

# CURRICULUM VITAE OF MICHELE BARBATO

<b>CONTACT INFORMATION</b>	
Position Title	Professor
Address	University of California Davis Department of Civil and Environmental Engineering 3149 Ghausi Hall One Shields Avenue Davis, CA 95616 USA
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## EDUCATION

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| <ul style="list-style-type: none"> <li>• Degree</li> <li>• Major</li> <li>• University</li> <li>• Advisor</li> <li>• Date</li> <li>• Dissertation Title</li> </ul> | <p>Ph.D.<br/>Structural Engineering<br/>University of California, San Diego<br/>Joel P. Conte<br/>Defense: September 2007 – Graduation: December 2007<br/>Finite Element Response Sensitivity, Probabilistic Response and Reliability Analyses of Structural Systems with Applications to Earthquake Engineering</p>   |
| <ul style="list-style-type: none"> <li>• Degree</li> <li>• Major</li> <li>• University</li> <li>• Date</li> </ul>  | <p>M.S.<br/>Structural Engineering<br/>University of California, San Diego<br/>December 2005</p>   |
| <ul style="list-style-type: none"> <li>• Degree</li> <li>• Major</li> <li>• University</li> <li>• Advisors</li> <li>• Date</li> <li>• Thesis</li> </ul>            | <p>Laurea Degree (5-year program), 110/110 “<i>summa cum laude</i>”<br/><i>Honors</i><br/>Civil Engineering (Minor: Structural Engineering)<br/>University of Rome “La Sapienza” (ITALY)<br/>Marcello Ciampoli (advisor), Giorgio Monti (co-advisor)<br/>Defense and graduation: March 2002<br/>“Un Elemento Finito Trave-Colonna in C.A. per il Rinforzo con FRP” (in Italian; “A finite element for R/C frames retrofitted with FRP”).</p> |

## **APPOINTMENTS**

- Professor, University of California Davis, July 2018 – present
- Associate Professor, Louisiana State University at Baton Rouge, August 2013 – August 2018
- Visiting Professor, University of Chieti-Pescara “G. D’Annunzio”, INGEO Department, Pescara, Italy, July – December 2015
- Assistant Professor, Louisiana State University at Baton Rouge, October 2007 - August 2013
- Research Assistant, University of California at San Diego, April 2002 – September 2007
- Teaching Assistant, European School for Advanced Studies in Reduction of Seismic Risk (ROSE School), Pavia, Italy  
Class: Seismic reliability analysis (Instructor: Prof. Joel P. Conte)  
Appointment: Spring term 2007 (June 25 – July 20, 2007).
- Visiting Graduate Researcher, University of Chieti-Pescara “G. D’Annunzio”, PRICOS Department, Pescara, Italy, September 2006 – February 2007
- Teaching Assistant, University of California at San Diego  
Class: SE 130B – Structural Analysis II (Instructor: Prof. Joel P. Conte)  
Appointments: Spring 2003 - Spring 2005 - Spring 2006 - Spring 2007

## **PROFESSIONAL LICENSES**

- Professional Board of Engineers of Isernia (Italy), License # 371, 2002 – present
- Professional Engineer in Civil Engineering, Louisiana, License # 38978, 2014 - present

## **PROFESSIONAL MEMBERSHIPS**

- AEI Member 2008 – 2009, 2020 - present
- EMI Fellow 2019 – present (Charter Member 2008 – 2019)
- SEI Fellow 2019 – present (Member 2008 – 2019)
- AISC Educator Member 2008 – present
- ASCE Fellow 2021 – present (Student Member, 2007 – 2008; Associate Member: 2008-2014; Member 2014 - 2021)
- Engineers Without Borders (EWB-USA), Member 2008 – present
- IALCCE Member 2009 – present
- IABMAS Member 2009 – present
- CERRA Member 2003 – present
- ACI Member 2011 – 2012
- IAWF Member 2020 – present
- ASME Member 2020 – present
- AAAS Member 2021 – present
- Tau Beta Pi, CA-Lambda Chapter, Eminent Engineer Member 2021 - present

## AWARDS AND HONORS

### AWARDS AND HONORS AS PROFESSOR AT UC DAVIS

- **2021 ASCE Outstanding Reviewer Award** for ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering.
- **2021 ASCE Fellow.**
- **2021 Eminent Engineer, Tau Beta Pi, CA-Lambda Chapter.**
- **2020 EMI Service Award** in recognition of “distinguished service to EMI as Chair of the Dynamics Committee”.
- **2020 ASCE Sacramento Section Fredrick Panhost Structural Engineer Award.**
- **2020 ASCE Walter L. Huber Civil Engineering Research Prize.**
- **2019 ASCE Outstanding Reviewer Award** for Natural Hazards Review (ASCE).
- **2019 Summer UC Davis ACCELERATE Fellow.**
- **2019 EMI Service Award** in recognition of “outstanding service as chair of the Dynamics Committee Student Paper Competition 2018”.
- **2019 EMI Fellow.**
- **2019 SEI Fellow.**
- **EMI Delegate to 2019 Regions 8 and 9 Multi-Region Leadership Conferences (MRLC), Workshop for Section and Branch Leaders (WSBL).**
- **2018 AISC Advancing Structural Steel Education Award.**

### AWARDS AND HONORS AS ASSISTANT/ASSOCIATE PROFESSOR AT LSU

- **2017 LSU Service award** in recognition of “10 years of dedicated commitment and loyal service”.
- **2017 LSU College of Engineering Longwell Award for Instructor Excellence.**
- **2017 Outstanding Reviewer** for Computer Methods in Applied Mechanics and Engineering (Elsevier).
- **2017 Outstanding Reviewer** for Reliability Engineering and System Safety (Elsevier).
- **2017 Outstanding Reviewer** for Structural Safety (Elsevier).
- **2017 Outstanding Reviewer** for Journal of Building Engineering (Elsevier).
- **2016 Outstanding Reviewer** for Engineering Structures (Elsevier).
- **Highly Cited Paper recognition** for the paper “**Performance-Based Hurricane Engineering (PBHE) framework**”, published in 2013 and recognized as one of the five most highly cited papers during 2014, 2015 and up until June 2016 among those published in Structural Safety.
- **2012 Best Paper Award for Young Experts** for the paper “**Reliability-Based Estimates of Dynamic Load Allowance for Capacity Rating of Prestressed Concrete Girder Bridges under Different Road Surface Conditions**” by Deng L, Cai SC, and Barbato M. Presented at the 12th International Symposium on Structural Engineering (ISSE-12), Nov. 17-19, 2012, Wuhan, China.
- **2012 ASCE Outstanding Reviewer Award** for the Journal of Structural Engineering (ASCE).
- **2012 Tiger Athletic Foundation (TAF) Outstanding Undergraduate Teaching Award.**
- **2011 ASCE Outstanding Reviewer Award** for the Journal of Structural Engineering (ASCE).
- **2011 EASD Junior Research Prize**, in the area of **Development of Methodologies for Structural Dynamics** “for his already achieved excellent scientific visibility in structural reliability and earthquake engineering.” Awarded at EURO DYN 2011, Leuven (Belgium), July 4-6, 2011.
- **2009 ASCE Moisseiff Award**, for the paper “**Nonlinear Seismic Response Analysis of Steel-Concrete Composite Frames**”, Journal of Structural Engineering (ASCE), June 2008, as an “important contribution to the knowledge of the dynamic response of composite steel-concrete structures”. Received at the Structures Congress 2009, Austin (TX), April 30, 2009.

- **2007 Outstanding Alumni**, UCSD Jacobs School of Engineering, Department of Structural Engineering.

#### GRADUATE STUDY AWARDS AND HONORS

- **ICASP10 Overseas Student Scholarship**, awarded after selection by the ICASP10 local Organizing Committee (100,000 JPY), for presentation of the paper "Extension of Spectral Characteristics to Complex-Valued Random Processes and Applications in Structural Reliability" to the 10<sup>th</sup> International Conference on Applications of Statistics and Probability in Civil Engineering (ICASP10), August 1-3, 2007, Tokyo (Japan).
- **OGSR - UCSD Structural Engineering Department**, funding for presentation of the paper "Simplified Probabilistic Dynamic Response Analysis of Structural Systems" at the International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2007) in Rethymnon (Crete, Greece), June 13-16, 2007 (\$ 875).
- **OGSR - UCSD Structural Engineering Department**, funding for presentation of the paper "Response Sensitivity and Probabilistic Response Analyses of Reinforced Concrete Frame Structures" at the 8<sup>th</sup> National Conference on Earthquake Engineering in San Francisco (CA, USA), April 18-22, 2006 (\$ 500).
- **Graduate Researcher Assistantship, University of California at San Diego, Department of Structural Engineering**, April 2002-September 2007.

#### UNDERGRADUATE STUDY AWARDS AND HONORS

- **Laurea Degree in Civil Engineering** awarded with grade **110/110** and **summa cum laude Honors** for the thesis "Un Elemento Finito Trave-Colonna in C.A. per il Rinforzo con FRP" (in Italian; "A finite element for R/C frames retrofitted with FRP").
- **"Federazione Nazionale dei Cavalieri del Lavoro" Scholarship** for the "Residenza Universitaria Lamaro-Pozzani" in Rome, awarded in 1995 through a merit-based national selection over the entire Italian territory and reconfirmed year-by-year from 1995 to 2000.
- **2<sup>nd</sup> classified** (out of 6400 students) at the admission exams to the course of study in the School of Engineering at the University of Rome "La Sapienza" (academic year 1995-1996).

#### HIGH-SCHOOL AWARDS AND HONORS

- **3<sup>rd</sup> classified** at the Olympiads of Physics 1994-1995 for high-school students (regional level, Molise, Italy).
- **Scholarship for the University Orientation Course of the "Scuola Superiore Normale" of Pisa** through a merit-based national selection over the entire Italian territory of the best 200 high-school students in the school year 1993-1994.

## RESEARCH INTERESTS

- Modeling and analysis of reinforced concrete, steel and steel-concrete composite structures;
- Modeling and analysis of reinforced concrete structures retrofitted with fiber reinforced polymers;
- Modeling and analysis of soil-foundation-structure interaction systems;
- Finite element methods for response and response sensitivity analyses of structural and geotechnical systems;
- Earthquake engineering and structural dynamics;
- Random vibration theory and stochastic process modeling;
- Computational reliability analysis of structural and geotechnical systems;
- Probabilistic methods and their application to earthquake/wind/hurricane engineering;
- Performance-Based Earthquake/Wind/Hurricane/Multihazard Engineering;
- Multihazard assessment and mitigation under current and changing climate conditions;
- Innovative use and valorization of waste and by-product materials for construction applications;
- Design of wildfire-resistant structures;
- Numerical optimization methods and their application to structural engineering problems, e.g.:
  - Structural reliability,
  - Structural optimization,
  - Structural identification,
  - Finite element model updating

## RESEARCH ACTIVITIES

### **FUNDED PROJECTS**

TOTAL FUNDING = \$6,879,622 (\$6,766,540 AS PI, \$113,082 AS CO-PI)

- F1. Title: **Assessment and Mitigation of Wildfire-Induced Air Pollution**  
PI: **Barbato, M.**  
Co-PI: Yifang Zhu, Donald Dabdub, Mohammad Safeeq, Kelly Maggi, Jeffrey Mirocha, Aiken Allison.  
Sponsor: **University of California Office of the President**  
Program: **UC Laboratory Fees Research Program**  
Grant Period: **March 2020-February 2023**  
Award Amount: **\$4,795,355 (\$3,749,855 from UCOP + \$925,500 from National Labs + \$120,000 from EPRI)**
- F2. Title: **Preliminary Guidelines on Multihazard Engineering and Design**  
PI: **Barbato, M.**  
Co-PI: YeongAe Heo, Hussam Mahmoud, Elaina Sutley, Shutao Xing, Nur Yazdani.  
Sponsor: **American Society of Civil Engineers (ASCE) – Structural Engineering Institute (SEI)**  
Program: **SEI Special Projects**  
Grant Period: **October 2019-September 2022**  
Award Amount: **\$10,000**
- F3. Title: **Use of bagasse ash as a concrete additive for road pavement applications**  
PI: **Barbato, M.** (March 2018-August 2018, then Co-PI)  
Co-PI: Marwa Hassan, Maria Gutierrez-Wing  
Sponsor: **Transportation Consortium of South Central States (Tran-SET)**  
Grant Period: **March 2018-September 2019**  
Award Amount: **\$75,189 (\$60,000 from Tran-SET + \$15,189 from LTRC)**
- F4. Title: **Evaluation of lightweight gypsum-based materials for oyster reef reconstruction and coastal protection**  
PI: **Barbato, M.** (March 2018-August 2018)  
Co-PI: None  
Sponsor: **Louisiana Sea Grant**  
Program: **Undergraduate Research Opportunities Program (UROP)**  
Grant Period: **March 2018-December 2018**  
Award Amount: **\$3,000**
- F5. Title: **A novel pozzolanic concrete additive based on sugarcane bagasse ash**  
PI: **Barbato, M.** (July 2018-August 2018)  
Co-PI: None  
Sponsor: **Louisiana Board of Regents, NSF EPSCoR, through LSU Graduate School**  
Program: **Economic Development Assistantships (EDAs) 2017-2018**  
Grant Period: **July 2018-June 2022**  
Award Amount: **\$100,000**
- F6. Title: **Effects of Sugarcane Bagasse on Mechanical Properties of Fluorogypsum-Based Blends**  
PI: **Barbato, M.**

