

Curriculum Vitae

GARY DON SEIDEL, PH.D.

ASSOCIATE PROFESSOR

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EDUCATION

- Doctor of Philosophy**, Aerospace Engineering (2002-2007)
Texas A&M University, College Station, TX
Thesis Topic: *Micromechanics Modeling of the Multifunctional Nature of Carbon Nanotube-Polymer Nanocomposites*
Thesis Chair: Dr. Dimitris C. Lagoudas
Thesis Committee: Drs. J.N. Reddy, John Slattery, and James Boyd
Recipient, Sandia National Laboratories/Texas A&M University
Doctoral Fellowship in Engineering
- Master of Science**, Aerospace Engineering (1999-2002)
Texas A&M University, College Station, TX
Thesis Topic: *A Model for Predicting the Evolution of Damage in the Plastic Bonded Explosive LX17*
Thesis Chair: Dr. David H. Allen
Thesis Committee: Drs. Dimitris C. Lagoudas and J.N. Reddy
- Bachelor of Science**, Aerospace Engineering (1994-1999)
Texas A&M University, College Station, TX
Magna Cum Laude
- Diploma**, St. Thomas High School, Houston, TX (1990-1994)
Graduated top 3% of the Class of 1994

RESEARCH INTERESTS

- Micromechanics Analysis of Nanocomposites
- Damage Evolution using Cohesive Zone and Continuum Damage Models
- Bridging Atomistic and Continuum Length and Time Scales in Nanocomposites
- Multi-scale Modeling of Multifunctional Composites and Biomaterials
- Micromechanics of Materials with Time-Varying Effective Properties
- Meshless Computational Solid Mechanics for Dynamic Materials

PROFESSIONAL EXPERIENCE

- **Associate Professor** (2015-present)
Aerospace and Ocean Engineering Department,
Virginia Polytechnic Institute and State University
- **Interim Assistant Department Head for Academic Affairs** (2017-present)
Aerospace and Ocean Engineering Department,
Virginia Polytechnic Institute and State University
- **Assistant Professor** (2008-2015)
Aerospace and Ocean Engineering Department,
Virginia Polytechnic Institute and State University
- **Affiliate Faculty** (2011-present)
Engineering Science and Mechanics Department
Mechanical Engineering Department
Virginia Polytechnic Institute and State University
- **Postdoctoral Research Associate** (2007-2008)
Texas Institute of Intelligent Bio-Nano Materials and Structures for Aerospace Vehicles
(TiiMS), Aerospace Engineering Department, Texas A&M University
- **Graduate Assistant Research** (2002-2007)
Aerospace Engineering Department, Texas A&M University
- **Graduate Assistant Research** (1999-2002)
Aerospace Engineering Department, Texas A&M University
- **Graduate Student Intern** (Summer 2000)
Engineering Sciences Summer Institute, Sandia National Laboratories, Livermore, CA
- **Student Intern** (Summer 1999)
Science and Technology Outreach Program, Sandia National Laboratories, Albuquerque,
NM
- **Undergraduate Student Research Assistant** (1997-1999)
Aerospace Engineering Department, Texas A&M University

PUBLICATIONS

Refereed Journal Publications (32)

1. Y. Li and G.D. Seidel, 2018, Multiscale modeling of the interface effects in CNT-epoxy nanocomposites, *Computational Materials Science*, Vol 153, pp. 363-381
2. Adarsh K. Chaurasia, Andrew M. Rukangu, Michael K. Philen, Gary D. Seidel, and Eric C. Freeman, 2018, Evaluation of bending modulus of lipid bilayers using undulation and orientation analysis, *Physical Review E*, Vol 97, 032421-1-12
3. Naveen Prakash and Gary D. Seidel, 2018, Effects of microscale damage evolution on piezoresistive sensing in nanocomposite bonded explosives under dynamic loading via electromechanical peridynamics, *Modelling and Simulation in Materials Science and Engineering*, Vol 26, No 1, 015003-1-32.
4. Engin C. Sengezer and Gary D. Seidel, 2018, Structural health monitoring of nanocomposite bonded energetic materials through piezoresistive response, *AIAA Journal*, Vol 56, No 3, pp. 1225-1238.

5. Engin C. Sengezer, Gary D. Seidel, Robert J. Bodnar, 2017, Anisotropic piezoresistivity characteristics of aligned carbon nanotube-polymer nanocomposites, *Smart Materials and Structures*, Vol. 26, No. 9, 095027-1-24
6. Naveen Prakash and Gary D. Seidel, 2017, Computational electromechanical peridynamics modeling of strain and damage sensing in nanocomposite bonded explosive materials (NCBX), *Engineering Fracture Mechanics*, Vol. 177, pp 180-202
7. A.K. Chaurasia, G.D. Seidel, 2017, Computational micromechanics analysis of electron hopping and interfacial damage induced piezoresistive response in carbon nanotube-polymer nanocomposites subjected to cyclic loading conditions, *European Journal of Mechanics - A/Solids*, Vol. 64, pp 112-130
8. G. Domínguez-Rodríguez, A.K. Chaurasia, G.D. Seidel, A. Tapia, and F. Avilés, 2016, Hierarchical Multiscale Modeling Of The Effect Of Carbon Nanotube Damage On The Elastic Properties Of Polymer Nanocomposites, *Journal of Mechanics of Materials and Structures*, Vol. 12, No. 3, pp 263-287.
9. G. Dominguez-Rodriguez, A. Tapia, G.D. Seidel, F. Aviles, 2016, Influence of Structural Defects on the Electrical Properties of Carbon Nanotubes and Their Polymer Composites, *Advanced Engineering Materials*, In Press, DOI: 10.1002/adem.201600116.
10. Xiang Ren, Adarsh K. Chaurasia, and G. D. Seidel, 2016, Concurrent Multiscale Modeling of Coupling Between Continuum Damage and Piezoresistivity in CNT-Polymer Nanocomposites, *International Journal of Solids and Structures*, Vol. 96, pp. 340-354.
11. Adarsh K. Chaurasia, Engin C. Sengezer, Krishna K. Talamadupula, Stefan Povolny, Gary D. Seidel 2014 Experimental Characterization and Computational Modeling of Deformation and Damage Sensing Through the Piezoresistive Response of Nanocomposite Bonded Surrogate Energetic Materials, *Journal of Multifunctional Composites*, Vol. 2 No. 4, ISSN 2168-4286.
12. Naveen Prakash and Gary D. Seidel 2016 Electromechanical peridynamics modeling of piezoresistive response of carbon nanotube nanocomposites, *Computational Materials Science*, Vol. 113, pp. 154-170.
13. Y. Li and G.D. Seidel 2015 Multiscale modeling of functionalized interface effects on the effective elastic material properties of CNT-polyethylene nanocomposites, *Computational Materials Science* Vol. 107 pp. 216-234.
14. Xiang Ren, Adarsh Chaurasia, Andres Oliva-Aviles, Jose de Jesus Ku-Herrera, Gary Seidel, Francis Aviles 2015 Modeling of Mesoscale Dispersion Effect on the Piezoresistivity of Carbon Nanotube-Polymer Nanocomposites via 3D Computational Multiscale Micromechanics Methods, *Smart Materials and Structures*, Vol. 24 No 6 pp. 065031.
15. Xiang Ren, Josh Burton, Gary D. Seidel, Khalid Lafdi 2015 Computational Multiscale Modeling and Characterization of Piezoresistivity in Fuzzy Fiber Reinforced Polymer Composites, *International Journal of Solids and Structures* Vol 54 pp 121-134.
16. A.K. Chaurasia, X. Ren, and G.D. Seidel 2014 Computational Micromechanics Analysis of Electron Hopping and Interfacial Damage Induced Piezoresistive Response In Carbon Nanotube-Polymer Nanocomposites, *Smart Materials and Structures* Vol 23 No 7 p 075023-1-23.
17. Engin Cem Sengezer, Gary D. Seidel, and Robert J. Bodnar 2015 Phenomenological Characterization of Fabrication of Aligned Pristine-SWNT and COOH-SWNT

- Nanocomposites via Dielectrophoresis Under AC Electric Field, *Polymer Composites* Vol. 36 Iss. 7 pp. 1266-1279.
18. Yumeng Li and Gary D Seidel 2014 Multiscale Modeling of the Effects of Nanoscale Load Transfer on the Effective Elastic Properties of Unfunctionalized Carbon Nanotube-Polyethylene Nanocomposites, *Modelling and Simulation in Materials Science and Engineering* Vol 22 pp 25023-1-28.
 19. A.I. Oliva-Aviles, F. Aviles, V. Sosa, G.D. Seidel 2014 Dielectrophoretic modeling of the dynamic carbon nanotube network formation in viscous media under alternating current electric fields, *Carbon* Vol 69 pp 342-354.
 20. A. K. Chaurasia, G. D. Seidel 2014 Computational micromechanics analysis of electron hopping induced conductive paths and associated macroscale piezoresistive response in carbon nanotube-polymer nanocomposites, *Journal of Intelligent Material Systems and Structures*, November 2014 vol. 25 no. 17 pp. 2141-2164.
 21. Xiang Ren and Gary D Seidel 2013 Computational micromechanics modeling of piezoresistivity in carbon nanotube-polymer nanocomposites, *Composite Interfaces* Vol 20 Iss 9 pp 693-720.
 22. J J Ku-Herrera, F Aviles and G D Seidel 2013 Self-sensing of elastic strain, matrix yielding and plasticity in multiwall carbon nanotube/vinyl ester composites *Smart Materials and Structures* 22 085003-1-7
 23. Xiang Ren and Gary D. Seidel 2013 Computational micromechanics modeling of inherent piezoresistivity in carbon nanotube-polymer nanocomposites *Journal of Intelligent Material Systems and Structures* Vol. 24, Iss. 12 pp. 1459-1483
 24. A.I. Oliva-Aviles, F. Aviles, G.D. Seidel, V. Sosa. 2013 On the contribution of carbon nanotube deformation to piezoresistivity of carbon nanotube/polymer composites *Composites Part B: Engineering* 47 200-206
 25. G. Chatzigeorgiou, G.D. Seidel, D.C. Lagoudas 2012 Effective mechanical properties of “fuzzy fiber” composites. *Composites Part B: Engineering*, Vol. 43, Iss. 6 pp. 2577-2593.
 26. G.D. Seidel and A.-S. Puydupin-Jamin 2011 Analysis of clustering, interphase region, and orientation effects on the electrical conductivity of carbon nanotube-polymer nanocomposites via computational micromechanics. *Mechanics of Materials*, 43, 755-774.
 27. G.D. Seidel and D.C. Lagoudas. 2009. A micromechanics model for the electrical conductivity of nanotube-polymer nanocomposites. *Journal of Composite Materials*, 43, No 9, 917-941.
 28. G.D. Seidel and D.C. Lagoudas. 2008. A micromechanics model for the thermal conductivity of nanotube-polymer nanocomposites. *Journal of Applied Mechanics*, 75, No 4, 041025-1-9.
 29. D. C. Hammerand, G. D. Seidel and D. C. Lagoudas. 2007. Computational Micromechanics of Clustering and Interphase Effects in Carbon Nanotube Composites. *Mechanics of Advanced Materials and Structures* 14 277–294.
 30. G.D. Seidel and D.C. Lagoudas. 2006. Micromechanical analysis of the effective elastic properties of carbon nanotube reinforced composites. *Mechanics of Materials* 38 884-907.
 31. Y.-R. Kim, D.H. Allen, and G.D. Seidel. 2006. Damage-Induced modeling of elastic-viscoelastic randomly oriented particulate composites. *ASME Journal of Engineering Materials and Technology* 128 18-27.

