

## **Salvatore Salamone,PhD.**

Phil M. Ferguson Centennial Teaching Fellowship in Civil Engineering  
Department of Civil, Architectural and Environmental Engineering

### RESEARCH INTERESTS

Structural health monitoring (SHM), non-destructive evaluation (NDE), resilience of structural systems subject to earthquakes, ultrasonic sensing methods for smart structures, wave propagation in solids, digital signal processing and pattern recognition, dynamics and vibrations of structural systems, piezoelectric energy harvesting, NDE for additive manufacturing.

### EDUCATION

- Post-doctoral studies, NDE & Structural Health Monitoring Laboratory, Department of Structural Engineering, University of California, San Diego, 2007-2010.
- Ph.D. in Structural Engineering, University of Palermo, Italy 2007.
- Laurea (M.S.) in Civil Engineering, University of Palermo, Italy 2002

### ACADEMIC ACCREDITATIONS

- Full Professor, National Scientific Habilitation, Scientific Discipline ICAR 08/B2, Civil Engineering/Structural Mechanics, Ministry of Instruction, University and Research (MIUR), Italy, (09/2019 –09/2025)
- Associate Professor, National Scientific Habilitation, Scientific Discipline ICAR 08/B3, Civil Engineering/Structural Design, Ministry of Instruction, University and Research (MIUR), Italy, (07/2019 –07/2025)

### CURRENT AND PREVIOUS ACADEMIC POSITIONS

- *Associate Professor* with Tenure, Department of Civil, Architectural and Environmental Engineering, University of Texas, at Austin, (09/2018 – present).
- *Assistant Professor*, Department of Civil, Architectural and Environmental Engineering, University of Texas, at Austin, (08/2015–08/2018).
- *Director*, Smart Structures Research Laboratory (SSRL), Department of Civil, Architectural and Environmental Engineering, University of Texas, at Austin, (08/2015– present).
- *Assistant Professor*, Department of Civil, Structural and Environmental Engineering, University at Buffalo, State University of New York, (08/2010–08/2015), (**Promoted to Associate Professor with tenure effective in September 2015**).
- *Director*, Smart Structures Research Laboratory (SSRL), University at Buffalo, (08/2011-09/2015).
- *Postdoctoral Fellow*, Department of Structural Engineering, University of California, San Diego, (05/2007–07/2010).
- *Research Assistant*, Department of Structural Engineering, University of California, San Diego, (11/2005–10/2006).
- *Research Assistant*, Department of Structural Engineering, University of Palermo, (01/2004–04/2007).

HONORS AND AWARDS

- *2020 Aerospace Best Paper Awards 2018* (Nominations were selected by the editorial office of Aerospace based on the number of citations, views and downloads from the website. All research articles published in 2018 were eligible for consideration).
- *2019 Department Teaching Award*
- *2018 American Society for Nondestructive Testing (ASNT) Fellowship Research Award.*
- *2018 Best Paper Award, the 60<sup>th</sup> Acoustic Emission Working Group Meeting, Charleston, South Carolina* (as advisor, and co-author).
- *2017 Outstanding reviewer for the Journal of Automation in Construction*
- *2017 Outstanding reviewer for the Journal of Mechanical Systems and Signal Processing*
- *2016 Honorable mention paper award* (as advisor, and co-author), the 58<sup>th</sup> acoustic emission working group meeting, Philadelphia, Pennsylvania.
- *2015 Outstanding reviewer for the Journal of Ultrasonics*
- *2014 ASNT Robert B. Oliver scholarship* (as advisor) (an award given to an undergraduate student who has submitted the most outstanding manuscript on nondestructive testing research)
- *2014 Achenbach Medal* from the Journal of Structural Health Monitoring (an international award that recognizes an individual who, within 10 years of Ph.D., has made an outstanding contribution to the advancement of the field of structural health monitoring)
- *2012 Best paper award* (as advisor, and co-author), the 54<sup>th</sup> acoustic emission working group meeting, Princeton, New Jersey
- *2011 American Society for Nondestructive Testing (ASNT), faculty grant award*
- *2011 NSF travel award for Junior Faculty*, to attend the wind energy research workshop, University of Massachusetts Lowell

MEMBERSHIPS IN PROFESSIONAL AND HONORARY SOCIETIES

- Society of Experimental Mechanics (SEM), since 2016
- American Society of Civil Engineers (ASCE), since 2010
- Acoustical Society of America (ASA), since 2010
- American Society for Nondestructive Testing (ASNT), since 2010
- American Concrete Institute (ACI), 2012-2014
- Consortium of Universities for Research in Earthquake Engineering (CUREE), 2010-2015

UNIVERSITY COMMITTEE ASSIGNMENTS*University of Texas at Austin:*

Departmental	Member, curriculum and accreditation committee	2019-2020
	Member, search committee for new FSEL director	2018-2019
	Chair, structural engineering graduate advisor and recruiter	2017-2018
	Member, graduate policies, fellowships and recruiting committee	2017-2018
	Co-Chair, structural engineering graduate advisor and recruiter	2016-2017
	Member, strategic vision implementation committee	2016-2017
	Member, distinguished lecture series committee	2015-2018

	Member, undergraduate recruiting and retention committee	2015-2016
<i>University at Buffalo:</i>		
Departmental	Member, undergraduate studies committee	2013-2015
	Member, search committee for faculty in materials	2013-2014
	Member, graduate admission committee	2011-2015
	Member, bridge engineering program steering committee	2011-2014
	Member, MCEER	2010-2015
College	Member, of the faculty-freshman mentor program (EAS 202)	2011-2014

### PROFESSIONAL REGISTRATION

- Engineer-in-Training, California (2009)
- Italian Professional Engineer (Dec. 2002)

### CONSULTING

- Avanti-Tech, San Diego Jan. 2008 – Aug. 2009
- Avanti-Tech, San Diego Sept. 2010 – Aug. 2011

