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(December 2021)

1. Education

Ph.D. Mechanical Engineering & Materials Science	RICE University	2007
M.S. Mechanical Engineering & Materials Science	RICE University	2005
B.S. Diploma in Mechanical Eng. & Aeronautics	University of Patras (Greece)	2002

2. Research and Teaching Interests

My primary research interest is in theoretical and applied mechanics with emphasis on the understanding of the mechanical behavior of materials. To achieve this goal, I rely on defining multiscale microstructure-properties-behavior relations using methods that involve theory, experiments, modeling and simulations. A fundamental goal of this type of research is the understanding of the deformation and failure of advanced materials in terms of their multiscale architecture and their constitutive response with applications in materials design. An additional research goal is the identification of damage and in particular the quantification of evolving material states as a function of applied loading, which can then be used for prognosis of remaining useful life. In this context, I have been using sensing and testing methods in plasticity, fracture and fatigue investigations across length scales in conjunction with signal processing and numerical simulation approaches that could assist both the fundamental understanding of the mechanical behavior of materials as well as their applications. In relation to these research efforts, I teach topics related to solid mechanics, advanced manufacturing and cyberphysical systems.

3. Professional Experience

2021/09 –	Professor, Mechanical Eng. & Mechanics Dept., Drexel U.
2020/05 –	Joint Associate Professor (courtesy), Electrical & Computer Eng. Drexel U.
2020/03 –	Joint Associate Professor (courtesy), School of Biomedical Eng., Drexel U.
2016/04 – 2017/11	Assistant Director (Inaugural), Drexel Center for Functional Fabrics
2015/09 –	Associate Professor, Mechanical Eng. & Mechanics Dept., Drexel U.
2014/03 – 2015/08	P.C. Chou Assistant Professor, Mechanical Engineering & Mechanics Dept.
2009/01 – 2014/02	Assistant Professor, Mechanical Eng. & Mechanics Dept., Drexel U.
2007/08 – 2009/08	Postdoctoral Fellow, Aerospace Eng. & Engineering Mechanics, UT Austin
2002/08 – 2007/07	Graduate Student, Mechanical Eng. & Materials Science, RICE University
1998/09 – 2002/07	Research Assistant, Mechanical Eng. & Aeronautics, U. of Patras (Greece)
2001	Intern, Institute for Chem. Eng. and High Temp. Procedures, Patras (Greece)
2000	Intern, EC/JRC, Institute of Advanced Materials, Petten, The Netherlands

4. Awards and Honors

- 2019 Scholarly Materials & Research Equipment Award, Drexel U.
- 2019 Outstanding Mid-Career Research Award, College of Engineering, Drexel U.
- 2016 Provost's Early Career Outstanding Scholarly Award, Drexel U.
- 2015 Drexel Xi/Pi Tau Sigma Section Graduate Teaching Excellence Award
- 2014 ASME National Student Section Advisor Award
- 2014 ASME Philadelphia Section Faculty Advisor Award
- 2014 P.C. Chou Endowed Assistant Professor in Mechanical Engineering, Drexel U.
- 2014 Office of Naval Research, Young Investigator Award
- 2012 Student section Advisor of the Year, Drexel U.
- 2011 American Society of Nondestructive Testing (ASNT), Faculty Grant Award
- 2003 – 2007 Onassis Foundation International Scholarship Award for Doctoral Studies
- 2003 Hellenic Professional Society of Texas Scholarship for Graduate Studies
- 2000 – 2002 Technical Chamber of Greece Scholarships for Academic Performance

5. Publications and Presentations

5.1 Refereed Journal Articles

[^]Underlined names designate students and postdocs supervised by A. Kontsos

- J68. 2021 S. Schlenker and **A. Kontsos***, “A Computational Framework to Incorporate Deformation Data into Modeling of Localizations”, ASME Journal of Applied Mechanics (submitted)
- J67. 2021 Y. Reza, A. Riensche, E. Tekerek, L. Jacquemetton, H. Halliday, M. Vandever, A. Tenequer, V. Perumal, **A. Kontsos**, Z. Smoqi, K. Cole, P. Rao, “Digitally Twinned Additive Manufacturing: Detecting Flaws in Laser Powder Bed Fusion by Combining Thermal Simulations with In-situ Meltpool Sensor Data”, Materials & Design, Vol. 211, 110167
- J66. 2021 M. Idrees, A.M.H Ibrahim, E. Tekerek, **A. Kontsos**, G.R. Palmese and N. J. Alvarez, “The effect of resin-rich layers on mechanical properties of 3D printed woven fiber-reinforced composites”, Composites Part A, Vol. 144, 106339
- J65. 2021 M. Bahadori, E. Tekerek, M. Mathew, K. Mazur, B.J. Wisner **A. Kontsos***, "Composite Material Failure Model Updating Approach Leveraging Nondestructive Evaluation Data", Journal of Nondestructive Evaluation, Diagnostics and Prognostics of Engineering Systems, Vol. 4(3), 031002
- J64. 2020 V.I. Perumal, A. Najafi and **A. Kontsos***, “A Novel Digital Design Approach for Metal Additive Manufacturing to Address Local Thermal Effects”, Designs, Vol. 4, pp. 41
- J63. 2020 B. Wisner, E. Tekerek, J. Cannarella, and **A. Kontsos***, “Effect of Particle Reinforcement on the Progressive Failure of Alumina Trihydrate filled Poly(Methyl Methacrylate)”, Polymer, Vol. 205, 122754
- J62. 2020 M. Mathew, B. Wisner, S. Ridwan, M. McCarthy, I. Bartoli and **A. Kontsos***, "A Bio-inspired Frequency-based Approach for Tailorable and Scalable Speckle Pattern Generation", Experimental Mechanics, Vol. 60, pp. 1103-1117

- J61. 2020 S. Malik, R. Rouf, K. Mazur and **A. Kontsos***, “*The Industry Internet of Things (IIoT) as a Methodology for Autonomous Diagnostics in Aerospace Structural Health Monitoring*”, *Aerospace*, Vol. 7, 64
- J60. 2020 P. Wadekar, V. Perumal, G. Dion, **A. Kontsos** and D. Breen*, “*An Optimized Yarn-level Geometric Model for FEA Simulations of Weft-Knitted Fabrics*”, *Computer Aided Geometric Design*, Vol. 80, 101883
- J59. 2020 B.J. Wisner, K. Mazur and **A. Kontsos***, “*The use of Nondestructive Evaluation Methods in Fatigue: A Review*”, *Fatigue & Fracture of Engineering Materials*, Vol. 43(5), pp. 859-878
- J58. 2020 E. Tekerek, D. Liu, B.J. Wisner, M. Matthew, N. Castaneda, M. Oncull and **A. Kontsos***, “*Experimental Investigation of the Multiscale Mechanical Behavior of Knitted Textiles*”, *Material Design and Processing Communication*, Vol. 2(1), e106
- J57. 2019 B.J. Wisner, P. Potstada, V. Perumal, K. Baxevanakis, M. Sause and **A. Kontsos***, “*Progressive Failure Monitoring and Analysis in Aluminum by In Situ Nondestructive Evaluation*”, *Fatigue & Fracture of Engineering Materials*, Vol. 42(9), pp. 2133-2145
- J56. 2019 D. Liu, S. Koric and **A. Kontsos***, “*A Multiscale Homogenization Approach for Architected Knitted Textiles*”, *ASME Journal of Applied Mechanics*, Vol. 86(11), pp. 111006
- J55. 2019 R. Carmi, B. J. Wisner, P.A. Vanniamparambil, J. Cuadra, A. Bussiba and **A. Kontsos***, “*Progressive Failure Monitoring of Fiber Reinforced Metal Laminate Composites using a Nondestructive Approach*”, *ASME Journal of Nondestructive Evaluation, Diagnostics and Prognostics of Engineering Systems*, Vol. 2, pp. 021006-1
- J54. 2019 Y. Li, **A. Kontsos** and I. Bartoli, “*Automated Rust Detection of a Steel Bridge Using Aerial Multispectral Imagery*”, *Journal of Infrastructure Systems*, Vol. 25(2), pp. 04019014
- J53. 2019 D. Liu, S. Koric and **A. Kontsos***, “*Parallelized Finite Element Analysis of Knitted Textile Mechanical Behavior*”, *ASME Journal of Engineering Materials & Technology*, Vol. 141, pp. 021008
- J52. 2019 B.J. Wisner, K. Mazur, V. Perumal, K. Baxevanakis, L. An, G. Feng and **A. Kontsos***, “*Acoustic Emission Signal Processing Framework to Identify Fracture in Aluminum Alloys*”, *Engineering Fracture Mechanics*, Vol. 210, pp. 367-380
- J51. 2018 S. Esola, B. Wisner, P.A. Vanniamparambil, J. Geriguis and **A. Kontsos***, “*Part Qualification Methodology for Composite Aircraft Components using Acoustic Emission Monitoring*”, *Applied Sciences*, Vol. 8(9), pp. 1490
- J50. 2018 A. Ellenberg, **A. Kontsos**, I. Bartoli, “*On the Use of Unmanned Aerial Vehicles in Nondestructive Evaluation of Civil Infrastructure*”, *Materials Evaluation*, Vol. 76(5), pp. 629-642
- J49. 2018 A. Spear, S. R. Kalidindi, B. Meredig, **A. Kontsos**, J.-B. le Greverend, “*Data-Driven Materials Investigations: The Next Frontier in Understanding and Predicting Fatigue Behavior*”, *JOM*, Vol. 70(7), pp. 1143-1146
- J48. 2018 B.J. Wisner, K. Mazur and **A. Kontsos***, “*Fatigue Damage Assessment Leveraging Nondestructive Evaluation Data*”, *JOM*, Vol. 70(7), pp. 1182-1189