Co-PI: None  
Sponsor: LSU  
Program: Halliburton Scholars - Research and Mentoring Program  
Grant Period: November 2017-June 2018  
Award Amount: \$7,500

- F7. Title: Fall 2016 visit to University of South Carolina for collaborative research with Dr. Fabio Matta on engineered earth masonry  
PI: Barbato, M.  
Co-PI: None  
Sponsor: SECU  
Program: SEC Faculty Travel Program  
Grant Period: October 2016  
Award Amount: \$1,000
- F8. Title: Collaborative Research: Engineered Earth Masonry for Affordable Seismic Resistant Low-Rise Buildings  
PI: Barbato, M.  
Co-PI: None  
Sponsor: NSF  
Program: NEES RESEARCH  
Grant Period: September 2015-August 2018  
Award Amount: \$164,983 + \$10,000 (REU)
- F9. Title: Acquisition of COMSOL Multiphysics Modeling Software for Multi-department Utilization  
PI: Boldor, D.  
Co-PI: Nandakumar, K., Wahab, M.A., Schwehm, C., Choi, J.-W., Daniels-Race, T., Monroe, T., Hayes, D., Sabliov, C.M., Okeil, A., Barbato, M., Ozdemir, C.E., Tyagi, M., Zeidouni, M., Shipman, S., Brenner, S., Lipton, R.  
Sponsor: LSU Student Technology Fee Oversight Committee  
Program: Student Technology Fee  
Grant Period: January 2015-December 2017  
Award Amount: \$78,792
- F10. Title: Feasibility study for low-cost hurricane-resistant residential buildings made of earth blocks  
PI: Barbato, M. (34%)  
Co-PI: Holton, R. (33%), Mishra, A.K. (33%)  
Sponsor: LSU Coastal Sustainability Studio (CSS)  
Program: New Projects Fund  
Grant Period: August 2014-July 2015  
Award Amount: \$35,000
- F11. Title: Use of stabilized phosphogypsum as a construction material for artificial reefs  
PI: Barbato, M. (35%), Gutierrez-Wing, M.T. (35%),  
Co-PI: Rusch, K.A., Seals, R. (10%), Jung, J. (20%)  
Sponsor: Louisiana Department of Wildlife and Fisheries  
Program: NA

Grant Period: September 2013-August 2016

Award Amount: \$1,022,434

- F12. Title: Collaborative Research: Planning Grant: I/UCRC for Windstorm Hazard Mitigation  
PI: Cai S.C.S. (LSU), Liang D. (Texas Tech University), Friedley K.J. (University of Alabama Tuscaloosa)  
Co-PI: Barbato M., Okeil A., Aly M.A., Friedland C.J. (LSU), Schoeder J., Smith D. (Texas Tech University), Dao T.N., Graettinger A.J. (University of Alabama Tuscaloosa)  
Sponsor: National Science Foundation (NSF)  
Program: I/UCRC  
Grant Period: January 2014-December 2014  
Award Amount: \$11,500
- F13. Title: A novel hurricane-resistant housing construction system  
PI: Barbato, M.  
Co-PI: None  
Sponsor: Louisiana Board of Regents, NSF EPSCoR, through LSU Graduate School  
Program: Economic Development Assistantships (EDAs) 2013-2014  
Grant Period: August 2014-July 2018  
Award Amount: \$100,000
- F14. Title: LSU Wind Cannon repair  
PI: Barbato, M.  
Co-PI: None  
Sponsor: LSU Office of Research & Economic Development  
Program: Equipment Repair Fund  
Grant Period: January 2013-June 2013  
Award Amount: \$1,500 (+\$527 from CEE Department)
- F15. Title: Advanced semi-analytical techniques for accurate and efficient estimate of first-passage failure probabilities  
PI: Barbato, M.  
Co-PI: None  
Sponsor: Louisiana Board of Regents, through NSF EPSCoR  
Program: Pfund 2012 Program  
Grant Period: January 2013-December 2013  
Award Amount: \$10,000
- F16. Title: Strategies and Speculations - Historical preservation methods for at risk coastal sites, Case Study 1 - Fort Proctor  
PI: McClure, U.E. (33%, Arch)  
Co-PI: Barbato, M. (33%), Cantrell, B. (33%, Landscape Arch.)  
Sponsor: LSU Coastal Sustainability Studio  
Program: 2011-2012 Funding Support  
Duration: September 2011-August 2012  
Award Amount: \$15,450



- F17. **Title: Improving the self-healing properties of concrete materials by using composite action with fiber reinforced polymers and shape memory alloys**  
**PI: Barbato, M. (50%)**  
**Co-PI: Hassan, M. (50%, CM)**  
**Sponsor: Gulf Coast Center for Evacuation and Transportation Resiliency**  
**Program: University Transportation Center Grant**  
**Grant Period: August 2011-July 2012**  
**Award Amount: \$59,286**
- F18. **Title: Experimental shake table tests on bulk liquid packaging**  
**PI: Cai, S.C.S. (60%)**  
**Co-PI: Barbato, M. (40%)**  
**Sponsor: PACTEC, Inc.**  
**Program: NA**  
**Grant Period: February 2011-August 2011**  
**Award Amount: \$7,340**
- F19. **Title: Development of finite elements for response and response sensitivity analysis of reinforced concrete structures retrofitted with externally-bonded fiber reinforced polymers**  
**PI: Barbato, M.**  
**Co-PI: None**  
**Sponsor: Louisiana Board of Regents**  
**Program: RCS Program**  
**Duration: August 2010-July 2013**  
**Award Amount: \$128,366**
- F20. **Title: A probabilistic performance-based methodology for mitigation of wind-borne debris impact hazard and design of impact resistant building envelope components**  
**PI: Barbato, M.**  
**Co-PI: None**  
**Sponsor: Louisiana Board of Regents, NSF EPSCoR, through LSU Graduate School**  
**Program: Economic Development Assistantships (EDAs) 2009-2010**  
**Grant Period: January 2010-December 2013**  
**Award Amount: \$100,000**
- F21. **Title: A novel performance-based methodology for mitigation of seismic pounding risk**  
**PI: Barbato, M.**  
**Co-PI: None**  
**Sponsor: Louisiana Board of Regents, through NSF EPSCoR**  
**Program: Pfund 2010 Program**  
**Grant Period: March 2011-February 2012**  
**Award Amount: \$10,000**

- F22. **Title:** A probabilistic performance-based approach for building separation distance decision to mitigate seismic pounding risk  
**PI:** Barbato, M.  
**Co-PI:** None  
**Sponsor:** LSU Council on Research  
**Program:** 2009-2010 Faculty Research Grant Program  
**Duration:** August 2010-July 2011  
**Award Amount:** \$10,000
- F23. **Title:** Invited keynote presentation “Recent advances and current challenges in finite element reliability analysis” to the 2010 Handling Exceptions in Civil Engineering Workshop, University of Rome “La Sapienza”, Rome (Italy), July 8-9, 2010  
**PI:** Barbato, M.  
**Co-PI:** None  
**Sponsor:** Louisiana Board of Regents, through NSF EPSCoR  
**Program:** Travel Grant for Emerging Faculty (TGEF)  
**Grant Period:** July 8-9, 2010  
**Award Amount:** \$1,200
- F24. **Title:** Probabilistic characterization of building envelope component resistance to wind-borne debris impact using experimental fragility curves  
**PI:** Barbato, M.  
**Co-PI:** None  
**Sponsor:** LSU Council on Research  
**Program:** 2008-2009 Faculty Grant Program  
**Grant Period:** July 2008-December 2009  
**Award Amount:** \$10,000  
([http://www.research.lsu.edu/frg\\_recipients08-09.pdf](http://www.research.lsu.edu/frg_recipients08-09.pdf))
- F25. **Title:** Development of a novel record-and-site-based stochastic model for generation of synthetic ground motions  
**PI:** Barbato, M.  
**Co-PI:** None  
**Sponsor:** LSU Council on Research  
**Program:** 2008 Summer Stipend Program  
**Grant Period:** July 2008  
**Award Amount:** \$5,000  
(<http://www.research.lsu.edu/ssp2008.shtml>)
- F26. **Title:** Probabilistic demand analysis of dynamically-excited uncertain structural systems  
**PI:** Barbato, M.  
**Co-PI:** None  
**Sponsor:** Louisiana Board of Regents, through NSF EPSCoR  
**Program:** Pilot Funding for New Research (Pfund)  
**Grant Period:** May 2008-July 2009  
**Award Amount:** \$10,000  
(<http://www.laregents.org/www2/main/Pfund%202008%20awards.pdf>)

- F27. **Title:** Performance evaluation of buried pipe systems  
**PI:** Barbato, M.  
**Co-PI:** None  
**Sponsor:** Louisiana Department of Transportation and Development (LADOTD), through Louisiana Transportation Research Center (LTRC)  
**Program:** Technology Transfer  
**Grant Period:** January 2008-December 2009  
**Award Amount:** \$75,000  
([https://www.ltrc.lsu.edu/pdf/2008/capsule\\_086gt.pdf](https://www.ltrc.lsu.edu/pdf/2008/capsule_086gt.pdf))
- F28. **Title:** Participation to the 2009 NSF CAREER Proposal Writing Workshop, George Mason University, Arlington (VA, USA), March 12-13, 2009  
**PI:** Barbato, M.  
**Co-PI:** None  
**Sponsor:** Louisiana Board of Regents, through NSF EPSCoR  
**Program:** Travel Grant for Emerging Faculty (TGEF)  
**Grant Period:** March 12-13, 2009  
**Award Amount:** \$1,200
- F29. **Title:** A probabilistic performance-based approach for wind-borne debris hazard mitigation  
**PI:** Barbato, M.  
**Co-PI:** None  
**Sponsor:** LSU College of Engineering, through Longwell's Family Foundation  
**Program:** Fund for Innovation in Engineering Research (FIER)  
**Grant Period:** March 2008-May 2010  
**Award Amount:** \$20,000  
([http://www.eng.lsu.edu/news\\_events/viewnews.php?id=260](http://www.eng.lsu.edu/news_events/viewnews.php?id=260))

## PUBLICATIONS

Note: Authors with superscript # are graduate/undergraduate students co-advised, and/or hosted; authors with superscript \* are graduate students advised as major advisor; Authors with superscript + are post-doctoral researchers.

### PUBLICATIONS ON INTERNATIONAL JOURNALS

- J1. Lee J, **Barbato M**, Lee DK (2020). Rockfall hazard analysis on highway networks in South Korea based on the concept of functional safety. *Rock Mechanics and Rock Engineering*. ACCEPTED
- J2. Subedi S<sup>#</sup>, Arce GA, Hassan MM, **Barbato M**, Mohammad LN (2021). “Effect of raw sugarcane bagasse ash as sand replacement on the fiber-bridging properties of engineered cementitious composites.” *Transportation Research Record*. ACCEPTED.
- J3. Subedi S<sup>#</sup>, Arce GA, Noorvand H, Hassan MM, **Barbato M**, Mohammad LN (2021). Properties of engineered cementitious composites with raw sugarcane bagasse ash used as sand replacement. *Journal of Materials in Civil Engineering* (ASCE). ACCEPTED.
- J4. Vieira DZ\* and **Barbato M** (2021). Investigation of the transverse steel effects 1 on the axial compression strength of FRP-confined reinforced concrete columns based on a numerical parametric study. *Journal of Composites for Construction* (ASCE), 25(4): 04021024. <https://doi.org/10.1061/%28ASCE%29CC.1943-5614.0001135>
- J5. Esmaeili M\*, **Barbato M** (2021). A predictive model for hurricane wind hazard under changing climate conditions. *Natural Hazards Review* (ASCE), 22(3): 04021011. <https://doi.org/10.1061/%28ASCE%29NH.1527-6996.0000458>
- J6. Bigdeli Y\*, **Barbato M**, Lofton CD<sup>#</sup>, Gutierrez-Wing MT, and Rusch KA (2020). “Mechanical properties and performance under laboratory and field conditions of a lightweight fluorogypsum-based blend for economic artificial-reef construction.” *Journal of Materials in Civil Engineering* (ASCE), 32(7): 04020172. [http://doi.org/10.1061/\(ASCE\)MT.1943-5533.0003240](http://doi.org/10.1061/(ASCE)MT.1943-5533.0003240)
- J7. Kumar N\* and **Barbato M** (2019). “A new constitutive model for interface elements in finite element modeling of masonry.” *Journal of Engineering Mechanics* (ASCE), 145(5): 04019022.
- J8. Vieira DZ\*, **Barbato M** and Hu D (2018). “Constitutive model of concrete simultaneously confined by FRP and steel for finite element analysis of FRP-confined reinforced concrete columns.” *Journal of Composites for Construction* (ASCE), 22(6):04018064.
- J9. Rizzo F<sup>+</sup>, **Barbato M** and Sepe V (2018). “Peak factor statistics of wind effects for hyperbolic paraboloid roofs.” *Engineering Structures*, 173:313-330.
- J10. Bigdeli Y\*, **Barbato M**, Gutierrez-Wing MT, Lofton CD<sup>#</sup>, Rusch KA, Jung J and Jang J<sup>#</sup> (2018). “Development of new pH-adjusted fluorogypsum-cement-fly ash blends: Preliminary investigation of strength and durability properties.” *Construction and Building Materials*, 182:646-656.
- J11. Lofton CD<sup>#</sup>, **Barbato M**, Bigdeli Y\*, Jung J, Jang J<sup>#</sup>, Rusch KA and Gutierrez-Wing MT (2018). “Estimating sulfate effective diffusion coefficients of stabilized fluorogypsum for aquatic applications.” *Journal of Environmental Engineering* (ASCE), 144(9):04018083.
- J12. Kumar N\*, **Barbato M** and Holton R (2018). “Feasibility study of affordable earth masonry housing in the US Gulf Coast.” *Journal of Architectural Engineering* (ASCE), 24(2):04018009.

