of HPS-485W Bridge Girders," 5th ASCE Materials Engineering Congress, Cincinnati, OH, May 10-12, 1999.

77. "High Performance Steel Bridge Research in U.S.," 14th U.S.-Japan Bridge Engineering Workshop, Pittsburgh, PA, Nov. 3-4, 1998.

78. "Research and Innovation in Steel Bridges Using High Performance Steel," 1998 World Steel Bridge Symposium, Chicago, IL, Sept 2-4, 1998.

79. "Seismic Behavior of Composite Columns," ACI 1998 Spring Convention, Houston, TX, March 1998.

80. “Connections to Concrete Filled Steel Tube Columns,” ACI 1998 Spring Convention, Houston, TX, March 1998.

81. “Comprehending Behavior of Tension Splices for Reinforcing Bars Embedded in High Strength Concrete,” 1998 TRB, Washington, DC, Jan. 1998.

82. “Full Scale Testing of Old Steel Truss Bridges,” 1998 TRB, Washington, DC, Jan 1998.

83. “Seismic Behavior of High Strength Concrete Filled Tube (CFT) Columns,” PCI/FHWA International Symposium on High Performance Concrete, New Orleans, LA, Oct 20-22, 1997.

84. “Design of Tension Lap Splices in High Strength Concrete,” PCI/FHWA International Symposium on High Performance Concrete, New Orleans, LA, Oct 20-22, 1997.

85. “Recommended Changes to ACI 318 Building Code for Calculating Tension Development Lengths,” Engineering Foundation Conference on High Strength Concrete, Kona, HI, July 1997.

86. “Application of High Performance Steel in Steel Bridge Construction,” 1997 ASCE Structures Congress XV, Portland OR, April 13-16, 1997.

87. “Effect of Cross Bracing on Seismic Performance of Steel I-Girder Bridges,” 1997 ASCE Structures Congress XV, Portland OR, April 13-16, 1997.

88. Lecture in the American Institute of Steel Construction (AISC) national seminar series on new developments in steel construction. Responsible for section on Wind and Seismic Loads, Omaha, NE, June 1996.

89. “A Nondestructive Method for Prestress Evaluation,” 1996 ASCE Structures Congress XIV, Chicago, IL, April 15-18, 1996.

90. “Seismic Performance of Concrete Filled Tube Columns,” ACI 1996 Spring Convention, Denver, CO, March 1996.

91. “Performance of Composite Structures During the Kobe Earthquake,” ACI 1995 Fall Convention, Montreal, Canada, Nov. 1995.

92. “Effect of Cross Frames on Behavior of Steel Girder Bridges,” TRB Fourth International Bridge Conference, San Francisco, CA, Aug 28-30, 1995.

93. “Rating Concrete Slab Bridges,” IABSE Symposium, San Francisco, CA, Aug 1995.

94. “Cross Frames in Steel Girder Bridges – Their Role During and After Construction,” 12$^{th}$ International Bridge Conference, Pittsburgh, PA, June 19-21, 1995.

95. “Technology Transfer into Practice: The Beginning and End,” NSF Conference on Research Transformed into Practice, Arlington, VA, June 14-16, 1995.

96. “Bond of Reinforcing Bars Embedded to High Strength Concrete,” National Science Foundation Workshop, Honolulu, HI, Dec. 1994.

97. One of six invited speakers from the U.S. in an international workshop on high strength concrete, sponsored by National Science Foundation, organized by Dr. Catherine French, Hawaii, Nov. 1994.

98. “Seismic Behavior of High-Strength Concrete Columns,” Fifth U.S. National Conference on Earthquake Engineering, Chicago, IL, July 10-14, 1994.

99. “Bridge Engineering Research at the University of Nebraska-Lincoln,” CE Monthly Seminar Series, Civil Engineering Department, University of Minnesota, Minneapolis, MN, May 6, 1994.

100. Lectured in the American Institute of Steel Construction (AISC) National Seminar Series on new developments in steel construction. Responsible for section on 1993 changes to AISC's LRFD building code, Des Moines, IA, May 5, 1994.