- J47. 2018 K.P. Baxevanakis, B. Wisner, S. Schlenker, H. Baid and **A. Kontsos***, “*Data-driven Damage Model based on Nondestructive Evaluation*”, ASME Journal of Nondestructive Evaluation, Diagnostics and Prognostics of Engineering Systems, Vol.1(3), pp. 031007-031007-12
- J46. 2018 C. Mo, and **A. Kontsos***, “*Twinning Contributions to Strain Localizations in Magnesium Alloys*”, Materials Science and Engineering A, Vol. 722, pp. 206-215
- J45. 2018 F. Althoey, B. Wisner, **A. Kontsos** and Y. Farnam, “*Cementitious Materials Exposed to High Concentration of Sodium Chloride Solution: Formation of a Deleterious Chemical Phase Change*”, Construction and Building Materials Vol. 167, pp. 543-552
- J44. 2018 M. Matthew, A. Ellenberg, S. Esola, M. McCarthy, I. Bartoli and **A. Kontsos***, “*Multiscale Deformation Measurements using Multispectral Optical Metrology*”, Structural Control and Health Monitoring, Vol. 25; pp. e2166
- J43. 2018 B.J. Wisner and **A. Kontsos***, “*Investigation of Particle Fracture during Fatigue of Aluminum 2024*”, International Journal of Fatigue, Vol. 111, pp. 33-43
- J42. 2018 D. Liu, B. Shakibajahromi, D. E. Breen, G. Dion and **A. Kontsos***, “*A Computational Approach to Model Interfacial Effects on the Mechanical Behavior of Knitted Textiles*”, ASME Journal of Applied Mechanics, Vol. 85(4), pp. 041007
- J41. 2018 F. Wang, K. Hazeli, K.D. Molodov, C.D. Barrett, T. Al-Samman, D.A. Molodov, **A. Kontsos**, K.T. Ramesh, H. El Kadiri, S.R. Agnew, “*Characteristic dislocation substructure in $\{10\bar{1}2\}$ twins in hexagonal metals*”, Scripta Materialia, Vol. 143, pp. 81-85
- J40. 2018 B.J. Wisner and **A. Kontsos***, “*In situ Monitoring of Particle Fracture in Aluminum Alloys*, Fatigue & Fracture of Engineering Material Systems, Vol. 43, pp. 581-596
- J39. 2018 K.P. Baxevanakis, C. Mo, M. Cabal and **A. Kontsos***, “*An Integrated Method to Model Strain Localization Bands in Magnesium Alloys*”, Computational Mechanics, Vol. 61(1), pp. 119-135
- J38. 2017 S. Esola, I. Bartoli, S.E. Horner, J.Q. Zheng and **A. Kontsos***, “*Defect detection via instrumented impact in thick-sectioned laminate composites*”, Journal of Nondestructive Evaluation, Vol. 36, Article 47
- J37. 2017 D. Liu, D. Christe, B. Shakibajahromi, C. Knittel, N. Castaneda, D. E. Breen, G. Dion and **A. Kontsos***, “*On the Role of Material Architecture in the Mechanical Behavior of Knitted Textiles*”, International Journal of Solids and Structures, Vol. 109, pp. 101-11
- J36. 2017 M. Bolhassani, P.A. Vanniamparambil, S. Rajaram, A.A. Hamid*, **A. Kontsos** and I. Bartoli, “*Failure Analysis and Damage Detection of Partially Grouted Reinforced Concrete Masonry Walls by Enhancing Deformation Measurement Using DIC*”, Journal of Engineering Structures, Vol. 134, pp. 262-275
- J35. 2017 N. Castaneda, B.J. Wisner, J.A. Cuadra, S. Amini and **A. Kontsos***, “*Investigation of the Z-binder Role in Progressive Damage of 3D Woven Composites*”, Composites Part A, Vol. 98, pp. 76-89

- J34. 2017 S. Rajaram, P.A. Vanniamparambil, F. Khan, M. Bolhassani, A. Koutras, I. Bartoli, F. Moon, A. Hamid, P. Benson Shing, J. Tyson and **A. Kontsos***, “*Full Field Deformation Measurements During Seismic Loading of Masonry Buildings*”, Structural Control & Health Monitoring, Vol. 24 (4), pp. e1903
- J33. 2016 A. Ellenberg, **A. Kontsos***, F. Moon and I. Bartoli*, "*Bridge Deck Delamination Identification from Unmanned Aerial Vehicle Infrared Imagery*", Automation in Construction, Vol. 72, pp. 155-165
- J32. 2016 C. Mo, B. Wisner, M. Cabal, K. Hazeli, K.T. Ramesh, H. El Kadiri, T. Al-Samman, K.D. Molodov, D. A. Molodov and **A. Kontsos***, “*Acoustic Emission of Deformation Twinning in Magnesium*”, Materials, Vol. 9, 662
- J31. 2016 J. A. Cuadra, K. P. Baxevanakis, M. Mazzotti I. Bartoli and **A. Kontsos***, "*Energy Dissipation via Acoustic Emission in Ductile Crack Initiation*", International Journal of Fracture, Vol. 199(1), pp. 89-104
- J30. 2016 J. A. Cuadra, K. P. Baxevanakis, A. Loghin and **A. Kontsos***, "*Validation of a Cyclic Plasticity Computational Method Using Fatigue Full Field Deformation Measurements*", Fatigue and Fracture of Engineering Materials & Structures, Vol 39(6), pp. 722-736
- J29. 2016 A. Ellenberg, I. Bartoli, F. Moon and **A. Kontsos***, "*Bridge Related Damage Quantification using Aerial Vehicle Imagery*", Structural Control and Health Monitoring, Vol. 23, pp. 1168-1179
- J28. 2016 S. Rajaram, J. Cuadra, R. Saralaya, I. Bartoli and **A. Kontsos***, “*In situ CTE Measurements and Damage Detection Using Optical Metrology*”, Measurement Science & Technology, Vol. 27, 025202
- J27. 2015 B. J. Wisner, M. Cabal, P.A. Vanniamparambil, J. Hochhalter, W. P. Leser and **A. Kontsos***, “*In situ Microscopic Investigation to Validate Acoustic Emission Monitoring*”, Experimental Mechanics, Vol. 55, pp. 1705-1715
- J26. 2015 A. Ellenberg, L. Branco, A. Krick, I. Bartoli and **A. Kontsos***, "*Use of unmanned aerial vehicle for quantitative infrastructure evaluation*", Journal of Infrastructure Systems, Vol. 21 (3), 04014054
- J25. 2015 P.A. Vanniamparambil, R. Carmi, F. Khan, J. Cuadra, I. Bartoli and **A. Kontsos***, “*An active-passive acoustics approach for bond-line condition monitoring in aerospace skin stiffener panels*”, Journal of Aerospace Science and Technology, Vol.
- J24. 2015 P.A. Vanniamparambil, U. Guclu, and **A. Kontsos***, “*Identification of crack initiation using advanced acoustic emission analysis*”, Experimental Mechanics, Vol. 55, pp.
- J23. 2015 A. Watters, J. Cuadra, **A. Kontsos** and G. Palmese, “*Processing-Structure-Property relationships of SWNT-Epoxy composites prepared using ionic liquids*”, Composites: Part A, Vol. 73, pp. 269-276
- J22. 2015 K. Hazeli, H. Askari, J. Cuadra, F. Streller, R.W. Carpick, H.M. Zbib and **A. Kontsos***, “*Microstructure-sensitive investigation of Magnesium alloy fatigue*”, International Journal of Plasticity, Vol. 68, pp. 55-76
- J21. 2015 K. Hazeli, J. Cuadra, F. Streller, C. Bahr, M. L. Taheri, R. W. Carpick and **A. Kontsos***, "*3D Surface effects of twinning in Magnesium Alloys*", Scripta Materialia, Vol. 100, pp. 9-12

- J20. 2015 J. Cuadra, P.A. Vanniamparambil, D. Servansky, I. Bartoli and A. Kontsos*, "*Acoustic Emission source modeling using a data-driven approach*", Journal of Sound and Vibration, Vol. 341, pp. 222-236
- J19. 2015 F. Khan, M. Bolhassani, A. Hamid, A. Kontsos and I. Bartoli, "*Modeling and experimental implementation of infrared thermography on concrete masonry structures*", Journal of Infrared Physics & Technology, Vol. 69, pp. 228-237
- J18. 2015 F. Khan, S. Rajaram, P.A. Vanniamparambil, M. Bolhassani, A. Hamid, A. Kontsos and I. Bartoli*, "*Multisensing NDT for damage assessment of concrete masonry walls*", Structural Control and Health Monitoring, Vol. 22, pp. 449-462
- J17. 2014 P.A. Vanniamparambil, M. Bolhassani, R. Carmi, F. Khan, I. Bartoli, F. L Moon, A. Hamid and A. Kontsos*, "*A data fusion approach for progressive damage quantification in reinforced concrete masonry walls*", Smart Materials and Structures, Vol. 23(1), 015007
- J16. 2014 K. Hazeli, A. Sadeghi, M.O. Pekguleryuz and A. Kontsos*, "*Damping and Dynamic Recovery in Magnesium Alloys Containing Strontium*", Materials Science and Engineering A, Vol. 589, pp. 275-279
- J15. 2013 K. Hazeli, A. Sadeghi, M.O. Pekguleryuz and A. Kontsos*, "*The effect of Strontium in Plasticity of Novel Magnesium Alloys*", Materials Science and Engineering A, Vol. 578, pp. 383-393
- J14. 2013 J. Cuadra, P.A. Vanniamparambil, K. Hazeli, I. Bartoli and A. Kontsos*, "*Damage Quantification in Polymer Composites using a Hybrid NDT Approach*", Composites Science and Technology, Vol. 83, pp. 11-21
- J13. 2013 P.A. Vanniamparambil, F. Khan, K. Hazeli, J. Cuadra, E. Schwartz, A. Kontsos and I. Bartoli, "*Novel Optico-Acoustic NDT for Wire Breaks Detection in Cables*", Structural Control and Health Monitoring, Vol. 20 (11), pp. 1339-1350
- J12. 2013 K. Hazeli, J. Cuadra, P.A. Vanniamparambil and A. Kontsos*, "*In situ Identification of Twin-related Bands near Yielding in a Magnesium Alloy*", Scripta Materialia, Vol. 68, pp.83-86
- J11. 2012 I. Neitzel, V. Mochalin, J. Niu, J. Cuadra, A. Kontsos, G. Palmese, Y. Gogotsi, "*Maximizing Young's modulus of aminated nanodiamond-epoxy composites measured in compression*", Polymer, Vol. 53, pp.5965-5971
- J10. 2012 P.A. Vanniamparambil, I. Bartoli, K. Hazeli, J. Cuadra, E. Schwartz, R. Saralaya and A. Kontsos*, "*An integrated SHM approach for crack growth monitoring*", Journal of Intelligent Material Systems & Structures, Vol. 23(14), pp.1563-1573
- J9. 2012 Q. Zhang, V. Mochalin, I. Neitzel, K. Hazeli, J. Niu, A. Kontsos, J. Zhou, P.I. Lelkes, and Y. Gogotsi, "*Mechanical properties and biomineralization of multifunctional nanodiamond-PLLA for bone tissue engineering* ", Biomaterials, Vol. 33, pp.5067-5075
- J8. 2011 A. Kontsos*, T. Loutas, V. Kostopoulos, K. Hazeli, B. Anasori and M. Barsoum, "*Nanocrystalline Mg-MAX composites: Mechanical Behavior Characterization via Acoustic Emission Monitoring*", Acta Materialia, Vol. 59, pp.5716-5727