- J13. Bigdeli Y\*, **Barbato M**, Gutierrez-Wing MT and Lofton CD<sup>#</sup> (2018). “Use of slurry fluorogypsum (FG) with controlled pH-adjustment in FG-based blends.” *Construction and Building Materials*, 163:160-168. <https://doi.org/10.1016/j.conbuildmat.2017.12.099>
- J14. Bruneau M, **Barbato M**, Padgett JE, Zaghi AE, Mitrani-Reiser J and Li Y (2017). “State-of-the-art on multihazard design.” *Journal of Structural Engineering* (ASCE), 10.1061/(ASCE)ST.1943-541X.0001893. 143(10), October 2017.
- J15. Unnikrishnan VU\* and **Barbato M** (2017). “Multi-hazard interaction effects on the performance of low-rise wood-frame housing in hurricane-prone regions.” *Journal of Structural Engineering* (ASCE), [https://doi/10.1061/\(ASCE\)ST.1943-541X.0001797](https://doi/10.1061/(ASCE)ST.1943-541X.0001797), 143(8), August 2017.
- J16. Zaghi AE, Padgett JE, Bruneau M, **Barbato M**, Li Y, Mitrani-Reiser J and McBride A (2016). “Forum Paper: Establishing common nomenclature, characterizing the problem, and identifying future opportunities in multi-hazard design.” *Journal of Structural Engineering* (ASCE), 10.1061/(ASCE)ST.1943-541X.0001586, H2516001, 142(12), December 2016.
- J17. Tubaldi E, Freddi F and **Barbato M** (2016). “Probabilistic seismic demand model for pounding risk assessment.” *Earthquake Engineering and Structural Dynamics*, 45:1743–1758.
- J18. Li Y<sup>#</sup>, Conte JP and **Barbato M** (2016). “Influence of time-varying frequency content in earthquake ground motions on seismic response of linear elastic systems.” *Earthquake Engineering and Structural Dynamics*, 45(8):1271–1291.
- J19. Unnikrishnan VU\* and **Barbato M** (2016). “Performance-based comparison of different storm mitigation techniques for residential buildings.” *Journal of Structural Engineering* (ASCE), 10.1061/(ASCE)ST.1943-541X.0001469, 04016011, 142(6), June 2016.
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- C18. Tubaldi E<sup>+</sup>, **Barbato M** and Dall’Asta A (2014). “Stochastic seismic response analysis of adjacent buildings coupled by nonlinear viscous dampers.” *Proceedings (full paper)*, 9<sup>th</sup> International Conference on Structural Dynamics (EURODYN 2014), 30 June 30 – July 2 2014, Porto (Portugal).
- C19. **Barbato M** and Tubaldi E<sup>+</sup> (2013). “Risk-based design of the separation distance between adjacent buildings.” *Proceedings (abstract)*, 4th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2013), June 12-14, 2013, Kos Island (Greece).
- C20. Tubaldi E<sup>+</sup>, **Barbato M** and Dall’Asta A (2013). “Optimal risk-based design of linear dampers for seismic retrofit of buildings.” *Proceedings (abstract)*, 4th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2013), June 12-14, 2013, Kos Island (Greece).
- C21. Unnikrishnan VU\*, **Barbato M**, Petrini F and Ciampoli M (2012). “Probabilistic performance-based risk assessment considering the interaction of wind and windborne debris hazard.” *Proceedings (full paper)*, Advances in Hurricane Engineering Conference (ATC-SEI 2012), October 24-26, Miami, FL (USA).
- C22. Deng L<sup>#</sup>, Cai SC and **Barbato M** (2012). “Reliability-based estimates of dynamic load allowance for capacity rating of prestressed concrete girder bridges under different road surface conditions.” *Proceedings (full paper)*, 12th International Symposium on Structural Engineering (ISSE-12), November 17-19, 2012, Wuhan (China).  
**(Paper recipient of the ISSE-12 Best Paper Award for Young Experts).**
- C23. Deng L<sup>#</sup>, Cai SC and **Barbato M** (2012). “Dynamic load allowance for capacity rating of prestressed concrete girder bridges based on reliability studies.” *Proceedings (full paper)*, 6<sup>th</sup> International Conference on Bridge Maintenance, Safety and Management (IABMAS 2012), July 8-12, 2012, Lake Como (Italy).

- C24. **Barbato M** and Tubaldi E<sup>+</sup> (2012). “A reliability-based approach for seismic pounding risk assessment.” *Proceedings (abstract)*, 2012 Joint Conference of the Engineering Mechanics Institute and 11<sup>th</sup> ASCE Joint Specialty Conference on Probabilistic Mechanics and Structural Reliability (EMI/PMC 2012), June 17-20, 2012, University of Notre Dame, South Bend, IN (USA).
- C25. Unnikrishnan VU\* and **Barbato M** (2012). “Performance-based hurricane engineering methodology for wind and windborne debris hazards.” *Proceedings (abstract)*, 2012 Joint Conference of the Engineering Mechanics Institute and 11<sup>th</sup> ASCE Joint Specialty Conference on Probabilistic Mechanics and Structural Reliability (EMI/PMC 2012), June 17-20, 2012, University of Notre Dame, South Bend, IN (USA).
- C26. Gu Q, Conte JP, **Barbato M**, Gill PE, and McKenna F (2012). “OpenSees-SNOPT: Framework for finite element-based optimization.” *Presentation*, OpenSees Day 2012, August 15-16, UC Berkeley, Berkeley, CA (USA).
- C27. Shelton T\*, Ehr Gott J, Moral R and **Barbato M** (2011). “Experimental and numerical investigation of the ground-shock coupling factor for near-surface detonations.” *Proceedings (full paper)*, 82<sup>nd</sup> Shock and Vibration Symposium, October 30-November 3, 2011, Baltimore, MD (USA).
- C28. **Barbato M**, Vasta M and Conte JP (2011). “Closed-form solutions for the spectral characteristics of linear elastic systems subjected to a fully nonstationary earthquake ground motion process.” *Proceedings (full paper)*, 8<sup>th</sup> International Conference on Structural Dynamics (EURODYN 2011), July 4-6, 2011, Leuven (Belgium).
- C29. Tubaldi E<sup>+</sup> and **Barbato M** (2011). “Reliability-based assessment of seismic pounding risk between adjacent buildings.” *Proceedings (full paper)*, 3<sup>rd</sup> International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2011), May 25-28, 2011, Corfu (Greece).
- C30. **Barbato M**, Petrini F<sup>+</sup> and Ciampoli M (2011). “A preliminary proposal for a probabilistic Performance-Based Hurricane Engineering framework.” *Proceedings (full paper)*, ASCE Structures Congress 2011, April 14-16, 2011, Las Vegas, NV (USA).
- C31. Malone R and **Barbato M** (2010). “Fractal design of large scale commercial recirculating aquaculture systems.” *Proceedings (abstract)*, 8<sup>th</sup> International Conference on Recirculating Aquaculture, August 20-22, 2010, Roanoke, VA (USA).
- C32. Tubaldi E<sup>#</sup>, **Barbato M** and Dall’Asta A (2010). “Bridges with abutment restraint: probabilistic seismic response assessment.” *Proceedings (full paper)*, 14<sup>th</sup> European Conference on Earthquake Engineering (14ECEE), August 30-September 3, 2010, Ohrid (Macedonia).
- C33. Ghazizadeh S\* and **Barbato M** (2010). “An improved approximate solution of the first-passage problem for simple oscillator subjected to white noise excitation.” *Proceedings (full paper participating to the student paper competition in Probabilistic Methods)*, 2010 Engineering Mechanics Institute Conference (EMI 2010), August 8-11, 2010, Los Angeles, CA (USA).
- C34. Zona A, **Barbato M**, Dall’Asta A and Dezi L (2010). “Safety assessment of steel-concrete composite girders through nonlinear probabilistic analysis.” *Proceedings (full paper)*, 4<sup>th</sup> International Conference on Steel & Composite Structures (ICSCS’10), July 21-23, 2010, Sydney (Australia).
- C35. Tubaldi E<sup>#</sup>, **Barbato M** and Dall’Asta A (2010). “Influence of model parameter uncertainty on the seismic vulnerability analysis of continuous steel-concrete composite bridges exhibiting dual load path.” *Proceedings (full paper)*, 5<sup>th</sup> International Conference on Bridge Maintenance, Safety and Management (IABMAS2010), July 11–15, 2010, Philadelphia, PA (USA).

- C36. **Barbato M** and Vasta M (2010). “Time-variant spectral characteristics of non-stationary random processes.” *Proceedings (full paper)*, 6<sup>th</sup> Computational Stochastic Mechanics (CSM6) Conference, June 13-16, 2010, Rhodes (Greece).
- C37. Petrini F<sup>+</sup>, Ciampoli M and **Barbato M** (2010). “Performance-based design of tall buildings under wind action.” *Proceedings (full paper)*, 2010 Structures Congress & North American Steel Construction Conference (NASCC 2010), May 12-15, 2010, Orlando, FL (USA).
- C38. Tubaldi E<sup>#</sup>, **Barbato M** and Dall’Asta A (2010). “Seismic response and vulnerability of steel-concrete composite bridges accounting for model parameter uncertainties” *Proceedings (full paper)*, 2010 Structures Congress & North American Steel Construction Conference (NASCC 2010), May 12-15, 2010, Orlando, FL (USA).
- C39. **Barbato M** and Herbin A\* (2010). “Fragility analysis of building envelope components subject to windborne debris impact hazard.” *Proceedings (abstract)*, 2010 Structures Congress & North American Steel Construction Conference (NASCC 2010), May 12-15, 2010, Orlando, FL (USA).
- C40. **Barbato M** (2010). “An accurate and efficient finite element for reinforced concrete beams flexurally retrofitted with FRP.” *Proceedings (full paper)*, Earth & Space 2010 Conference, March 14-17, 2010, Honolulu, HI (USA).
- C41. **Barbato M**, Petrini F<sup>+</sup> and Ciampoli M (2010). “Effects of modeling parameter uncertainty on the structural response of offshore wind turbines.” *Proceedings (full paper)*, Earth & Space 2010 Conference, March 14-17, 2010, Honolulu, HI (USA).
- C42. Tubaldi E<sup>#</sup>, **Barbato M** and Dall’Asta A (2009). “Seismic response of steel-concrete composite bridges accounting for model parameter uncertainties.” *Proceedings (abstract)*, 2009 Joint ASCE-ASME-SES Conference on Mechanics and Materials, June 24-27, 2009, Virginia Tech, Blacksburg, VA (USA).
- C43. **Barbato M** (2009). “Time-variant spectral characteristics of non-stationary random processes: an application to structural reliability and earthquake engineering.” *Proceedings (full paper)*, 2<sup>nd</sup> International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2009), June 22-24, 2009, Rhodes (Greece).
- C44. Zona A, **Barbato M** and Conte JP (2009). “Modeling issues in nonlinear dynamic finite element analysis of steel-concrete composite frame structures subjected to seismic excitation.” *Proceedings (full paper)*, 2<sup>nd</sup> International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2009), June 22-24, 2009, Rhodes (Greece).
- C45. **Barbato M**, Gu Q<sup>+</sup> and Conte JP (2009). “Time-variant structural reliability analysis by using the DP-RS-Sim method.” *Proceedings (full paper)*, 2<sup>nd</sup> International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2009), June 22-24, 2009, Rhodes (Greece).
- C46. **Barbato M** (2009). “Performance evaluation of buried pipe installation: preliminary results.” *Proceedings (abstract)*, 2009 Louisiana Transportation Conference, (2009 LTC), February 8-11, 2009, Baton Rouge, LA (USA).
- C47. **Barbato M** (2008). “Finite element response sensitivity, probabilistic response and reliability analyses of structural and geotechnical systems.” *Proceedings (abstract)*, 4<sup>th</sup> Conference of Italian Researchers, November 8, 2008, Houston, TX (USA).
- C48. Zona A, **Barbato M**, Dall’Asta A, Dezi L (2008). “Response uncertainty evaluation of continuous steel-concrete girders designed with plastic theory.” *Proceedings (full paper)*, VII Italian Workshop on Composite Structures, October 23-24, 2008, Benevento (Italy).