### PROFESSIONAL SOCIETY AND MAJOR GOVERNMENTAL COMMITTEES

- *Reviewer for the following peer-reviewed journals (Total of 56 different peer-review journals):* Intelligent Material Systems and Structures, Structural Health Monitoring, Journal of Solids and Structures, Journal of Bridge Engineering, Journal of Structural Engineering, Ultrasonics, Mechanical Systems and Signal Processing, Journal of Pressure Vessel Technology, Structural Control and Health Monitoring, Nondestructive Testing and Evaluation, NDT & E International, IEEE Transactions on Ultrasonics Ferroelectrics and Frequency Control, Mathematical Problems in Engineering, Smart Materials and Structures, Sensors, Composites Part B, Research in Nondestructive Evaluation, Measurement, Experimental Techniques, Experimental Mechanics, Construction and Building Materials, Smart Structures and Systems, Journal of Materials in Civil Engineering, Journal of Infrastructure Systems, Structural Monitoring and Maintenance: an International Journal, Journal of Nondestructive Evaluation, Philosophical Transactions A, Measurement Science and Technology, International Journal of Concrete Structures and Materials, Proceedings of the IEEE, International Journal of Fracture, Journal of Civil Structural Health Monitoring, Transportation Research Part C, Journal of Engineering Mechanics, Engineering Structures, Journal of Computational Methods in Sciences and Engineering, KSCE Journal of Civil Engineering, Earthquake Spectra, Materials, Automation in Construction, The Journal of the Acoustical Society of America, Scientific Reports, Journal of Vibration and Acoustics, Applied Acoustics, Advances in Structural Engineering, Sensors & Actuators: A. Physical, Engineering Fracture Mechanics, IMA Journal of Applied Mathematics, Journal of Testing and Evaluation, Journal of Materials Engineering and Performance, Journal of Nondestructive Evaluation, Diagnostics and Prognostics of Engineering Systems, International Journal of Distributed Sensor Networks, Meccanica, Computer-Aided Civil and Infrastructure Engineering, CRC press (2 book chapters), Elsevier press (1 book).
- *Reviewer for the following national funding agencies:* US National Science Foundation, programs: Hazard Mitigation and Structural Engineering (2010), Sensor and Sensing Systems (2010, 2011, 2013), Atmospheric and Geospace Sciences (2013), MRI (2020); U.S. Department of Transportation - Pipeline & Hazardous Materials Safety Administration (PHMSA) (2012, 2015, 2016, 2019), Kentucky Science

and Engineering Foundation (2013), South Carolina Space Grant & South Carolina NASA EPSCoR (2015), Department of Energy: SBIR-STTR (2016, 2017, 2020), NEUP (2017, 2018, 2020).

- *Reviewer for the following international funding agencies:* Chilean National Science Foundation (FONDECYT) (2012), South Africa's National Research Foundation (NRF) (2012), Kuwait Foundation for the Advancement of Sciences (2019, 2020), Fondazione Cariplo (2019, 2020).
- *Editorial Board:*
  - Structural Monitoring and Maintenance: An International Journal (01/2013-present)
  - Acoustics (01/2017-present)
  - Mathematical Problems in Engineering (06/2017-present)
  - Journal of Acoustics (10/2018-present)
  - Sensors (02/2019-present)
- *Special Issue Guest Editor:*
  - Journal of Sensors (2013)
  - International Journal of Corrosion (2015)
- *Technical Committees:*
  - ASCE Structural Health Monitoring and Control (2012-present)
  - ASCE Methods of Monitoring Structural Performance (2013-present)
  - ASME Ultrasonics for Mechanical Systems (2014-present)
- *Conference Organization Committees:*
  - Member of the international organizing committee at 10<sup>th</sup> International Workshop on Structural Health Monitoring, September 12-14, 2017, Stanford University, CA
  - Member of the international organizing committee at 10<sup>th</sup> International Workshop on Structural Health Monitoring, September 10-12, 2019, Stanford University, CA
- *Symposium/conference chair:*
  - Ultrasonic Guided Wave Propagation for SHM of Engineering Structures, 5<sup>th</sup> Edition EWSHM, June 28 -July 2 2010, Sorrento, Italy.
  - Innovation in Structural Health Monitoring (ISHM): Current Trends and Applications, 11<sup>th</sup> Edition ICOSSAR, June 16-20, 2013, Columbia University, NY.
  - SHM/NDE for Civil Infrastructures: Recent Developments and Challenges 9<sup>th</sup> International Workshop on Structural Health Monitoring, September 10-12, 2013, Stanford University, CA.
  - SHM/NDE for Civil Infrastructures, 10<sup>th</sup> International Workshop on Structural Health Monitoring, September 2015, Stanford University, CA.
  - Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems, SPIE Smart Structures and Materials + Nondestructive Evaluation and Health Monitoring, March 25-29, 2017, Portland, OR.
  - SHM/NDE for Civil Infrastructures: Recent Developments and Challenges, 10<sup>th</sup> International Workshop on Structural Health Monitoring, September 12-14, 2017, Stanford University, CA.
- *Special Session Organizer:*
  - Innovation in Structural Health Monitoring (ISHM): Current Trends and Applications, 11<sup>th</sup> Edition ICOSSAR, June 16-20, 2013, Columbia University, NY.
  - SHM/NDE for Civil Infrastructures: Recent Developments and Challenges, 9<sup>th</sup> International Workshop on Structural Health Monitoring, September 10-12, 2013, Stanford University, CA.

- SHM/NDE for Civil Infrastructures, 10<sup>th</sup> International Workshop on Structural Health Monitoring, September 1-3, 2015, Stanford University, CA.
- Guided Ultrasonic Waves in Structures for NDE and SHM, ASME IMECE Conference, November 11-17, 2016, Phoenix, AZ.
- SHM/NDE for Civil Infrastructures: Recent Developments and Challenges, 10<sup>th</sup> International Workshop on Structural Health Monitoring, September 12-14, 2017, Stanford University, CA.
- Recent Advances on Data Processing Techniques for Ultrasonics-based SHM/NDE, 11<sup>th</sup> International Workshop on Structural Health Monitoring, September 12-14, 2019, Stanford University, CA.

## PUBLICATIONS

According to Google Scholar (last date accessed 20/10/2020): Citations for 'Salvatore Salamone': 2226, H-Index: 26; (Underlined names denote students under my direct supervision).