- J7. 2010 **A. Kontsos**, C. M. Landis, “Phase-field modeling of domain structure energetics and evolution in ferroelectric thin films”, *Journal of Applied Mechanics*, Vol. 77, n.1, pp. 1-12
- J6. 2009 **A. Kontsos** and P.D. Spanos, “Modeling of Nanoindentation Data and Characterization of Polymer Nanocomposites by a Multiscale Stochastic Finite Element Method”, *Journal of Computational and Theoretical Nanoscience*, Vol. 6, pp.2273-2282
- J5. 2009 **A. Kontsos**, C. M. Landis, “Computational Modeling of Domain Wall Interactions with Dislocations in Ferroelectric Crystals”, *International Journal of Solids and Structures*, Vol. 46(6), pp.1491-1498
- J4. 2008 P.D. Spanos and **A. Kontsos**, “A Multiscale Monte Carlo Finite Element Method for Determining Mechanical Properties of Polymer Nanocomposites”, *Journal of Probabilistic Engineering Mechanics*, Vol. 23, pp.456-470
- J3. 2006 P.D. Spanos, **A. Kontsos**, P. Cacciola, “Steady-State Dynamic Response of Preisach Hysteretic Systems”, *Journal of Vibrations and Acoustics*, Vol. 128, pp.244-250
- J2. 2004 Y. Z. Pappas, **A. Kontsos**, T. Loutas and V. Kostopoulos, “On the Characterization of Continuous Fibres Fractures by Quantifying Acoustic Emission and Acousto-Ultrasonic Methods”, *Journal of NDT&E International*, Vol. 37(5), pp.389-401
- J1. 2003 Kostopoulos V., T.H. Loutas, **A. Kontsos**, G. Sotiriadis, Y. Z. Pappas. 2003, “On the Identification of the Failure Mechanisms in Oxide/Oxide Composites Using Acoustic Emission”, *Journal of NDT&E International*, Vol. 36(8), pp.571-580

6.2 Book Chapters and Special Issues

- S1. 2016 “Fatigue in Materials: TMS Symposium” Special issue in *Journal of Fatigue & Fracture of Engineering Materials & Structures*, Editors: A. Kontsos, A. Spear, T. Zhai and C. Muhlstein, Vol. 39, Issue 6, pp. 649-789
- S2. 2013 “Multiscale Stochastic FEM modeling of Polymer Nanocomposites”, V. Mittal (Ed.): *Modeling and Prediction of Polymer Nanocomposite Properties*, Vol. 4, Wiley VCH Germany (Polymer Nano-, Micro- and Macro-composites Series)

6.3 Dissertation and Theses

- D2. 2007 “Polymer Nanocomposites Characterization by a Stochastic Finite Elements Representation”, Ph.D. dissertation, Rice University, Houston, Texas, Publication No. AAT 3256709, 243 pages, UMI, Ann Arbor, MI, USA
- D1. 2005 “Deterministic and Random Analysis of Systems with Hysteresis using the Preisach Formalism”, Masters of Science Thesis, Rice University, Houston, Texas, Publication No.: AAT 1425843, ISBN: 9780542041501, 107 pages, UMI, Ann Arbor, MI, USA

6.4 Refereed Conference Articles

- C65 2021 S.Malik, E. Tekerek, A. Zawad, and **A.Kontsos***, “An Internet of Things based Crack Monitoring Approach Using Nondestructive Evaluation Data”, STP1638 on Fifth Symposium on Evaluation of Existing and New Sensor Technologies for Fatigue, Fracture and Mechanical Testing, May 2021

- C64. 2020 S.Malik, R.Rouf, K.Mazur, and **A.Kontsos***, “*A Dynamic Data Driven Application Systems (DDDAS)-based Digital Twin IoT Framework*”, DDDAS2020: InfoSymbiotics/Dynamic Data Driven Applications Systems Virtual Conference, October 2020
- C63. 2020 S.Malik, R.Rouf, and **A.Kontsos***, “*An Internet of Things Approach for Dynamic and Data-Driven Remaining Useful Life Predictions*”, ASME SMASIS 2020 Virtual Conference, September 2020
- C62. 2019 S.Malik, K.Mazur, R.Rouf, and **A.Kontsos***, “*The Industry Internet of Things (IIoT) as a Methodology for Autonomous Diagnostics & Prognostics in Aerospace Structural Health Monitoring*”, 11th International Workshop on Structural Health Monitoring, Stanford University, California, September 2019
- C61. 2019 K.Mazur, S.Malik, R.Rouf, M.Bahadori, M.Shehu, M.Mathew, E.Tekerek, B.Wisner, and **A.Kontsos***, “*Composite Material Remaining Useful Life Estimation Using an IoT-Compatible Probabilistic Framework*”, 11th International Workshop on Structural Health Monitoring, Stanford University, California, September 2019
- C60. 2019 M.Mathew, B.Wisner, S.Ridwan, M. McCarthy, I. Bartoli and **A. Kontsos***, “*Optimized and Tailorable Speckle Pattern Generation Approach for Digital Image Correlation Applications in SHM*”, 11th International Workshop on Structural Health Monitoring, Stanford University, California, September 2019
- C59. 2019 K.Mazur, B.Wisner and **A. Kontsos***, “*An Acoustic Emission IoT Framework for Monitoring, Data Management, Diagnostics and Prognostics*”, Acoustic Emission Working Group 61, University of Illinois Chicago, Chicago IL, June 2019
- C58. 2019 R.A.Haynes, E.Habtour, T.C.Henry, D.P. Cole, V. Weiss, A. Kontsos, B. Wisner, “*Damage Precursor Indicator for Aluminum 7075-T6 Based on Nonlinear Dynamics*”, In: Kerschen G. (eds) *Nonlinear Dynamics*, Volume 1. Conference Proceedings of the Society for Experimental Mechanics Series, Springer, Cham, ISBN 978-3-319-74280-9
- C57. 2018 E.Tekerek, D. Liu, B.J. Wisner, M. Matthew, D. Breen and **A. Kontsos***, “*Integrated Investigation of the Role of 3D Architecture in the Mechanical Behavior of Knitted Textiles*”, In: Conference Proceedings of ECCM 2018 – 18th European Conference on Composite Materials, Athens Greece, June 2018
- C56. 2018 R. Carmi, B.J. Wisner, R. Shneck, A. Bussiba and **A. Kontsos***, “*Damage State Assessment of Fiber Reinforced Metal Laminate Composites*”, In: Conference Proceedings of ECCM 2018 – 18th European Conference on Composite Materials, Athens Greece, June 2018
- C55. 2018 B.J. Wisner, M. R. Bahadori, K. Mazur, M. Shehu, M. Matthew, H. Baid, F. Abdi and **A. Kontsos***, “*Data-driven Prognostics for Fiber Reinforced Composites Based on Multimodal NDE Monitoring*”, In: Conference Proceedings of ECCM 2018 – 18th European Conference on Composite Materials, Athens Greece, June 2018