- C49. **Barbato M**, Zona A and Conte JP (2008). “Simplified probabilistic response analysis of steel-concrete composite beams.” *Proceedings (abstract)*, VII Italian Workshop on Composite Structures, October 23-24, 2008, Benevento (Italy).
- C50. **Barbato M**, Gu Q and Conte JP (2008). “A new hybrid reliability analysis method: the Design Point - Response Surface – Simulation method.” *Proceedings (full paper)*, 14<sup>th</sup> World Conference on Earthquake Engineering (14WCEE), October 12-17, 2008, Beijing (China).
- C51. Gu Q., **Barbato M** and Conte JP (2008). “A new sensitivity and reliability framework for structural and geotechnical systems.” *Proceedings (full paper)*, 14<sup>th</sup> World Conference on Earthquake Engineering (14WCEE), October 12-17, 2008, Beijing (China).
- C52. **Barbato M**, Zona A and Conte JP (2008). “Probabilistic response analysis of steel-concrete composite structures.” *Proceedings (abstract)*, First American Academy of Mechanics Conference (FirstAAM2008), June 17-20, 2008, New Orleans, LA (USA).
- C53. **Barbato M**, Gu Q. and Conte JP (2008). “Recent advances in sensitivity, probabilistic response and reliability analysis of structural systems.” *Proceedings (abstract)*, First American Academy of Mechanics Conference (FirstAAM2008), June 17-20, 2008, New Orleans, LA (USA).
- C54. **Barbato M** (2008). “Accurate and efficient finite element modeling of FRP-strengthened reinforced concrete beams.” *Proceedings (abstract)*, Inaugural International Conference of the Engineering Mechanics Institute (EM08), May 18-21, 2008, Minneapolis, MN (USA).
- C55. **Barbato M**, Gu Q. and Conte JP (2008). “The Multidimensional Visualization in the Principal Planes method for time-invariant reliability analysis applications.” *Proceedings (abstract)*, Inaugural International Conference of the Engineering Mechanics Institute (EM08), May 18-21, 2008, Minneapolis, MN (USA).
- C56. **Barbato M**, Gu Q. and Conte JP (2008). “A new hybrid method for structural reliability analysis: the Design Point - Response Surface - Simulation (DP-RS-Sim) method.” *Proceedings (abstract)*, Inaugural International Conference of the Engineering Mechanics Institute (EM08), May 18-21, 2008, Minneapolis, MN (USA).
- C57. Gu Q., **Barbato M**, and Conte JP (2008). “Finite element response sensitivity analysis for structural models using multi-point constraints.” *Proceedings (abstract)*, Inaugural International Conference of the Engineering Mechanics Institute (EM08), May 18-21, 2008, Minneapolis, MN (USA).
- C58. Conte JP, **Barbato M** and Gu Q (2007). “Finite element response sensitivity, probabilistic response and reliability analyses.” *Proceedings (keynote paper)*, International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2007), June 13-16, 2007, Rethymno, Crete (Greece).
- C59. **Barbato M** and Conte JP (2007). “Simplified probabilistic dynamic response analysis of structural systems.” *Proceedings (full paper)*, International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2007), June 13-16, 2007, Rethymno, Crete (Greece).
- C60. **Barbato M**, Gu Q and Conte JP (2006). “Framework for finite element response sensitivity and reliability analyses of structural and geotechnical systems.” *Proceedings (full paper)*, 1<sup>st</sup> European Conference on Earthquake Engineering and Seismology (1<sup>st</sup> ECEES), September 3-8, 2006, Geneva (Switzerland).
- C61. **Barbato M**, Conte JP and Zona A (2006). “Response sensitivity analysis of frame structures using finite elements based on three-field mixed formulation.” *Proceedings (abstract)*, 7<sup>th</sup> World Congress on Computational Mechanics (7<sup>th</sup> WCCM), July 16-22, 2006, Los Angeles, CA (USA).



- C62. **Barbato M**, Zona A and Conte JP (2004). “Nonlinear finite element response sensitivity analysis of steel-concrete composite beams.” *Proceedings (full paper)*, 9<sup>th</sup> ASCE EMD/SEI/GI/AD Joint Specialty Conference on Probabilistic Mechanics and Structural Reliability, July 26-28, 2004, Albuquerque, NM (USA).
- C63. Conte JP, **Barbato M** and Spacone E (2004). “Force-based finite element response sensitivity analysis of frame structures.” *Proceedings (full paper)*, 17<sup>th</sup> ASCE Engineering Mechanics Conference, June 13-16, 2004, University of Delaware, Newark, DE (USA).
- C64. **Barbato M**, Monti G and Santinelli F (2003). “Fiber-section FE of FRP-strengthened RC beam for seismic analysis.” *Proceedings (full paper)*, fib-Symposium Concrete Structures in Seismic Regions, May 6-9, 2003, Athens (Greece).

#### TECHNICAL REPORTS

- R1. Arce GA, Hassan MM, Gutierrez-Wing MT and **Barbato M** (2019). “Use of Bagasse Ash as a Concrete Additive for Road Pavement Applications.” *Rep. No. 18CLS03*, Transportation Consortium of South Central States (Tran-SET), Baton Rouge, LA (USA).
- R2. **Barbato M** and Hassan MM (2013). “Improving the Self-Healing Properties of Concrete Materials by Using Composite Actions with Fiber Reinforced Polymers.” *Rep. No. 11-12*, Gulf Coast Research Center for Evacuation and Transportation Resiliency, Baton Rouge, LA (USA).
- R3. ASCE/AWEA (2011). “Recommended Practice for Compliance of Large Land-based Wind Turbine Support Structures.” *ASCE/AWEA RP2011*, Washington, DC (USA) - Contributing member.
- R4. **Barbato M**, Bowman ME\* and Herbin AH\* (2010). “Performance of Buried Pipe Installation.” *Rep. No. FHWA/LA.10/467*, LTRC Project No. 08-6GT, Baton Rouge, LA (USA).
- R5. **Barbato M** and Conte JP (2010). “Spectral Characteristics of Non-Stationary Random Processes: Theory and Applications to Linear Structural Models.” *Rep. No. SSRP-07/23*, Dept. of Structural Engineering, University of California at San Diego, La Jolla, CA (USA).
- R6. Gu Q, **Barbato M**, and Conte JP (2010). “Probabilistic Push-Over Response Analysis of Structural and/or Geotechnical Systems.” *Rep. No. SSRP-10/01*, Dept. of Structural Engineering, University of California at San Diego, La Jolla, CA (USA).
- R7. Tubaldi E, **Barbato M** and Dall’Asta A (2009). “Parametric Study of Continuous Steel-Concrete Composite Bridges Exhibiting Dual Load Path”. *Rep. No. CEE-07-2009*, Dept. of Civil and Environmental Engineering, Louisiana State University and A&M College, Baton Rouge, LA (USA).
- R8. Zona A, **Barbato M** and Conte JP (2007). “Nonlinear Seismic Response Analysis of Steel-Concrete Composite Frames.” *Rep. No. SSRP-07/11*, Dept. of Structural Engineering, University of California at San Diego, La Jolla, CA (USA).
- R9. Zona A, **Barbato M** and Conte JP (2006). “Finite Element Response Sensitivity Analysis of Steel-Concrete Composite Structures.” *Rep. No. SSRP-04/02*, Dept. of Structural Engineering, University of California at San Diego, La Jolla, CA (USA).

#### DEGREE THESES

- T1. **Barbato M** (2007). “Finite Element Response Sensitivity, Probabilistic Response and Reliability Analyses of Structural Systems with Applications to Earthquake Engineering.” *Ph.D. Dissertation*, Dept. Structural Engineering, Jacobs School of Engineering, University of California at San Diego, Advisor: Professor Joel P. Conte, La Jolla, CA (USA).
- T2. **Barbato M** (2002). “Un Elemento Finito Trave-Colonna in C.A. per il Rinforzo con FRP” (in Italian; “A finite element for R/C frames retrofitted with FRP”). *Laurea degree Thesis*, Dept. of Structural and Geotechnical Engineering, School of Engineering, University of Rome “La Sapienza”, Advisor: Professor Ciampoli M., Co-Advisor: Professor Monti G., Rome (Italy).

## **SERVICE ACTIVITIES**

### **SERVICE AT UC DAVIS**

- Member of CEE Committee on Diversity, Inclusion, and Equity (Fall 2019 – present)
- CoE Faculty Executive Committee Alternate Representative for the Civil and Environmental Engineering (CEE) Department (Fall 2019-present)
- Member of the Search Committee for a temporary instructor for ECI 149 (Spring 2019)
- Graduate Program Committee (GPC) Representative for the Structures and Structural Mechanics (SESM) group (Spring 2019-present).
- Graduate Program Committee (GPC) Observer for the Structures and Structural Mechanics (SESM) group (Fall 2018-Winter 2019).

### **SERVICE AT LSU**

- LSU ASCE Student Chapter: Faculty Advisor (Fall 2012 – Spring 2017)
- Graduate Faculty, LSU: Associate Member (2007-2013) - Member (2013-2018).
- Member of 2018 Longwell Award Committee, College of Engineering, LSU: Member (May 2018)
- College Policy Committee (CPC), College of Engineering, LSU: Member (Fall 2013-Spring 2017)
- Academic advisor to more than 15 undergraduate students per semester, CEE Department, LSU (Spring 2008 – Spring 2018).
- Civil Engineering Undergraduate Curriculum Committee, CEE Department, LSU: Member (2011-2018)
- Geotechnics Faculty Search Committee, CEE Department, LSU: Member (2009-2010)
- Scholarship Committee, CEE Department, LSU: Member (2013-2014) - Chair (2014 – 2018).

## **REVIEWS**

### **PAPER REVIEW FOR JOURNALS**

1. *Advances in Civil Engineering*, Hindawi.
2. *Advances in Engineering Software*, Elsevier
3. *Advances in Mechanical Engineering*, Hindawi.
4. *Advances in Structural Engineering*, SAGE.
5. *American Journal of Engineering and Applied Sciences*, Science Publications.
6. *Building and Environment*, Elsevier.
7. *Buildings*, MDPI.
8. *Bulletin of Earthquake Engineering*, Springer.
9. *Civil Engineering*, ICE.
10. *Communications in Nonlinear Science and Numerical Simulation*, Elsevier.
11. *Communications in Numerical Methods in Engineering*, Wiley.
12. *Composite Structures*, Elsevier.
13. *Computer Methods in Applied Mechanics and Engineering*, Elsevier.
14. *Computer Modeling in Engineering & Sciences*, Tech Science Press.
15. *Computers and Structures*, Elsevier.
16. *Construction and Building Materials*, Elsevier.
17. *Disaster Advances*, World Research Journals.
18. *Earthquake and Structures, An International Journal*, Technopress.
19. *Earthquake Engineering and Engineering Vibration*, Springer.
20. *Earthquake Engineering and Structural Dynamics*, Wiley.
21. *Energies*, MDPI.
22. *Engineering Structures*, Elsevier.
23. *Experimental Mechanics*, Springer.

24. *Finite Elements in Analysis and Design*, Elsevier.
25. *Frontiers in Built Environment - Earthquake Engineering*,
26. *Indian Journal of Engineering & Materials Sciences*, NISCAIR & Indian National Science Academy
27. *International Journal of Architectural Heritage*, Taylor & Francis.
28. *International Journal of Computational Methods*, World Scientific.
29. *International Journal of Concrete Structures and Materials*, Springer Open.
30. *International Journal of Earthquake and Impact Engineering*, Inderscience.
31. *International Journal of Non-Linear Mechanics*, Elsevier.
32. *International Journal of Physical Science*, Academic Journals.
33. *International Journal of Reliability and Safety*, Inderscience.
34. *International Journal of Research on Engineering Structures and Materials*, MIM Research Group
35. *International Journal of Steel Structures*, KSSC.
36. *Journal of Applied Mechanics*, ASME.
37. *Journal of Architectural Engineering*, ASCE.
38. *Journal of Bridge Engineering*, ASCE.
39. *Journal of Building Engineering*, Elsevier.
40. *Journal of Coastal Research*, Coastal Education & Research Foundation (CERF)
41. *Journal of Composites for Construction*, ASCE.
42. *Journal of Computer Science*, Science Publications.
43. *Journal of Computing in Civil Engineering*, ASCE.
44. *Journal of Earthquake Engineering*, Taylor & Francis.
45. *Journal of Engineering Mechanics*, ASCE.
46. *Journal of Intelligent Material Systems and Structures*, SAGE
47. *Journal of Materials in Civil Engineering*, ASCE.
48. *Journal of Nanomechanics and Micromechanics*, ASCE.
49. *Journal of Polymer Engineering*, Freund.
50. *Journal of Risk and Reliability*, SAGE.
51. *Journal of Sound and Vibration*, Elsevier.
52. *Journal of Structural Engineering*, ASCE.
53. *Journal of Vibration and Control*, SAGE.
54. *Journal of Wind Engineering & Industrial Aerodynamics*, Elsevier.
55. *Journal of Zhejiang University-SCIENCE A*, Springer.
56. *Materials and Structures*, Springer.
57. *Meccanica*, Springer.
58. *Mechanics Based Design of Structures and Machines*, Taylor & Francis.
59. *Mechanics of Advanced Materials and Structures*, Taylor & Francis.
60. *Mechanical Systems and Signal Processing*, Elsevier.
61. *Natural Hazards Review*, ASCE.
62. *Nuclear Engineering and Design*, Elsevier.
63. *Ocean Engineering*, Elsevier.
64. *Open Journal of Civil Engineering*, Scientific Research Publishing.
65. *Probabilistic Engineering Mechanics*, Elsevier.
66. *Reliability Engineering & System Safety*, Elsevier.
67. *Risk and Uncertainty in Engineering Systems: Part A*, ASCE-ASME.
68. *Risk and Uncertainty in Engineering Systems: Part B*, ASCE-ASME
69. *Shock and Vibrations*, Hindawi.
70. *Simulation Modelling Practice and Theory*, Elsevier.
71. *Soil Dynamics and Earthquake Engineering*, Elsevier.
72. *Structural Concrete*, Wiley.
73. *Structural Engineering and Mechanics, An International Journal*, Technopress.