### *J. Refereed Archival Journal Publications*

- [J59] Dubuc, B., Livadiotis, S., Ebrahimkhanlou, A., Salamone, S., (2020). “Crack-induced guided wave motion and modal excitability in plates using elastodynamic reciprocity”, *Journal of Sound and Vibration*, Vol. 476(23), 115287.
- [J58] Dubuc, B., Ebrahimkhanlou, A., Salamone, S., (2020). “Stress monitoring of prestressing strands in corrosive environments using modulated higher-order guided ultrasonic waves”, *Structural Health Monitoring*, Vol. 19(1), pp. 202–214.
- [J57] Athanasίου, A., Ebrahimkhanlou, A., Zaborac, J., Hrynyk, T., Salamone, S., (2020). “A machine learning approach based on multifractal features for crack assessment of reinforced concrete shells”, *Computer-Aided Civil and Infrastructure Engineering*, Vol. 35(6), pp. 565–578.
- [J56] Zaborac, J., Athanasίου, A., Salamone, S., Bayrak, O., Hrynyk, T., (2019). “Crack-Based Shear Strength Assessment of Reinforced Concrete Members Using a Fixed-Crack Continuum Modeling”, *Journal of Structural Engineering*, Vol. 146(4), 17 pp.
- [J55] Dubuc, B., Ebrahimkhanlou, A., Livadiotis, S., Salamone, S., (2019). “Inversion algorithm for Lamb-wave-based depth characterization of acoustic emission sources in plate-like structures”, *Ultrasonics*, Vol. 99.
- [J54] Ebrahimkhanlou, A., Dubuc, B., Salamone, S., (2019). “A generalizable deep learning framework for localizing and characterizing acoustic emission sources in riveted metallic panels”, *Mechanical Systems and Signal Processing*, Vol. 130, pp. 248-272.
- [J53] Livadiotis, S., Ebrahimkhanlou, A., Salamone, S., (2019). “An algebraic reconstruction imaging approach for corrosion damage monitoring of pipelines”, *Smart Materials and Structures*, Vol. 28, 13 pp.
- [J52] Dubuc, B., Ebrahimkhanlou, A., Salamone, S., (2019). “Corrosion monitoring of prestressed concrete structures by using topological analysis of acoustic emission data”, *Smart Materials and Structures*, Vol. 28, 12 pp.
- [J51] Ebrahimkhanlou, A., Choi, J., Hrynyk, T., Salamone, S., Bayrak, O., (2019). “Acoustic emission monitoring of containment structures during post-tensioning”, *Engineering Structures*, accepted.
- [J50] Ebrahimkhanlou, A., Athanasίου, A., Hrynyk, D.T., Bayrak, O., Salamone, S., (2019). “Fractal and multifractal analysis of crack patterns in prestressed concrete girders”, *Journal of Bridge Engineering*, in print.

- [J49] Dubuc, B., Ebrahimkhanlou, A., Salamone, S., (2018). “Computation of propagating and non-propagating guided modes in nonuniformly stressed plates using spectral methods”, *Journal of Acoustical Society of America*, Vol. 143 (6), pp. 3220-3230.
- [J48] Ebrahimkhanlou, A., Salamone, S., (2018). “Single-sensor acoustic emission source localization in plate-like structures using deep learning”, *Aerospace*, Special Issue - selected papers from IWSHM 2017, Vol. 5(2), pp.1–22.
- [J47] Dubuc, B., Ebrahimkhanlou, A., Salamone, S., (2018). “Localization of multiple acoustic emission events occurring closely in time using sparse reconstruction”, *Journal Intelligent Material Systems & Structures*, Vol. 19 (11), pp.2362-2373.
- [J46] Dubuc, B., Ebrahimkhanlou, A., Salamone, S., (2018). “Stress measurement in seven-wire strands using higher order guided ultrasonic wave modes”, *Journal of the Transportation Research Record*, *accepted*.
- [J45] Delgado D.C., Clayton, P., O'Brien, W.J., Seepersad, C., Juenger, M., Ferron, R., Salamone, S., (2018). “Applications of additive manufacturing in the construction industry – A forward-looking review”, *Automation in Construction*, Vol. 89, pp. 110–119.
- [J44] Dubuc, B., Ebrahimkhanlou, A., Salamone, S., (2018). “Higher order longitudinal guided wave modes in axially stressed seven-wire strands”, *Ultrasonics*, Vol. 84, pp.382–391.
- [J43] Dubuc, B., Ebrahimkhanlou, A., Salamone, S., (2017). “Effect of pressurization on helical guided wave energy velocity in fluid-filled pipes”, *Ultrasonics*, Vol. 75, pp.145–154.
- [J42] Dubuc, B., Ebrahimkhanlou, A., Salamone, S., (2017). “The effect of applied stress on the phase and group velocity of guided waves in anisotropic plates”, *Journal of Acoustical Society of America*, Vol. 142 (6), pp. 3553–3563.
- [J41] Ebrahimkhanlou, A., Salamone, S., (2017). “Acoustic emission source localization in thin metallic plates: a single-sensor approach based on edge reflections”, *Ultrasonics*, Vol. 78, pp. 134–145.
- [J40] Ebrahimkhanlou, A., Salamone, S., (2017). “A probabilistic framework for single-sensor acoustic emission source localization in thin metallic plates”, *Smart Material and Structures*, Vol. 26, 095026, 19 pp.
- [J39] Matovu, M., Farhidzadeh, A., Salamone, S., (2016). “Damage assessment of steel-plate concrete composite walls by using infrared thermography: a preliminary study”, *Journal of Civil Structural Health Monitoring*, Vol. 6(2), pp. 303–313.
- [J38] Ebrahimkhanlou, A., Dubuc, B., Salamone, S., (2016). “Damage localization in metallic plate structures using edge-reflected lamb waves”, *Smart Materials and Structures*, Vol. 25, 085035, 13 pp.
- [J37] Dehghan Niri, E., Salamone, S., (2016). “Quantitative corrosion imaging of pipelines using multi helical guided ultrasonic waves”, *Structural Monitoring and Maintenance: an international journal*, Vol.3 (3).
- [J36] Ebrahimkhanlou, A., Farhidzadeh, A., Salamone, S., (2016). “Multifractal analysis of crack patterns in reinforced concrete shear walls”, *Structural Health Monitoring*, Vol. 15(1), pp.81–92.
- [J35] Ercolino M., Farhidzadeh, A., Salamone, S., Magliulo, G., (2015). “Detection of onset of failure in prestressed strands by cluster analysis of acoustic emissions”, *Structural Monitoring and Maintenance: an international journal*, Vol.2 (4).
- [J34] Farhidzadeh, A., Epackachi, S., Salamone, S., Whittaker, A., (2015). “Bayesian decision and mixture models for ae monitoring steel-concrete composite shear walls”, *Smart Materials and Structures*, Vol. 24, 115018, 11 pp.