32. G.D. Seidel, D.H. Allen, K.L.E. Helms, and S.E. Groves. 2005. A model for predicting the evolution of damage in viscoelastic particle-reinforced composites. *Mechanics of Materials* 37 163-178

Papers in Conference Proceedings (51)

1. Nishant Shirodkar, Samantha Rocker, Gary Seidel, "Structural Health Monitoring of Solid Rocket Propellants using Piezo-resistive properties of Dispersed Carbon Nano-tube Sensing Networks", ASME 2018 SMASIS Conference on Smart Materials, Adaptive Structures and Intelligent Systems in Session 1-7 Piezoelectrics and Piezoresistive Materials, San Antonio, Texas, USA, 10 - 12 September, 2018 (SMASIS2018-8250)
2. Nishant Shirodkar, Samantha Rocker, Tanner McCoy, Gary Seidel, "Electro-Mechanical Response of Polymer Bonded Energetic Materials with CNT Sensing Networks for Structural Health Monitoring", Proceedings Paper for the 2018 SEM Annual Conference and Exposition on Experimental and Applied Mechanics, Greenville, South Carolina, USA, 4 -7 June, 2018 (492-sen)
3. K. Talamadupula and G. Seidel, "Multiscale Modeling of Effective Piezoresistivity and Implementation of Non-Local Damage Formulation in Nanocomposite Bonded Explosives", Proceedings Paper for the 59th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech 2018, Kissimmee, Florida, USA, 8 - 12 January, 2018 (AIAA-2018-0903)
4. Samantha Rocker, Timothy Wade Pearrell, Engin Sengezer, Gary Seidel, "Electro-Thermal Response of Polymer-Bonded Explosives for Structural Health Monitoring of Energetic Materials", ASME 2017 SMASIS Conference on Smart Materials, Adaptive Structures and Intelligent Systems in Session 1-7 Multifunctional Composites III, Snowbird, Utah, USA, 18 - 20 September, 2017 (SMASIS2017-3869)
5. Engin C. Sengezer, Gary D. Seidel, "Application of Piezoresistive Nanocomposite Binders for Real Time Embedded Sensing of Strain and Damage in Energetic Materials", Proceedings Paper for the 58th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech 2017, Grapevine, Texas, USA 9 - 13 January, 2017 (AIAA 2017-0122)
6. Krishna Kiran Talamadupula, Adarsh K. Chaurasia, Gary D. Seidel, "Multiscale Modeling of Effective Piezoresistivity and Damage Response in Nanocomposite Bonded Explosives", Proceedings Paper for the 58th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech 2017, Grapevine, Texas, USA, 9 - 13 January, 2017 (AIAA 2017-0348)
7. Naveen Prakash, Gary D. Seidel, "Coupled Electromechanical Peridynamic Modeling of Strain and Damage Sensing in Granular Energetic Materials", Proceedings Paper for the 58th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech 2017, Grapevine, Texas, USA, 9 - 13 January, 2017 (AIAA 2017-0126)
8. Adarsh Chaurasia and Gary Don Seidel, "Modeling Nanocomposite Piezoresistive Response With Electromechanical Cohesive Zone Material Point Method", ASME 2016 SMASIS Conference on Smart Materials, Adaptive Structures and Intelligent Systems in

- Session 2-10 Piezo Resistive Materials and Devices, Stowe, Vermont, USA, 28 - 30 September, 2016 (SMASIS2016-9236)
9. Naveen Prakash and Gary Seidel, "Coupled Electromechanical Peristatic Simulation of Deformation and Damage Sensing in Granular Materials", ASME 2016 SMASIS Conference on Smart Materials, Adaptive Structures and Intelligent Systems in Session 2-10 Piezo Resistive Materials and Devices, Stowe, Vermont, USA, 28 - 30 September, 2016 (SMASIS2016-9235)
 10. Krishna Talamadupula, Adarsh Chaurasia, and Gary Seidel, "2-Scale Hierarchical Multiscale Modeling of Piezoresistive and Damage Response in Polymer Nanocomposite Bonded Explosive", ASME 2016 SMASIS Conference on Smart Materials, Adaptive Structures and Intelligent Systems in Session 2-10 Piezo Resistive Materials and Devices, Stowe, Vermont, USA, 28 - 30 September, 2016 (SMASIS2016-9234)
 11. Engin C. Sengezer and Gary D. Seidel, "In-situ Sensing of Deformation and Damage in Nanocomposite Bonded Surrogate Energetic Materials", Proceedings Paper for the SEM XIII International Congress, Orlando, Florida, USA, 6-9 June, 2016 (449-sen).
 12. Engin C. Sengezer and Gary D. Seidel, "Real time In-situ Sensing of Damage Evolution in Nanocomposite Bonded Surrogate Energetic Materials", Proceedings Paper for the SPIE Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring Conference, Behavior and Mechanics of Multifunctional Materials and Composites 2016, Las Vegas, Nevada, USA, 21-23 March, 2016
 13. D. Seifert, M. Patil, G. Seidel, and G. Reich, "Multi-Functional Topology Optimization of Nanocomposite Beams", Proceedings Paper for the 57th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech 2016, San Diego, California, USA, 4-8 January 2016, (AIAA-2016-1173)
 14. K. Talamadupula, S. Berry, J. O'Donnell, G. Seidel, B. Goodell, "Experimental Characterization and Computational Analysis of Mode I Fracture Toughness of a Nanocellulose Z-Pin Reinforced Carbon Fiber Laminate", Proceedings Paper for the 57th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech 2016, San Diego, California, USA 4-8 January 2016, (AIAA-2016-0937)
 15. N. Prakash and G. Seidel, "A Coupled Electromechanical Peridynamics Framework for Modeling Carbon Nanotube Reinforced Polymer Composites", Proceedings Paper for the 57th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech 2016, San Diego, California, USA 4-8 January 2016, (AIAA-2016-0936)
 16. E. Sengezer, Stefan Povolny, and G. Seidel, "Real Time In-Situ Sensing of Damage Evolution in Carbon Nanotube-Polymer Nanocomposite Bonded Surrogate Energetics", Proceedings Paper for the 57th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech 2016, San Diego, California, USA 4-8 January 2016, (AIAA-2016-0412)
 17. A. Chaurasia and G. Seidel, "Multiscale Modeling of Effective Piezoresistivity in Nanocomposite Bonded Explosives", Proceedings Paper for the 57th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech 2016, San Diego, California, USA 4-8 January 2016, (AIAA-2016-0155)

18. Krishna Talamadupula, Adarsh Chaurasia, and Gary Seidel, "2-Scale Hierarchical Multiscale Modeling of Piezoresistive Response in Polymer Nanocomposite Bonded Explosives", Proceedings Paper for the ASME 2015 Conference on Smart Materials, Adaptive Structures and Intelligent Systems in Session 2-8 Smart Materials for Sensing Stretch and Pressure, Colorado Springs, Colorado, USA, 21 - 23 September, 2015 (SMASIS2015-9111)
19. Ryan Seifert, Mayuresh Patil, Gary Seidel, and Gregory Reich, "Multi-Functional Topology Optimization of Piezoresistive Nanocomposite Beams", Proceedings Paper for the ASME 2015 Conference on Smart Materials, Adaptive Structures and Intelligent Systems in Session 1-7 Advanced Composites and Nanostructures I, Colorado Springs, Colorado, USA, 21 - 23 September, 2015 (SMASIS2015-8958)
20. A. Chaurasia, X. Ren, and G. Seidel (2015) "Computational Micromechanics Analysis of Damage Induced Piezoresistivity in Carbon Nanotube-Polymer Nanocomposites Under Cyclic Loading Conditions", Proceedings Paper for the 56th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech 2015, Kissimmee, Florida, USA, 5-9 January 2015 (AIAA-2015-1724)
21. N. Prakash and G. Seidel (2015) "A novel two-parameter linear elastic constitutive model for bond based peridynamics", Proceedings Paper for the 56th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech 2015, Kissimmee, Florida, USA, 5-9 January 2015 (AIAA-2015-0461)
22. E. Sengezer and G. Seidel, (2015) "Experimental Characterization of Damage Evolution in Carbon Nanotube-Polymer Nanocomposites", Proceedings Paper for the 56th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech 2015, Kissimmee, Florida, USA, 5-9 January 2015 (AIAA-2015-0126)
23. D. Seifert, M. Patil, and G. Seidel, (2015) "Topology Optimization of Composite Structures for Multifunctional Behavior" Proceedings Paper for the 56th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech 2015, Kissimmee, Florida, USA, 5-9 January 2015 (AIAA-2015-0455)
24. X. Rend and G. Seidel (2015) "Concurrent Multiscale Modeling of Coupling between Continuum Damage and Piezoresistivity in CNT-Polymer Nanocomposites", Proceedings Paper for the 56th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech 2015, Kissimmee, Florida, USA, 5-9 January 2015 (AIAA-2015-0393)
25. Engin Sengezer and G.D. Seidel (2014) "Experimental Characterization of Damage Evolution in Carbon Nanotube-Polymer Nanocomposites", Proceedings Paper for the 2014 Conference on Smart Materials, Adaptive Structures & Intelligent Systems (SMASIS), Newport, Rhode Island, USA, 8-10 September 2014 (SMASIS2014-7612)
26. Adarsh K. Chaurasia and G. D. Seidel (2014) "Sensing Interfacial Damage Initiation, Evolution and Accumulation in Carbon Nanotube-Polymer Nanocomposites Under Cyclic Loading: A Computational Micromechanics Approach" Proceedings Paper for the 2014 Conference on Smart Materials, Adaptive Structures & Intelligent Systems (SMASIS), Newport, Rhode Island, USA, 8-10 September 2014 (SMASIS2014-7592)

27. Adarsh K. Chaurasia, Xiang Ren, Yumeng Li, Engin C. Sengezer, Josh Burton and G. D. Seidel (2014) "Computational Modeling and Experimental Characterization of Macroscale Piezoresistivity in Aligned Carbon Nanotube and Fuzzy Fiber Nanocomposites", Proceedings Paper for the 55th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech, 13-17 January 2014 National Harbor, Maryland, USA (AIAA 2014-1168)
28. Adarsh K. Chaurasia, Xiang Ren, and Gary D. Seidel, (2013) "Computational Micromechanics Model to Study the Effective Macroscale Piezoresistivity of Carbon Nanotube-Polymer Nanocomposites for Strain and Damage Sensing", Proceedings paper for the ASME 2013 Conference on Smart Materials, Adaptive Structures and Intelligent Systems, September 16-18, 2013, Snowbird, Utah, USA.
29. J. L. Abot, K. Wynter, K. Belay, M.-D. Lamos, G. Seidel and B. Vondrasek (2013) "Mode II Delamination Detection in Laminated Composite Materials Using Carbon Nanotube Yarn: State-of-the-Art and Challenges", Proceedings Paper for the ASC 2013 28th Technical Conference, September 9-11, 2013, State College, Pennsylvania, USA.
30. Adarsh Chaurasia and G. D. Seidel "Computational Micromechanics Analysis of Electron Hopping Induced Piezoresistive Response in Carbon Nanotube-Polymer Nanocomposites" Proceedings Paper for the 54th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference Boston, Massachusetts, USA 8-11 April 2013 (AIAA 2013-1731)
31. Engin Sengezer and G.D. Seidel "Phenomenological Characterization of the Fabrication of Aligned Carbon Nanotube Nanocomposites via Dielectrophoresis Under AC Electric Field" Proceedings Paper for the 54th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference Boston, Massachusetts, USA 8-11 April 2013 (AIAA 2013-1582)
32. Xiang Ren and Gary D. Seidel "Computational Micromechanics Modeling of Piezoresistivity of Carbon Nanotube Polymer Nanocomposites" Proceedings Paper for the ECCM15 - 15TH EUROPEAN CONFERENCE ON COMPOSITE MATERIALS Venice, Italy 24-28 June, 2012 (ECCM15-914)
33. Mohammad Bonakdar, G.D. Seidel, and D.J. Inman "Effect of nanoscale fillers on the viscoelasticity of polymer nanocomposites" Proceedings Paper for the 53rd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference Honolulu, Hawaii, USA 23 - 26 April, 2012 (AIAA 2012-xxxx)
34. Yumeng Li and G.D. Seidel "Analysis of the Interface in CNT-Polyethylene Nanocomposites using a Multiscale Modeling Method" Proceedings Paper for the 53rd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference Honolulu, Hawaii, USA 23 - 26 April, 2012 (AIAA 2012-xxxx)
35. Xiang Ren and G.D. Seidel "Computational Micromechanics Modeling of Axial Piezoresistivity of Polymer Nanocomposites with Well Dispersed and Aligned Carbon Nanotubes" Proceedings Paper for the 53rd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference Honolulu, Hawaii, USA 23 - 26 April, 2012 (AIAA 2012-xxxx)
36. Xiang Ren and G.D. Seidel "Computational Modeling of Piezoresistivity of Carbon Nanotube Polymer Nanocomposites" Proceedings Paper for the SPIE Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring Conference San Diego, California, USA 11 - 15 March, 2012 [8342-49]