74. *Structural Engineering International*, IABSE.
75. *Structural Health Monitoring*, SAGE.
76. *Structural Safety*, Elsevier.
77. *Structures and Buildings*, ICE.
78. *Structures and Infrastructure Engineering*, Taylor & Francis.
79. *Sustainable Cities and Society*, Elsevier.
80. *Technology | Architecture + Design*, Taylor & Francis.
81. *World Journal of Engineering and Physical Sciences*, World Science Research Journals.

#### PAPER REVIEW FOR CONFERENCES

1. *ICASP 11 Conference*.
2. *Eurodyn 2011 Conference*.
3. *ICOSSAR 2013 Conference*.
4. *Eurodyn 2014 Conference*.
5. *ICASP 12 Conference*.
6. *2<sup>nd</sup> International Conference on Advance Materials Research and Application (AMRA 2015)*.
7. *ICASP 13 Conference*.
8. *EMI 2019 Conference*.
9. *Eurodyn 2020 Conference*.
10. *ICSECT'20 Conference*.
11. *ASCE Lifelines 2021 Conference*.

#### PROPOSAL REVIEW

1. *Florida Sea Grant*.
2. *Louisiana Sea Grant*.
3. *National Science Foundation (NSF)*.
4. *Research Council of Romania*.
5. *Fundação para a Ciência e a Tecnologia (Foundation of Science and Technology) of Portugal*.
6. Research statements reviewer for *Louisiana Transportation Research Center (LTRC)*.
7. *Louisiana Board of Regents (LA BoR)*.
8. Research Projects reviewer for *Sapienza University of Rome (Uniroma1)*.
9. *University of Florence (UNIFI)*
10. *Italian Program for Young Researchers "Rita Levi Montalcini"*
11. Several programs at LSU (*Economic Development Assistantship awards, LSU Discover Student grants, Faculty Research grants*).
12. *Shota Rustaveli National Science Foundation of Georgia (SRNSFG)*.
13. *Kuwait Foundation for the Advancement of Sciences (KFAS)*.
14. *Texas Sea Grant*.
15. *Korea-US. Science Cooperation Center (KUSCO)*.
16. *Fondecyt (Research Council of Chile)*

#### OTHER REVIEW/ASSESSMENT ROLES

1. Scientific assessor of Italian research system for the period 2011-2014 (VQR 2011-2014) for *Italian Research and University Evaluation Agency (ANVUR)*.
2. Invited judge for the *Tran-SET 2018 Student Poster Competition*.
3. Invited judge for the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 6<sup>th</sup>, and 7<sup>th</sup> *annual LSU CEE Graduate Student Research Conference*.
4. External evaluator (2014-2016) for Ph.D. dissertations at the University of Messina.

5. Extramural reviewer for promotion and tenure for several universities in USA, Italy, Belgium, and Jordan.
6. Book reviewer for *CRC Press & Routledge*.

#### PROFESSIONAL COMMITTEE MEMBERSHIP

1. Member of *EMI Board of Governors*, 2020-present
2. Member of *ASCE EMI Dynamics Committee*, 2008 – present (Vice-chair 2016 – 2017, Chair 2017-2020).
3. Chair of *EMI Dynamics Student Paper Competition*, 2017 – 2018.
4. Member of *ASCE EMI Probabilistic Methods Committee*, 2009 – present.
5. Member of *Working Party 4.4.7 “Nonlinear dynamic analysis for design and assessment of RC structures”*, Task Group 4.4 “Computer modelling and design”, Commission 4 “Modelling of structural behaviour and design”, (now *WP2.4.1 “Nonlinear dynamic analysis for seismic evaluation of RC frames”*), **fib** (fédération internationale du béton), 2009 – 2020.
6. Member of *ASCE SEI Performance Based Design of Structures Committee*, 2010 – present (Secretary 2015 – 2018, Vice-chair 2018-present).
7. Member of *ASCE SEI Multiple Hazard Mitigation Committee*, 2011 – present (control group member 2012 – 2018, Chair 2018-present).
8. Contributing member of “ASCE/AWEA RP2011: Recommended Practice for Compliance of Large Land-based Wind Turbine Support Structures.” Report released to the public in December 2011.
9. Member of *ASCE Structural Wind Engineering Committee*, 2012 – present.
10. Member of *ASCE Performance-Based Wind Engineering Sub-Committee*, 2015 – 2018.
11. Member of *Task Group 3 of the ASCE Technical Council on Life-Cycle Performance, Safety, Reliability, and Risk of Structural Systems*, 2014 – present.
12. Member of the *ASCE 7-22 – Wind Load Sub-Committee*, 2017 – present.
13. Member of the *Task Committee on the Updating of the EMI Strategic Plan*, 2018 – present.
14. Member of the *ASCE SEI Dynamic Effects Technical Administrative Committee*, 2018 – present.
15. Member of *ASCE SEI Task Committee on Performance-Based Wind Design*, 2019 – present.

#### CONFERENCE ORGANIZATION AND SCIENTIFIC COMMITTEES

1. Member of *IABMAS 2012 National Organizing Committee*, for the 6<sup>th</sup> International Conference on Bridge Maintenance, Safety and Management (IABMAS 2012), July 8-12, 2012, Lake Como, Italy.
2. Member of *ICEAS 2013 Scientific Committee*, for the 2013 International Conference on Earthquakes and Structures (ICEAS13), organized as part of the World Congress on Advances in Structural Engineering and Mechanics (ASEM 13), September 8-12, 2013, Jeju Island, Korea.
3. Member of *ICMAE Scientific Committee*, for the 1<sup>st</sup> International Conference on Multi-hazard Approaches to Civil Infrastructure Engineering (ICMAE 2014), June 26-27, 2014, Chicago, IL (USA).
4. Member of *OpenSees Days Italy Organizing Committee*, for the 2<sup>nd</sup> Italian OpenSees Days Symposium, June 10-11, 2015, University of Salerno, Fisciano (Italy).
5. Member of *ICASPI2 Scientific Committee*, for the 12<sup>th</sup> International Conference on Applications of Statistics and Probability in Civil Engineering (ICASPI2), July 12-15, 2015, Vancouver, Canada.
6. Member of *UNCECOMP 2015 Scientific Committee*, for the 1<sup>st</sup> International Conference on Uncertainty Quantification in Computational Sciences and Engineering (UNCECOMP 2015), May 25-27, 2015, Crete Island, Greece.
7. Member of *PMC 2016 Scientific Committee*, for the 2016 Probabilistic Mechanics and Reliability Conference (PMC 2016), May 22-25, 2016, Nashville, TN, USA.

8. Member of *UNCECOMP 2017 Scientific Committee*, for the 2<sup>nd</sup> International Conference on Uncertainty Quantification in Computational Sciences and Engineering (UNCECOMP 2017), June 15-17, 2017, Rhodes Island, Greece.
9. Member of *IF CRASC'17 Scientific Committee*, for the joint 4<sup>th</sup> Workshop of Forensic Engineering and 7<sup>th</sup> Workshop of Failure, Structural Reliability, and Retrofit (IF CRASC'17), September 14-16, 2017, Milan, Italy.
10. Member of *ICASPI3 Scientific Committee*, for the 13<sup>th</sup> International Conference on Applications of Statistics and Probability in Civil Engineering (ICASP13), May 26-29, 2019, Seoul, South Korea.
11. Member of *UNCECOMP 2019 Scientific Committee*, for the 3<sup>rd</sup> International Conference on Uncertainty Quantification in Computational Sciences and Engineering (UNCECOMP 2019), June 24-26, 2019, Crete Island, Greece.
12. Member of *PMC 2020 Scientific Committee*, for the 2020 EMI/Probabilistic Mechanics and Reliability Conference (EMI/PMC 2020), May 26-29, 2020 (postponed to May 25–28, 2021), New York, NY, USA.
13. Member of *EURODYN 2020 Scientific Committee*, for the XI International Conference on Structural Dynamics (EURODYN 2020), June 22-24, 2020 (postponed to 23-25 November 2020), Athens, Greece.
14. Member of *ICSECT'20 Scientific Committee*, for the 2020 International Conference on Structural Engineering and Concrete Technology (ICSECT'20), April 19-21 (postponed to October 18-20), 2020, Lisbon, Portugal.
15. Member of *UNCECOMP 2021 Scientific Committee*, for the 4<sup>th</sup> International Conference on Uncertainty Quantification in Computational Sciences and Engineering (UNCECOMP 2021), June 21-23, 2021, Athens, Greece.
16. Member of *ICSECT'21 Scientific Committee*, for the 2021 International Conference on Structural Engineering and Concrete Technology (ICSECT'20), March 14-16, 2021, London, England, UK.

## EDITORIAL ACTIVITIES

1. Guest Editor (2013-2014) for the Special Issue entitled “Performance Based Engineering: Current Advances and Applications”, published in *Engineering Structures*, Volume 78 (2014). Co-Editors: Dr. Palmeri and Dr. Petrini.
2. Guest Editor (2014-2015) for the Special Issue entitled “Stochastic Dynamics and Reliability Analysis of Structural and Mechanical Systems Subject to Environmental Excitations”, published in *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems: Part A*. Co-Editor: Dr. Vasta.
3. Editorial Board Member (2015-present) of *Sustainable and Resilient Infrastructure* (Taylor and Francis).
4. Editorial Board Member (2015-2020) of *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems: Part A*.
5. Editorial Board Member (2015-2020) of *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems: Part B*.
6. Guest Editor (2016-2017) for the Special Collection on “Recent Advances in Assessment and Mitigation of Multiple Hazards.” published in *ASCE Journal of Structural Engineering*. Co-Editors: Dr. Padgett and Dr. Li.
7. Trial Editor (2018-present) for *ASCE Natural Hazards Review*.
8. Specialty Editor (2018-present) for the Section on “Earthquake Engineering and Structural Engineering” in the *Journal of Research on Engineering Structures and Materials* (MIM Research Group)

9. Associate Editor (2019-present) for *ASCE Journal of Architectural Engineering*.
10. Editorial Board Member (2019-present) of *ASCE Journal of Composites for Construction*.
11. Associate Editor (2020-present) of *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems: Part A-Civil Engineering*.
12. Associate Editor (2020-present) of *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems: Part B-Mechanical Engineering*.
13. Guest Editor (2020-present) for the Special Collection on “Student Paper Competitions at the annual Engineering Mechanics Institute (EMI) Conference.” to be published in *ASCE Journal of Engineering Mechanics*. Co-Editor: Dr. Taflanidis.

#### **ORGANIZED TECHNICAL SESSION AND MINISYMPOSIA IN CONFERENCES**

- OM1. “Recent advances in performance-based engineering and design of structures and civil infrastructure systems subjected to single or multiple hazards.” Minisymposium #30 (3 sessions + round table) organized for the 11<sup>th</sup> International Conference on Structural Dynamics (EURODYN 2020), November 23-26, Athens (Greece), in collaboration with Dr. Conte (virtual event).  
**(Selected as one of 11 out of 38 minisymposia to have a round table)**
- OM2. “Uncertainties on materials and environmental loads.” Minisymposium #28 (1 session) organized for the 11<sup>th</sup> International Conference on Structural Dynamics (EURODYN 2020), November 23-26, Athens (Greece), in collaboration with Drs. Sepe and Vasta (virtual event).
- OM3. “Stochastic dynamics and reliability analysis of structural and mechanical systems under environmental excitations.” Minisymposium #27 (1 session) organized for the 11<sup>th</sup> International Conference on Structural Dynamics (EURODYN 2020), November 23-26, Athens (Greece), in collaboration with Dr. Vasta (virtual event).
- OM4. “Advances in experimental, analytical and computational Wind Engineering.” Minisymposium #29 organized for the 2019 Engineering Mechanics Institute Conference (EMI2019), June 18-21, 2019, Caltech, Pasadena, CA (USA), in collaboration with Dr. Aly.
- OM5. “Recent advances in Performance-Based Engineering for single and multiple hazards.” Minisymposium #57 organized for the 2019 Engineering Mechanics Institute Conference (EMI2019), June 18-21, 2019, Caltech, Pasadena, CA (USA).
- OM6. “Recent advances in Hurricane Engineering.” Minisymposium #58 organized for the 2019 Engineering Mechanics Institute Conference (EMI2019), June 18-21, 2019, Caltech, Pasadena, CA (USA), in collaboration with Dr. Aly.
- OM7. “Dynamic response and risk mitigation for advanced structures.” Minisymposium #58 organized for the 2019 Engineering Mechanics Institute Conference (EMI2019), June 18-21, 2019, Caltech, Pasadena, CA (USA), in collaboration with Dr. Gutierrez-Soto.
- OM8. “Hurricane Engineering: Past, Present, and Future.” *Special Panel Session* organized for the Structures Congress 2019, April 24-27, 2019, Orlando (FL), USA, in collaboration with Dr. Sutley.
- OM9. “Recent efforts in Hurricane Engineering: Assessment, mitigation, and recovery.” *Innovative Executive Session* organized for the Structures Congress 2019, April 24-27, 2019, Orlando (FL), USA, in collaboration with Dr. Sutley.
- OM10. “Performance assessment and performance-based design of structures for single/multiple hazards.” *Minisymposium* (3 sessions, 15 papers) organized for the 13<sup>th</sup> International Conference on Applications of Statistics and Probability in Civil Engineering (ICASP13), May 26-30, 2019, Seoul (South Korea).
- OM11. “Dynamics response and performance assessment of structures subject to single or multiple hazards.” *Special Session* (6 papers) organized for the EMI 2018 Conference, May 29-June 1, 2018, Cambridge (MA), USA.