- [J33] Farhidzadeh, A., Salamone, S., (2015). “Reference-free corrosion damage diagnosis in steel strands using guided ultrasonic waves”, *Ultrasonics*, Vol. 57(3), pp.198–208.
- [J32] Dehghan Niri, E., Farhidzadeh, A., Salamone, S., (2015). “Determination of the probability zone for acoustic emission source location in cylindrical shell structures”, *Mechanical Systems and Signal Processing*, Vol. 60, pp. 971–985.
- [J31] Dehghan Niri, E., Salamone, S., (2015). “A multi-helical ultrasonic imaging approach for the structural health monitoring of cylindrical structures”, *Structural Health Monitoring*, Vol. 14(1), pp.73–85.
- [J30] Farhidzadeh, A., Dehghan Niri, E., Zhong, Z., Salamone, S., Aref, A., Filiatrault, A., (2014). “Post-earthquake evaluation of pipelines rehabilitated with cured in place lining technology using acoustic emission”, *Construction & Building Materials*, Vol.54, pp.326–338.
- [J29] Moustafa, A., Dehghan Niri, E., Farhidzadeh, A., Salamone, S., (2014). “Corrosion monitoring of post-tensioned concrete structures using fractal analysis of guided ultrasonic waves”, *Structural Control and Health Monitoring*, Vol. 21(3), pp. 438–448.
- [J28] Dehghan Niri, E., Farhidzadeh, A., Salamone, S., (2014). “Nonlinear kalman filtering for acoustic emission source localization in anisotropic panels”, *Ultrasonics*, Vol. 54(2), pp. 486–501.
- [J27] Lanza di Scalea, F., Rizzo, P., Salamone, S., Bartoli, I., Al-Nazer, L., (2013). “Ultrasonic tomography for three-dimensional imaging of internal rail flaws: proof-of-principle numerical simulations”, *Journal of the Transportation Research Board*, Vol.2374, pp.162–168.
- [J26] Farhidzadeh, A., Dehghan Niri, E., Moustafa, A., Salamone, S., Whittaker, A., (2013). “Damage assessment of reinforced concrete structures using fractal analysis of residual crack patterns”, *Experimental Mechanics*, Vol. 53(9), pp. 1607–1619.
- [J25] Farhidzadeh, A., Salamone, S., Singla, P., (2013). “A probabilistic approach for damage identification a crack mode classification in reinforced concrete structures”, *Journal Intelligent Material Systems & Structures*, Vol. 24(14), pp.1722–1735 (Top four most downloaded papers in 2013).
- [J24] Dehghan Niri, E., Farhidzadeh, A., Salamone, S., (2013). “Adaptive multisensor data fusion for acoustic emission (AE) source localization in noisy environment”, *Structural Health Monitoring*, Vol. 12(1), pp. 59–77. (Among most cited papers as of 09/01/2013)
- [J23] Farhidzadeh, A., Salamone, S., Luna, B., Whittaker, A., (2013). “Acoustic emission monitoring of a reinforced concrete shear wall by b-value based outlier analysis”, *Structural Health Monitoring*, Vol. 12(1), pp. 3–13. (Among most cited papers as of 09/01/2013)
- [J22] Farhidzadeh, A., Dehghan Niri, E., Salamone, S., Luna, B., Whittaker, A., (2013). “Monitoring crack propagation in reinforced concrete shear walls by acoustic emission”, *Journal of Structural Engineering*, Vol. 139(12), 04013010.
- [J21] Dehghan Niri, E., Salamone, S., (2012). “Passively tunable mechanism for dual bimorph energy harvester with variable tip stiffness and axial load”, *Smart Materials and Structures*, Vol. 21(12), 125025, 15 pp.
- [J20] Dehghan Niri, E., Salamone, S., (2012). “A probabilistic framework for acoustic emission source localization in plate-like structures”, *Smart Materials and Structures*, Vol. 21(3), 035009, 16 pp. (Among the most cited papers published in 2012, as 11/23/2014)
- [J19] Moustafa, A., Salamone, S., (2012). “Fractal dimension based Lamb wave tomography algorithm for damage detection in plate-like structures”, *Journal Intelligent Material Systems & Structures*, Vol. 23, pp. 1269–1276.