37. Yumeng Li and G.D. Seidel, "Analysis of the Interface in CNT-Polyethylene Nanocomposites using a Multiscale Modeling Method", Proceedings Paper for the 52nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference, Denver, Colorado, April 4-7 2011 (AIAA 2011-2058)
38. Xiang Ren and G.D. Seidel, "Analytic and computational multi-scale micromechanics models for mechanical and electrical properties of fuzzy fiber composites", Proceedings Paper for the 52nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference, Denver, Colorado, April 4-7 2011 (AIAA 2011-1923)
39. Mohammad Bonakdar, G.D. Seidel, and D.J. Inman "Damping characterization of viscoelastic composites using micromechanical approach", Proceedings Paper for the 2011 SPIE Smart Structures/NDE Conference, San Diego, California, March 6-10 2011 [7978-48].
40. G.D. Seidel and S.N. Stephens "Analytical and Computational Micromechanics Analysis of the Effects of Interphase Regions and Orientation on the Effective Coefficient of Thermal Expansion of Carbon Nanotube-Polymer Nanocomposites", Proceedings Paper for the 51st AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Orlando, Florida, April 12-15 2010 (AIAA 2010-2809)
41. A.-S. Puydupin-Jamin and G.D. Seidel "Computational Micromechanics Analysis of the Effects of Bundle Packing and Interphase Addition on the Effective Electrical and Thermal Transverse Conductivity of Carbon Nanotube-Polymer Nanocomposites", Proceedings Paper for the 51st AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Orlando, Florida, April 12-15 2010 (AIAA 2010-2523)
42. G.D. Seidel, K.L. Boehringer, and D.C. Lagoudas, "Computational Micromechanics Analysis of the Effects of Interphase Regions and Bundle Packing on the Effective Electrical Properties of Carbon Nanotube-Polymer Nanocomposites", Proceedings Paper for the 50th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Palm Springs, California, 4-7 May, 2009. (AIAA 2009-2498)
43. G.D. Seidel, K.L. Boehringer, and D.C. Lagoudas, "Analysis of Clustering and Interphase Region Effects on the Electrical Conductivity of Carbon Nanotube-Polymer Nanocomposites via Computational Micromechanics", Proceedings Paper for SMASIS 2008: Proceedings of the ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems, October 28-30, 2008, Ellicott City, Maryland, USA. (SMASIS2008-670)
44. G.D. Seidel and D.C. Lagoudas, "Micromechanics Modeling of Polymer Nanocomposites for use as Multifunctional Materials", Proceedings Paper for the 49th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Schaumburg, Illinois, 7-10 April, 2008. (AIAA 2008-1947)
45. G.D. Seidel, Y. Bisrat, and D.C. Lagoudas, "Electrical and Thermal Conductivities of Carbon Nanotube-Epoxy Composites: Modeling and Characterization", Proceedings Paper for IMECE2007: 2007 ASME International Mechanical Engineering Congress and Exposition, Seattle, Washington, 11-15 November, 2007. (IMECE2007-42339)
46. D.C. Lagoudas and G.D. Seidel, "Micromechanics Modeling of the Multi-Functional Nature of Carbon Nanotube-Epoxy Nanocomposites: Effective Elastic Thermal and Electrical Properties", Proceedings Paper for COMP07: 6th International Symposium on Advanced Composites, Corfu, Greece, 16-18 May, 2007. (COMP2007-021)

47. G.D. Seidel and D.C. Lagoudas, "Micromechanics Aspects of Multi-scale Modeling of Multi-functional Nanocomposites: Effective Thermal Conductivity", Proceedings Paper for the 48th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Honolulu, Hawaii, 23-26 April, 2007. (AIAA 2007-2172)
48. G.D. Seidel, D.C. Lagoudas, S.J.V. Frankland, and T.S. Gates, "Micromechanics modeling of functionally graded interphase regions in carbon nanotube-polymer composites", Proceedings Paper for the 47th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Newport, Rhode Island, 1-4 May, 2006. (AIAA 2006-1678)
49. G. D. Seidel, D.C. Lagoudas, S.J.V. Frankland, and T.S. Gates, "Modeling functionally graded interphase regions in carbon nanotube reinforced composites", Proceedings Paper for the 20th American Society for Composites Technical Conference, Drexel University, Philadelphia, PA, 7-9 September, 2005.
50. D. Lagoudas and G. Seidel, "Effective Elastic Properties of Carbon Nanotubes and Carbon Nanotube Reinforced Composites," AIAA Paper 2004-1782, 45th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference, Palm Springs, CA, April 19-22, 2004.
51. D.C. Lagoudas and G. D. Seidel, 2003, "A Micromechanical Study on the Clustering Effect of Carbon Nanotube Reinforced Composites," ASME International Mechanical Engineering Congress, Washington, D.C., Nov. 16-22, 2003.

Book Chapters

1. Brian L. Wardle, Joseph H. Koo, Gregory M. Odegard, Gary D. Seidel, "Advanced Nanoengineered Materials" in Aerospace Materials and Applications, American Institute of Aeronautics and Astronautics, Inc., Vol 255 of Progress in Astronautics and Aeronautics, 2018, pp 275-304.
2. Gary Don Seidel, George Chatzigeorgiou, Xiang Ren, Dimitris C. Lagoudas, "Multiscale Modeling of Multifunctional Fuzzy Fibers Based on Multi-Walled Carbon Nanotubes" in Modeling of Carbon Nanotubes, Graphene and their Composites, Springer Series in Materials Science Volume 188, 2014, pp 135-176.

PRESENTATIONS

Professional Conferences (121)

1. Nishant Shirodkar, Samantha Rocker, Gary Seidel, "Structural Health Monitoring of Solid Rocket Propellants using Piezo-resistive properties of Dispersed Carbon Nano-tube Sensing Networks", ASME 2018 SMASIS Conference on Smart Materials, Adaptive Structures and Intelligent Systems in Session 1-7 Piezoelectrics and Piezoresistive Materials, San Antonio, Texas, USA, 10 - 12 September, 2018 (SMASIS2018-8250)
2. Krishna Talamadupula, Naveen Prakash, Gary Seidel, "Electromechanical Peridynamic Investigation of Piezoresistivity and Damage Sensing of Nanocomposite Bonded Explosives (NCBXs) Under Impact Loading Conditions", ASME 2018 SMASIS Conference on Smart Materials, Adaptive Structures and Intelligent Systems in Session 1-2 Energy Storage and Materials Electronics, San Antonio, Texas, USA, 10 - 12 September, 2018 (SMASIS2018-8238)
3. Krishna Talamadupula, Gary Seidel, "Multiscale Investigation of Piezoresistive Response of Nanocomposite Bonded Explosives (NCBXs) Derived From Electron Tunneling

- Effects", ASME 2018 SMASIS Conference on Smart Materials, Adaptive Structures and Intelligent Systems in Session 1-2 Energy Storage and Materials Electronics, San Antonio, Texas, USA, 10 - 12 September, 2018 (SMASIS2018-8239)
4. Ryan Siefert, Mayuresh Patil, Gary Seidel, "Multi-Objective Topology Optimization of Self-Sensing Structures with Designed Boundary Conditions", ASME 2018 SMASIS Conference on Smart Materials, Adaptive Structures and Intelligent Systems in Session 1-1 Design Optimization, San Antonio, Texas, USA, 10 - 12 September, 2018 (SMASIS2018-8240)
 5. Krishna Talamadupula, Gary Seidel, "Multiscale Modeling of Piezoresistivity and Damage Induced Sensing Of Nanocomposite Bonded Explosive Materials Using Non-Local Damage Formulation", WCCMXIII and PANACM II, 13th World Congress in Computational Mechanics, Minisymposium #1213 Computational Constitutive Modeling, New York, New York, USA, 22 - 27 July, 2018 (Presented by Krishna Talamadupula) (#2021303)
 6. Naveen Prakash, Gary Seidel, "Peridynamics Applied to Deformation and Damage Sensing in Polymer Bonded Explosive Materials", WCCMXIII and PANACM II, 13th World Congress in Computational Mechanics, Minisymposium #304 Peridynamics and Its Applications, New York, New York, USA, 22 - 27 July, 2018, (Presented by Naveen Prakash) (#2018609)
 7. Naveen Prakash, Krishna Talamadupula, Engin Sengezer, Gary Seidel, "Multiscale Modeling of Piezoresistivity and Damage Induced Sensing Of Nanocomposite Bonded Explosive Materials Under Dynamic Loading Using Electromechanical Peridynamics", WCCMXIII and PANACM II, 13th World Congress in Computational Mechanics, Minisymposium #603 Smart Materials across the Scales: Modeling, Experiment and Simulation, New York, New York, USA, 22 - 27 July, 2018 (#2021312)
 8. Stefan Povolny, Gary Seidel, Carolina Tallon Galdeano, "Property Prediction and Damage Modeling in Ultra High Temperature Ceramics Using the Material Point Method", WCCMXIII and PANACM II, 13th World Congress in Computational Mechanics, Minisymposium #413 Multiscale/Multiphysics Approach on Complex Materials and Structures, New York, New York, USA, 22 - 27 July, 2018 (Presented by Stefan Povolny) (#2021322)
 9. Nishant Shirodkar, Samantha Rocker, Tanner McCoy, Gary Seidel, "Electro-Mechanical Response of Polymer Bonded Energetic Materials with CNT Sensing Networks for Structural Health Monitoring", Proceedings Paper for the 2018 SEM Annual Conference and Exposition on Experimental and Applied Mechanics, Greenville, South Carolina, USA, 4 -7 June, 2018 (Presented by Nishant Shirodkar) (492-sen)
 10. K. Talamadupula and G. Seidel, "Multiscale Modeling of Effective Piezoresistivity and Implementation of Non-Local Damage Formulation in Nanocomposite Bonded Explosives", Proceedings Paper for the 59th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech 2018, Kissimmee, Florida, USA, 8 - 12 January, 2018, (AIAA-2018-0903)
 11. Krishna Talamadupula and Gary Seidel, "Multiscale Multifunctional Modeling of Piezoresistivity and Damage Mechanisms of Nanocomposite Bonded Explosives", ASME 2017 SMASIS Conference on Smart Materials, Adaptive Structures and Intelligent Systems in Session 1-7 Multifunctional Composites III, Snowbird, Utah, USA, 18 - 20 September, 2017 (SMASIS2017-3880)

12. Samantha Rocker, Timothy Wade Pearrell, Engin Sengezer, Gary Seidel, "Electro-Thermal Response of Polymer-Bonded Explosives for Structural Health Monitoring of Energetic Materials", ASME 2017 SMASIS Conference on Smart Materials, Adaptive Structures and Intelligent Systems in Session 1-7 Multifunctional Composites III, Snowbird, Utah, USA, 18 - 20 September, 2017 (Presented by Samantha Rocker) (SMASIS2017-3869)
13. Adarsh Chaurasia, Andrew Rukangu, Eric Freeman, Michael Philen, and Gary Seidel, "Effect of Lipid Type and Surface Charges on the Bending Modulus of Lipid Bilayer Membranes", Mechanobiology of Cells, Vesicles and Biomembranes Minisymposium at the 14 U.S. National Congress on Computational Mechanics, Montreal, Quebec, Canada, 17-20 July, 2017 (Presented by Adarsh Chaurasia)
14. Adarsh Chaurasia, Stefan Povolny, Gary Seidel, "Modeling of Electromechanical Composite Interfaces in the Material Point Method using Cohesive Zones", Meshfree and Particle Methods: New Developments and Applications Minisymposium at the 14 U.S. National Congress on Computational Mechanics, Montreal, Quebec, Canada, 17-20 July, 2017 (Presented by Stefan Povolny)
15. Naveen Prakash and Gary Seidel, "Electromechanical Peridynamic Modeling of Deformation and Damage Sensing in Polymer Bonded Explosive Materials", Peridynamic Modeling and Simulations Minisymposium at the 14 U.S. National Congress on Computational Mechanics, Montreal, Quebec, Canada, 17-20 July, 2017
16. Engin C. Sengezer, Gary D. Seidel, "Through Development of Inherently Sensing Energetics for Real-time in Situ Strain and Damage Detection", Proceedings Paper for the SEM IV International Congress, Indianapolis, Indiana, USA, 12-15 June, 2017 (Presented by Engin Sengezer) (15-sen)
17. Engin C. Sengezer, Gary D. Seidel, "Application of Piezoresistive Nanocomposite Binders for Real Time Embedded Sensing of Strain and Damage in Energetic Materials", Proceedings Paper for the 58th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech 2017, Grapevine, Texas, USA, 9 - 13 January, 2017 (Presented by Engin Sengezer) (AIAA 2017-0122)
18. Krishna Kiran Talamadupula, Adarsh K. Chaurasia, Gary D. Seidel, "Multiscale Modeling of Effective Piezoresistivity and Damage Response in Nanocomposite Bonded Explosives", Proceedings Paper for the 58th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech 2017, Grapevine, Texas, USA, 9 - 13 January, 2017 (AIAA 2017-0348)
19. Naveen Prakash, Gary D. Seidel, "Coupled Electromechanical Peridynamic Modeling of Strain and Damage Sensing in Granular Energetic Materials", Proceedings Paper for the 58th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech 2017, Grapevine, Texas, USA, 9 - 13 January, 2017 (AIAA 2017-0126)
20. Krishna Kiran Talamadupula, Adarsh Chaurasia, and Gary Seidel, "Multiscale Investigation of the Piezoresistive Effect of Nanocomposite Bonded Explosives (NCBXs) with Continuum Damage Mechanics", 2016 Society of Engineering Science 53rd Annual Technical Meeting, Session D8-4 on Computational Mechanics of Materials and Structures, University of Maryland, College Park, Maryland, USA, 2-5 October, 2016 (Presented by Krishna Talamadupula)