- OM12. “Dynamics response, performance assessment and vibration control of structures subject to single or multiple hazards.” *Special Session* (6 papers) organized for the EMI 2018 Conference, May 29-June 1, 2018, Cambridge (MA), USA, in collaboration with Dr. Aly.
- OM13. “Performance-Based Engineering: State-of-the-art, state-of-practice, and future trends.” *Special Panel Session* organized for the Structures Congress 2018, April 19-21, 2018, Fort Worth (TX), USA.  
**(Selected as one of 4 out of 112 sessions streamed live at the Structures Congress)**
- OM14. “Methods for Uncertainty Analysis in Earthquake Engineering.” *Special Session* (8 papers) organized for the 16<sup>th</sup> World Conference of Earthquake Engineering (16WCEE), January 9-13, 2017, Santiago, Chile, in collaboration with Drs. Jensen and Taflanidis.
- OM15. “Performance-Based Engineering approaches for mitigation of single and multiple hazards.” *Special Session* (5 papers) organized for the Structures Congress 2015, April 23-25, 2015, Portland (OR), USA.
- OM16. “Stochastic dynamics and reliability analysis of structural and mechanical systems under environmental excitation”. *Three-session Minisymposium* (14 papers) organized for the IX International Conference on Structural Dynamics (EURODYN 2014), June 30-July 2, Porto, Portugal, in collaboration with Dr. Vasta.
- OM17. “Performance-Based, Reliability-Based, and Risk-Based Design: Rational approaches to mitigate natural and man-made hazards.” *Five-session Minisymposium* (32 papers) organized for the 11th International Conference on Structural Safety & Reliability (ICOSSAR 2013), June 16-20, 2013, Columbia University, New York (NY), USA, in collaboration with Drs. Petrini and Palmeri.
- OM18. “Performance-Based Engineering and Reliability-Based Design.” *Two-session Minisymposium* (9 papers) organized for the 4<sup>th</sup> International Conference on Computational Dynamics & Earthquake Engineering (COMPDYN 2013), 12-14 June 2013, Kos, Greece, in collaboration with Dr. Tubaldi.
- OM19. “Assessment and mitigation of multi-hazard effects in hurricanes.” *Special Session* (4 papers) organized for the Advances in Hurricane Engineering Conference (ATC-SEI 2012), October 24-26, Miami (FL), USA, in collaboration with Prof. Carol Friedland.
- OM20. “Stochastic dynamics and reliability analysis of structural and mechanical systems under environmental excitation.” *Three-session Minisymposium* (14 papers) organized for the 8<sup>th</sup> International Conference on Structural Dynamics (EURODYN 2011), July 4-6, 2011, Leuven (Belgium), in collaboration with Prof. Marcello Vasta.
- OM21. “Performance-Based Engineering.” *Minisymposium* (6 papers) organized for the 3<sup>rd</sup> International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2011), May 26-28, 2011, Corfu (Greece), in collaboration with Prof. Joel P. Conte.
- OM22. “Performance-Based Engineering.” *Special Session* (4 papers) organized for the 2010 Structures Congress & North American Steel Construction Conference (NASCC 2010), May 12-14, 2010, Orlando, FL (USA).
- OM23. “Statistical and probabilistic methods in computational mechanics to treat aleatory and epistemic uncertainties in structural and/or geotechnical systems and their loading environment.” *Three-session Minisymposium* (15 papers) organized for the 2<sup>nd</sup> International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2009), June 22-24, 2009, Rhodes (Greece), in collaboration with Prof. Joel P. Conte.
- OM24. “Probabilistic methods in finite element dynamic analysis.” *Two-session Minisymposium* (8 papers) organized for the International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2007), June 13-16, 2007, Rethymno, (Crete, Greece), in collaboration with Prof. Joel P. Conte.

## CHAired TECHNICAL SESSION AND MINISYMPOSIA IN CONFERENCES

- CM1. “Performance assessment and performance-based design of structures for single/multiple hazards.” *Minisymposium chair* (for all 3 sessions) for the 13<sup>th</sup> International Conference on Applications of Statistics and Probability in Civil Engineering (ICASP13), May 26-30, 2019, Seoul (South Korea). Co-chairs: Drs. Freddi and Pinelli.
- CM2. “Dynamics response and performance assessment of structures subject to single or multiple hazards.” *Special Session chair* for the EMI 2018 Conference, May 29-June 1, 2018, Cambridge (MA), USA.
- CM3. “Dynamics response, performance assessment and vibration control of structures subject to single or multiple hazards.” *Special Session chair* for the EMI 2018 Conference, May 29-June 1, 2018, Cambridge (MA), USA, co-chair: Dr. Aly.
- CM4. “Performance-Based Engineering: State-of-the-art, state-of-practice, and future trends.” *Special Panel Session moderator* for the Structures Congress 2018, April 19-21, 2018, Fort Worth (TX), USA.
- CM5. “Session 3A: Structures.” *Session moderator* for the Tran-SET 2018 Conference, April 3-4, 2018, New Orleans (LA), USA.
- CM6. “Performance-Based Engineering approaches for mitigation of single and multiple hazards.” *Special Session moderator* for the Structures Congress 2015, April 23-25, 2015, Portland (OR), USA.
- CM7. “Stochastic dynamics and reliability analysis of structural and mechanical systems under environmental excitation”. *Chair of Sessions 1, 2 and 3 of Minisymposium* organized for the IX International Conference on Structural Dynamics (EURODYN 2014), June 30-July 2, Porto, Portugal, co-chair: Dr. Vasta.
- CM8. “Performance-Based, Reliability-Based, and Risk-Based Design: Rational approaches to mitigate natural and man-made hazards.” *Chair of Sessions 1 and 5 of Minisymposium* organized for the 11th International Conference on Structural Safety & Reliability (ICOSSAR 2013), Columbia University, New York (NY), USA, co-chair: Dr. Petrini.
- CM9. “Gusset plates in steel truss bridges: Testing, analysis and monitoring.” *Special Session moderator* for the 6th International Conference on Bridge Maintenance, Safety and Management (IABMAS 2012), July 8-12, 2012, Lake Como, Italy, co-chair: Dr. Chiara Crosti.
- CM10. “Reliability-Based Assessment & Design II.” *Special Session moderator* for the 2012 Joint Conference of the Engineering Mechanics Institute and 11th ASCE Joint Specialty Conference on Probabilistic Mechanics and Structural Reliability (EMI/PMC 2012), June 17-20, 2012, Notre Dame (IN), USA, co-chair: Professor Abdollah Shafieezadeh.
- CM11. “Stochastic dynamics and reliability analysis of structural and mechanical systems under environmental excitation.” *Minisymposium chair* for the 8th International Conference on Structural Dynamics (EURODYN 2011), July 4-6, 2011, Leuven, Belgium, co-chairs Professor Marcello Vasta, Professor Joel P. Conte, and Professor Agathoklis Giaralis.
- CM12. “Performance-Based Engineering.” *Minisymposium chair* for the 3rd International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2011), May 26-28, 2011, Corfu, Greece.
- CM13. “Performance-Based Engineering.” *Special Session moderator* for the 2010 Structures Congress & North American Steel Construction Conference (NASCC 2010), May 12-14, 2010, Orlando (FL), USA.
- CM14. “Statistical and probabilistic methods in computational mechanics to treat aleatory and epistemic uncertainties in structural and/or geotechnical systems and their loading environment.” *Three-session Minisymposium chair* for the 2<sup>nd</sup> International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2009), June 22-24, 2009, Rhodes, Greece, co-chairs: Dr. Gianpaolo Cimellaro, Professor Joel P. Conte.

- CM15. “Probabilistic methods in finite element dynamic analysis.” *Two-session Minisymposium chair* for the International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2007), June 13-16, 2007, Rethymno, Crete, Greece, co-chair: Professor Joel P. Conte.
- CM16. “Uncertainty evaluation III.” *Session chair* for the Inaugural International Conference of the Engineering Mechanics Institute (EM08), Symposium on Probabilistic Mechanics and Structural Reliability, May 18-21, 2008, Minneapolis (MN), USA, co-chair: Professor Frank Xu.

#### INVITED PRESENTATIONS

- IP1. “???” Invited Seminar, Civil Engineering and Engineering Mechanics Seminar Series, Columbia University, April 30, 2021, New York, NY (USA) – (virtual event).
- IP2. “Performance-Based Hurricane Engineering (PBHE) methodology under current and changing climate conditions.” Invited Seminar, Structural Engineering Seminar Series, University of Illinois at Urbana-Champaign, April 19, 2021, Champaign, IL (USA) – (virtual event).
- IP3. “.”. UC Davis Climate Adaptation Research Center Seminar Series, University of California Davis, ???, Davis, CA (USA) – (virtual event).
- IP4. “Wildfire-induced air pollution assessment and mitigation.” *Invited Speaker and Panelist*, Webinar, California National Resources Agency & California Strategic Growth Council, January 26, 2021, Sacramento, CA (USA) – (virtual event).
- IP5. ASCE @UCDavis
- IP6. “How to predict and manage California's fire risk in a changing climate.” *Invited Panelist*, Webinar, UCLA Government and Community Relations, December 4, 2020, Los Angeles, CA (USA) – (virtual event).  
<https://www.youtube.com/watch?v=vh9NQGiGWFY>
- IP7. UCD-LBNL collaboration planning
- IP8. Eurodyn 2020 Panel
- IP9. “Affordable and sustainable compressed and stabilized earth block (CSEB) construction.” *Invited Seminar*, Department of Civil & Environmental Engineering Seminar - Fall 2020, Rice University, November 13, 2020, Houston, TX (USA) - (virtual event).
- IP10. “Earth construction: An ancient solution for a sustainable future.” *Guest Lecture*, ECI 3 - Civil Infrastructure & Society, Fall 2020, University of California Davis, November 12, 2020, Davis, CA (USA) - (virtual event).
- IP11. “Effect of transverse steel confinement in FRP-confined RC columns: From finite element modeling to a new design equation.” *Invited Seminar*, Structural Engineering and Structural Mechanics (SESM) Seminar - Fall 2020, University of California Davis, October 29, 2020, Davis, CA (USA) - (virtual event).
- IP12. “Hurricane loss analysis for single-family houses considering current and changing climate conditions.” *Invited SimCenter Webinar*, NSF NHERI, October 6, 2020, UC Berkeley, Berkeley, CA (USA) – (virtual event).  
<https://www.youtube.com/watch?v=7p11TPBG3BE>
- IP13. “Performance Based Hurricane Engineering (PBHE) framework: Formulation and application to single-family housing and tall buildings.” *Invited Seminar*, ASCE Sacramento Section, Capital Branch Monthly Meeting, August 25, 2020, Sacramento, CA (USA) - (virtual event).  
<https://ascecapitalbranch.org/award-winning-engineer-presents-performance-based-hurricane-engineering-pbhe-framework/>
- IP14. “Wildfire induced air pollution mitigation and assessment.” *Invited Speaker*, UC Davis-University of Sydney Collaborative Fire Response Initiative Virtual Research Symposium, March 26, 2020, University of California Davis, Davis, CA (USA) - (virtual event).