- C54. 2018 M. Brown, J. Kujawski and **A. Kontsos***, “Automated CAD Model Generation from LiDAR Point Clouds”, In: Conference Proceedings of 2nd International Symposium on Aerial Robotics, Philadelphia PA, June 2018
- C53. 2018 B.J. Wisner, K. Mazur, M. R. Bahadori, M. Shehu, H. Baid, **A. Kontsos*** and F. Abdi, “Data-driven Composite Damage Prognostics by Coupling Computational Modeling with Nondestructive Evaluation”, In: SAMPE 2018 Conference Proceedings, Long Beach CA, May 2018
- C52. 2017 M. Mathew, A. Ellenberg, I. Bartoli and **A. Kontsos***, “A Multiscale & Multispectral Approach to Digital Image Correlation for SHM Applications”, 11th International Workshop on Structural Health Monitoring, Stanford University, California, September 2017
- C51. 2017 B. Wisner and **A. Kontsos***, “Coupling In Situ Microstructure Observation with Machine Learning Algorithms for Damage Diagnostics and Prognostics”, 11th International Workshop on Structural Health Monitoring, Stanford University, California, September 2017
- C50. 2017 F. Wang, K. Hazeli, K.D. Molodov, C.D. Barrett, T. Al-Samman, A. Oppendal, D.A. Molodov, **A. Kontsos**, K.T. Ramesh, H. El Kadiri, S.R. Agnew, “The Effect of $\{10\bar{1}2\}$ Twin Boundary on the Evolution of Defect Substructure”, Magnesium Technology 2017, The Minerals, Metals & Materials Series, ISSN 2367-1181, pp. 175-180
- C49. 2017 R. Vallet, C. Knittel, D. Christie, N.A. Castaneda, C. A. Kara, K. Mazur, D. Liu, **A. Kontsos**, Y. Kim, G. Dion, “Digital fabrication of textiles: an analysis of electrical networks in 3D knitted functional fabrics”, *Proc. SPIE 10194*, Micro- and Nanotechnology Sensors, Systems, and Applications IX, 1019406 (May 18, 2017); doi:10.1117/12.2263515
- C48. 2017 B.J. Wisner and **A. Kontsos***, “Fatigue Damage Precursor Identification Using Nondestructive Evaluation coupled with Electron Microscopy”, In: Zehnder A. et al. (eds) Fracture, Fatigue, Failure and Damage Evolution, Volume 8. Conference Proceedings of the Society for Experimental Mechanics Series. Springer, Vol. 8, pp. 1-8
- C47. 2016 A. Ellenberg, A. Kontsos and I. Bartoli, “Unmanned Aerial Vehicle for Infrastructure Evaluation”, ASNT Fall Meeting, Long Beach CA, October 2016
- C46. 2016 N.A. Castaneda, B. Wisner, J. Cuadra and **A. Kontsos***, “Identification of 4D Damage Precursors in 3D Woven Composites”, 31st American Society of Composites Conference and ASTM D30 Meeting 2016, Williamsburg VA, September 2016
- C45. 2016 A. Ellenberg, A. Kontsos, F. Moon and I. Bartoli, “Rapid, Preliminary Bridge Deck Damage Identification from Unmanned Aerial System Imagery”, NDE/NDT for Highways & Bridges: SMT 2016, Portland OR, August 2016
- C44. 2016 D. Christie, B. Wisner, J. Bhatt and **A. Kontsos***, “Raising Interest in STEM Education: A research-based Community College University Partnership for

Improving Minority Participation”, 123rd ASEE Annual Conference & Exposition, New Orleans, LA, June 2016

- C43. 2016 R. Carni, A. Bussiba, R. Shneck and **A. Kontsos***. “*Damage Onset and Accumulation in fiber reinforced metal laminate under quasi-static and fatigue loading monitored nu Acoustic Emission method*”, Acoustic Emission Working Group 58, Drexel University, Philadelphia PA, May 2016
- C42. 2016 B.J. Wisner, C. Mo, R. Whitmore, S. Rajaram and **A.Kontsos***, “*Damage Precursor Identification in Metal Alloys using Acoustic Emission Monitoring coupled with Microscopy*”, Acoustic Emission Working Group 58, Drexel University, Philadelphia PA, May 2016
- C41. 2016 A. Ellenberg, A. Kontsos, F. Moon and I. Bartoli, “*Low-Cost, Quantitative Assessment of Highway Bridges through the Use of Unmanned Aerial Vehicles*”, SPIE 2016 Meeting in Las Vegas, Nevada, March 2016
- C40. 2015 S.Esola, I.Bartoli, S.E.Horner, J.Q.Zheng and **A.Kontsos***, “*Quantitative Acoustics Approach for Damage Detection in Hard Armor Protective Inserts*”, American Composites Society (ACS), Michigan State University, Michigan, September 2015
- C39. 2015 S.Rajaram, U.Guclu, P.A.Vanniamparambil, S.Esola, **A.Kontsos***, “*Remaining Useful Life Estimations using Acoustic Emissions*”, 10th International Workshop on Structural Health Monitoring, Stanford University, California, September 2015
- C38. 2015 D.Christe, A. Shah, J.Bhatt, M. Rodriguez Mergenthal, L.Powell and **A.Kontsos***, “*Raising Interest in STEM Education: A research-based learning framework for improving minority participation*”, 122nd ASEE Annual Conference & Exposition, Seattle, WA, June 2015
- C37. 2015 B. Wisner, M.Cabal, P.A.Vanniamparambil, J. Hochhalter and A.Kontsos*, “*Microstructure-Sensitive Investigation of Fracture using Acoustic Emission Coupled with Electron Microscopy*”, SAMPE 2015, Baltimore, Maryland, May 2015
- C36. 2015 D.Christe, J.Bhatt, A.Shah, L.Powell and **A.Kontsos***, “*Raising Interest in STEM Education: A research-based learning framework*”, 4th Annual IEEE Symposium on Emerging Trends in Library & Information Science, Delhi, India, January 2015
- C35. 2014 J.Cuadra, K.Hazeli, M.Cabal, and **A.Kontsos***, “*The role of multiple strain localizations in Fatigue of Magnesium alloys*”, ASME 2014 International Mechanical Engineering Congress and Exposition, Volume 9: Mechanics of Solids, Structures and Fluids, Montreal, Quebec, Canada, November 14–20, 2014, Conference Sponsors: ASME, ISBN: 978-0-7918-4958-3, Paper No. IMECE2014-40203, pp. V009T12A03
- C34. 2014 F.Khan, A.Ellenberg, S.Ye, A.E.Aktan, F.Moon, **A.Kontsos**, A.Pradhan and I. Bartoli, “*Multispectral Aerial Imaging for Infrastructure Evaluation*”, ASNT 2014, Charleston, South Carolina, October 2014

- C33. 2014 S. Esola, I. Bartoli, S. Horner, J.Q.Zheng and **A.Kontsos***, “Non-destructive approach for damage detection in hard armor protective inserts”, ACS 2014 Conference, *San Diego*, California, September 2014
- C32. 2014 R.Carmi, A.Bussiba, I.Alon, P.A.Vanniamparambil, J.Cuadra, U.Guclu and **A.Kontsos***, “*Acoustic Emission as a tool for monitoring fatigue damage accumulation in fiber reinforced metal laminates*”, ACS 2014 Conference, *San Diego*, California, September 2014
- C31. 2014 S.Rajaram, P.A.Vanniamparambil, J.Cuadra, A.Ramadurgakar, I.Bartoli and **A.Kontsos***, “*A multispectral nondestructive approach for image-based damage monitoring*”, ACS 2014 Conference, *San Diego*, California, September 2014
- C30. 2014 P.A.Vanniamparambil, R.Carmi, F.Khan, I.Bartoli and **A.Kontsos***, “*Identification of debonding in CFRP stiffened panels using pattern recognition*”, ACS 2014 Conference, *San Diego*, California, September 2014
- C29. 2014 S.Esola, I.Bartoli, S.E.Horner, J.Q.Zheng and **A.Kontsos***, “*Parametric Study Using Modal Analysis of a Bi-Material Plate With Defects*”, QNDE 2014 Conference, *Boise*, Idaho, July 2014
- C27. 2014 B.Cohen, S.Ye, G.Karaman, F.Khan, I.Bartoli, A.Pradhan, A.Ellenber, F.Moon, P.Gurian, **A.Kontsos**, E.Minaie, C.Young, D.Lowdermilk and E. Aktan, “*Design and implementation of an integrated operations and performance preservation monitoring system for asset management of major bridges*”, 7th European Workshop on Structural Health Monitoring, *Nantes*, France, July 2014
- C26. 2014 S.Ye, S.H.H.Nourzad, A.Pradhan, I.Bartoli and **A.Kontsos**, “*Automated detection of damaged areas after hurricane Sandy using Aerial color images*”, in Proceedings of Computing in Civil and Building Engineering, *Orlando*, Florida, June 2014
- C25. 2014 A.Ellenber, **A.Kontsos**, I.Bartoli and A.Pradhan, “*Masonry crack detection application of an Unmanned Aerial Vehicle*”, in Proceedings of Computing in Civil and Building Engineering, *Orlando*, Florida, June 2014
- C24. 2014 E.Aktan, A.Pradhan, K.Sjoblom, F.Moon, I.Bartoli, Y.Bayleyegn, B.Cohen and **A.Kontsos**, “*Challenges in educating the Millennial Civil Engineers*”, in Proceedings of ASCE Structures Congress, *Boston*, Massachusetts, April 2014
- C23. 2014 P.A. Vanniamparambil, J.Cuadra, U.Guclu, I.Bartoli and **A.Kontsos***, “*Cross-validated detection of crack initiation in aerospace materials*”, SPIE Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring Conference, *San Diego*, California, March 2014
- C22. 2014 F.Khan, I.Bartoli, P.A. Vanniamparambil, **A.Kontsos**, M. Bolhassani, A. Hamid, “*Acoustics and temperature based NDT for damage assessment of concrete masonry system subjected to cyclic loading*”, SPIE Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring Conference, *San Diego*, California, March 2014
- C21. 2014 J.Cuadra, P.A. Vanniamparambil, K.Hazeli, I.Bartoli and **A.Kontsos***, “*Data-fusion NDE for Progressive Damage Quantification in Composites*”, Proceedings

of the Advanced Composites for Aerospace, Marine and Land Applications in TMS 2014, San Diego (CA), February 2014