21. Naveen Prakash and Gary Seidel, "Peridynamic Modeling of Strain and Damage Sensing in Nanocomposite Bonded Energetic Materials", 2016 Society of Engineering Science 53rd Annual Technical Meeting, Session D8-1 on Computational Mechanics of Materials and Structures, University of Maryland, College Park, Maryland, USA, 2-5 October, 2016 (Presented by Naveen Prakash)
22. Engin C. Sengezer and Gary D. Seidel, "In-situ Structural Health Monitoring in Polymer Bonded Surrogate Energetic Materials", 2016 Society of Engineering Science 53rd Annual Technical Meeting, Session E2-3 on Mechanics of One-Dimensional Nanomaterials: Experiments and Modeling, University of Maryland, College Park, Maryland, USA, 2-5 October, 2016 (Presented by Engin Sengezer)
23. Adarsh Chaurasia and Gary Don Seidel, "Modeling Nanocomposite Piezoresistive Response With Electromechanical Cohesive Zone Material Point Method", ASME 2016 SMASIS Conference on Smart Materials, Adaptive Structures and Intelligent Systems in Session 2-10 Piezo Resistive Materials and Devices, Stowe, Vermont, USA, 28 – 30 September, 2016 (SMASIS2016-9236)
24. Naveen Prakash and Gary Seidel, "Coupled Electromechanical Peristatic Simulation of Deformation and Damage Sensing in Granular Materials", ASME 2016 SMASIS Conference on Smart Materials, Adaptive Structures and Intelligent Systems in Session 2-10 Piezo Resistive Materials and Devices, Stowe, Vermont, USA, 28 - 30 September, 2016 (SMASIS2016-9235)
25. Krishna Talamadupula, Adarsh Chaurasia, and Gary Seidel, "2-Scale Hierarchical Multiscale Modeling of Piezoresistive and Damage Response in Polymer Nanocomposite Bonded Explosive", ASME 2016 SMASIS Conference on Smart Materials, Adaptive Structures and Intelligent Systems in Session 2-10 Piezo Resistive Materials and Devices, Stowe, Vermont, USA, 28 - 30 September, 2016 (SMASIS2016-9234)
26. Engin C. Sengezer and Gary D. Seidel, "In-situ Sensing of Deformation and Damage in Nanocomposite Bonded Surrogate Energetic Materials", Proceedings Paper for the SEM XIII International Congress, Orlando, Florida, USA, 6-9 June, 2016 (Presented by Engin Sengezer) (449-sen)
27. Engin Sengezer and Gary Seidel, "Real time in-situ sensing of damage evolution in nanocomposite bonded surrogate energetic materials", 2016 SPIE Smart Structures NDE, Las Vegas, Nevada, USA, 20 - 24 March, 2016 (9800-31)
28. D. Seifert, M. Patil, and G. Seidel, "Multi-Functional Topology Optimization of Nanocomposite Beams", Proceedings Paper for the 57th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech 2016, San Diego, California, USA, 4-8 January 2016, (AIAA-2016-1173)
29. K. Talamadupula, S. Berry, J. O'Donnell, G. Seidel, B. Goodell, "Experimental Characterization and Computational Analysis of Mode I Fracture Toughness of a Nanocellulose Z-Pin Reinforced Carbon Fiber Laminate", Proceedings Paper for the 57th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech 2016, San Diego, California, USA 4-8 January 2016, (AIAA-2016-0937)
30. N. Prakash and G. Seidel, "A Coupled Electromechanical Peridynamics Framework for Modeling Carbon Nanotube Reinforced Polymer Composites", Proceedings Paper for

- the 57th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech 2016, San Diego, California, USA 4-8 January 2016, (AIAA-2016-0936)
31. E. Sengezer and G. Seidel, "Real Time In-Situ Sensing of Damage Evolution in Carbon Nanotube-Polymer Nanocomposites under Impact Loading", Proceedings Paper for the 57th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech 2016, San Diego, California, USA 4-8 January 2016, (AIAA-2016-0412)
 32. A. Chaurasia and G. Seidel, "Multiscale Modeling of Effective Piezoresistivity in Nanocomposite Bonded Explosives", Proceedings Paper for the 57th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech 2016, San Diego, California, USA 4-8 January 2016, (AIAA-2016-0155)
 33. Engin Sengezer and Gary Seidel, "In Situ Raman and Piezoresistive Characterization of Aligned Carbon Nanotube-Polymer Nanocomposites", ASME 2015 International Mechanical Engineering Congress and Exposition, 12-43-1 Processing and Performance of Nanocomposites I, Houston, Texas, USA, 15 - 18 November, 2015 (IMECE2015-53475)
 34. Adarsh Chaurasia, Xiang Ren, and Gary Seidel, "Multiscale Modeling of Piezoresistive Response in CNT-Polymer Nanocomposites", ASME 2015 International Mechanical Engineering Congress and Exposition, 12-34-2 Multi-Field Studies in Heterogeneous Materials: Experimental, Theoretical, and Numerical Approaches, Houston, Texas, USA, 15 - 18 November 2015 (IMECE2015-53534)
 35. Naveen Prakash and Gary Seidel, "Mesoscale Peridynamic Modeling of Nanocomposite Bonded Energetics Under Impact Loading", ASME 2015 International Mechanical Engineering Congress and Exposition, 1-13-1 Peridynamics Modeling I, Houston, Texas, USA, 15 - 18 November 2015 (IMECE2015-53521)
 36. Adarsh Chaurasia and Gary Seidel, "Multiscale Modeling of Polymer Nanocomposite Bonded Explosives", ASME 2015 International Mechanical Engineering Congress and Exposition, Session 1-10-2 Multiscale Models and Experiments for Composites, Houston, Texas, USA, 15 - 18 November 2015 (IMECE2015-53540)
 37. Seth Berry, Krishna Talamadupula, Jeremy O'Donnell, Phillip Head, Gary Seidel, Barry Goodell, "Experimental and Computational Analysis of Mode I Fracture Toughness of Carbon Fiber Pre-Preg with Nano-Cellulose Z-Pins Using a Double Cantilevered Beam", ASME 2015 International Mechanical Engineering Congress and Exposition, Session 1-8-2 Impact, Damage, and Fracture of Composites II, Houston, Texas, USA, 15 - 18 November 2015 (IMECE2015-53510)
 38. Adarsh K. Chaurasia, Xiang Ren and Gary D. Seidel, "Computational Micromechanics Based Exploration of Strain and Damage Sensing Capabilities in CNT-Polymer Nanocomposites", 2015 Society of Engineering Science 52nd Annual Technical Meeting, Session W1 on Micromechanics and Multifunctional Nano Composites, Texas A&M University, College Station, Texas USA, 26 - 28 October 2015
 39. Engin Sengezer, Cayla Schnebele, and Gary Seidel, "In Situ and Real Time Monitoring of Strain and Damage Using Piezoresistive Carbon Nanotube-Polymer Nanocomposites and Digital Image Correlation", ASME 2015 Conference on Smart Materials, Adaptive Structures and Intelligent Systems in Session 1-7 Advanced Composites and

- Nanostructures I, Colorado Springs, Colorado, USA, 21 - 23 September 2015 (SMASIS2015-9115)
40. Krishna Talamadupula, Adarsh Chaurasia, and Gary Seidel, "2-Scale Hierarchical Multiscale Modeling of Piezoresistive Response in Polymer Nanocomposite Bonded Explosives", Proceedings Paper for the ASME 2015 Conference on Smart Materials, Adaptive Structures and Intelligent Systems in Session 2-8 Smart Materials for Sensing Stretch and Pressure, Colorado Springs, Colorado, USA, 21 - 23 September 2015 (SMASIS2015-9111)
 41. Ryan Seifert, Mayuresh Patil, Gary Seidel, and Gregory Reich, "Multi-Functional Topology Optimization of Piezoresistive Nanocomposite Beams", Proceedings Paper for the ASME 2015 Conference on Smart Materials, Adaptive Structures and Intelligent Systems in Session 1-7 Advanced Composites and Nanostructures I, Colorado Springs, Colorado, USA, 21 - 23 September 2015 (Presented by Ryan Seifert) (SMASIS2015-8958)
 42. Gary Seidel, Adarsh Chaurasia, Xiang Ren, "Computational Micromechanics-Based Exploration of Strain and Damage Sensing Capabilities in CNT-Polymer Nanocomposites", Multiscale Modeling and Characterization of Multiphysics for Nano, Bio and Smart Materials Minisymposium at the 13 U.S. National Congress on Computational Mechanics, San Diego, California, USA, 26 - 30 July 2015 (USNCCM13-1078)
 43. Adarsh Chaurasia and Gary Seidel, "Computational Modeling of Piezoresistive Response in CNT-Polymer Nanocomposites Using Material Point Method", Modeling Materials with Coupled Physics (Thermo- Electro- Chemo- and Magneto-Mechanics) Minisymposium at the 13 U.S. National Congress on Computational Mechanics, San Diego, California, USA, 26 - 30 July 2015 (Presented by Adarsh Chaurasia) (USNCCM13-1079)
 44. Naveen Prakash and Gary Seidel, "Peridynamic Modeling of Carbon Nanotube Reinforced Polymer Nanocomposites", Peridynamics and Its Applications Minisymposium at the 13 U.S. National Congress on Computational Mechanics, San Diego, California, USA, 26 - 30 July 2015 (Presented by Naveen Prakash) (USNCCM13-1076)
 45. Adarsh K. Chaurasia, Xiang Ren, Yumeng Li, Engin C. Sengezer, Josh Burton and G. D. Seidel, "Computational Modeling and Experimental Characterization of Macroscale Piezoresistivity in Aligned Carbon Nanotube and Fuzzy Fiber Nanocomposites", The American Carbon Society Workshop: Carbon Fibers and Their Composites, Oak Ridge, Tennessee, April 16-17, 2015.
 46. A. Chaurasia, X. Ren, and G. Seidel (2015) "Computational Micromechanics Analysis of Damage Induced Piezoresistivity in Carbon Nanotube-Polymer Nanocomposites Under Cyclic Loading Conditions", Proceedings Paper for the 56th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech 2015, Kissimmee, Florida, USA, 5-9 January 2015 (AIAA-2015-1724)
 47. N. Prakash and G. Seidel (2015) "A novel two-parameter linear elastic constitutive model for bond based peridynamics", Proceedings Paper for the 56th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials

- Conference at AIAA SciTech 2015, Kissimmee, Florida, USA, 5-9 January 2015 (AIAA-2015-0461) (Presented by N. Prakash)
48. E. Sengezer and G. Seidel, (2015) "Experimental Characterization of Damage Evolution in Carbon Nanotube-Polymer Nanocomposites", Proceedings Paper for the 56th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech 2015, Kissimmee, Florida, USA, 5-9 January 2015 (AIAA-2015-0126) (Presented by E. Sengezer)
 49. D. Seifert, M. Patil, and G. Seidel, (2015) "Topology Optimization of Composite Structures for Multifunctional Behavior" Proceedings Paper for the 56th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech 2015, Kissimmee, Florida, USA, 5-9 January 2015 (AIAA-2015-0455) (Presented by D. Seifert)
 50. X. Rend and G. Seidel (2015) "Concurrent Multiscale Modeling of Coupling between Continuum Damage and Piezoresistivity in CNT-Polymer Nanocomposites", Proceedings Paper for the 56th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech 2015, Kissimmee, Florida, USA, 5-9 January 2015 (AIAA-2015-0393)
 51. Engin Sengezer and G.D. Seidel (2014) "Experimental Characterization of Damage Evolution in Carbon Nanotube-Polymer Nanocomposites", Proceedings Paper for the 2014 Conference on Smart Materials, Adaptive Structures & Intelligent Systems (SMASIS), Newport, Rhode Island, USA, 8-10 September 2014 (SMASIS2014-7612) (Presented by E. Sengezer)
 52. Adarsh K. Chaurasia and G. D. Seidel (2014) "Sensing Interfacial Damage Initiation, Evolution and Accumulation in Carbon Nanotube-Polymer Nanocomposites Under Cyclic Loading: A Computational Micromechanics Approach" Proceedings Paper for the 2014 Conference on Smart Materials, Adaptive Structures & Intelligent Systems (SMASIS), Newport, Rhode Island, USA, 8-10 September 2014 (SMASIS2014-7592) (Presented by A. Chaurasia)
 53. Gary Seidel, Xiang Ren, Adarsh Chaurasia, Yumeng Li, Josh Burton, "Multiscale Modeling of Deformation and Damage Sensing in Carbon Nanotube-Polymer Nanocomposites" 2014 Conference on Smart Materials, Adaptive Structures & Intelligent Systems (SMASIS) Newport, Rhode Island, USA 8-10 September 2014 (SMASIS2014-7613)
 54. Gustavo Dominguez Rodriguez, Gary Seidel, Jorge Tapia Gonzalez, Francis Aviles Cetina "Influence of Structural Defects on the Electrical Properties of Carbon Nanotubes and their Polymer Composites" Advances in Computational Materials Science Symposium at the XXIII International Materials Research Congress Cancun, Mexico, 17-21 August 2014 (Presented by Gustavo Dominguez Rodriguez)
 55. "Computational Modeling and Experimental Characterization of Macroscale Piezoresistivity in Aligned Carbon Nanotube and Fuzzy Fiber Nanocomposites", Adarsh K. Chaurasia, Xiang Ren, Yumeng Li, Engin C. Sengezer, Josh Burton and G. D. Seidel, 55th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference at AIAA SciTech, National Harbor, Maryland, USA, 13-17 January, 2014 (AIAA 2014-1168)
 56. "Multiscale Modeling and Experimental Characterization of Macroscale Piezoresistivity in Carbon Nanotube-Polymer Nanocomposites and Fuzzy Fibers", Gary

- D. Seidel, Yumeng Li, Xiang Ren, Adarsh Chaurasia, Engin Sengezer, Josh Burton, Macromolecules and Interfaces Institute Technical Conference and Review, 28-30 October, 2013, Blacksburg, Virginia.
57. "Multiscale Modeling and Characterization of the Deformation and Damage Sensing of Fuzzy Fiber Fragmentation Specimens", Xiang Ren, Josh Burton, and Gary Seidel, Presented at The 24th International Conference on Adaptive Structures Technologies (ICAST2013), 7-9 October, 2013, Aruba.
 58. "Computational Micromechanics Model to Study the Effective Macroscale Piezoresitivity of Carbon Nanotube-Polymer Nanocomposites for Strain and Damage Sensing", Adarsh K. Chaurasia, Xiang Ren, and Gary D. Seidel, Session: 2-3 Ferroelectrics: Applications & Devices of the ASME 2013 Conference on Smart Materials, Adaptive Structures and Intelligent Systems, Snowbird, Utah, USA, 16-18 September, 2013. (SMASIS2013-3223)
 59. "Mode II Delamination Detection in Laminated Composite Materials Using Carbon Nanotube Yarn: State-of-the-Art and Challenges", J. L. Abot, K. Wynter, K. Belay, M.-D. Lamos, G. Seidel and B. Vondrasek, ASC 2013 28th Technical Conference, State College, Pennsylvania, USA, 9-11 September, 2013 (Presented by Jandro Abot)
 60. "A hierarchical multiscale modeling approach towards the estimation of the elastic properties of CNT-polymer nanocomposites with damaged CNTs", Gustavo Dominguez Rodriguez, Gary Seidel, Jorge Tapia Gonzalez, Francis Aviles Cetina, Session on Advances in Nanocomposites for Thermal and Structural Applications at the 50th Annual Technical Meeting of the Society of Engineering Science and ASME-AMD Summer Meeting Joint Conference, Brown University School of Engineering, Providence, Rhode Island, USA, 28-31 July, 2013.
 61. "Computational Micromechanics Analysis of Electron Hopping Induced Piezoresistive Response in Carbon Nanotube-Polymer Nanocomposites", Adarsh Chaurasia and G. D. Seidel, Proceedings Paper for the 54th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference, Boston, Massachusetts, USA 8-11 April, 2013 (Presented by Adarsh Chaurasia) (AIAA 2013-1731)
 62. "Phenomenological Characterization of the Fabrication of Aligned Carbon Nanotube Nanocomposites via Dielectrophoresis Under AC Electric Field", Engin Sengezer and G.D. Seidel, Proceedings Paper for the 54th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference, Boston, Massachusetts, USA, 8-11 April, 2013 (AIAA 2013-1582)
 63. "Investigation of a Bonded Composite Reinforcement Applied to Ships of the Australian Navy", Sebastian Fave and Gary D. Seidel, ASME 2012 International Mechanical Engineering Congress and Exposition, Houston, Texas, 9-15 November, 2012 (Presented by Sebastian Fave) (IMECE2012-93348)
 64. "Phenomenological Models for Processing of Aligned Carbon Nanotube Nanocomposites Under AC Electric Fields", Engin Sengezer, Gary D. Seidel, Mayuresh Patil, and Robert Canfield, ASME 2012 International Mechanical Engineering Congress and Exposition, Houston, Texas, 9-15 November, 2012, (Presented by Engin Sengezer) (IMECE2012-89494)
 65. "Computational Study of effects of Nanoscale Interfaces in functionalized CNTs-Polyethylene Nanocomposite", Yumeng Li and Gary D. Seidel, ASME 2012

- International Mechanical Engineering Congress and Exposition, Houston, Texas, 9-15 November, 2012 (Presented by Yumeng Li) (IMECE2012-89083)
66. "Computational Micromechanics Analysis of the Effects of Clustering, Interphase Layers and Interfaces on the Effective Coefficient of Thermal Expansion of Carbon Nanotube-Polymer Nanocomposites", Skylar Stephens and Gary D. Seidel, ASME 2012 International Mechanical Engineering Congress and Exposition, Houston, Texas, 9-15 November, 2012 (Presented by Skylar Stephens) (IMECE2012-89080)
 67. "Controlling the MWCNT Network Formation in Polymers and Viscous Media via Electric Fields", Andres I. Oliva-Aviles, Francis Aviles, Gary D. Seidel, Victor Sosa, and Fidel Gamboa, ASME 2012 International Mechanical Engineering Congress and Exposition, Houston, Texas, 9-15 November, 2012 (Presented by Andres I. Oliva-Aviles) (IMECE2012-89021)
 68. "Multiscale Modeling of Network Piezoresistivity in Carbon Nanotube-Polymer Nanocomposites", Adarsh Chaurasia, Gary D. Seidel, and Francis Aviles, ASME 2012 International Mechanical Engineering Congress and Exposition, Houston, Texas, 9-15 November, 2012 (Presented by Adarsh Chaurasia) (IMECE2012-88727)
 69. "Multiscale Modeling of the Coupling of Continuum Damage and Piezoresistivity in Polymer Nanocomposites", Xiang Ren and Gary D. Seidel, ASME 2012 International Mechanical Engineering Congress and Exposition, Houston, Texas, 9-15 November, 2012 (Presented by Xiang Ren) (IMECE2012-88681)
 70. "Computational Micromechanics Modeling of Piezoresistivity of Carbon Nanotube Polymer Nanocomposites", Xiang Ren and Gary D. Seidel, Proceedings Paper for the ECCM15 - 15TH EUROPEAN CONFERENCE ON COMPOSITE MATERIALS, Venice, Italy, 24-28 June, 2012 (ECCM15-914)
 71. "Effect of nanoscale fillers on the viscoelasticity of polymer nanocomposites", Mohammad Bonakdar, G.D. Seidel, and D.J. Inman, Proceedings Paper for the 53rd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference, Honolulu, Hawaii, USA, 23 - 26 April, 2012 (AIAA 2012-1825)
 72. "Analysis of the Interface in CNT-Polyethylene Nanocomposites using a Multiscale Modeling Method", Yumeng Li and G.D. Seidel, Proceedings Paper for the 53rd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference, Honolulu, Hawaii, USA, 23 - 26 April, 2012 (AIAA 2012-1819)
 73. "Computational Micromechanics Modeling of Axial Piezoresistivity of Polymer Nanocomposites with Well Dispersed and Aligned Carbon Nanotubes", Xiang Ren and G.D. Seidel, Proceedings Paper for the 53rd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference, Honolulu, Hawaii, USA, 23 - 26 April, 2012 (AIAA 2012-1496)
 74. "Computational Modeling of Piezoresistivity of Carbon Nanotube Polymer Nanocomposites", Xiang Ren and G.D. Seidel, SPIE Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring Conference San Diego, California, USA 11 - 15 March, 2012 [8342-49]
 75. "Effect of Interphase on Damping Properties of Viscoelastic Nanocomposites ", Mohammad Bonakdar, G.D. Seidel, and D. Inman, ASME 2011 International Mechanical Engineering Congress and Exposition, Denver, Colorado, 11-17 November, 2011 (IMECE2011-64591)

76. "Multiscale Modeling of Damage in the Carbon Nanotube-Polymer Interphase of Fuzzy Fibers Subjected to Quasi-static Mechanical Loading", Xiang Ren and G.D. Seidel, ASME 2011 International Mechanical Engineering Congress and Exposition, Denver, Colorado, 11-17 November, 2011 (IMECE2011-64567)
77. "Nanocomposites as Structural Health Monitors: Multiscale Modeling of Piezoresistivity in Carbon Nanotube Polymer Nanocomposites", Xiang Ren, Skylar Stephens, G.D. Seidel and Francis Aviles, ASME 2011 International Mechanical Engineering Congress and Exposition, Denver, Colorado, 11-17 November, 2011 (Presented by Xiang Ren) (IMECE2011-64531)
78. "Computational Study of Nanoscale Interfaces in CNTs-Polyethylene Nanocomposite", Yumeng Li and G.D. Seidel, ASME 2011 International Mechanical Engineering Congress and Exposition, Denver, Colorado, 11-17 November, 2011 (Presented by Yumeng Li) (IMECE2011-64523)
79. "Self-sensing of Strain and Damage of a Multiwalled CNT-Polymer Composite", Jose de Jesus Ku-Herrera, Francis Aviles, and G.D. Seidel, ASME 2011 International Mechanical Engineering Congress and Exposition, Denver, Colorado, 11-17 November, 2011 (Presented by Jose de Jesus Ku-Herrera) (IMECE2011-62338)
80. "Effect of Interphase on Damping Properties of Viscoelastic Nanocomposites", Mohammad Bonakdar, G.D. Seidel, and D. Inman, ASME 2011 Applied Mechanics and Materials Conference, Chicago, Illinois, 30 May - 1 June, 2011 (Presented by Mohammad Bonakdar) (McMat2011-4537)
81. "Nanocomposites as Structural Health Monitors: Multiscale Modeling of Piezoresistivity in Carbon Nanotube Polymer Nanocomposites", Xiang Ren, Skylar Stephens and G.D. Seidel, ASME 2011 Applied Mechanics and Materials Conference, Chicago, Illinois, 30 May - 1 June, 2011 (McMat2011-4532)
82. "Computational Study of Nanoscale Interfaces in CNTs-Polyethylene Nanocomposite", Yumeng Li and G.D. Seidel, ASME 2011 Applied Mechanics and Materials Conference, Chicago, Illinois, 30 May - 1 June, 2011 (Presented by Yumeng Li) (McMat2011-4531)
83. "Analysis of the Interface in CNT-Polyethylene Nanocomposites using a Multiscale Modeling Method", Yumeng Li and G.D. Seidel, 52nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference, Denver, Colorado, 4-7 April, 2011 (AIAA 2011-2058).
84. "Analytic and computational multi-scale micromechanics models for mechanical and electrical properties of fuzzy fiber composites", Xiang Ren and G.D. Seidel, 52nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference, Denver, Colorado, 4-7 April, 2011 (Presented by Xiang Ren) (AIAA 2011-1923).
85. "Damping characterization of viscoelastic composites using micromechanical approach", Mohammad Bonakdar, G.D. Seidel, and D.J. Inman, 2011 SPIE Smart Structures/NDE Conference, San Diego, California, 6-10 March, 2011 (Presented by Mohammad Bonakdar) [7978-48]
86. "Analysis of Interface and Interphase Regions in Multiscale Composites: Direct Simulation and Inverse Methods", Yumeng Li and G.D. Seidel, ASME 2010 International Mechanical Engineering Congress and Exposition, Track 12: Mechanics of Solids, Structures, and Fluids, Topic 12-17: Multifunctional and Nanostructured