101. “High-Strength Concrete Columns: State of Knowledge,” 1994 ASCE Structures Congress XII, Atlanta, GA, April 24-28, 1994.

102. “Rigid Beam-To-Column Connection Detail for Circular Composite Columns,” 1994 ASCE Structures Congress XII, Atlanta, GA, April 24-28, 1994.

103. Several presentations by invitation to present steel bridge research results to the AASHTO T14 Steel Bridge Committee since Feb 1994.

104. “Flexural Capacity of High-Strength Concrete Columns,” Research in Progress Session, ACI Fall Convention, Minneapolis, MN, Nov. 1993.

105. “Design Suggestions for Development in High-Strength Concrete,” Session on High-Performance Concrete, ACI Fall Convention, Minneapolis, MN, Nov. 1993.

106. “Rating Old Concrete Slab Bridges,” 10$^{th}$ Annual International Bridge Conference, Pittsburgh, PA, June 14-16, 1993.

107. “Design Criteria for Tension Splices in High-Strength Concrete,” Third International Symposium on Utilization of High-Strength Concrete, Lillehammer, Norway, June 1993.

108. “Flexural Capacity and Ductility of High-Strength Concrete Columns,” Third International Symposium on Utilization of High-Strength Concrete, Lillehammer, Norway, June 1993.

109. “Application of High-Strength Concrete in High-Rise Buildings,” Third International Symposium on Utilization of High-Strength Concrete, Lillehammer, Norway, June 1993.

110. “Interaction Between Beam and Steel Connections,” 1993 ASCE Structures Congress XI, Irvine, CA, April 19-21, 1993.

111. “Seismic Behavior of High Strength Concrete Columns,” 1993 ASCE Structures Congress XI, Irvine, CA, April 19-21, 1993.

112. “An Innovative Connection Detail for High Rise Buildings,” 1993 ASCE Structures Congress XI, Irvine, CA, April 19-21, 1993.

113. “Tubular Composite Connections” and “Extended Header Plate Connections,” AISC Committee on Research, Orlando, FL, March 1993.

114. “Safety Assessment of Old Concrete Slab Bridges,” Session on Safety Assessment of Existing Structures, ACI 1993 Spring Convention, Vancouver, Canada, March 1993.

115. “Ultimate Load Testing of Concrete Slab Bridge,” TRB Annual Convention, Washington, DC, Jan 1993.

116. “Load Carrying Capacity of Old Concrete Slab Bridges,” National Science Foundation Workshop on Bridge Engineering Research in Progress, La Jolla, CA, Nov. 16-17, 1992.

117. “Bond Performance of Large Deformed Reinforcing Bars Embedded in High-Strength Concrete,” International Conference on Bond in Concrete, Riga, Latvia, Oct 15-17, 1992.

118. “Ductility of High Strength Concrete Columns Subjected to Seismic Loading,” ACI Fall Convention, San Juan, Puerto Rico, Oct 1992.

119. “Strength Capacity of Old Concrete Slab Bridges,” ACI Fall Convention, San Juan, Puerto Rico, Oct 1992.

120. “Design Recommendations for Tension Development Length in High Strength Concrete,” ACI Fall Convention, San Juan, Puerto Rico, Oct 1992.

121. “Design Issues Related to Use of High Strength Concrete,” Graduate Student Seminar, University of Texas, Austin, TX, Sept 1992.

122. “High Strength Concrete Columns: Earthquake Engineering Aspect,” ACI Spring Convention, Washington, DC, March 1992.

123. “Seismic Performance of Ultra High Strength Reinforced Concrete Columns,” ACI Fall Convention, Dallas, TX, Nov. 1991.

124. “Design and Detailing of Transverse Reinforcement in High Strength Reinforced Concrete Columns Subjected to Seismic Loading,” National Science Foundation Research Grantee Workshop, Phoenix, AZ, Aug 1991.

125. “Bond Performance of Deformed Reinforcing Bars Using Ultra High Strength Concrete,” ACI Spring Convention, Boston, MA, March 1991.

126. “Cumulative Damage in Semi-Rigid Beam-to-Column Connections: A Fracture Mechanics Approach,” Southeastern Conference on Theoretical and Applied Mechanics (SECTAM) XII, Columbia, SC, April 17-18, 1986.