- [J18] Marzani, A., Salamone, S., (2012). “Numerical prediction and experimental verification of temperature effect on plate waves generated and received by piezoceramic sensors”, *Mechanical Systems and Signal Processing*, Vol. 30, pp. 204-217.
- [J17] Salamone, S., Veletzos, M.J, Lanza di Scalea, F., Restrepo. J.I., (2012). “Detection of initial yield and onset of failure in bonded post-tensioned concrete beams”, *Journal of Bridge Engineering*, Vol. 17(6), pp. 966–974 (SPECIAL ISSUE: Nondestructive Evaluation and Testing for Bridge Inspection and Evaluation).
- [J16] Bartoli, I., Salamone, S., Phillips, R., Lanza di Scalea, F., (2011). “Use of interwire ultrasonic leakage to quantify loss of prestress in multiwire tendons”, *Journal of Engineering Mechanics*, Vol. 137(5), pp. 324–334.
- [J15] Salamone, S., Bartoli, I., Phillips, R., Nucera, C., Lanza di Scalea, F., (2011). “Health monitoring of prestressing tendons in post-tensioned concrete bridges”, *Journal of the Transportation Research Record*, Vol. 2220, pp. 21–27.
- [J14] Coccia, S., Phillips, R., Bartoli, I., Salamone, S., Lanza di Scalea, F., Fateh, M., Carr, G., (2011). “Noncontact ultrasonic guided-wave system for rail inspection”, *Journal of the Transportation Research Record*, Vol. 2261, pp. 143–147.
- [J13] Coccia, S., Bartoli, I., Marzani, A., Lanza di Scalea, F., Salamone, S., Fateh, M., (2011). “Numerical and experimental study of guided waves for detection of defects in the rail head”, *NDT&E International*, Vol. 44(1), pp. 93–100.
- [J12] Salamone, S., Bartoli, I., Di Leo, P., Lanza di Scalea, F., Ajovalasit, A., D'Acquisto, L., Rhymer, J., Kim, H., (2010). “High velocity impact location on aircraft panels using macro fiber composite piezoelectric rosettes”, *Journal of Intelligent Material Systems and Structures*, Vol. 21(9), pp. 887–896.
- [J11] Srivastava, A., Bartoli, I., Salamone, S., Lanza di Scalea, F., (2010). “Higher harmonic generation in nonlinear waveguides of arbitrary cross-section”, *Journal of the Acoustical Society of America*, Vol. 127(5), pp. 2790–2796.
- [J10] Rizzo, P., Cammarata, M., Bartoli, I., Lanza di Scalea, F., Salamone, S., Coccia, S., and Phillips, R., (2010). “Ultrasonic guided waves-based monitoring of rail head: laboratory and field tests”, *Advances in Civil Engineering*, Vol.2010 (ID.291293).
- [J09] Salamone, S., Lanza di Scalea, F., Bartoli, I., Coccia, S., (2009). “Guided-wave health monitoring of aircraft composite panels under changing temperature”, *Journal of Intelligent Material Systems and Structures*, Vol. 20(9), pp. 1079–1090.
- [J08] Salamone, S., Fasel, T., Bartoli, I., Srivastava, A., Lanza di Scalea, F., Todd, M., (2009). “Health monitoring approach for adhesively bonded joints”, *Materials Evaluation*, Vol. 67(7), pp. 828–836 (invited).
- [J07] Coccia, S., Bartoli, I., Salamone, S., Phillips, R., Lanza di Scalea, F., Fateh, M., (2009). “Non-contact ultrasonic guided wave detection of rail defects”, *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2117, pp. 77–84.
- [J06] Bilello, C., Di Paola, M. Salamone, S., (2008). “A correction method for the analysis of continuous linear one-dimensional systems under moving loads”, *Journal of Sound and Vibration*, Vol. 315, pp. 226–238.
- [J05] Cottone, G., Pirrotta, A., Salamone, S., (2008). “Incipient damage identification through characteristics of the analytical signal response”, *Structural Control and Health Monitoring*, Vol. 15(8), pp. 1122-1142.



- [J04] Lanza di Scalea, F., Salamone, S., (2008). “Temperature effects in ultrasonic Lamb wave structural health monitoring systems”, *Journal of the Acoustical Society of America*, Vol. 124(1), pp. 161–174.
- [J03] Salamone, S., Bartoli, I., Lanza di Scalea, F., Coccia, S., (2008). “Temperature effect on guided wave based macro-fiber composite transduction”, *Materials Evaluation*, Vol. 66(10), pp. 1071–1076.
- [J02] Bartoli, I., Salamone, S., Phillips, R., Lanza di Scalea, F., Coccia, S., Sikorsky, C., (2008). “Monitoring pre-stress level in seven wire prestressing tendons by inter wire ultrasonic wave propagation”, *Journal of Advances in Science and Technology—Embodying Intelligence in Structures and Integrated Systems*, Vol. 56, pp. 200–205.
- [J01] Bilello, C., Di Paola, M., Salamone, S., (2005). “A correction method for dynamic analysis of linear continuous systems”, *Computer and Structures*, Vol. 83, pp. 662–670.

### C. Refereed Conference Proceedings

- [C53] Ebrahimkhanlou, A., Salamone, S., Ebrahimkhanlou, A., Reza, A., Kreitman, K., Helwig, T., Williamson, E., and Engelhardt, M., (2019). “Acoustic emission monitoring of strengthened steel bridges: Inferring the mechanical behavior of post-installed shear connectors,” *Proceedings of SPIE 10971, Nondestructive Characterization and Monitoring of Advanced Materials, Aerospace, Civil Infrastructure, and Transportation*, ed. Gyekenyesi, A. L., Denver, CO, March 3-7, doi: 10.1117/12.2514231.
- [C52] Ebrahimkhanlou A., Dubuc, B., Salamone, S. (2019). “A deep learning-based framework for two-step localization and characterization of acoustic emission sources in metallic panels using only one sensor,” *Proceedings of SPIE 10972, Health Monitoring of Structural and Biological Systems XII*, ed. Tribikram Kundu, Denver, CO, March 3-7, doi: 10.1117/12.2514228.
- [C51] Dubuc, B., Ebrahimkhanlou, A., Salamone, S., (2019). " Data fusion approach for characterization of corrosion-induced stress change in prestressing strands using modulated higher-order guided ultrasonic waves", *Proceedings of SPIE 10972, Health Monitoring of Structural and Biological Systems XII*, ed. Tribikram Kundu, Denver, CO, March 3-7.
- [C50] Livadiotis S., Ebrahimkhanlou A., Salamone S., (2019). "A helical-based ultrasonic imaging algorithm for structural health monitoring of cylindrical structures", *Proc. SPIE, Health Monitoring of Structural and Biological Systems XIII*, Denver, CO, March 3-7, 10.1117/12.2514308.
- [C49] Dubuc, B., Ebrahimkhanlou, A., Salamone, S., (2018). “A spectral method for computing guided waves in stressed plates and rods”, *Proceedings of SPIE’s: Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems*, Denver, CO, March 04-08.
- [C48] Ebrahimkhanlou, A., Choi, J., Hrynyk, T.D., Salamone, S., Bayrak, O. (2018). “Detection of the onset of delamination in a post-tensioned curved concrete structure using hidden Markov modeling of acoustic emissions”, *Proceedings of SPIE’s: Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems*, Denver, CO, March 04-08.
- [C47] Ebrahimkhanlou, A., Salamone, S., (2018). “Single-sensor acoustic emission source localization in plate-like structures: A deep learning approach”, *Proceedings of SPIE’s: Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems*, Denver, CO, March 04-08.