- Materials: Modeling and Characterization, Session 12-17-4: Multifunctional and Nanostructured Materials IV, Vancouver, British Columbia, Canada, 12 -18 November, 2010.
87. "Multiscale Modeling of the Elastic Properties of Fuzzy Fibers", Xiang Ren and G.D. Seidel, ASME 2010 International Mechanical Engineering Congress and Exposition, Track 12: Mechanics of Solids, Structures, and Fluids, Topic 12-17: Multifunctional and Nanostructured Materials: Modeling and Characterization, Session 12-17-3: Multifunctional and Nanostructured Materials III, Vancouver, British Columbia, Canada, 12 -18 November, 2010.
 88. "Analytical and Computational Micromechanics Analysis of the Effects of Interphase Regions and Orientation on the Effective Coefficient of Thermal Expansion of Carbon Nanotube-Polymer Nanocomposites", G.D. Seidel and Skylar N. Stephens, ASME 2010 International Mechanical Engineering Congress and Exposition, Track 1: Advances in Aerospace Technology, Topic 1-3: Lightweight Sandwich Structures, Session 1-3-2: Lightweight Sandwich Structures II, Vancouver, British Columbia, Canada, 12 -18 November, 2010.
 89. "Multiscale Modeling in Polymer Nanocomposites", G.D. Seidel, Composites & Infrastructure Workshop, Varese, Italy, 29 May - 1 June, 2010.
 90. "Analytical and Computational Micromechanics Analysis of the Effects of Interphase Regions and Orientation on the Effective Coefficient of Thermal Expansion of Carbon Nanotube-Polymer Nanocomposites", G.D. Seidel and S.N. Stephens, 51st AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Orlando, Florida, 12-15 April, 2010. (Presented by S.N. Stephens) (AIAA 2010-2809)
 91. "Computational Micromechanics Analysis of the Effects of Bundle Packing and Interphase Addition on the Effective Electrical and Thermal Transverse Conductivity of Carbon Nanotube-Polymer Nanocomposites", A.-S. Puydupin-Jamin and G.D. Seidel, 51st AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Orlando, Florida, 12-15 April, 2010. (Presented by A.-S. Puydupin-Jamin) (AIAA 2010-2523)
 92. "Micromechanics Analysis of the Effects of Clustering and Functionalization on the Effective Thermal Conductivity of Carbon Nanotube-Polymer Nanocomposites", G.D. Seidel and S. Puydupin-Jamin, Session 12-35-2 Mechanics of Multifunctional and Nanostructured Materials II of the ASME International Mechanical Engineering Congress and Exposition, Orlando, Florida, 13-19 November, 2009.
 93. "Micromechanics Modeling of Carbon Nanotube-Epoxy Nanocomposites and Unidirectional Hybrid Laminates: Summary of Elastic, Thermal and Electrical Properties with Emphasis on Coefficient of Thermal Expansion", G.D. Seidel, Multi-Scale Modeling and Characterization of Nano-Structured Polymer Composites Session of the 46th Technical Meeting of the Society of Engineering Science at Joint ASCE-ASME-SES Conference on Mechanics and Materials, Blacksburg, Virginia, 24-27 June, 2009.
 94. "Computational Micromechanics Analysis of the Effects of Interphase Regions and Bundle Packing on the Effective Electrical Properties of Carbon Nanotube-Polymer Nanocomposites", G.D. Seidel, K.L. Boehringer, and D.C. Lagoudas, Session 60 SDM-37 Nanocomposite III - Tribute to Tom Gates of the 50th

- AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Palm Springs, California, 4-7 May, 2009. (AIAA 2009-2498)
95. “Micromechanics Analysis of the Effects of Clustering on the Effective Electrical Conductivity of Carbon Nanotube-Polymer Nanocomposites”, G.D. Seidel, K.L. Boehringer, and D.C. Lagoudas, Session 13-11-2 Nanocomposite Properties of the ASME International Mechanical Engineering Congress and Exposition, Boston, Massachusetts, 31 October – 6 November, 2008.
 96. “Micromechanics Analysis of the Effects of Carbon Nanotube Chain Formation on the Effective Electrical Conductivity of Carbon Nanotube-Polymer Nanocomposites”, G.D. Seidel, S. Banda, Z. Ounaies, and D.C. Lagoudas, Session 13-13-2 Nanocomposites 2 of the ASME International Mechanical Engineering Congress and Exposition, Boston, Massachusetts, 31 October – 6 November, 2008.
 97. “Multiscale Modeling of Mechanical Properties of Nanocomposites with Interfacial Effects”, A. Awasthi, D.C. Lagoudas and G.D. Seidel, Session 12-24-1 Micromechanics-multiscale Study of the ASME International Mechanical Engineering Congress and Exposition, Boston, Massachusetts, 31 October – 6 November, 2008.
 98. “Analysis of Clustering and Interphase Region Effects on the Electrical Conductivity of Carbon Nanotube-Polymer Nanocomposites via Computational Micromechanics”, G.D. Seidel, K.L. Boehringer, and D.C. Lagoudas, SYMP 1 Multifunctional Materials, 1-6 Polymer Nanocomposites Session of the ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems, Ellicott City, Maryland, 28-30 October, 2008. (SMASIS2008-670)
 99. “Micromechanics Modeling of the Elastic and Thermal Properties of Carbon Nanotube-Epoxy Nanocomposites and Unidirectional Hybrid Laminates”, G.D. Seidel, D.C. Lagoudas, S.J.V. Frankland, T.C. Clancy, J.C. Riddick, P.R. Thakre, and J. Zhu, Multiscale Modeling and Characterization of Nano-structured Polymer Composites Session of the 45th Technical Meeting of the Society of Engineering Science, Urbana-Champaign, Illinois, 12-15 October, 2008.
 100. “Modeling and Characterization of Effective Mechanical, Thermal and Electrical Properties of Multifunctional Nanocomposites”, D.C. Lagoudas and G.D. Seidel, 1st International Conference from Nanoparticles & Nanomaterials to Nanodevices & Nanosystems (IC4N-2008), Porto Carras Grand Resort, Halkidiki, Greece, 16-18 June, 2008. (Presented by D.C. Lagoudas)
 101. “Micromechanics Modeling of Polymer Nanocomposites for use as Multifunctional Materials”, G.D. Seidel and D.C. Lagoudas, 49th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Schaumburg, Illinois, 7-10 April, 2008. (Presented by D.C. Lagoudas) (AIAA 2008-1947)
 102. “Electrical and Thermal Conductivities of Carbon Nanotube-Epoxy Composites: Modeling and Characterization”, G.D. Seidel, Y. Bisrat, and D.C. Lagoudas, Advanced Composites and Nanostructured Materials Session 1-3-4 of the 2007 ASME International Mechanical Engineering Congress and Exposition, Seattle, Washington, 11-15 November, 2007. (IMECE2007-42339)
 103. “Micromechanics Modeling of Electrical and Thermal Conductivities of Carbon Nanotube-Epoxy Composites”, G.D. Seidel and D.C. Lagoudas, Active Nanocomposites Session of the 44th Technical Meeting of the Society of Engineering Science, College Station, Texas, 22-24 October, 2007.

104. "Micromechanics Modeling of Thermal Conductivities of Carbon Nanotube-Epoxy Nanocomposites: Influence of Thermal Resistance and Functionalizations", G.D. Seidel and D.C. Lagoudas, Multi-Scale Modeling and Characterization of Nanostructured Polymer Composites Session of the 44th Technical Meeting of the Society of Engineering Science, College Station, Texas, 22-24 October, 2007.
105. "Micromechanical Analysis of Interphase Effects on the Multi-functional Nature of Carbon Nanotube Composites", G.D. Seidel and D.C. Lagoudas, Keynote Address for Session 19-3-1 Active Nanocomposites I: Modeling of Carbon-Nanotube Based Composites at McMat 2007: ASME Applied Mechanics and Materials Conference, Austin, Texas, 3-7 June, 2007. (Presented by D.C. Lagoudas) (MCMAT2007-30503)
106. "Micromechanics Modeling of the Multi-Functional Nature of Carbon Nanotube-Epoxy Nanocomposites: Effective Elastic Thermal and Electrical Properties", D.C. Lagoudas and G.D. Seidel, COMP07: 6th International Symposium on Advanced Composites, Corfu, Greece, 16-18 May, 2007. (COMP2007-021)
107. "Micromechanics Aspects of Multi-scale Modeling of Multi-functional Nanocomposites: Effective Thermal Conductivity", G.D. Seidel and D.C. Lagoudas, 48th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Honolulu, Hawaii, 23-26 April, 2007. (Presented by D.C. Lagoudas) (AIAA 2007-2172)
108. "Micromechanical Characterization and Analysis of the Elastic Behavior of Carbon Nanotube Composites", D.C. Lagoudas, G.D. Seidel, and P.R. Thakre, ASME International Mechanical Engineering Congress and Exposition (IMECE06), November 5th-10th, 2006, Chicago, Illinois. (Presented by D.C. Lagoudas)
109. "Micromechanical Analysis of Interphase and Interface Effects on Load Transfer in Carbon Nanotube Composites", G.D. Seidel, D.C. Lagoudas, The 43rd Annual Technical Meeting of the Society of Engineering Science, State College, Pennsylvania, August 13-16, 2006.
110. "Micromechanics modeling of functionally graded interphase regions in carbon nanotube-polymer composites", G.D. Seidel, D.C. Lagoudas, S.J.V. Frankland, and T.S. Gates, 47th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Newport, Rhode Island, 1-4 May, 2006. (AIAA 2006-1678)
111. "Modeling the Effects of Clustering and Gradient Interphase Regions on the Effective Elastic Properties of Carbon Nanotube Reinforced Epoxy Composites", D.C. Lagoudas and G.D. Seidel, The 2005 ASME International Mechanical Engineering Congress and Exposition, Orlando, Florida, November 5-11, 2005.
112. "Modeling functionally graded interphase regions in carbon nanotube reinforced composites", G. D. Seidel, D.C. Lagoudas, S.J.V. Frankland, and T.S. Gates, 20th American Society for Composites Technical Conference, Drexel University, September, 2005.
113. "Micromechanical analysis of clustering and load transfer in carbon nanotube composites" G.D. Seidel , D.C. Lagoudas and D.C. Hammerand. ASME/ASCE/SES Conference, June 2005, Baton Rouge, Louisiana.
114. "Finite element micromechanical analysis of clustering and load transfer in carbon nanotube composites" D.C. Hammerand, G.D. Seidel and D.C. Lagoudas. National Congress on Computational Mechanics, June 2005, Austin, Texas. (Presented by D.C. Hammerand)

115. "Micromechanical Analysis of Clustering and Load Transfer in Carbon Nanotube Composites" D.C. Lagoudas, G.D. Seidel, and D.C. Hammerand. 41st Annual Technical Meeting of the Society of Engineering Science, October 10-13, 2004, Lincoln, Nebraska (Presented by D.C. Lagoudas)
116. "Micromechanical Analysis of Clustering and Load Transfer in Carbon Nanotube Composites" G.D. Seidel, D.C. Lagoudas, and D.C. Hammerand. Graduate Student Session of the 41st Annual Technical Meeting of the Society of Engineering Science, October 10-13, 2004, Lincoln, Nebraska.
117. "Effective Elastic Properties of Carbon Nanotube Reinforced Composites" D. Lagoudas and G. Seidel. 45th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference, Palm Springs, CA, April 19-22, 2004. (Presented by D.C. Lagoudas)
118. "A Micromechanical Study on the Clustering Effect of Carbon Nanotube Reinforced Composites," D.C. Lagoudas and G. D. Seidel. ASME Winter Conference, Washington, D.C., Nov. 16-22, 2003.
119. "A Model for Predicting the Evolution of Damage in Viscoelastic Particle Reinforced Composites" G.D. Seidel, D.H. Allen, and S.E. Groves. ASME Winter Conference, Washington, D.C., Nov. 16-22, 2003. (Presented by D.H. Allen)
120. "Raman Spectroscopy approach to mechanics of single wall carbon nanotubes composites," V. Hadjiev, D. Lagoudas, D. Davis, G. Seidel, ASME Summer Meetings, Scottsdale, AZ, June 17-20, 2003 (Presented by V. Hadjiev)
121. "Elastic Properties of Single Wall Carbon Nanotubes: Transitioning Atomic to Continuum Scales" E.-S. Oh, A.P. Awasthi, G.D. Seidel, D.C. Lagoudas, and J.C. Slattery. ICCES '03 Corfu, Greece, July 24-29, 2003 (Presented by D.C. Lagoudas).