- IP15. “Earth block construction: a sustainable housing solution for the wildland-urban interface (WUI).” *Invited Speaker*, 2020 Wildfire Induced Air Pollution Mitigation & Assessment Symposium, March 23, 2020, University of California Davis, Davis, CA (USA) - (virtual event).
- IP16. “Risk assessment for the built environment subject to natural hazards.” *Invited Speaker*, RE-LAND 2<sup>nd</sup> Workshop, December 19, 2019, University of Camerino, Ascoli Piceno, (Italy).
- IP17. “Earth construction: An ancient solution to a present-day problem for a sustainable future.” *Invited Seminar*, Structural Engineering and Structural Mechanics (SESM) Seminar - Fall 2019, University of California Davis, October 3, 2019, Davis, CA (USA).
- IP18. “Performance-Based Wind/Hurricane/Earthquake Engineering: a rational approach to design, retrofit, and maintenance of structures.” *Invited Speaker*, RE-LAND 1<sup>st</sup> Workshop, August 26, 2019, University of California Los Angeles, Los Angeles, CA (USA).
- IP19. “The importance of seismic design codes and their enforcement – Lessons learned from the 2010 Haiti Earthquake.” *Invited Speaker*, Bi-monthly Meeting, Woodland Sunrise Rotary Club, March 21, 2019, Woodland, CA (USA).
- IP20. “Risk-based design: application to seismic pounding and to buildings equipped with damping devices.” *Invited Presentation*, First Planning Meeting of the NHERI and EUCENTRE Research Collaboration, Embassy of Italy, October 29, 2018, Washington, DC (USA).
- IP21. “Hurricane hazard and loss analysis under current and changing climate scenarios.” *Invited Seminar*, Structural Engineering and Structural Mechanics (SESM) Seminar - Fall 2018, University of California Davis, October 8, 2018, Davis, CA (USA).
- IP22. “Predicting wind hurricane hazard under changing climate conditions.” *Invited Speaker and Panelist*, Hurricane Disaster Infrastructure Resilience and Planning Workshop II, American Institute of Chemical Engineers (AIChE), July 25, 2018, Madison, WI (USA).
- IP23. “Hurricane loss analysis for single-family houses under current and changing climate scenarios.” *Invited Seminar*, Scuola di Architettura e Design ‘Eduardo Vittoria’, University of Camerino, June 11, 2018, Camerino (Italy).
- IP24. “Current research efforts in Performance-Based Engineering for sustainable and safe structures under multi-hazard scenarios.” *Invited Seminar*, School of Engineering, Tufts University, May 29, 2018, Medford, MA (USA).
- IP25. “Performance-Based Engineering: State-of-the-art, state-of-practice, and future trends.” *Invited Speaker, Moderator, and Panelist*, Structures Congress 2018, April 20, 2018, Fort Worth, TX (USA).
- IP26. “Performance-Based Hurricane Engineering: Loss analysis for single-family houses in current and changing climate scenarios.” *Invited Seminar*, Department of Civil and Environmental Engineering, University of California Davis, February 15, 2018, Davis, CA (USA).
- IP27. “Performance-Based Hurricane Engineering: General framework and recent applications.” *Invited Seminar*, Department of Civil and Environmental Engineering, Pennsylvania State University, February 9, 2017, State College, PA (USA).
- IP28. “Practical applications of the Performance-Based Hurricane Engineering framework.” *Invited Seminar*, Department of Civil and Environmental Engineering, University of Pittsburgh, February 3, 2017, Pittsburgh, PA (USA).
- IP29. “Recent applications of a novel Performance-Based Hurricane Engineering framework.” *Invited Seminar*, Department of Structural, Geotechnical and Building Engineering, Polytechnic University of Torino, June 14, 2016, Turin (Italy).
- IP30. “Ingegneria degli uragani.” *Invited Seminar* (in Italian), Collegio Universitario Lamaro-Pozzani, Cavalieri del Lavoro, December 10, 2015, Rome (Italy).
- IP31. “Multi-hazard considerations within the Performance-Based Hurricane Engineering framework.” *Invited Seminar*, Department of Structural and Geotechnical Engineering, University of Rome “La Sapienza”, December 9, 2015, Rome (Italy).

- IP32. “Performance-Based Hurricane Engineering and its application to tall buildings.” *Invited Seminar*, Department of Civil Engineering, City University London, November 11, 2015, London (UK).
- IP33. “Recent advances in Performance-Based Hurricane Engineering.” *Invited Seminar*, PROCAM, University of Camerino, October 27, 2015, Ascoli Piceno (Italy).
- IP34. “Haiti 2010: l’importanza del costruire secondo criteri antisismici.” *Invited Speaker and Panelist* (in Italian), Symposium: La Memoria del Terremoto ... Conoscere per Prevenire, University of Chieti-Pescara “G. D’Annunzio”, October 8, 2015, Chieti (Italy).
- IP35. “Performance-Based Hurricane Engineering: A multi-hazard approach.” *Invited Speaker and Panelist*, 1<sup>st</sup> International Conference on Multi-hazard Approaches to Civil Infrastructure Engineering (ICMAE 2014), June 26-27, 2014, Chicago, IL (USA).
- IP36. “Performance-Based Hurricane Engineering: A multi-hazard approach.” *Invited Seminar*, PROCAM, University of Camerino, June 11, 2014, Ascoli Piceno (Italy).
- IP37. “A multi-hazard approach for Performance-Based Hurricane Engineering.” *Invited Seminar*, Department of Civil and Environmental Engineering, Rice University, October 5, 2012, Houston, TX (USA).
- IP38. “A stochastic dynamics performance-based approach to seismic assessment and optimal design.” *Invited Seminar*, Department of Architecture, Construction and Structures, Polytechnic University of Marche, July 20, 2012, Ancona (Italy).
- IP39. “First-passage reliability problem: Recent advances and their application to seismic pounding.” *Invited Seminar*, PROCAM, University of Camerino, June 27, 2011, Ascoli Piceno (Italy).
- IP40. “Properties of concrete: An ancient material with a modern twist.” *Invited Presentation*, Saturday Science @ LSU series, Department of Physics and Astronomy, LSU, March 12, 2011, Baton Rouge, LA (USA).
- IP41. “Recent advances and current challenges in finite element reliability analysis”. *Invited Keynote Presentation*, 2010 Handling Exceptions in Structural Engineering Workshop, University of Rome “La Sapienza”, July 8-9, 2010, Rome (Italy).
- IP42. “A proposal for a fully-probabilistic performance-based hurricane engineering framework.” *Invited Seminar*, Department of Architecture, Construction and Structures, Polytechnic University of Marche, June 29, 2010, Ancona (Italy).
- IP43. “A fully-probabilistic approach for an innovative performance-based hurricane engineering methodology: Application to wind-borne debris hazard.” *Invited Lecture*, Course CE7701: Wind Engineering (Instructor: Dr. M. Levitan), Department of Civil and Environmental Engineering, Louisiana State University and A&M College, March 23, 2010, Baton Rouge, LA (USA).
- IP44. “Earthquakes don’t kill, poor construction does: The January 12<sup>th</sup> 2010 Haiti earthquake.” *Wilbert Lecture*, Department of Geology & Geophysics, Louisiana State University and A&M College, January 29, 2010, Baton Rouge, LA (USA), given in collaboration with Profs. A. Webb and J. Nunn (Dept. of Geology & Geophysics, LSU).
- IP45. “Toward a comprehensive approach integrating advanced nonlinear finite element analysis and probabilistic methods for design, retrofit and maintenance of bridge structures.” *Invited Seminar*, PROCAM, University of Camerino, July 1, 2009, Ascoli Piceno (Italy).
- IP46. “Recent advances in reliability analysis of structural and geotechnical systems.” *Invited Seminar*, Department of Experimental Statistics, Louisiana State University and A&M College, November 19, 2008, Baton Rouge, LA (USA).
- IP47. “Finite element response sensitivity, probabilistic response and reliability analyses of structural and geotechnical systems.” *Invited Seminar*, Department of Constructions and Mathematical Methods in Architecture, University of Naples “Federico II”, July 17, 2008, Naples (Italy).
- IP48. “Finite element response sensitivity, probabilistic response and reliability analyses of structural and geotechnical systems.” *Invited Seminar*, Department of Architecture, Construction and Structures, Polytechnic University of Marche, July 1, 2008, Ancona (Italy).

- IP49. “Performance evaluation of buried pipe systems – Research phase 1 results.” *Invited Presentation*, LA DOTD Headquarters, April 16, 2008, Baton Rouge, LA (USA).
- IP50. “Performance evaluation of buried pipe systems.” *Invited Presentation*, LA DOTD Headquarters, December 20, 2007, Baton Rouge, LA (USA).
- IP51. “Finite element response sensitivity, probabilistic response and reliability analyses of structural and geotechnical systems.” *Invited Seminar*, Department of Civil and Environmental Engineering, Louisiana State University, May 15, 2007, Baton Rouge, LA (USA).
- IP52. “Finite element response sensitivity, probabilistic response and reliability analyses of structural and geotechnical systems.” *Invited Seminar*, School of Civil and Environmental Engineering, Georgia Institute of Technology, April 2, 2007, Atlanta, GA (USA).

## TEACHING ACTIVITIES

### **COURSES OFFERED AT UC DAVIS**

- ECI 132 **Structural Design - Metallic Elements:** Undergraduate level course (senior level, elective)  
ECI 189E **Structural Loads - Calculation and Modeling:** Undergraduate level course (senior level, elective) (*new course*)  
ECI 289E/225 **Special Topic - Random Vibrations:** Graduate level course (*new course*)  
ECI 289E/224 **Structural Reliability Analysis:** Graduate level course (*new course*)

### **COURSES OFFERED AT LSU**

- CE 3415 **Structural Analysis I:** Undergraduate level course (junior level, required)  
CE 4400 **Principles of Steel Design:** Undergraduate level course (senior level, elective)  
CE 4435 **Indeterminate Structural Analysis:** Undergraduate level course (senior level, elective)  
CE 4430 **Structural Engineering:** Undergraduate level course (senior level, capstone project)  
CE 7420 **Limit Analysis and Design:** Graduate level course  
CE 7700/7435 **Random Vibrations:** Graduate level course (*new course*)

### **PROFESSIONAL/ACADEMIC DEVELOPMENT COURSES/CONFERENCES/WORKSHOPS ATTENDED**

- “Nonlinear Finite Element Analysis for Structural Engineering”, University of Chieti-Pescara “G. D’Annunzio”, PRICOS Department, Graduate Course, Fall 2007, Pescara (Italy)
- Educator Session, 2008 North American Steel Construction Conference (NASCC), April 2-5, 2008, Nashville, TN (USA)
- 2008 ENG<sup>2</sup> LSU Faculty Development Workshop, June 2-4, 2008, Baton Rouge, LA (USA).
- The Coastal Sustainability Agenda (CSA) Grand Challenge Workshop “Grand Challenges in Coastal Resiliency I”, January 20-21, Louisiana State University, Baton Rouge, LA (USA)
- 2009 NSF CAREER Proposal Writing Workshop, March 12-13, 2009, George Mason University, Arlington, VA (USA)
- 2009 Structures Congress, April 29-May 1, Austin, TX (USA)
- Educator Session, 2010 Structures Congress & North American Steel Construction Conference (NASCC 2010), May 12-15, 2010, Orlando, FL (USA).
- 2018 AISC Educator Workshop, July 17-19, 2018, Dallas, TX (USA).
- 2019 ASCE Region 8 & 9 Multi-Region Leadership Conference (MRLC), March 8-9, 2019, Honolulu, HI (USA).
- 2020 ASCE Virtual Convention, October 28-30, 2020.

### **POST-DOCTORAL RESEARCHERS SUPERVISED**

- Quan Gu, Post-Doctoral Researcher at LSU (March 2009-August 2009), Project: *An advanced hybrid method for structural reliability of nonlinear structural and/or geotechnical systems: the DP-RS-Sim method.*
- Francesco Petrini, Post-Doctoral Researcher visiting LSU from Sapienza University of Rome, Rome, Italy (August 2009), Project: *Devising a probabilistic Performance-Based Hurricane Engineering framework.*
- Enrico Tubaldi, Post-Doctoral Researcher visiting LSU from University of Camerino, Camerino, Italy (July 2010-August 2010), Project: *A probabilistic performance-based framework for minimum buildings’ separation distance to avoid seismic pounding.*

- Fabio Rizzo, Post-Doctoral Researcher visiting LSU from University of Chieti-Pescara “G. D’Annunzio”, Pescara, Italy (August 2016), Project: *Reliability-based design of tension structures subject to wind loads*.
- Ying Qin, Associate Professor visiting UC Davis from Southeast University, Nanjing, China (March 2019-February 2020), Project: *Performance-based design of double-skin steel-concrete composite walls*.
- Shuang Hou, Associate professor visiting UC Davis from Harbin Institute of Technology, Harbin, China (November 2019-November 2020), Project: *Finite element modal updating of an RC frame by using monitored damage data*.

#### PH.D. STUDENTS ADVISED AS PRINCIPAL ADVISOR

- Vipin Unnithan, Ph.D., LSU (Graduated in **Summer 2015**), Dissertation title: *Performance-Based Hurricane Engineering (PBHE) framework*.
- Timothy Shelton, Ph.D., LSU (incomplete, **Fall 2015**), Project: *Modeling of unexploded ordnance (UXO) disposal on floating barges*.
- Yasser Bigdeli, Ph.D., LSU (Graduated in **Spring 2018**), Dissertation title: *Mechanical and physical properties of fluorogypsum-cement-fly ash blends for artificial reef and coastal protection structures*.
- Mirsardar Esmaeili, UC Davis, Ph.D. (ongoing), Project: *Performance-based hurricane engineering methodology*.
- Nitin Kumar, Ph.D., UC Davis (ongoing), Project: *Hurricane-resistant earth block constructions*.
- Diogo Vieira, Ph.D., UC Davis (ongoing), Project: *Finite element-based response and reliability analysis of reinforced concrete structures retrofitted with fiber reinforced polymers*.
- Amirhossein Ghezelbash, Ph.D., UC Davis (ongoing), Project: *Feasibility study of earth block construction as an economical and sustainable fireproof construction material to mitigate wildfire risk*.