## Funded Research Grants and Contracts

Following is a list of research projects for which Dr. Azizinamini has served as Principal Investigator and Project Director, since joining University of Nebraska-Lincoln on August of 1989, as Assistant professor and Chair of Civil and Environmental Engineering Department at Florida International University on Jan. of 2011.

1- Title: Bond Performance of Reinforcing Bars Embedded in High Strength Concrete
Amount: $23,000 from the sponsor
Sponsor: Portland Cement Association, Skokie, IL
Dates: 1990-1991
PI: A. Azizinamini

2- Title: Design and Detailing of Transverse Reinforcement for High Strength Reinforced Concrete Columns Subjected to Seismic Loading
Amount: $59,950 from the sponsor with $18,000 in kind match fund from UNL
Sponsor: National Science Foundation (Research Initiation Grant)
Dates: 1990-1992
PI: A. Azizinamini

3- Title: Development of a New Energy Efficient Construction Material - High Strength Concrete
Amount: $172,544.50 from the sponsor with $29,000 in kind match fund from UNL
Sponsors: Department of Energy ($86,272 cash); Nucor Research and Development, Norfolk, NE ($9,840 cash); Montague System, Inc., Greenville, SC ($15,000 reaction frames as in-kind matching funds); Wilson Concrete, Omaha, NE ($20,000 girder specimens as in-kind matching funds); Concrete Industries Inc., Lincoln, NE ($9,600 reusable frame works as in-kind matching funds); W.R. Grace & Co., Overland Park, KS ($1,000 concrete admixture in-kind matching funds); Ready Mixed Concrete Co, Lincoln, NE; Master Builders, Omaha, NE
Dates: 1990-1992
PI: A. Azizinamini
Co-P.I.: D. Delorm, Engineering Mechanics, UNL

4- Title: Design of Steel Connections to Composite Columns
Amount: $5,000 from the sponsor
Sponsor: American Institute of Steel Construction
Dates: 1990-1992
PI: A. Azizinamini

5- Title: Development of Design Aids for Extended Header Plate C Connections
Amount: $45,725 from the sponsor with $2,000 in kind match fund from UNL
Sponsors: American Institute of Steel Construction ($19,475 cash) and Paxton and Vierling ($26,250 test specimens and reaction frames as in-kind matching funds)
Dates: 1991-1993
PI: A. Azizinamini

6- Title: Research Experience for Undergraduate Students
Amount: $10,000 from the sponsor
Sponsor: National Science Foundation
Dates: 1991-1992
PI: A. Azizinamini

7- Title: Strength Capacity of Concrete Slab Structures and Implementation of Bridge Monitoring System
Amount: $169,513 from the sponsor
Sponsor: Nebraska Department of Roads
Dates: 1991-1992
PI: A. Azizinamini
Co-P.I.: M. Khalifa, Civil Engineering, UNL

8- Title: Strength Capacity of Prestressed Girder Bridges
Amount: $55,601 from the sponsor
Sponsor: Nebraska Department of Roads
Dates: 1992-1993
PI: A. Azizinamini
Co-P.I.: J. Rohde and M.K. Tadros

9- Title: Strength Capacity of Steel Girder Bridges
Amount: $171,203 from the sponsor
Sponsor: Nebraska Department of Roads
Dates: 1992-1994
PI: A. Azizinamini
Co-P.I.: M. Khalifa and B. Rosson, Civil Engineering, UNL

10- Title: Codify Design Procedure for Bond in Ultra High Strength Concrete
Amount: $37,756 from the sponsor with $9,000 in kind match fund from UNL
Sponsor: Portland Cement Association, Skokie, IL
Dates: 1992-1993
PI: A. Azizinamini

11- Title: Reliability Based Rating Procedure for Concrete Slab Bridges using Field-Testing.