Invited Talks and Lectures (11)

1. "Multiscale Modelling and Characterization of Macroscale Piezoresistivity in Carbon Nanotube-Polymer Nanocomposites and Their Application in Composites", Seminar at the Air Force Research Laboratory, Wright Patterson Air Force Base, Dayton, OH, 17 – June, 2016 (Invited by Dr. Brent Volk)
2. "Multiscale Modelling and Characterization of Macroscale Piezoresistivity in Carbon Nanotube-Polymer Nanocomposites and Their Application in Composites", Seminar at The Dow Chemical Company, Freeport, TX, 19 – November 2015 (Invited by Dr. Piyush Thakre)
3. "Multiscale Modeling of Macroscale Piezoresistivity in Carbon Nanotube-Polymer Nanocomposites and Fuzzy Fibers", G.D. Seidel, Seminar in the Engineering Science and Mechanics Department at Virginia Tech, Blacksburg, VA, 22 – January, 2014 (Invited by Dr. Romesh Batra)
4. "Multiscale Modeling of Macroscale Piezoresistivity in Carbon Nanotube-Polymer Nanocomposites and Fuzzy Fibers", G.D. Seidel, Seminar at the Centro de Investigación y de Estudios Avanzados (CINVESTAV), Merida, Mexico, 13 – December, 2013 (Invited by Dr. Victor Sosa)
5. "Multiscale Modeling of the Multifunctional Properties of CNT-Polymer Nanocomposites via Analytic and Computational Micromechanics", G.D. Seidel, 2013 Structural Engineering and Materials (SEM) Graduate Seminar in the Charles E. Via, Jr.

- Department of Civil and Environmental Engineering, Virginia Tech, Blacksburg, Virginia, 3 – April, 2013 (Invited by Dr. Cris Moen)
6. "Multiscale Modeling of the Multifunctional Properties of CNT-Polymer Nanocomposites via Analytic and Computational Micromechanics", G.D. Seidel, Seminar in the Department of Mechanical Engineering, Materials Science and Engineering Program, The Catholic University of America, Washington, D.C., 26 – November, 2012 (Invited by Dr. Jandro Abot)
 7. "Multiscale Modeling of the Multifunctional Properties of CNT-Polymer Nanocomposites via Analytic and Computational Micromechanics", G.D. Seidel, High Performance Materials Institute Seminar, 114 MRB, Florida State University, Tallahassee, Florida, 2 – November, 2012 (Invited by Dr. Tao Liu)
 8. "Multiscale Modeling of the Multifunctional Properties of CNT-Polymer Nanocomposites via Analytic and Computational Micromechanics", G.D. Seidel, National Institute of Aerospace Research Seminar, NASA Langley Research Center (LaRC), Building 1202 - Room 222, Hampton, Virginia, 18 – June, 2012 (Invited by Dr. Douglas Stanley)
 9. "Computational Micromechanics Models for Multifunctional Nanocomposites", G.D. Seidel, SEMINARIO DE LA UNIDAD DE MATERIALES (Materials Department Seminar); CENTRO DE INVESTIGACION CIENTIFICA DE YUCATAN (CICY) (Yucatan Scientific Investigation Center), Merida, Yucatan, Mexico, 14-16 May, 2012 (Invited by Dr. Francis Aviles)
 10. "Multiscale Modeling of Mechanical, Thermal, and Electrical Properties of Carbon Nanotube-Polymer Nanocomposites", G.D. Seidel, COMS 2011: Commercialization of Micro-Nano Systems Conference; Nanocomposite Manufacturing Initiatives and Challenges Panel Session, Greensboro, North Carolina, 28-31 August, 2011 (Invited by Ray Jones).
 11. "Multiscale Modeling of Mechanical, Thermal, and Electrical Properties of Carbon Nanotube-Polymer Nanocomposites", G.D. Seidel, SEMINARIO DE LA UNIDAD DE MATERIALES (Materials Department Seminar); CENTRO DE INVESTIGACION CIENTIFICA DE YUCATAN (CICY) (Yucatan Scientific Investigation Center), Merida, Yucatan, Mexico, 20-23 June, 2011 (Invited by Dr. Francis Aviles).

Student Conferences and Poster Sessions (9)

1. "Multiscale Modeling of Carbon Nanotube Sprayed Carbon Fiber Composites via Micromechanics", G.D. Seidel and D.C. Lagoudas, Nanohour at the Beckman Institute, University of Illinois Urbana-Champaign, October 18th, 2006.
2. "Multiscale Modeling of Carbon Nanotube Sprayed Carbon Fiber Composites via Micromechanics", Student Research Week – Texas A&M University, March 28, 2006, College Station, Texas. (1st Place in Session)
3. "Micromechanical Analysis of Clustering and Load Transfer in Carbon Nanotube Composites" G.D. Seidel. Poster Session at 3rd Annual TiiMS-URETI Review Meeting, August 2-3, 2005, College Station, Texas. (3rd Place Poster in Division)
4. "Modeling the Effects of Clustering and Gradient Interphase Regions on the Effective Elastic Properties of Carbon Nanotube Reinforced Epoxy Composites" Student Research Week – Texas A&M University, March 29, 2005, College Station, Texas. (1st Place in Session)

5. "Modeling of carbon nanotube composites" G. Seidel and D. Lagoudas. Poster Session at NASA URETI Workshop, October 13-15, 2004, College Park, Maryland.
6. "Micromechanical Analysis of the Effective Elastic Properties of Carbon Nanotube Reinforced Composites" G.D. Seidel and S. Vaitkunas. Poster Session at 2nd Annual TiiMS-URETI Review Meeting, July 28-29, 2004, Houston, Texas. (Honorable Mention)
7. "Micromechanics of Carbon Nanotube-Reinforced Composites" G.D. Seidel. Student Research Week – Texas A&M University, March 30, 2004, College Station, Texas. (2nd Place in Session)
8. "Modeling of Carbon Nanotube Composites", G.D. Seidel, E.-S. Oh, A.P. Awasthi, and D.C. Lagoudas, Student Poster Session at 1st Annual TiiMS-URETI Review Meeting, July 14-15, 2003, Houston, Texas. (1st Place Poster)
9. "A Model for the Predicting of the Evolution of Damage in Particle-Reinforced Composites" G.D. Seidel. Student Research Week – Texas A&M University, March 24, 2003, College Station, Texas.

Informal Presentations

1. "Effective Elastic Properties of Carbon Nanotubes and Nanocomposites" While visiting Sandia National Laboratories, August 22, 2004.
2. "Effective Elastic Properties of Carbon Nanotubes and Carbon Nanotube Reinforced Composites" D.C. Lagoudas, E-S Oh, G.D. Seidel, A. Awasthi, Y. Bisrat, and C-G Chao. While visiting NASA Langley, July, 2004. (Presented by D.C. Lagoudas)

TEACHING INTERESTS

- Mechanics of Materials & Strength of Materials
- Continuum Mechanics & Atomistic Modeling
- Micromechanics Analysis of Composites & Fracture Mechanics Models
- Introduction to Finite Element Analysis & Nonlinear Finite Elements
- Viscoelasticity
- Multifunctional Active Materials
- Multiscale Modeling of Damage Evolution and Multifunctional Composites

TEACHING EXPERIENCE

Associate Professor Virginia Tech – Undergraduate Courses

- AOE 3024: Thin-Walled Structures (Fall 2017)
 - Course Data: Enrollment 144 (2 Sections 82/62); 75min Lecture 5x per week
- AOE 3024: Thin-Walled Structures (Sumr 2017)
 - Course Data: Enrollment 9 (1 Section on-line); 75min Lecture 5x per week
- AOE 3024: Thin-Walled Structures (Fall 2016)
 - Course Data: Enrollment 114 (2 Sections 33/81); 75min Lecture 2x per week
- AOE 3024: Thin-Walled Structures (Sumr 2016)
 - Course Data: Enrollment 12 (2 Sections 4 (in-class)/8 (on-line)); 75min Lecture 5x per week
- AOE 3024: Thin-Walled Structures (Fall 2015)
 - Course Data: Enrollment 130 (2 Sections 70/60); 75min Lecture 2x per week

Assistant Professor Virginia Tech – Undergraduate Courses

- AOE 3024: Thin-Walled Structures (Fall 2014)

- Course Data: Enrollment 127 (2 Sections 71/56); 75min Lecture 2x per week
- AOE 3024: Thin-Walled Structures (Fall 2013)
 - Course Data: Enrollment 184 (2 Sections 107/77); 75min Lecture 2x per week
- AOE 3024: Thin-Walled Structures (Fall 2012)
 - Course Data: Enrollment 162 (2 Sections 84/78); 75min Lecture 2x per week
- AOE 3024: Thin-Walled Structures (Fall 2011)
 - Course Data: Enrollment 142 (2 Sections 63/79); 75min Lecture 2x per week
- AOE 3024: Thin-Walled Structures (Fall 2010)
 - Course Data: Enrollment 147 (2 Sections 70/77); 75min Lecture 2x per week
- AOE 3024: Thin-Walled Structures (Fall 2009)
 - Course Data: Enrollment 143 (2 Sections 66/77); 75min Lecture 2x per week
- AOE 3024: Thin-Walled Structures (Fall 2008)
 - Course Data: Enrollment 120 (2 Sections 40/80); 75min Lecture 2x per week

Associate Professor Virginia Tech – Graduate Courses

- AOE 5984: Meshless and Semi-Meshless Modeling Techniques for Composite Materials (Fall 2018)
- AOE 5614: Multiscale Modeling of Multifunctional Composites (Fall 2018)
- AOE 5034/ESM 5304: Mechanical and Structural Dynamics/Vibrations (Spring 2018)
- AOE 5604: Multiscale Modeling of Damage in Composites (Spring 2017)
- AOE 5034/ESM 5304: Mechanical and Structural Dynamics/Vibrations (Spring 2016)

Assistant Professor Virginia Tech – Graduate Courses

- AOE 5984: Special Topics: Multiscale Modeling of Damage in Composites (Spring 2015)
- AOE 5984: Special Topics: Multiscale Modeling of Multifunctional Composites (Spring 2014)
- AOE 5984: Special Topics: Multiscale Modeling of Damage in Composites (Spring 2013)
- AOE 5984: Special Topics: Multiscale Modeling of Multifunctional Composites (Spring 2012)
- AOE 5984: Special Topics: Multiscale Modeling of Damage in Composites (Spring 2011)
- AOE 5984: Special Topics: Multiscale Modeling of Nanocomposites (Spring 2010)
- MACR 5015: Fundamentals of Macromolecular Science and Engineering I with Laboratory (Team Instructor: Taught 2 weeks of lectures on Constitutive and Mechanical Properties of Polymers) (Fall 2009)

Lecturer Texas A&M – Undergraduate Courses

- AERO 214: Aerospace Engineering Principles of Continuum Mechanics (Fall 2007)
 - Fully responsible for all aspects of course development and instruction.
 - Course Data: Enrollment 37; 75min Lecture 2x per week; 75min Recitation 1 per week

Teaching Assistant Texas A&M – Undergraduate Courses

- ENGR 214: Conservation Principles for Continuous Media (6 Semesters, 1999-2002)
 - Assisted five different teachers of record: Drs. Dimitris Lagoudas, David Allen, Walter Haisler, John Whitcomb, and Kayleen Helms.