- C20. 2014 K.Hazeli, J.Cuadra, P.A. Vanniamparambil, R.Carmi and A.Kontsos*, "*Quantification of Microstructure-Properties-Behavior Relations in Magnesium Alloys Using a Hybrid Approach*", Proceedings of the Mg 2014 symposium in TMS 2014, San Diego (CA), February 2014
- C19. 2013 R. Carmi, P.A. Vanniamparambil, J. Cuadra, K. Hazeli, U. Guclu, A. Bussiba, I. Bartoli and A. Kontsos*, "*Acoustic Emission and Digital Image Correlation as Complementary Techniques for Laboratory and Field Research*", World Conference in Acoustic Emission 2013, Shanghai, China, November 2013
- C18. 2013 P.A. Vanniamparambil, F. Khan, S. Rajaram, E. Schwartz, M. Bolhassani, A. Hamid, A. Kontsos and I. Bartoli, "*Multiple Cross Validated Sensing System for Damage monitoring in Civil Structural Components*", 9th International Workshop on Structural Health Monitoring, Stanford Univ., September 2013
- C17. 2013 R. Carmi, P.A. Vanniamparambil, U. Guclu, J. Cuadra, I. Bartoli and A.Kontsos*, "*Multimodal Non-destructive Evaluation Approach for Damage Quantification*", 9th International Workshop on Structural Health Monitoring, Stanford Univ., September 2013
- C16. 2013 F. Khan, P.A. Vanniamparambil, R. Carmi, A.Kontsos and I. Bartoli, "*Integrated Health Monitoring System for Damage Detection in Civil Structural Components*", ICOSSAR 2013, New York, NY, June 2013
- C15. 2013 P.A. Vanniamparambil, R. Carmi, F. Khan, I. Bartoli and A. Kontsos*, "*Novel Optico-Acoustic Sensing System for Cross-Validated Structural Health Monitoring*", ICOSSAR 2013, New York, NY, June 2013
- C14. 2013 P.A. Vanniamparambil, F. Khan, E. Schwartz, A. Kontsos, I. Bartoli, M. Bolhassani and A. Hamid "*Using DIC to Measure Deformation Fields of Concrete Masonry Test Specimens*", 12th Canadian Masonry Symposium, Vancouver, Canada, June 2013
- C13. 2013 E. Schwartz, R. Saralaya, J. Cuadra, K. Hazeli, P.A. Vanniamparambil, R. Carmi, I. Bartoli and A. Kontsos*, "*The Use of Digital Image Correlation for Non-destructive and Multi-scale Damage Quantification*", SPIE Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring Conference, San Diego, California, March 2013
- C12. 2013 P.A. Vanniamparambil, F. Khan, R. Carmi, S. Rajaram, E. Schwartz, A. Kontsos and I. Bartoli, "*Integrated Non-destructive Testing Approach for Damage Detection and Quantification in Structural Components*", SPIE Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring Conference, San Diego, California, March 2013
- C11. 2012 K. Hazeli, A. Sadeghi, M.O. Pekguleryuz and A. Kontsos*, "*Microstructure and Mechanical Behavior of Novel Extruded Magnesium Alloys*". 9th International Conference on Magnesium Alloys and their Applications, Vancouver, Canada, July 2012

- C10. 2012 I. Bartoli, A. Emin Aktan, **A. Kontsos**, P.A. Vanniamparambil, K. Hazeli, “*An Integrated Health Monitoring Approach for Damage Quantification in Critical Structural Components*”. *EACS 5th European Conference on Structural Control*, Genoa, Italy, June 2012
- C9. 2012 H. Gong, Y. Kim, Q. Zhang, K. Hazeli, **A. Kontsos**, P. I. Leikes, D. Yao and J.G. Zhou, “*Micro Characterization of Mg and Mg Alloy for Biodegradable Orthopedic Implants Application*”. *ASME International Manufacturing Science and Engineering Conference*, Notre Dame, Indiana, June 2012
- C8. 2012 P.A. Vanniamparambil, I. Bartoli, K. Hazeli, R. Saralaya, J. Cuadra, E. Schwartz and **A. Kontsos***, “*In-situ Acousto-ultrasonic Monitoring of crack propagation in Aluminum Alloy*”. *SPIE Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring Conference*, *San Diego*, California, March 2012
- C7. 2010 **A. Kontsos***, K. Hazeli, B. Anasori, T. Loutas, G. Sotiriadis, V. Kostopoulos and M. W. Barsoum, “*Grain Size Effect on the Fatigue Response of Nanocrystalline Magnesium Composites Reinforced with MAX Phases*”. In: 9th HSTAM International Congress on Mechanics Limassol, Cyprus, 12 – 14 July, 2010
- C6. 2009 **A. Kontsos**, Wenyuan Li and C. M. Landis, “*Computational Phase-field Modeling of Defect Interactions in Ferroelectrics*”, *SPIE Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring Conference*, *San Diego*, California, March 2009
- C5. 2007 **A. Kontsos** and P.D. Spanos, “*A Monte Carlo Finite Element Method for Determining the Young’s Modulus of Polymer Nanocomposites Using Nanoindentation Data*”, *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, 1st International Conference on Micro- and Nanosystems (MNS), Las Vegas, Nevada, September 2007, DETC2007-34801
- C4. 2006 **A. Kontsos**, M. Esteva, A. Tamer and P.D. Spanos, “*Polymer Nanocomposites Characterization by a Stochastic Multiscale Approach*”, *Proceedings of the 5th International Conference on Computational Stochastic Mechanics*, Rhodes, Greece, June 2006 - *Computational Stochastic Mechanics (CSM-5)*, G. Deodatis & P.D. Spanos eds., Millpress, Rotterdam Netherlands (2007), ISBN: 978-90-5966-052-6, pp. 393-400
- C3. 2005 P.D. Spanos, **A. Kontsos** and P. Cacciola, “*Steady-State Dynamic Response of Preisach Hysteretic Systems*”, *ASME International Design Engineering Technical Conferences and Computers and Information in Engineering Conference - DETC2005*, v 1 B: 20th Biennial Conf. on Mechanical Vibration and Noise, Long Beach, CA, USA, September 2005, DETC2005-85552, pp. 1457-1466
- C2. 2003 Y. Z. Pappas, **A. Kontsos**, T. Loutas and V. Kostopoulos, “*On the characterization of acoustic emission activity generated by continuous fibres breakage*”, *Proceedings of the 3rd International Conference on Emerging Technologies in NDT*, Thessaloniki, Greece, May 2003 - *Emerging Technologies in Non Destructive Testing*, Van Hemelrijck, Anastasopoulos and Melanitis (eds), 2004, Swets & Zeitlinger B.V., Lisse, The Netherlands, ISBN: 978-9058096456, pp. 143-150

- C1. 2002 T. Loutas, **A. Kontsos**, Y. Z. Pappas and V. Kostopoulos. 2002, “*On the Identification of the Damage Mechanisms in Oxide/Oxide Composites Using Acoustic Emission*”, Proceedings of the 25th European Conference on Acoustic Emission Testing, EWGAE 2002, Prague, Czech Republic, September 2002, Editor: P. Mazal, ISBN 80-214-2174-6

6. Patents

1. *Integration of Digital Image Correlation with Acoustic Emissions*, US 10,488,368 B2), **Antonios Kontsos**, Ivan Bartoli and Prashanth Abraham Vanniamparambil, Date of Patent: November 26th, 2019
2. *Multiscale Deformation Measurements Leveraging Tailorable and Multispectral Speckle Patterns*, US 10,845,187 B2, Antonios Kontsos, Fnu Melvin Domin Mathew, Andrew James Ellenberg, Ivan Bartoli, Date of Patent: November 24th, 2020
3. *Computing Progressive Failure in Materials and Structures by Integration of Digital Image Correlation with Acoustic Emission Monitoring Data*, Publication No.: US 2021/0302381 A1, Antonios Kontsos, Ivan Bartoli, Prashanth Abraham Vanniamparambil, Publication Date: September 30th, 2021

7. Invited Talk/Seminars

63. 2021 *Thoughts on how to turn your niche research activity into a STEM curriculum, first joint ASEE (American Society of Engineering Education) and Autodesk webinar*, May 2021
62. 2021 *Digital Twinning for Intelligent Material & Structural Design*, (Virtual) in the Dept. of Mechanical Engineering & Aeronautics, The University of Patras, Greece, April 2021
61. 2020 *An Internet of Things Approach for Dynamic and Data-driven Remaining Useful Life Predictions*, ASME 2020 SMASIS Virtual Conference, September 2020
60. 2020 *Thoughts on how to turn your niche research activity into a STEM curriculum*, CASTLE Pedagogical Hour, Drexel University, September 2020
59. 2019 *Progressive Failure Monitoring and Analysis in Aluminum by In situ Nondestructive Evaluation*, Editorial Anniversary Meeting, Fatigue & Fracture of Engineering Materials & Structures, University of Sheffield, Sheffield UK, September 2019
58. 2019 *The Digital Twin Concept as the Next Frontier for Intelligent Materials & Systems*, Departmental Seminar in the School of Mechanical, Electrical and Manufacturing Engineering, Loughborough University, Loughborough UK, September 2019
57. 2019 *A Path Towards Intelligent Systems Leveraging Sensing, Data Analysis & Decision Making*, LeBow School of Business, Drexel University, March 2019
56. 2019 *Innovation in Construction Inspection: Drones*, Keynote presentation in 52nd Mid-Atlantic Quality Assurance Workshop, Washington DC, January 2019
55. 2018 *Linking Material Microstructure with Damage Diagnostics and Prognostics*, Engineering Science & Mechanics Department Seminar, Penn State University, September 2018
54. 2018 *The Behavior of Knitted Textiles through the Lens of Architected Materials*, IUTAM Symposium on Architected Materials Mechanics, Chicago, September 2018