Amount: $159,035 from the sponsor with $22,000 in kind match fund from UNL
Sponsor: Federal Highway Administration and Nebraska Department of Roads
Dates: 1993-1994
PI: A. Azizinamini
Co-P.I.: F. Choobineh, Industrial Engineering, UNL

12- Title: Field Implementation of Non-Destructive Technique to Assess Prestressed Concrete Bridges
Amount: $111,732 from the sponsor with $16,000 match from the Center for Infrastructure Research (CIR)
Sponsor: Nebraska Department of Roads (NDOR)
Dates: 1994-1997
PI: A. Azizinamini
Co-PI: J. Rhode and F. Choobineh

13- Title: An Alternative Approach for Rating and Rehabilitation of Historic Steel Truss Bridges
Amount: $186,946 from the sponsor with $37,944 match from the Center for Infrastructure Research (CIR)
Sponsor: Federal Highway Administration (FHWA)
Dates: 1994-1997
PI: A. Azizinamini
Co-PI: F. Choobineh

14- Title: Developing Design Criteria for Required Tension Development and Tension Splice Length for Reinforcing Bars Embedded in High Strength Concrete
Amount: $100,076 from the sponsor that includes $35,220 subcontract to New Jersey Institute of Technology
Sponsor: National Science Foundation (NSF)
Dates: 1995-1999
PI: A. Azizinamini
Co-PI: A. Saadeghvaziri, New Jersey Institute of Technology

15- Title: U.S. – Japan Cooperative Work on Earthquake Engineering: Development of Detail and Design Criteria for Steel Beam to Concrete Filled Tube Column Connections in Seismic Regions
Amount: $153,435 from the sponsor that includes $60,500 subcontract to University of California at Berkeley, $13,560 match from the College of Engineering & Technology at UNL and $12,000 match from the Center for Infrastructure Research (CIR)
Sponsor: National Science Foundation (NSF)
Dates: 1995-1999
PI: A. Azizinamini
Co-PI: F. Filippou, University of California at Berkeley

16- Title: Fellowship to Visit Japan – National Science Foundation Program
Amount: $10,000 from the sponsor
Sponsor: Japan Society for the Promotion of Science (JSPS), nominated by the National Science Foundation (NSF)
Dates: 1996 (fellowship lasted for two weeks)
PI: A. Azizinamini

17- Title: Course on Design of Steel Bridges; Part 1 and 2.
Amount: $30,000 from the sponsor
Sponsor: Nebraska Department of Roads (NDOR)
Dates: 1997-1998
PI: A. Azizinamini

18- Title: Full Scale Testing of High Performance Steel Bridge Girders
Amount: $34,000 from the sponsor with $47,605 match from the Mid-America Transportation Center (MATC)
Sponsor: American Iron and Steel Institute (AISI)
Dates: 1995-2000
PI: A. Azizinamini

19- Title: High Performance Steel Bridge Research and Construction in Nebraska; Phase II
Amount: $103,000 from the sponsor
Sponsor: Federal Highway Administration (FHWA)
Dates: 1999-2000
PI: A. Azizinamini

20- Title: High Performance Steel Bridge Research and Construction in Nebraska, Phase I
Amount: $204,000 from the sponsor with $30,000 match from the Mid-America Transportation Center and $61,400 match from the Center for Infrastructure Research (CIR)
Sponsor: Federal Highway Administration (FHWA)
Dates: 1996-1999
PI: A. Azizinamini

21- Title: Economic Substructures for Steel Bridges
Amount: $163,857 from the sponsor with $26,165 match from the Center for Infrastructure Research (CIR) and $48,091 match from the Mid-America Transportation Center (MATC)
Sponsor: Nebraska Department of Roads (NDOR) and the Federal Highway Administration (FHWA)
Dates: 1998-2001
PI: A. Azizinamini
Co-PI: D.C. Rizos and S. Kuska

22- Title: Bridge Research Focus Group, National Bridge Research Organization (NaBRO)
Amount: $526,776 from the sponsor with $73,134 match from the Mid-America Transportation Center (MATC)
Sponsor: Nebraska Research Initiative (NRI)
Dates: 1998-2002
PI: A. Azizinamini
Co-PI: D.C. Rizos, C. Tuan, D. Alexander and F. Choobineh

23- Title: Acquisition of Bridge Testing System
Amount: $75,000 from the sponsor with $25,000 match from the College of Engineering and Technology at UNL
Sponsor: University of Nebraska-Lincoln (UNL) Foundation
Dates: 1999-2000
PI: A. Azizinamini