- [C46] Dubuc, B., Ebrahimkhanlou, A., Salamone, S., (2017). “Simultaneous localization and classification of acoustic emission sources in plates using a guided wave-based sparse reconstruction”, *Proceedings of the 11th International Workshop Structural Health Monitoring*, ed. F-K. Chang, Stanford, CA, September 12–14, pp. 2139-2146.
- [C45] Ebrahimkhanlou, A., Salamone, S., (2017). “A deep learning approach for single-sensor acoustic emission source localization in plate-like structures”, *Proceedings of the 11th International Workshop Structural Health Monitoring*, ed. F-K. Chang, Stanford, CA, September 12–14, pp. 2139-2146.
- [C44] Ebrahimkhanlou, A., Salamone, S., (2017). “A Probabilistic model for visual inspection of concrete shear walls”, *Proceedings of SPIE’s: Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems*, Portland, OR, March 25-29, doi: 10.1117/12.2258614.
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*D. Non-Refereed Conference Proceedings (includes papers not required or not submitted)*

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- [D20] Ebrahimkhanlou, A., Choi, J., Hrynyk, T.D., Salamone, S., Bayrak, O. (2018). “Acoustic emission monitoring of a nuclear containment structure during post-tensioning: data mining and knowledge discovery,” *Proceedings of the 27th ASNT Research Symposium, Orlando, FL, March 26-29.*
- [D19] Ebrahimkhanlou, A., Salamone, S., (2017). “Uncertainty quantification for single sensor localization of acoustic emission sources in plate-like structures”, *Proceedings of the ASME, International Mechanical Engineering Congress and Exposition (IMECE), November 3-9, Tampa, FL.*
- [D18] Ebrahimkhanlou, A., A., Salamone, S., (2017) “A probabilistic, single-sensor approach for acoustic emission source localization in metallic plates”, *Proceedings of ASNT research symposium, March 13-16, Jacksonville, FL.*
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- [D16] Dubuc, B., Ebrahimkhanlou, A., A., Salamone, S., (2016) “Helical guided ultrasonic waves for pipeline structural health monitoring” *Proceedings of ASME, Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS), September 28-30, Stowe Mountain, VT.*
- [D15] Ebrahimkhanlou, A., Salamone, S., (2016). “An acoustic emission source localizer in plate structures using edge reflections”. Acoustic Emission Working Group Meeting 58th, Philadelphia, PA. (Honorable Mention)
- [D14] Ebrahimkhanlou, A., A., Salamone, S., (2016) “An acoustic emission source localizer in isotropic plate structures using edge reflections”, *Proceedings of ASNT research symposium, 11-14 April, New Orleans.*
- [D13] Ebrahimkhanlou, A., A., Salamone, S., (2016) “Introducing Bayesian network for probabilistic damage quantification of concrete shear walls based on visual inspection”, *Proceedings of ASNT research symposium, 11-14 April, New Orleans.*
- [D12] Dehghan Niri, E., Ebrahimkhanlou, A., Dubuc, B., Salamone, S., (2015). “Multi-helical acoustic emission damage localization for corrosion monitoring of cylindrical structures”, *ASNT 24th Research Symposium, Anaheim, CA, March 16-19.*
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- [D08] Farhidzadeh, A., Dehghan Niri, E., Salamone, S., (2013). “Introducing vision-based damage for quantification of cracks pattern in concrete structures”, *Proceedings of 22<sup>nd</sup> ASNT annual research Symposium*, 19-21 March 2013, Memphis, Tennessee, USA.
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- [D05] Dehghan Niri, E., Salamone, S., (2012). “Probabilistic approach to Acoustic Emission (AE) source location and wave velocity estimation in isotropic plate like structures”, *Proceedings of ASNT Spring Symposium and Research Conference*, Dallas, TX, 19-23 Mar. 2012.
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#### R. Technical Reports

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- [R13] Salamone, S., “Rail Defect Detection by Noncontact Vibration Measurements”, *Technical Report No #DTFR53-17-C-00024*, to UDOT/Federal Rail Administration, September 2018.
- [R12] Salamone, S., “A Vision-Based Technique for Damage Assessment of Civil Structures”, *Technical Report No. #1333506*, to National Science Foundation, October 2017.
- [R11] Salamone, S., “Toward permanently installed pipeline monitoring systems”, *Technical Report No: DTPH56-13-H-CAAP03*, to USDOT, Pipeline & Hazardous Materials Safety Administration (PHMSA), December 2015.
- [R10] Salamone, S., “Smart lifeline systems for improving water and energy efficiency”, *Technical Report to the New York State Pollution Prevention Institute*, 2013.

- [R09] Salamone, S., “Corrosion damage assessment of post-tensioned concrete structures”, *Technical Report No. UTRC-RF49111-32-21*, to University Transportation Research Center Region 2, March 2013.
- [R08] Salamone, S., “Revision of graduate course CIE500s: introduction to nondestructive evaluation”, *Technical Report* to the American Society for Nondestructive Testing (ASNT), University at Buffalo, 2012.
- [R07] Phillips, R., Lanza di Scalea, F., Nucera, C., Bartoli, I., Salamone, S., Kim, H., White, S., Rhymer, J., “STTR (Phase II) – Real-time in-situ impact and damage locator in anisotropic aerospace structures” *Technical Report No. AFOSR-FA9550*, to the Air Force Office of Scientific Research (AFOSR), Avanti Tech, LLC, 2013.
- [R06] Coccia, S., Bartoli, I., Phillips, R., Rizzo, P., Salamone, S., and Lanza di Scalea, F., “On-line high-speed rail defect detection – Part II,” *Technical Report No. SSRP-10/03* to the Federal Railroad Administration, University of California, San Diego, 2010.
- [R05] Bartoli, I., Salamone, S., Phillips R., Nucera, C., Lanza di Scalea, F., “Health monitoring to detect failure of prestressing (PS) cables in segmental box-girder bridges”, *Technical Report No. SSRP-09/06* to the California Department of Transportation, University of California, San Diego, 2009.
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- [R02] Coccia, S., Phillips R., Bartoli, I., Salamone, S., Lanza di Scalea, F., “Non-contact rail defect detection”, *Technical Report No. SSRP-08/02* to the Federal Railroad Administration, University of California, San Diego, 2008.
- [R01] Coccia, S., Bartoli, I., Salamone, S. and Lanza di Scalea, F., “Report of third field test of UCSD/FRA rail defect detection prototype, Gettysburg, PA, March 17-21, 2008”, *Technical Report No. SSRP-08/02* to the Federal Railroad Administration, University of California, San Diego, 2008.