53. 2018 *Material Structure-Processing-Properties-Behavior Relationships and their Role in Plasticity, Fatigue and Fracture*, Paris Tech University, Aix-en-Provence France, July 2018
52. 2018 *Knitted Textiles as 3D Architected Materials*, Tsinghua University, Beijing China, July 2018
51. 2018 *Linking Failure Diagnostics with Prognostics Using Integrated Mechanics*, Tianjin University, Tianjin China, July 2018
50. 2018 *Plasticity, Fracture and Fatigue of Advanced Alloys using Evolving Structure-Processing-Properties-Behavior Relationships*, Tianjin University, Tianjin China, July 2018
49. 2018 *A Path Towards Understanding of Multiscale and Evolving Material Structure-Properties-Relationships*, Materials Science and Engineering Department Seminar, University of Texas at Arlington, February 2018
48. 2018 *Data-driven Modeling of Strain Localizations in Fatigue*, Plasticity'18 conference, Puerto Rico, January 2018
47. 2017 *A Mechanics Perspective in Understanding Incubation and Initiation of Ductile Fracture*, Mechanical Engineering Department Seminar, University of Utah, September 2017
46. 2017 *Microstructure-Sensitive Nondestructive Evaluation coupled with Machine Learning Algorithms as a Bridger between Diagnostics & Prognostics*, ASME SMASIS 2017, Snowbird UT, September 2017
45. 2017 *From Diagnostics to Intelligent Prognostics Via Integrated Nondestructive Evaluation*, AAS&T Meeting, Phoenix AZ, May 2017
44. 2017 *Fatigue Damage Diagnostics and Prognostics via Microstructure-sensitive Acoustic Emission*, Acoustic Emission Working Group-59, Seattle WA, May 2017
43. 2017 *Computational Modeling of Knitted Textiles using the Finite Elements Method*, Penn State University, March 2017
42. 2017 *An Integrated Materials & Mechanics Approach to Link Diagnostics to Prognostics*, U.S. Naval Research Laboratory, March 2017
41. 2017 *Nondestructive Evaluation as a link between Fatigue Diagnostics and Prognostics*, TMS 2017, San Diego CA, March 2017
40. 2017 *3D Knitted Textile Metamaterials: A new type of architected materials with revolutionary potential*, Aerospace and Mechanical Engineering Departments Seminar, CALTECH, January 2017
39. 2017 *On Stochastic Events in Multiscale Fracture & Plasticity via Multimodal Nondestructive Evaluation*, Abrupt, Stochastic Events in Fracture and Plasticity, Plasticity'17 conference, Puerto Vallarta (Mexico), January 2017
38. 2017 *Particle Fracture Effects in Microplasticity & Damage of Aluminum Alloys*, Damage & Ductile Fracture Symposium, Plasticity'17 conference, Puerto Vallarta (Mexico), January 2017
37. 2016 *Diagnostics and Prognostics for Vibrating structures based on Microstructure-sensitive-based Damage Precursors*, ASME IMECE 2016, Houston, TX
36. 2016 *From Diagnostics to Prognostics: a Perspective through the Lens of Mechanics of Materials & Structures*, Aerospace Engineering Department Seminar, University of Illinois at Urbana-Champaign, October 2016

35. 2016 *Computational Modeling of Microstructure-dependent Strain Localizations in Magnesium Alloys*, Small Scale Plasticity and Microstructural Evolution Symposium, Plasticity'16 conference, Kona (HI), January 2016
34. 2016 *Microstructure-Sensitive Fatigue via Multiscale Experimental Mechanics & Multimodal Characterization*, Symposium in honor of Huseyin Sehitoglu, Plasticity'16 conference, Kona (HI), January 2016
33. 2015 *Understanding the Multiscale Mechanical Behavior of Knitted Textile Architectures*, Department of Fiber Science and Apparel Design Seminar, Cornell University, Ithaca (NY), November 2016
32. 2015 *RVE Size Definition for Knitted Textile Architectures*, Presentation in Society of Engineering Science (SES) Meeting 2015, College Station (TX), October 2015
31. 2015 *Multiscale Mechanics Coupled with Multimodal NDE for Damage Diagnostics & Prognostics*, Structural Engineering Departmental Seminar, San Diego (CA), May 2015
30. 2015 *The Challenges of Acoustic Emission in Diagnostics & Prognostics*, AEWG-57 Meeting, University of Illinois Chicago, May 2015
29. 2015 *Microstructure-Sensitive Fatigue using Multimodal Nondestructive Evaluation*, Johns Hopkins University, Civil Engineering Graduate Seminar, Baltimore (MD), April 2015
28. 2015 *Monitoring and Quantification of Twinning in Magnesium Alloys using Multiscale Strain Measurements*, International Journal of Plasticity Conference, Montego Bay, Jamaica, January 2015
27. 2014 *Microstructure-sensitive Mechanical Behavior Characterization of Magnesium Alloys*, Ameritech Symposium on Material Property Identification, The University of Texas at Austin, Austin (TX), December 2014
26. 2014 *Identification of Fatigue Precursors via Quantitative Nondestructive Evaluation*, 51st Society of Engineering Science (SES) Technical Meeting, Purdue University, West Lafayette (IN), October 2014
25. 2014 *Identification of Fatigue Precursors in Magnesium Alloys*, Department of Mechanical, Engineering, Departmental Seminar, Texas A&M, College Station (TX), June 2014
24. 2014 *Microstructure-sensitive Plasticity and Fatigue of Magnesium Alloys*, NASA Langley Research Center, Hampton (VA), May 2014.
23. 2014 *Microstructure-sensitive Fatigue via Multimodal Nondestructive Evaluation*, Georgia Tech, The George W. Woodruff School of Mechanical Engineering, Departmental Seminar, Atlanta (GA), May 2014.
22. 2014 *Microstructure-sensitive Fatigue Using a Quantitative NDE Approach*, TMS 2014, San Diego (CA), February 2014.
21. 2013 *Multimodal Non-destructive Evaluation Approach for Damage Quantification*, 9th International Workshop on Structural Health Monitoring, Stanford Univ., September 2013
20. 2013 *In situ Fatigue Monitoring in Mg Alloys: A quantitative NDE approach*, TMS 2013, San Antonio (TX), March 2013.
19. 2013 *Quantitative Nondestructive Evaluation: An Applied Mechanics Perspective*, Rensselaer Polytechnic Institute, Department of Mechanical, Aerospace and Nuclear Engineering, Departmental Seminar, Troy (NY), February 2013.

18. 2012 *In situ and scale-bridging damage quantification using novel non-destructive testing approaches*, ASME IMECE 2012, Houston (TX), November 2012
17. 2012 *Use of Digital Image Correlation in Nondestructive Testing, Mechanical Behavior Characterization and Data-driven Modeling*, Trilion Optical Metrology Conference, September 2012
16. 2012 *Identification of microstructure-properties-behavior relations in advanced materials using novel nondestructive testing approaches*, Purdue University, School of Aeronautics and Astronautics, Departmental Seminar, West Lafayette (IN), September 2012
15. 2012 *A novel framework for scale-bridging characterization of materials mechanical behavior using Acoustic Emission*, AEWG 54, Princeton (NJ), May 2012
14. 2012 *Scale-bridging fatigue monitoring in Magnesium Alloys*, TMS 2012, Orlando (FL), March 2012
13. 2012 *Deformation and damage monitoring in advanced materials using novel nondestructive testing approaches*, Mechanical Engineering Dept. seminar, Villanova University, Philadelphia (PA), February 2012
12. 2011 *On the identification of deformation and damage mechanisms in advanced composites using integrated nondestructive testing & evaluation approaches*, McMAT 2011, Chicago (IL), May 2011
11. 2011 *Microstructure-properties relations in advanced materials using modern NDT&E approaches*, ASNT AEWG Meeting, Denver (CO), May 2011
10. 2011 *Monitoring and characterization of the fatigue response of nanocrystalline Mg composites reinforced with Ti_2AlC* , TMS 2011, San Diego (CA), March 2011
9. 2010 *Multiscale characterization of mechanical properties and quantification of property-structure relations in nanocrystalline Mg-matrix composites*, 2010 ASME IMECE, Vancouver, Canada, November 2010
8. 2010 *Grain Size Effect on the Fatigue Response of Nanocrystalline Magnesium Composites Reinforced with MAX Phases*, 9th HSTAM International Congress on Mechanics, Limassol Cyprus, July 2010
7. 2008 *Theoretical and Computational Modeling of Domain Evolution in Ferroelectric Crystals with Dislocations*, University of Texas at Austin, Austin (TX), May 2009
6. 2009 *Modeling of Advanced Materials: A Broad Perspective*, Department of Mechanical Engineering & Mechanics, Drexel University, Philadelphia (PA), May 2009
5. 2009 *Theoretical and Computational Modeling of Advanced Materials*, Department of Mechanical Engineering, Texas Tech University, Lubbock (TX), May 2009
4. 2009 *Modeling of Advanced Materials: A Broad Perspective*, Department of Aerospace Engineering, Texas A&M University, College Station (TX), April 2009
3. 2009 *Theoretical and Computational Modeling of Ferroelectric Materials*, Engineering Science & Mechanics Department, Virginia Tech, Blacksburg (VA), April 2009
2. 2007 *Polymer Nanocomposites Characterization by a Stochastic Finite Elements Representation*, Mechanical Engineering & Aeronautics Department, University of Patras, Greece, September 2007

1. 2007 *Modeling of Mechanical Properties of Polymer Nanocomposites Using a Multiscale Stochastic Finite Element Method*, Institute of Structural Analysis, TU Dresden, Dresden, Germany, March 2007

8. Teaching Activities

8.1 Courses developed and taught at Drexel University

ENG 101: Freshman Design I	2015 – 2016
ENG 102: Freshman Design II	2015 – 2016
ENG 103: Freshman Design III	2015 – 2016
ENG 113: Digital Design & Advanced Manufacturing	2019 –
MEM 202: Engineering Mechanics: Statics	2013 –
MEM 331: Experimental Mechanics	2016 –
MEM 423: Mechanics of Vibrations	2016 –
MEM 427: Finite Element Method	2017 –
MEM 591: Applied Engineering Analysis I	2009 – 2016
MEM 592: Applied Engineering Analysis II	2009 – 2016
MEM 593: Applied Engineering Analysis III	2009 – 2016
MEM 678: Nondestructive Evaluation Methods	2011 –

8.2 Independent study courses

MEM 699: NDT&E of Materials and Structures	2010
MEM 699: Advanced Computational Mechanics	2011, 2016
MEM 699: Damage Detection & Prognosis	2011 – 2016
MEM 699: Numerical Methods in Biomechanics	2014
MEM 699: IoT for Damage Detection	2021
ECEE 499: GUI Development IIoT Applications	2021
ECEE 499: Applied Internet of Things	2021

8.3 Vertically Integrated Projects

ENGR 370: Advanced Manufacturing	2018 – 2020
ENGR 370: Internet of Things for Structural Health Monitoring	2018 – 2020
ENGR 370: Drones in Engineering	2019 – 2020
ENGR 370: Fighting Spotted Lanternfly	2020 – 2021

8.4 Education & Outreach Activities

Founder and Director, RISE @ Drexel	2013 – 2016
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9. Service Activities