24- Title: Steel Bridge System with Delayed Composite Action: Concept Identification
Amount: $67,863 from the sponsor with $12,300 match from NaBRO and $25,459 in kind match from UNL
Sponsor: Nebraska Department of Roads (NDOR)
Dates: 1999-2001
PI: A. Azizinamini

25- Title: Design, Construction, Testing and Development of Design Specifications for High Performance Steel
Amount: $290,000 from the sponsor with $101,097 in kind match fund from UNL
Sponsor: Federal Highway Administration (FHWA)
Dates: 1999-2004
PI: A. Azizinamini

26- Title: Development of a Design Guideline for Phase Construction of Steel Bridges
Amount: $297,217 from the sponsor with $54,098 match from NaBRO and $95,595 in kind match from UNL
Sponsor: Nebraska Department of Roads (NDOR)
Dates: 1999-2002
PI: A. Azizinamini

27- Title: Bridge Deck Casting and Curing Procedures
Amount: $14,424 from the sponsor with $4,930 in kind match from UNL
Sponsor: Nebraska Department of Roads (NDOR)
Dates: 2000-2001
PI: A. Azizinamini

28- Title: New Short Span Steel Bridge: Inverted Steel Box
Amount: $148,416 from the sponsor with $34,950 in kind match from UNL
Sponsor: Nebraska Department of Roads (NDOR)
Dates: 2000-2002
PI: A. Azizinamini

29- Title: Design, Construction and Evaluation of an Innovative High Performance Steel Bridge (Phase III)
Amount: $297,000 from the sponsor
Sponsor: Federal Highway Administration (FHWA)
Dates: 2001-2004
PI: A. Azizinamini

30- Title: Steel Bridge Systems
Amount: $225,751 from the sponsor with $71,453 in kind match from UNL
Sponsor: Nebraska Department of Roads (NDOR)
Dates: 2001-2003
PI: A. Azizinamini

31- Title: Continuation of Long Term Monitoring of the Dodge Street Over I-480 Bridge
Amount: $83,366 from sponsor with $23,140 in kind match from UNL
Sponsor: Nebraska Department of Roads (NDOR)
Dates: 2002-2005
PI: A. Azizinamini

32- Title: Monitoring of First 100 ksi High Performance Steel Box Bridge in U.S.
Amount: $292,244.00
Sponsor: Federal Highway Administration (FHWA) and Nebraska department of Roads
Dates: 2003-2006
PI: A. Azizinamini

33- Title: Development of Monitoring and security bridge systems for Bridges in Nebraska
Amount: $131,207.00
Sponsor: Nebraska Department of Roads
Dates: 2004-2005
PI: A. Azizinamini

34- Title: IBRC 2002 Project
Amount: $500,000.00 from sponsor with $61,213 in kind match from UNL
Sponsor: Federal Highway Administration (FHWA)
Dates: 2003-2006

PI: A. Azizinamini

35- Title: IBRC 2004 Project
Amount: $400,000.00
Sponsor: Federal Highway Administration (FHWA)
Dates: 2005-2007
PI: A. Azizinamini

36- Title: Performance Evaluation of New Corrugated-Type Embossments for Composite Deck
Amount: $135,000.00
Sponsor: NUCOR Research and Development
Dates: Aug. 2005- March 2005
PI: A. Azizinamini

37- Title: Technical Advisor, Assisting Republic of Korea in Development of Next Generation of Steel Bridges Utilizing Advanced Materials

Amount: $300,000.00
Sponsor: Government of Republic of Korea, through POSCO Steel
Dates: Aug. 2005- March 2010
PI: A. Azizinamini

38- Title: IBRC 2005 Project – Folded Plate Steel Bridges
Amount: $550,000.00
Sponsor: Federal Highway Administration

39- Title: Evaluation of Bridges with Fracture Critical Elements
Amount: $240,000
Sponsor: Nebraska Department of Roads
Dates: July 2008 – July 2010