#### INVITED LECTURES AND SEMINARS

- *Recent Advances in Ultrasonic Techniques for Structural Health Monitoring*, IUSS, Pavia, Italy, June 2018.
- *An Introduction to Structural Health Monitoring of Civil Infrastructure Systems by using Guided Ultrasonic Waves*, Department of Civil, Environmental, Aerospace, and Materials Engineering, University of Palermo, Italy, May 2017 (Webinar).
- *Recent Advances in Ultrasonic Techniques for Structural Health Monitoring*, Department of Civil, Environmental, Aerospace, and Materials Engineering, University of Palermo, Italy, June 2016.
- *Structural Health Monitoring of Civil Infrastructure Systems by using Guided Ultrasonic Waves*, Department of Mechanical Engineering, University of Texas, Austin, TX, March 2016.
- *Structural Health Monitoring of Civil Infrastructure Systems by using Guided Ultrasonic Waves*, Rice University, Department of Civil and Environmental Engineering, Houston, TX, November 2015.
- *Toward Permanently Installed Pipeline Monitoring Systems*, U.S. Department of Transportation, Office of Pipeline Safety, October 2015.



- *Structural Health Monitoring of Civil Infrastructure Systems: An Ultrasonic Wave-based Approach*, Department of Civil, Architectural and Environmental Engineering, University of Texas, Austin, TX, March 2015.
- *Structural Health Monitoring of Civil Infrastructure Systems: An Ultrasonic Wave-based Approach*, Department of Civil and Environmental Engineering, University of California, Berkeley, CA, February 2015.
- *Structural health monitoring using guided ultrasonic waves*, Department of Mechanical Engineering, Binghamton University, State University of New York, Binghamton, NY, October 2014.
- *Structural health monitoring*, University of Enna “Kore”, Italy, 19-20 December 2013 (16 hours lectures).
- *Structural health monitoring by guided ultrasonic waves*, The New York State Association of Transportation Engineers, Buffalo, NY, November 2013.
- *Structural health monitoring by guided ultrasonic waves*, The City College of New York, Department of Mechanical Engineering, NY, April 2013.
- *Structural health monitoring of civil infrastructures*, Emerging technologies in Bridge Engineering Class, University at Buffalo, October, 2012
- *Health monitoring of prestressing tendons in post-tensioned concrete bridges*, Association of Bridge Construction and Design, Spring Conference, Batavia, NY, April 2011.
- *Health monitoring of prestressing tendons in post-tensioned concrete bridges*, Emerging Technologies in Bridge Engineering Class, University at Buffalo, October, 2011.
- *Health monitoring of prestressing tendons in post-tensioned concrete structures*, Dept. of Civil, Structural and Environmental Engineering, University at Buffalo, April 2010.
- *Health monitoring of prestressing tendons in post-tensioned concrete structures*, Department of Civil & Environmental Engineering, University of California, Irvine, May 2009.
- *Temperature effects on the structural diagnostics of CFRP composite aircraft components by ultrasonic guided waves*, Department of Structural Engineering, University of California, San Diego, December 2007.
- *Correction methods for the analysis of continuous linear systems under moving loads*, (Italian National Conferences) 1st Workshop C.I.Di.S., on Structure Dynamics, Department of Structural Engineering, University of Messina, Italy, February 2005.

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- Salamone, S., Kaynardag, K., “*Mobile rail track defect detection*,” Provisional Patent #62559726, 2017.
- Salamone, S., Ebrahimkhanlou, A., “*Spark acoustic emission simulator*,” Provisional Patent No. 62/642,947, 2018.

## MEDIA COVERAGE OF RESEARCH

- *ASCE’s Civil Engineering Magazine*, “Corrosion-detecting sensors could protect nation’s highways,” January 2014.
- *Engineering News-Record*, “New steel-cable corrosion test method could replace manual checks,” December 2013.

- *In Compliance Magazine*, “Electric shock technique developed to detect bridge corrosion,” December 2013.
- *Electronic Products Magazine*, “How do you detect corrosion in a bridge? Simple - you zap it with electricity,” December 2013.

### COMMUNITY SERVICE

- The Interdisciplinary Science and Engineering Partnership (NSF-ISEP) Program, Department of Chemistry, University at Buffalo: Workshop organizer for Buffalo Public School district science teachers (June 2013).
- The Interdisciplinary Science and Engineering Partnership (ISEP) Program, Department of Chemistry, University at Buffalo: Worked with 4 high school teachers from the Buffalo Public School for one month (June 2012).

### GRANTS AND CONTRACTS

*Amounts indicated parenthetically (for joint proposals) are Salamone shares.*

University of Texas at Austin:

<b>Co-Investigators</b>	<b>Title</b>	<b>Agency</b>	<b>Grant Period</b>
P. Sela (PI) S. Salamone Arturo Baltazar	Smart leak detection in water networks through low-cost nonintrusive distributed acoustic sensors	ConTeX	09/01/2020-08/31/2021
S. Salamone (PI)	Rail Defect Detection by Noncontact Vibration Measurements – Phase 2	USDOT/Federal Rail Administration	05/14/2019-05/13/2022
R. Ferron (PI) S. Salamone	Evaluating long-term durability and performance of prestressed concrete beam with extensive surface cracking	Texas Department of Transportation	09/01/2019-03/31/2020
S. Salamone (PI)	Internal Corrosion Monitoring in Pipelines by using Helical Ultrasonic Waves	USDOT/Pipeline & Hazardous Materials Safety Administration	09/28/2018-09/28/2021
S. Salamone (PI) M. Drew, UT Neuroscience Dept. (PI)	Sensitive Detection of Anxiety States Using Guided Ultrasonic Waves	UT-VPR APX competition	11/01/2018-02/28/2020
S. Salamone (PI)	MEWR – A Bio-inspired probabilistic framework for SHM of complex structures	American Society for Nondestructive Testing (ASNT)	07/01/2018-06/30/2019
S. Salamone (PI)	In-kind Donation	BNSF	07/01/2018
S. Salamone (PI)	An Integrated Corrosion Monitoring System for Pipelines	Exxon Mobil	09/01/2017-08/31/2019