9.1 Service to the Department (Mechanical Engineering & Mechanics)

Member of Mechanics & Structures Committee	2009 –
Member of MATH & Simulation Content Committee	2010 – 2011
Member of Computational Infrastructure Committee	2010 – 2011
Member of Software Committee	2010 – 2011
Member of Academic Support Committee	2011 – 2013
Chair of the Academic Support Committee	2018 – 2021
Member of Faculty Search Committee	2012 – 2013
Senior Design Task Force	2014 – 2015

Member of Faculty Search Committee	2016 – 2017
Member of Undergraduate Curriculum Committee	2016 – 2017
Chair of Student Affairs Committee	2013 – 2016
Member of Laboratory Committee	2013 – 2018
ASME Drexel Section Faculty Advisor	2010 – 2020
Pi Tau Sigma Drexel Section Faculty Advisor	2010 –
9.2 Service to the College of Engineering	
Dean’s Junior Faculty Advisory Committee	2011 – 2012
Faculty Committees for PhD Candidacy, Proposals and Defenses	2009 –
Committee on CoE Research Operating Plan	2014 –
Core Curriculum Implementation Group	2015 –
Freshman Design Task Force	2016
Computational Engineering Minor Committee	2016
Advanced Manufacturing Working Group	2016 – 2018
KEEN Fellows in COE	2021 –
9.3 Service to the University	
Research Day Judge	2011 –
Provost’s NSF Bridge to Doctorate Advisory Committee	2013 –
Steinbright Faculty Advisory Committee	2013 –
President Fry’s Steering Committee on Learning Space Project	2014 – 2015
University Research Computing Facility Board	2016 – 2021
Faculty Senate	2020 –
9.4 Service to the Community	
Community College of Philadelphia, Engineering Sc.&Tech Adv. Com.	2010 –
ASME Philadelphia Section Executive Committee member & Chair	2010 –
Pi Tau Sigma National Office Vice-President at Large	2013 –
ASME Applied Mechanics Division Symposium Organizer	2011
TMS Mechanical Behavior of Materials Committee	2012 –
Pi Tau Sigma/ASME Joint Awards Committee Chair	2014 – 2019
Acoustic Emission Working Group (AEWG) Vice President	2019 –

10. Professional Activities

- Conference: (i) Organizer:** Symposium of *Fatigue in Materials*: TMS 2021 (Virtual), TMS 2020 (San Diego, CA), TMS 2019 (San Antonio, TX), TMS 2018 (Phoenix, AZ), TMS 2017 (San Diego, CA), TMS 2016 (Nashville, TN), TMS 2015 (Orlando, FL, March 2015), TMS 2014 (San Diego CA, February 2014), TMS 2013 (San Antonio TX, March 2013), Session in *Knit Modeling*: The Fiber Society 2016 Fall Meeting and Technical Conference (Cornell University, Ithaca NY), 58th Acoustic Emission Working Group (Drexel University, Philadelphia PA), *Precursor to Damage State Quantification in Materials* in SES 2014 (Purdue University, October 2014), *Nondestructive Evaluation & Structural Health Monitoring for Composites* in ACS 2014 (UCSD, San Diego, September 2014), *Innovations in Structural Health Monitoring*, ICOSAR 2013 (New York, NY, June 2013), *Behavior of Composite Materials and Structures: Experimental Testing, Sensing and Computational Modeling*, McMAT 2011 (Chicago IL, June 2011), **(ii) Chairman:** *Materials Characterization using Acoustic Emission* (AEWG 54, Princeton NJ, May 2012), *Fatigue and Corrosion Damage in*

Metallic Materials: Fundamentals, Modeling and Prevention: Fatigue Property-Microstructure Relationships and Crack Growth, TMS 2012 (Orlando FL, March 2012) and TMS 2011 (San Diego CA, March 2011), *Nanomechanics*, HSTAM 2010, (Limassol Cyprus, July 2010), *Phase Field Modeling of Ferroelectrics Session*, SPIE Smart Structures/NDE 2010 (San Diego CA, March 2010).

- Editorial Board for the following international journals: i) ASME Journal of Engineering Materials and Technology, ii) Fatigue and Fracture of Engineering Materials and Structures (Wiley), Theoretical & Applied Fracture Mechanics (Elsevier), iv) Designs (MDPI)
- Reviewer for the following International Journals: Archives of Applied Mechanics, Composites Part B, Computer, Materials & Continua, Computational Materials Science, Fatigue and Fracture of Engineering Materials & Structures, International Journal of Non-Linear Mechanics, Journal of Applied Mechanics, Journal of Composite Materials, Journal of Intelligent Material Systems and Structures, Journal of Nanomaterials, Journal of Nanoparticle Research, Journal of Zhejiang University-Science A, Journal of Pressure Vessel Technology, Mechanical Systems and Signal Processing, Metallurgical and Materials Transaction A, Probabilistic Engineering Mechanics Journal.
- Member of the: American Society of Mechanical Engineers (ASME), American Society for Nondestructive Testing (ASNT), The Minerals, Metals & Materials Society (TMS), Sigma Xi Society, Rice University Engineering Alumni, Onassis Foundation Scholarship Recipient Association, Greek Society of Computational Mechanics. Vice-Chair for the ASME Philadelphia Section and Vice-President at Large of the National Office of Pi Tau Sigma (Mechanical Engineering Honors Society).
- Advisor: Engineering & Science Advisory Committee at Community College of Philadelphia, ASME, Pi Tau Sigma and Drexel Soccer Student Chapters at Drexel University.

11. Post-Doc & Student Supervision

11.1 Post-doctoral Fellow Supervision

Dr. Pablo Huang Zhang	08/2019 –
Dr. Brian Wisner (now Faculty in Ohio University)	10/2017 – 12/2018
Dr. Konstantinos Baxevanakis (now Faculty in Loughborough, UK)	10/2014 – 03/2017

11.2 Students Supervised to Completion by A. Kotsos (Primary or co-Advisor)

Graduated 13 PhD students (11 as primary and 2 as co-advisor) and 12 Masters to date

Sara Schenker PhD, Mechanical Engineering. & Mechanics, Drexel U.	2021
<i>Data-Driven Computational Modeling of Plasticity-Induced Damage Effects</i>	
Mohammadreza Bahadori PhD, Mech. Eng. & Mechanics, Drexel U.	2021
<i>Progressive Failure Modeling of Composite Materials Leveraging Multiscale Non-Destructive Evaluation Data</i>	
Melvin Mathew PhD, Mechanical Eng. & Mechanics, Drexel U.	2020
<i>Speckle Patterns for Tailorable & Multiscale Optical Metrology Measurements</i>	
Rami Carmi PhD, Mat. Sci. & Eng., Ben-Gurion Univ. of the Negev, Israel	2019
<i>Damage evaluation in GLARE laminate composite during quasi-static and fatigue model of loading using advanced NDT techniques and micromechanics modeling</i>	
Krzysztof Mazur, MS, Mechanical Engineering & Mechanics, Drexel U.	2019
<i>An Internet of Things Sensing Framework for Dynamic Damage Predictions in Materials & Structures</i>	
Shane Esola, PhD, Mechanical Engineering & Mechanics, Drexel U.	2019
<i>Nondestructive Approach for Defect Detection in Hard Armor Protective Inserts</i>	

Dani Liu, PhD, Mechanical Engineering & Mechanics, Drexel U. <i>Computational Mechanics of Knitted Textiles</i>	2018
Daniel Christe, MS, Mechanical Engineering & Mechanics, Drexel U. <i>Integrated Design of 3D Architected Materials</i>	2018
Matthew S. Brown, MS, Mechanical Engineering & Mechanics, Drexel U. <i>Automated Conversion of 3D Point Clouds to Solid Geometrical Computer Models</i>	2018
Vignesh Perumal, MS, Mechanical Engineering & Mechanics, Drexel U. <i>Computational Modeling of Fracture and Associated Wave Propagation in Precipitate-Hardened Aluminum Alloys</i>	2018
Mustafa Oncul, MS, Mechanical Engineering & Mechanics, Drexel U. <i>Mechanical Behavior Characterization of Knitted Textiles</i>	2017
Chengyang Mo, MS, Mechanical Engineering & Mechanics, Drexel U. <i>Direct Monitoring and Quantification of Deformation Twinning in Magnesium Alloys</i>	2017
Brian Wisner, PhD, Mechanical Engineering & Mechanics, Drexel U. <i>Damage Precursor Identification via Microstructure-Sensitive Nondestructive Evaluation</i>	2017
Andrew Ellenberg, PhD, Mechanical Engineering & Mechanics, Drexel U. <i>Structural Health Monitoring using Unmanned Aerial Systems</i>	2017
Nestor Castaneda, MS, MEM, Drexel University <i>Investigation of the Z-binder Role in Progressive Damage of 3D Woven Composites</i>	2015
Md. Fuad Khan, PhD, Civil Archit. and Environmental Eng., Drexel U. (Co-advisor) <i>Multi-Sensing NDT Approaches for Inspection of Structural Components</i>	2015
Jefferson Cuadra, PhD, Mechanical Engineering & Mechanics, Drexel U. <i>A Computational Modeling Approach of Fracture-Induced Acoustic Emission</i>	2015
Mike Cabal, MS, Mechanical Engineering & Mechanics, Drexel U. <i>Microstructurally-driven Investigation of Strain Localization in Wrought Magnesium Alloys</i>	2015
Mohamed Shamma, PhD, Materials Science & Engineering, Drexel U. (Co-advisor) <i>On Buckling, King Boundaries and Kinking Nonlinear Elastic Solids</i>	2014
Prashanth A. Vanniamparambil, PhD, Mech. Eng. & Mechanics, Drexel U. <i>Cross-validated Nondestructive Evaluation using Acoustic Emission</i>	2014
Kavan Hazeli, PhD, Mechanical Engineering & Mechanics, Drexel University <i>Microstructure-Sensitive Plasticity and Fatigue of Magnesium Alloys</i>	2014
Satish Rajaram, MS, MEM, Drexel University <i>Use of Infrared Thermography in a Data Fusion Framework for Thermal and Damage Property Quantification</i>	2013
Jefferson Cuadra, MS, MEM, Drexel University <i>Damage Quantification in Fiber Reinforced Polymer Composites Using a Hybrid Non-destructive Testing Approach</i>	2012
Raghavendra Saralaya, MS, Mechanical Engineering & Mechanics, Drexel U. <i>In-Situ Grain Scale Strain Measurements Using Digital Image Correlation</i>	2012
Daniel Servansky, MS, Mechanical Engineering & Mechanics, Drexel University <i>A Novel Approach to Data-drive Modeling of Damage-Induced Elastic Wave Propagation</i>	2012