#### MASTER STUDENTS ADVISED AS PRINCIPAL ADVISOR

- Marvin Bowman, M.S. (project option, LSU, **Graduated: Spring 2010**), Project Report: *Performance evaluation of buried pipe installations by using finite element analysis*.
- Alexander Herbin, M.S. (thesis option, LSU, **Graduated: Fall 2011**), Thesis: *Fragility analysis of building envelope components subject to windborne debris impact hazard*.
- Sara Ghazizadeh, M.S. (thesis option, LSU, **Graduated: Fall 2011**), Thesis: *A study on the first-passage reliability problem and its application in earthquake engineering*.
- Dan (Claire) Hu, M.S. (thesis option, LSU, **Graduated: Fall 2012**), Thesis: *Efficient finite element modeling of reinforced concrete columns confined with fiber reinforced polymers*.
- Srinivasa Bellamkonda, M.S. (thesis option, LSU, **Graduated: Spring 2013**), Thesis: *Modeling of shear strengthening of reinforced concrete beams retrofitted with externally bonded fiber reinforced polymers*.
- Taylor Alphonso, M.S. (thesis option, LSU, **Graduated: Spring 2013**), Thesis: *Experimental fragility analysis of aluminum storm panels subject to windborne debris*.
- Yueqiang Sui, M.S. (thesis option, LSU, **Graduated: Spring 2014**), Thesis: *Mechanical behavior of FRP-confined self-healing concrete*.
- Jad El Khoury Antoun, M.S. (thesis option, LSU, **Graduated: Spring 2018**), Thesis: *Multi-hazard performance assessment of high-rise buildings*.
- Rafael Molina-Cornejo, M.S. (research experience, **Graduated: Spring 2020**), Research topic: *Mechanical properties of fluorogypsum-based concrete*.
- Jesus David Sanchez, M.S. (research experience, **Graduated: Spring 2020**), Research topic: *Mechanical properties of compressed and stabilized earth blocks subject to high temperatures*.



- Sagnik Paul, M.S. (research experience, **Graduated: Spring 2020**), Research topic: *Effects of using agricultural by-products on the mechanical properties of concrete.*
- Sarah Sullivan, M.S. (project option, **ongoing**), Research topic: *Fire damage mechanisms of buildings in the wildland-urban interface.*
- Hector Romero, M.S. (research experience, **ongoing**), Research topic: *Building emissions produced by wildfire damage for different construction materials.*

#### **GRADUATE STUDENT WORKERS**

- Cuong Nguyen, Civil Engineering, LSU, Project (Fall 2015): *Mechanical properties of fluorogypsum-based composites.*

#### **UNDERGRADUATE STUDENTS ADVISED FOR RESEARCH PROJECTS**

- Alexander Herbin, Civil Engineering, LSU, Project (Fall 2008): *Performance evaluation of buried pipe systems.*
- Jacob Foy, Civil Engineering, LSU, Project (Fall 2008): *Literature review for modeling of windborne debris flight trajectories and impact effects.*
- Brian Smoorenburg, Civil Engineering, LSU, Project #1 *Website of Dr. Barbato's research group*; Project #2 (Spring 2009-Spring 2012): *Hurricane Missile Cannon lab instrumentation and control systems* (Chancellor's Future Leaders in Research).
- Danielle Jordan, Civil Engineering, LSU, Project (Fall 2009): *Finite element modeling of RC beams retrofitted with FRPs.*
- Scott Gibson, Civil Engineering, LSU, Project (Fall 2010): *Hurricane Missile Cannon lab instrumentation and control systems* (Chancellor's Future Leaders in Research).
- Amy Olson, Civil Engineering, LSU, Project #1 (Fall 2012-Spring 2013): *Improving self-healing action of concrete using composite structural behavior*; Project #2 (Spring 2013-Fall 2013): *Website of Dr. Barbato's research group*; Project #3 (Fall 2013-Fall 2014): *Mechanical properties of fluorogypsum-based composites* (Chancellor's Future Leaders in Research Program).
- Marcos Antonio da Silva, Civil Engineering, Institute of International Education, Project (Summer 2014): *Use of sugarcane bagasse in fluorogypsum-based composites for artificial reef construction* (Brazil Scientific Mobility Program).
- Christopher Gallien, Civil Engineering, Baton Rouge Community College, Project (Summer 2014-Fall 2014): *Use of sugarcane bagasse in fluorogypsum-based composites for artificial reef construction* (Howard Hughes Medical Institute (HHMI) Professors Program at LSU).
- Grant Marcello, Civil Engineering, LSU, Project (Fall 2014): *Experimental compressive strength for fluorogypsum-based composites.*
- Lucy Farrar, Civil Engineering, LSU, Project (Spring 2016-Spring 2017): *Use of sugarcane bagasse in compressed and stabilized earth blocks* (NSF REU).
- Alex Ramirez, Civil Engineering, LSU, Project (Fall 2016- Spring 2017): *Use of sugarcane bagasse in compressed and stabilized earth blocks* (NSF REU).
- Neal Wright, Civil Engineering, LSU, Project (Fall 2016- Spring 2017): *Mechanical and physical properties of fluorogypsum-based composites.*
- Emily Kennedy, Civil Engineering, LSU, Project (Fall 2016): *Mechanical and physical properties of fluorogypsum-based composites.*
- Emma Pittman, Civil Engineering, LSU, Project (Fall 2016-Spring 2017): *Use of sugarcane bagasse in compressed and stabilized earth blocks* (Chancellor's Future Leaders in Research).
- Olivia Hunt, Civil Engineering, LSU, Project (Fall 2017-Summer 2018): *Evaluation of lightweight gypsum-based materials for oyster reef reconstruction and coastal protection* (NSF REU – LSU Discovery Research Grant – Louisiana Sea Grant UROP).

- Cameron Markowitz, Civil Engineering, LSU, Project (Fall 2017-Spring 2018): *Effects of sugarcane bagasse on mechanical properties of fluorogypsum-based blends* (Halliburton Scholars Program).
- Claire Like, Civil Engineering, LSU, Project (Fall 2017-Spring 2018): *Effects of sugarcane bagasse on mechanical properties of fluorogypsum-based blends* (Halliburton Scholars Program).
- Landon Stochton, Civil Engineering, LSU, Project (Fall 2017-Spring 2018): *Investigation of mechanical and physical properties of fluorogypsum-based blends* (NSF REU).
- Rommy Muhsen, Civil Engineering, LSU, Project (Fall 2017-Summer 2018): *Investigation of mechanical and physical properties of fluorogypsum-based blends* (NSF REU).
- Meredith Guidry, Civil Engineering, LSU, Project (Fall 2017-Summer 2018): *Investigation of mechanical and physical properties of fluorogypsum-based blends*.
- Thomas Bowden, Civil Engineering, LSU, Project (Fall 2017-Spring 2018): *Investigation of mechanical and physical properties of fluorogypsum-based blends*.
- Matthew Gordon, Civil Engineering, LSU, Project (Fall 2017-Summer 2018): *Investigation of mechanical and physical properties of fluorogypsum-based blends* (CEE President's Student Aid).
- Victoria Gulino, Civil Engineering, LSU, Project (Spring 2018): *Investigation of mechanical and physical properties of fluorogypsum-based blends*
- Nikolov Jordan, Civil Engineering, UC Davis, Project (Fall 2018): *Investigation of mechanical and physical properties of earth blocks made with recycled soil*.
- Ava Fathian Sabet, Civil Engineering, UC Davis, Project (Winter 2019): *Investigation of mechanical and physical properties of earth blocks made with recycled soil*.
- Mahmoud Al-Dabbas, Civil Engineering, UC Davis, Project (Fall 2019): *Investigation of mechanical and physical properties of earth blocks made with recycled soil*.
- Nicole Madey, Civil Engineering, UC Davis, Project (Winter 2020-present): *Investigation of mechanical and physical properties of compressed and stabilized earth blocks*.
- Hannah Wong, Civil Engineering, UC Davis, Project (Fall 2020-present): *Investigation of mechanical and physical properties of compressed and stabilized earth blocks*.
- Sydney Sandoval, Civil Engineering, UC Davis, Project (Fall 2020-present): *Investigation of mechanical and physical properties of compressed and stabilized earth blocks*.
- Shaurya Yadav, Civil Engineering, UC Davis, Project (Fall 2020-present): *Investigation of mechanical and physical properties of compressed and stabilized earth blocks*.

#### GROUP PROJECTS ADVISED

- Hurricane Missile Cannon Lab Instrumentation and Control Systems, EE-ME senior project, 2 teams of 4 students, Fall 2008-Spring 2009 (faculty advisor, other co-advisors: Dr. M. Levitan, Dr. D. Nikitopoulos, Mr. B. Audiffred)  
Sponsors: **Dr. M. Barbato**, Dr. M. Levitan
- Louisiana Wind Mitigation Policies (UC Davis independent study, 5 students, Fall 2020-present, (faculty advisor)

#### VISITING SCHOLARS HOSTED

- Enrico Tubaldi, Visiting Graduate Student (February 2009-June 2009), from University of Ancona, Ancona (Italy)

#### K-12 MENTORSHIP ACTIVITIES

- Mentor of Que'asia Stafford, middle school student from Kenilworth Science and Technology (KST) Charter School under the Student Research Mentorship (SRM) program, September 2014 – June 2015. Project: *Evaluation of leaching in fluorogypsum-based composites for artificial reef construction*  
(3<sup>rd</sup> place in the Environmental Management Junior category at the 2015 LA Region VII fair, 2015

School Honorable Mention Award in Pollution Prevention from the Louisiana Department of Environmental Quality, selected to participate in the 2015 Mostratec Brazilian Science and Technology Fair).

- Mentor of Shmond Haynes, middle school student from Kenilworth Science and Technology (KST) Charter School under the Student Research Mentorship (SRM) program, October 2017 – April 2018. Project: *Evaluation of setting time in fluorogypsum-based composites with bagasse ash*

#### **AWARDS RECEIVED BY CURRENT/FORMER STUDENTS WHILE MENTORED AT UC DAVIS**

- Nitin Kumar (Ph.D. student, current): (a) NSF travel support award (1 of only 55) to present at 2019 IMECE in Salt Lake City, UT - \$1,000.
- Mirsardar Esmaeili (Ph.D. student, current): (a) Travel support award to present at 2018 Lloyd's Days at Rice - \$500.
- Diogo Zignago Vieira (Ph.D. student, current): Science without Borders Brazil – LASPAU Scholarship 2018 - \$8,440 + Tuition expenses.

#### **AWARDS RECEIVED BY CURRENT/FORMER STUDENTS WHILE MENTORED AT LSU**

- Vipin U. Unnikrishnan (Ph.D. student, graduated in Summer 2015): (a) Economic Development Assistantship 2010-2013 - \$100,000 (2010), (b) Honorable Mention at the 3<sup>rd</sup> annual CEE Graduate Student Research Conference (2014), (c) LSU Dissertation Year assistantship - \$18,000 (2014).
- Taylor Alphonso (M.S. student: graduated in Spring 2013): First Place award at the 2012 Charles E. Peterson Prize.
- Dan Hu (M.S. student: graduated in Fall 2012): First Place award at the 2012 Charles E. Peterson Prize.
- Yasser Bigdeli (Ph.D. student, graduated in Spring 2018): (a) Spring 2014 CEE Enrichment Award - \$14,000, (b) Honorable Mention at the 4<sup>th</sup> annual CEE Graduate Student Research Conference (2015), (c) 2<sup>nd</sup> Place at the 5<sup>th</sup> annual CEE Graduate Student Research Conference - \$300 (2016), (d) 1<sup>st</sup> Place Award of Achievement at the Coastal Connections Competition - \$500 (2016), (e) finalist at the LSU 3MT Competition (2016), (f) 2017 LSU Dissertation Year Scholarship - \$18,000.
- Nitin Kumar (Ph.D. student, current): Economic Development Assistantship 2014-2018 - \$100,000 (2014).
- Mirsardar Esmaeili (Ph.D. student, current): (a) Fall 2014 LSU CEE Enrichment Award - \$3,000, (b) finalist at the LSU Coastal Connections Competition (2017), (c) Lloyd's Day at Rice University Student Travel Fellowship - \$500 (2018).
- Diogo Zignago Vieira (Ph.D. student, current): Science without Borders Brazil – LASPAU Scholarship 2016-2018 - \$52,944 + Tuition expenses.
- Olivia Hunt (undergraduate student, graduated): (a) LSU Discovery Research Grant - \$1,500 (2018), (b) Louisiana Sea Grant - Undergraduate Research Opportunities Program (UROP) award - \$3,000 (2018).
- Claire Like (undergraduate student, graduated): Halliburton Scholars Program scholarship - \$12,187 (Fall 2017 – Spring 2018)
- Cameron Markovitz (undergraduate student, graduated): Halliburton Scholars Program scholarship - \$12,187 (Fall 2017 – Spring 2018)