S. Salamone (PI)	Rail Defect Detection by Noncontact Vibration Measurements	Federal Rail Administration	10/01/2017-09/30/2018
S. Salamone (PI)	Toward integrated structural health monitoring systems for navy structures	Office of Naval Research	04/01/2017-02/29/2020
S. Salamone (PI)	A vision-based technique for damage assessment of civil structures	National Science Foundation	07/01/2015-07/31/2016
T. Hrynyk (PI) O. Bayrak S. Salamone	Evaluation of structural cracking in concrete	Texas Department of Transportation	01/01/2016-08/31/2018
R. Ferron (PI) S. Salamone	Evaluating long-term durability and performance of prestressed concrete beam with extensive surface cracking	Texas Department of Transportation	01/01/2016-08/31/2019

University at Buffalo:

<b>Co-Investigators</b>	<b>Title</b>	<b>Agency</b>	<b>Grant Period</b>
S. Salamone (PI)	A vision-based technique for damage assessment of civil structures	National Science Foundation	08/01/2013-06/30/2015
S. Salamone (PI)	Toward permanently installed pipeline monitoring systems	Pipeline & Hazardous Materials Safety Administration	10/01/2013-11/30/2015
S. Salamone (PI) G. Zhou	Collaborative research to advance scientific knowledge of the mechanism of corrosion in civil infrastructures	SUNY Research Foundation	12/01/2012-11/30/2014
S. Salamone (PI)	Corrosion damage assessment of post-tensioned concrete structures	USDOT (through the University Transportation Research Center 2)	12/22/2011-02/28/2013
S. Salamone (PI)	Smart lifeline systems for improving water and energy efficiency	The New York State Pollution Prevention Institute	03/01/2013-09/30/2013
S. Salamone (PI)	Equipment donation	Bridge Composites LLC	
S. Salamone (PI)	Revision of graduate course CIE500S "Introduction to nondestructive evaluation"	American Society of Nondestructive Testing	05/01/2011-06/01/2012

#### PH.D. SUPERVISION COMPLETED (6)

- Mr. Ehsan Dehghanniri, University at Buffalo, September 2014.  
*Current position:* Assistant Professor, New Mexico State University
- Mr. Alireza Farhidzadeh, University at Buffalo, September 2014.  
*Current position:* Data Scientist, Sysco.
- Mr. Moses Matovu, University at Buffalo, September 2015.  
*Current position:* Lecture at Makerere University, Uganda
- Mr. Arvin Ebrahimkhanlou, University of Texas at Austin, August 2018.  
*Current position:* Assistant Professor, New Mexico Institute of Mining and Technology
- Mr. Apostolos Athanasiou, University of Texas at Austin, December 2019.  
*Current position:* Senior Project Engineer, Thornton Tomasetti
- Mr. Brennan Dubuc, University of Texas at Austin, April 2020.  
*Current position:* Postdoctoral Fellow, Applied Research Laboratories, UT at Austin

#### M.S. SUPERVISION COMPLETED (10)

- Ms. Melanie B Schneider, University of Texas at Austin, May 2020
- Mr. Roel Gonzalez, University of Texas at Austin, December 2018
- Ms. My Vu, University of Texas at Austin, December 2018
- Mr. Brennan Dubuc, University of Texas at Austin, May 2017
- Ms. My Marina C Nakajima, University of Texas at Austin, December 2017
- Mr. Marco Manconi, Polytechnic of Turin, Italy, May 2017
- Mr. Alessandro Musumeci, Polytechnic of Turin, Italy, May 2017
- Mr. Jan Dokonal, University at Buffalo, August 2015
- Ms. Sandhya Ravindran, University at Buffalo, January 2015
- Mr. Arvin Ebrahimkhanlou, University at Buffalo, August 2015

#### PH.D. SUPERVISION IN PROGRESS (3)

- Mr. Korkut Kaynaradağ, University of Texas at Austin, expected to graduate in Spring 2021.
- Mr. Stylianos Livadiotis, University of Texas at Austin, expected to graduate in Fall 2021.
- Mr. Chi, Yang, University of Texas at Austin, expected to graduate in Fall 2021.

#### M.S. SUPERVISION IN PROGRESS (1)

- Mr. Konstantinos Sitaropoulos, University of Texas at Austin, expected to graduate in Spring 2020

#### POST-DOCTORAL SUPERVISION (3)

- Dr. Ehsan Dehghanniri, University at Buffalo, (September 2014-November 2014).
- Dr. Alireza Farhidzadeh, University at Buffalo, (September 2014-February 2015).
- Dr. Arvin Ebrahimkhanlou, University of Texas at Austin, (September 2018-August 2020).

#### VISITING SCHOLAR SUPERVISION (5)

- Mr. Iain Dunn, Ph.D. student from University of Palermo, Italy, 04/19 – 07/19
- Mr. Giuseppe Battaglia, Ph.D. student from University of Palermo, Italy, 02/18 – 07/18

- Ms. Xinran Li, undergraduate student from Tianjin University, China, 01/2017– 06/2017.
- Mr. Marco Manconi, MS student from Polytechnic of Turin, Italy, 03/2016 – 11/2016.
- Mr. Alessandro Musumeci, MS student from Polytechnic of Turin, Italy, 04/2016– 12/2016.
- Mr. Dr. Marianna Ercolino, from University of Naples, Italy, 06/2014–12/2015.
- Mr. Stefano Pescetelli, from Polytechnic of Turin, Italy, 10/2012–03/2013.

#### UNDERGRADUATE ADVISEES (10)

- Mr. Deyuan Zhang, University of Texas at Austin (CS), 09/2017–06/2018.
- Mr. Marco Munoz, University of Texas at Austin (CAEE), 05/2016–12/2016.
- Ms. Caitlyn Kallus, University of Texas at Austin (CAEE), 09/2016–12/2016.
- Mr. Sivateja Ponnuru, University of Texas at Austin (ECE), 09/2016–12/2016.
- Mr. Brennan Dubuc, University at Buffalo, 05/2014–07/2015.
- Mr. Tresor Mavinga, University at Buffalo, 05/2013–05/2014 (LSAMP program)
- Mr. Jan Dokonal, University at Buffalo, 09/01/2013–05/2014
- Mr. Tenzin Nyandak, University at Buffalo, 09/01/2013–05/2014
- Mr. Derrek Drass, University at Buffalo, 12/2011–05/2012.
- Ms Cynthia Romero, California State University of Los Angeles, 06/2011–08/2011 (NEES-REU).