11.3 Ongoing PhD Students supervised

Vignesh Perumal	exp. 2022
Emine Tekerek	exp. 2022
Sarah Malik	exp. 2024
Hadi Khezam	exp. 2024

11.4 Ongoing Undergraduate Students

Dhruv Shah, Griffin Coolidge, Toby Sullivan, Laswinth Suresh, Abby Sofia Pollock

11.5 PhD Dissertation Defenses Committees

Andy Mo, PhD, Mechanical Engineering, University of Pennsylvania	2020
Richard J. Vallett, PhD, MEM/ECE-CFF, Drexel U. <i>A Differential Capacitive Touch Sensing Systems for Knitted Textiles</i>	2019
Fadi Althoey, PhD, Civ., Arch. and Environmental Eng. (CAEE), Drexel U. <i>Understanding and Mitigating Damage Development in Cementitious Materials Exposed to Sodium Chloride</i>	2019
Divya Pathak, Electrical & Computer Engineering (ECE), Drexel U. <i>SMART Grid on Chip: Infusing intelligence to on-chip energy management</i>	2018
Jeffrey C. Kahn, Jr., PhD, Mechanical Engineering & Mechanics, Drexel U. <i>Distributed sensing in flexible fins for propulsive force prediction and underwater contact sensing</i>	2016
Justin P. Giriggs, PhD, Materials Science & Engineering (MSE), Drexel U. <i>Investigation of the Reversible Hysteresis Effect in Hexagonal Metal Single Crystals and the MAX Phases</i>	2015
Darin Tallman, PhD, Materials Science & Engineering (MSE), Drexel U. <i>On the Potential of MAX Phases for Nuclear Applications</i>	2015
Babak Anasori, PhD, Materials Science & Engineering (MSE), Drexel U. <i>Fabrication and Mechanical Properties of Magnesium Alloy Composites Reinforced with TiC and Ti₂AlC Particles</i>	2014
Ying Teng, PhD, Electrical & Computer Engineering (ECE), Drexel U. <i>Low Power Resonant Rotary Global Clock Distribution Network Design</i>	2014
Haibo Gong, PhD, Mechanical Engineering & Mechanics (MEM), Drexel U. <i>Innovative Design, Manufacturing and Characterization of Biodegradable Metals for Surgical Implants</i>	2014
Jephte Augustin, PhD, MEM, Drexel U. <i>Engineering a Bioactive Interference Screw for Accelerated Rehabilitation in ACL Reconstruction</i>	2013
T. William Mather, PhD, MEM, Drexel University <i>An Ensemble Approach Towards Dynamics Task Assignment for Many Robot Systems</i>	2013
Jeff S. Weidner, PhD, Civil, Arch. and Environmental Eng., Drexel U. <i>Structural Identification of a Complex Structure using both Conventional and Multiple Model Approaches</i>	2012
John B. Prader, PhD, CAEE, Drexel U. <i>Rapid Impact Modal Testing for Bridge Flexibility: Towards Objective Evaluation Of Infrastructures</i>	2012
Chris Geisler, PhD, MEM, Drexel U. <i>A Thermosensitive and Photocrosslinkable Composite Polymer Study for</i>	2011

<p><i>3-D Soft Tissue Scaffold Printing</i> Tony Fast, PhD, MSE, Drexel U.</p>	2011
<p><i>Developing Higher-Order Materials Knowledge Systems</i> Stephen Niezgodra, PhD, MSE, Drexel U.</p>	2011
<p><i>Stochastic Representation of Microstructure via Higher-Order Statistics</i></p>	
<p>11.6 Undergraduate student advising</p>	
<p>Senior design team: Venkat Iyer, John O’Driscoll, Mary Potvin, Hashir Ahman (Mechanical and Electrical engineering) <i>Novel Class-room Mechanical Testing Device Using Digital Image Correlation</i></p>	2011 – 2012
<p>Senior design team: Lara Branco, Andrew Ellenberg, Alison Krick (Mechanical Engineering) <i>Unmanned Aerial Vehicle for Infrastructure Evaluation</i></p>	2012 – 2013
<p>Senior design team: Utku Guclu (Materials Engineering) <i>Monitoring and Identification of Progressive Damage in Fiber Metal Laminates using NDT (Non Destructive Testing)</i></p>	2012 – 2013
<p>Senior design team: Sadaf Bahaza, Jeremy Monteiro, Harold Montilla, Aditi Ramadurgakar (Mechanical & Materials Engineering) <i>Multispectral & Multiscale Optical Methods for Structural Health Monitoring</i></p>	2013 – 2014
<p>Freshman design team: Jacob Zeitzew, Eric Hegnes (Mechanical Engineering) <i>Remote Structural Analysis Utilizing Optical Heads Up Displays and Unmanned Aerial Systems</i></p>	2013 – 2014
<p>Senior design team: J. Allen, L. Castro, H. Donovan, J. Swearer, M. Tabbut (Mechanical Engineering) <i>Novel Unmanned Aerial System for Structural Engineering Applications</i></p>	2014 – 2015
<p>Freshman design team: R. Baran, K. Mazur, N. Deleon, J. Boatwright, J. Boyal (Mechanical Engineering) <i>Manufacturing & Characterization of Damage in Hard Armor Protective Insert Simulants</i></p>	2014 – 2015
<p>Senior design team: D. Shah, J. Xu, M. Rosli, (Mechanical Engineering) <i>Generative Design Framework of Engineering Structures</i></p>	2016 – 2017
<p>Senior design team: E. Prasalowicz, A. Miller, S. Swartz, M. Davis, N. Scarpato, (Mechanical Engineering) <i>Solar-Charged Umbrella</i></p>	2017 – 2018
<p>Senior design team: J. Alvarez, J. Blackmer, M. Chane, S. Krok, E. McDaniel (Mechanical Engineering) <i>Energy and Structural Monitoring of Buildings with Unmanned Aerial Systems</i></p>	2017 – 2018
<p>Senior design team: M. Matwiejczyk, N. Caruso, V. Schafer, T. Jonnalagadda (Mechanical Engineering) <i>Automated Inclinator Manufacturing</i></p>	2017 – 2018
<p>Senior design team: A. Aristov, J. Downing, P. Fitzgerald, C. Klawunn (Mechanical Engineering)</p>	2017 – 2018

<i>Redesigning of the Constant Level Oiler for Level Accuracy and Easy Level Adjustment</i>	
Freshman design team: S. Fong, E. Kirchgessner, K. Moynahan (Mechanical Engineering)	2017 – 2018
<i>Developing a Continuous Fiber-Reinforced 3D Printer Filament</i>	
Senior design team: S. Engel, A. Foley, M. Kelly, F. Regal, R. August (Mechanical Engineering)	2018 – 2019
<i>Drone & Augmented Reality Combined Operational System (MEM's 2nd place)</i>	
Senior design team: Z. Seither, M. Mohnack, J. Terek, A. Shayer (Mechanical Engineering)	2018 – 2019
<i>Automated ADA Curb Inspection (MEM's 1st place, COE's 2nd place)</i>	
Senior design team: J. Chang, O. Dugmeouglu, O. Messinger (Mechanical Engineering)	2018 – 2019
<i>Portable 3D Printer</i>	
Senior design team: A. Bui, A. Ruran, D. Fitzgerald, C. Rossino (Mechanical Engineering)	2018 – 2019
<i>Solar Paneled Highways</i>	
Senior design team: J. Gliva, M. Scotto di Vetta, M. Wenser, T. Opalski (Mechanical Engineering)	2019 – 2020
<i>Defect Detection System in an FDM 3D Printer</i>	
Senior design team: T. Candelaria, S. Ballard, R. Rouf, I. Shahriar, K. Desai (Mechanical Engineering & Electrical Engineering)	2019 – 2020
<i>Plug-n-Play IoT Device</i>	
Senior design team: A. Batista, Y. Diallo, A. Joseph, Z. Luckowski, A. Taylor (Mechanical Engineering & Electrical Engineering)	2020 – 2021
<i>Digitally Threading of the Design-for-Manufacturing Workflow</i>	

12. Collaborators in the past 5 years

- Advisors:** Chad Landis (*The University of Texas at Austin*), Pol D. Spanos (*Rice University*)
- Collaborators:** Agnew, Sean (*Univ. of Virginia*), Bartoli, Ivan (*Drexel Univ.*), Bayerlein, Irene (*UCSB*), Breen, David (*Drexel Univ.*), Carpick, Robert (*University of Pennsylvania*), Carrol, Jay (*Sandia NL*), Cole, Dan (*ARL*), Dasgupta, Abhijit (*Univ. of Maryland*), Dion, Genevieve (*Drexel Univ.*), El-Kadiri, Haitham (*Mississippi State Univ.*), Habtour, Ed (*ARL*), Hall, Asha (*ARL*), Halliday, Scott (*Navajo Tech. U.*), Haynes, Robert (*ARL*), Hochhalter, Jacob (*NASA Langley*), Koric, Seid (*University of Illinois at UC*), Niri, Ehsan (*New Mexico State*), Palmese, Giuseppe (*Drexel Univ.*), Pegguleryuz, Mihriban (*McGill University*), Ramesh, KT (*Johns Hopkins Univ.*), Rao, Prhalada (*U. Nebraska-Lincoln*), Spears, Ashley (*Univ. of Utah*).