40- Title: Strategic Highway Research Program 2 (SHRP2 R19A Project) “Bridges for Service Life beyond 100 Years: Innovative Systems and Components
Amount: $2,000,000
Sponsor: TRB of National Academy of Science
Strategic Highway Research program
Dates: Dec 2007-Dec 2011
P.I. A. Azizinamini

41- Title: Managing Florida’s Fracture Critical Bridges
Amount: $280,444.71
Sponsor: Florida Dept of Transportation
Dates: May 2011-May 2014

P.I. A. Azizinamini

42- Title: Steel Plate Girder Diaphragm and Cross Bracing Loads
Amount: $167,361.19
Sponsor: Florida Dept of Transportation
Dates: June 2011- May 2014
P.I. A. Azizinamini

43- Title: Steel Framing Strategies for Highly Skewed Bridges to Reduce/Eliminate Distortion near Skewed Supports
Amount: $143,460.50
Sponsor: Florida Dept of Transportation
Dates: June 2011- May 2014
P.I. A. Azizinamini

44- Title: Non-Destructive Testing of Ringling Bridge Tendons Using Magnetic Based Methods
Amount: $297,564.83
Sponsor: Florida Dept of Transportation
Dates: June 2012- June 2013
P.I. A. Azizinamini

45- Title: Non-Destructive Testing (NDT) of a Segmental Concrete Bridge Scheduled for Demolition, with a Focus on Condition Assessment and Corrosion Detection of Internal Tendons
Amount: $248,746.03
Sponsor: Florida Dept of Transportation
Dates: May 2013- May 2015
P.I. A. Azizinamini

46- Title: University Transportation Center for Accelerated Bridge Construction
Amount: $2,820,000
Sponsor: U.S. DOT- RITA
Dates: Oct 2013 to Oct 2017
P.I. Atorod Azizinamini
Consortium University Members: University of Nevada-Reno and Iowa State University

47- Title: University Transportation Center for Accelerated Bridge Construction (Extension)
Amount: $934,000
Sponsor: U.S. DOT- RITA
Dates: Oct 2014 to Oct 2018
P.I. Atorod Azizinamini
Consortium University Members: University of Nevada-Reno and Iowa State University

| | | |
|---|---|---|
| 48- | Title: | Advisor to AECOM for ABC projects |
| | Amount: | $32,000 |
| | Sponsor: | Illinois Department of Transportation through AECOM Consulting compmany |
| | Dates: | May 2015 through Aug. 2015 |
| | P.I. | Atorod Azizinamini |
| 49- | Title: | University Transportation Center for Accelerated Bridge Construction |
| | Amount: | $7,500,000 |
| | Sponsor: | U.S. DOT- RITA |
| | Dates: | Dec 2016 to Dec 2022 |
| | P.I. | Atorod Azizinamini |
| | | Consortium University Members: University of Nevada-Reno and Iowa State University, University of Washington and University of Oklahoma. |
| 50- | Title: | Development of Magnetic NDT Equipment for Field Inspection of Internal Tendons |
| | Amount: | $250,000 |
| | Sponsor: | Florida DOT |
| | Dates: | Jan 2018 through August 2019 |
| | P.I. | Atorod Azizinamini |
| | Co-PI | Bernad Hellimier, Technical University of Berlin, Berlin, Germany |

## Graduate Student Development:

I am in the process of or have completed supervising, 25 M.S. students, 23 Ph.D and 8 post doctral students.

## COURSES TAUGHT

| | |
|---|---|
| CE 341 | Introduction to Structural Analysis |
| CE 444/844 | Steel Design I |
| CE 446/846 | Steel Design II |
| CE 940 | Advanced Design and Behavior of Steel Structures |
| CE 942 | Advanced Steel System Behavior |
| CE 998 | Steel Bridge Design |
| CE 998 | Advanced Design and Behavior of Steel Connections |
| CE 443/843 | Reinforced Concrete Design I |
| CE 447/847 | Reinforced Concrete Design II |
| CE 941 | Advanced Reinforced Concrete Systems |
| CE 498/898 | Experimental Techniques in Structural Engineering |
| CE 495 | Senior Design |
| CE 945 | Design for Dynamic Loads |
| CE 998 | Bridge Substructure Design |
| | Steel Bridge Design |

# MEMORANDUM
(Revised)

**TO:** Honorable Chairman Jose "Pepe" Diaz
and Members, Board of County Commissioners

**DATE:** January 19, 2022

**FROM:** Geri Bonzon-Keenan
County Attorney

**SUBJECT:** Agenda Item No. 8(L)(4)

**Please note any items checked.**

| | |
|---|---|
| _____ | **"3-Day Rule" for committees applicable if raised** |
| _____ | **6 weeks required between first reading and public hearing** |
| _____ | **4 weeks notification to municipal officials required prior to public hearing** |
| _____ | **Decreases revenues or increases expenditures without balancing budget** |
| _____ | **Budget required** |
| _____ | **Statement of fiscal impact required** |
| _____ | **Statement of social equity required** |
| _____ | **Ordinance creating a new board requires detailed County Mayor's report for public hearing** |
| ✓ | **No committee review** |
| ✓ | **Applicable legislation requires more than a majority vote (i.e., 2/3's present ____, 2/3 membership ✓, 3/5's ____, unanimous ____, CDMP 7 vote requirement per 2-116.1(3)(h) or (4)(c) ____, CDMP 2/3 vote requirement per 2-116.1(3)(h) or (4)(c) ____, or CDMP 9 vote requirement per 2-116.1(4)(c)(2) ____) to approve** |
| _____ | **Current information regarding funding source, index code and available balance, and available capacity (if debt is contemplated) required** |

Approved _____ Mayor
Veto _____
Override _____

Agenda Item No. 8(L)(4)
1-19-22

RESOLUTION NO. R-46-22

RESOLUTION WAIVING, BY A TWO-THIRDS VOTE OF THE FULL MEMBERSHIP OF THE BOARD OF COUNTY COMMISSIONERS, THE RESIDENCY REQUIREMENT OF SECTION 2-11.38 OF THE CODE OF MIAMI-DADE COUNTY, FLORIDA, AND APPOINTING ATOROD AZIZINAMINI, PH.D., P.E., TO SERVE AS A MEMBER OF THE MIAMI-DADE COUNTY ENVIRONMENTAL QUALITY CONTROL BOARD FOR A THREE-YEAR TERM

**WHEREAS,** this Board desires to accomplish the purposes outlined in the accompanying memorandum, a copy of which is incorporated herein by reference,

**NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF MIAMI-DADE COUNTY, FLORIDA,** that this Board, by a two-thirds vote of its full membership, waives the residency requirement of section 2-11.38 of the Code of Miami-Dade County and appoints Dr. Atorod Azizinamini to serve a three-year term as a member of the Miami-Dade County Environmental Quality Control Board.

The foregoing resolution was offered by Commissioner **Raquel A. Regalado**, who moved its adoption. The motion was seconded by Commissioner **José "Pepe" Diaz** and upon being put to a vote, the vote was as follows:

Jose "Pepe" Diaz, Chairman **aye**
Oliver G. Gilbert, III, Vice-Chairman **aye**

| | | | |
|---|---|---|---|
| Sen. René García | **aye** | Keon Hardemon | **aye** |
| Sally A. Heyman | **aye** | Danielle Cohen Higgins | **aye** |
| Eileen Higgins | **aye** | Joe A. Martinez | **nay** |
| Kionne L. McGhee | **aye** | Jean Monestime | **aye** |
| Raquel A. Regalado | **aye** | Rebeca Sosa | **aye** |
| Sen. Javier D. Souto | **aye** | | |

The Chairperson thereupon declared this resolution duly passed and adopted this 19th day of January, 2022. This resolution shall become effective upon the earlier of (1) 10 days after the date of its adoption unless vetoed by the County Mayor, and if vetoed, shall become effective only upon an override by this Board, or (2) approval by the County Mayor of this resolution and the filing of this approval with the Clerk of the Board.

MIAMI-DADE COUNTY, FLORIDA
BY ITS BOARD OF
COUNTY COMMISSIONERS

HARVEY RUVIN, CLERK

**Melissa Adames**
By:_____
Deputy Clerk

Approved by County Attorney as
to form and legal sufficiency.

Cristina M. Rabionet