- Course Data: Average enrollment 77 (Mixture of Engineering Disciplines); 2hr Lecture 2x per week

Teaching Assistant Texas A&M – Graduate Courses

- AERO 603\MEMA 602: Continuum Mechanics (Fall 2003)
 - Assisted Dr. Dimitris Lagoudas on a volunteer basis.
 - Course Data: 32 Students; 1hr 15min Lecture 2x per week.
- MEMA 625: Micromechanics (Spring 2005)
 - Assisted Dr. Dimitris Lagoudas on a volunteer basis.
 - Course Data: 7 Students; 1hr 15min Lecture 2x per week.

JOURNAL REVIEWS

1. Acta Materialia
2. Advanced Materials Interfaces
3. AIAA Journal
4. Applied Surface Science
5. ASME Journal of Materials Technology
6. Carbon
7. Composite Interfaces
8. Composites Part A
9. Composites Part B
10. Composite Structures
11. Composites Science and Technology
12. Computational Materials Science
13. Computer Methods in Applied Mechanics and Engineering
14. Engineering Fracture Mechanics
15. European Journal of Mechanics A/Solids
16. Express Polymer Letters
17. Finite Elements in Analysis and Design
18. International Journal of Applied Mechanics
19. International Journal of Fracture
20. International Journal of Solids and Structures
21. Journal of Applied Mechanics
22. Journal of Applied Research Technology
23. Journal of Composite Materials
24. Journal of Intelligent Material Systems and Structures
25. Journal of Materials and Design
26. Journal of Molecular Graphics and Modelling
27. Journal of Nanomaterials and Micromechanics
28. Journal of Vibration and Control
29. Latin American Journal of Solids and Structures
30. Macromolecular Materials and Engineering
31. Materials
32. Materials Letters
33. Meccanica
34. Mechanics of Materials
35. Modelling and Simulation in Materials Science and Engineering

36. Nanoscale
37. Nanotechnology
38. Nano Letters
39. Philosophical Magazine
40. Physica E
41. Polymer Composites
42. Science and Engineering of Composite Materials
43. Sensors and Actuators
44. Smart Materials and Structures
45. Theoretical and Applied Fracture Mechanics

RESEARCH STUDENTS MENTORED

Ph.D. Students

1. Neslihan Genckal – Fall 2018 – Present
2. Sammi Rocker – Fall 2018 – Present
3. Stefan Povolny – Fall 2015 – Present
4. Ryan Seifert – Fall 2014 – Present (Co-Advised w/ Dr. Mayuresh Patil)
5. Krishna Talamadupula – Spring 2014 – Present (ME)
6. Skylar Stephens – Fall 2013 - Present
7. Naveen Prakash – Fall 2012 – Summer 2017 (ESM)
8. Engin Sengezer - Fall 2011 – Summer 2017
9. Adarsh Chaurasia - Summer 2011 – May 2016 (ESM)
10. Yumeng Li - Fall 2009 – Fall 2014
11. Xiang Ren - Fall 2009 – Spring 2014

M.S. Students

1. Nishant Shirodkar – Fall 2017 -- Present
2. Seth Berry – Spring 2015 – Summer 2016
3. Sebastian Fave – Fall 2012 – Summer 2014
4. Corrado Degl'Incerti Tocci – Fall 2012 – Fall 2013
5. Brandon Hull - NASA Aeronautics Fellowship, Fall 2011 – Summer 2013
6. Skylar Stephens - SMART Fellowship, Summer 2010 – Spring 2013

B.S. Students

1. Elleora Farris – Fall 2018 – Present
2. Travis Roell – Summer 2018 – Present
3. Christopher Rodulfo – Summer 2018 – Present
4. Tanner McCoy – Fall 2017 – Present
5. Sammi Rocker – Spring 2017 – Spring 2018
6. Wade Pearrell – Spring 2017
7. Peter Freshwater – Summer 2016
8. Nicholas Stinson – Spring 2015
9. Cayla Schnebele – Spring 2015
10. Mickenzi Schank – Spring 2015 – Spring 2016
11. Kyle Pyne – Spring 2015
12. Jeremy O'Donnell – Spring 2015 – Fall 2016
13. Phillip Head – Spring 2015 – Spring 2016
14. Kris Tan – Summer 2014 – Spring 2015

15. Mark Sweet - Undergraduate Research Spring 2014
 16. Stefan Povolny - Undergraduate Research Spring 2014 – Spring 2015
 17. Billy Greer - Undergraduate Research Spring 2014
 18. Patrick Clark - Undergraduate Research Spring 2014
 19. Nick Janssens - Undergraduate Research Fall 2013 – Spring 2015
 20. Seth Berry - Undergraduate Research Fall 2013 – Spring 2014
 21. Jimmy Congleton - Undergraduate Research Summer 2013 – Fall 2013
 22. Garret Hehn - Undergraduate Research Spring 2013 – Fall 2013
 23. Stephanie Butron - Undergraduate Research Fall 2012 – Spring 2013
 24. Britannia Vondrasek - Undergraduate Research Summer 2012 – Spring 2013; 2012 Virginia Space Grant Consortium Scholarship
 25. Alex Rummel - Undergraduate Research Summer 2012
 26. Matt Miller - Undergraduate Research Summer 2012 – Spring 2014
 27. Robert Saunders - Undergraduate Research Summer 2012 – Spring 2013
 28. David Gayman - Undergraduate Research Summer 2011 – Spring 2012
 29. Corrado Degl'Incerti Tocci - Undergraduate Research Summer 2011
 30. Brandon Hull - Undergraduate Research Spring 2011
 31. Thomas Hays - Undergraduate Research Fall 2010 – Spring 2012
 32. Sebastian Fave - Undergraduate Research Fall 2010 – Spring 2012
 33. Samuel Taylor - Undergraduate Research Fall 2010 – Spring 2011
 34. Josh Burton - Undergraduate Research Summer 2010 – Spring 2012
 35. John Kiefer - Undergraduate Research Spring 2010 - Spring 2011; 2010 Virginia Space Grant Consortium Scholarship;
 36. Sophie Puydupin - Undergraduate Research Spring 2009 - Spring 2010
 37. Skylar Stephens - Undergraduate Research Spring 2009 - Spring 2010; 2009 Virginia Space Grant Consortium Scholarship
 38. Rachel Van Buren - Undergraduate Research Fall 2008
- Non-Thesis Masters Students**
39. Christina McLane/Arendt - Fall 2008 - Spring 2010

FUNDED RESEARCH PROJECTS

1. AFOSR: “Understanding Enhancement of Strength in CNT/GNP-Based Structural Composites”, PI Gary D. Seidel, Co-PI Shengfeng Cheng, Performance Period: June 2018 – June 2021, Amount: \$618,229
2. SBIR Phase I with Lynntech, Inc. September 2017 – February 2018, Amount: \$15,000.
3. AFOSR: “Exploration of structural health monitoring of hot spot initiation in CNT – nanocomposite bonded energetic materials”, PI Gary D. Seidel, Performance Period: May 2016 – April 2019, Amount: \$438,429
4. ICTAS Junior Faculty Grant: "Composite Delamination Prevention and Detection via Sustainable, Tough and Smart Nanocellulose/Carbon Nanotube Fibers - SmartPinZ", PI Gary D. Seidel, Co-PI Barry Goodell, Performance Period: July 2014 – July 2016, Amount: \$120,000.
5. AFOSR: “Exploration of Structural Health Monitoring Capabilities of Carbon Nanotube-Epoxy Nanocomposite Matrix in Epoxy-Based Energetic Materials”, PI: Gary D. Seidel, Performance Period: April 2014 – April 2016, Amount: \$106,588. Note: Addendum to

- “Multiscale Modeling and Characterization of the Effects of Damage Evolution on the Multifunctional Properties of Polymer Nanocomposites”.
6. AFOSR: “Multiscale Modeling and Characterization of the Effects of Damage Evolution on the Multifunctional Properties of Polymer Nanocomposites”, PI: Gary D. Seidel, Performance Period: April 2012 – April 2015, Amount: \$359,508.
 7. ICTAS Junior Faculty Grant: "Damping and Piezoresistive Response of Nanocomposite Structural Health Monitoring Sensors: Multiscale Modeling and Characterization", PI Gary D. Seidel, Co-PI D. Inman, Performance Period: July 2011 – July 2013, Amount: \$120,000.
 8. ICTAS Seed Grant: "Design Optimization and Fabrication of Nanocomposite MAV Wings", PI Mayuresh Patil, Co-PI: Gary D. Seidel and B. Canfield, Performance Period: July 2011 – July 2012, Amount: \$75,000
 9. NSF OISE International Research and Education: Planning Visits and Workshops: "Electric and electro-mechanical properties of CNT-polymer nanocomposites: An experimental and multiscale modeling approach", PI: Gary D. Seidel, Performance Period: August 2010 – July 2012, Amount: \$20,000. Note: Travel funds for PI and students to establish collaboration with Dr. Francis Aviles Cetina at the Centro de Investigación Científica de Yucatán, Merida, Mexico.
 10. Oak Ridge Associated Universities (ORAU) Ralph E. Powe Junior Faculty Enhancement Award: "Polymer Nanocomposites for Structural Health Monitoring Applications: Multiscale Modeling and Characterization", PI: Gary D. Seidel, Performance Period: June 2010 – May 2011, Amount: \$10,000.
 11. Naval Engineering Education Consortium (NEEC): Seed Money Startup Subproject "Development of Nanocomposite-based Structural Health Monitoring Sensors for Naval Vessel Applications", PI: Gary D. Seidel, Performance Period: May 2010 – September 2010, Amount: \$72,065. Note: Sub-project proposed as part of 5 year \$6,077,723 effort at Virginia Tech as a member institution of the NEEC.
 12. ARL MCOE: Existing Center Titled "Multilayered Technologies For Armored Structures And Composites (MultiTASC): Teaming The Army Research Laboratories (ARL) With Virginia Tech (VT)", PI Tim Long, Co-PIs: Romesh Batra, James Heflin, S. Richard Turner, John R. Morris, Nakhiah Goulbourne, Jack Lesko, Mike Hyer, Garth L. Wilkes, and Ronald D. Moffitt, Additional Co-PIs: Scott Case, Robert Moore, Gary D. Seidel, Performance Period: September 2006 – September 2015, Amount: \$3,871,718. Sub-project MT5-3 "Characterization of Graded Interphase Regions in Fiber Reinforced Composites", Co-PI: Gary D. Seidel, Performance Period: March 2010 – May 2012, Amount: \$92,086.
 13. SCHEV: “A 3D Printer & Scanner For Educational and Research Applications”, PI: Leigh McCue, Co-PI: William Devenport, Alan Brown, Wayne Neu, Mayuresh Patil, Michael Philen, Gary D. Seidel, Craig, Woolsey, Performance Period: January 2010 – December 2010, Amount: \$42,198.
 14. AFOSR - FY09 MURI Research Topic #18: "Synthesis, Characterization and Prognostic Modeling of Functionally Graded Hybrid Composites for Extreme Environments", PI: Dimitris C. Lagoudas, Co-PIs: Paul Cizmas, Xin-Lin Gao, Ibrahim Karaman, Ozden Ochoa, Zoubeida Ounaies, Miladin Radovic, J.N. Reddy, John Whitcomb, Phillippe H. Guebelle, Nancy Sottos, Scott White, Fu-Kuo Chang, Khalid Lafdi, Daniel J. Inman,

Nakhiah Goulbourne, Gary D. Seidel, Performance Period: June 2009 - September 2015,
Amount: \$7,736,920, Sub-Task Amount: \$380,119.

HONORS AND AWARDS

Professional Awards

- 2013 AIAA Associate Fellow
- 2018 AFRL Summer Faculty Fellow – Eglin AFB (HERD)
- 2017 AFRL Summer Faculty Fellow – Eglin AFB (HERD)
- Oak Ridge Associated Universities Ralph E. Powe Junior Faculty Enhancement Award, 2010
- 2016 ASME/Boeing Best Paper Award for their 2016 AIAA SciTech paper titled “A Coupled Electromechanical Peridynamics Framework For Modeling Carbon Nanotube Reinforced Polymer Composites”
- 2016 Dean’s Award for Excellence in Service
- 2013-2014 Virginia Tech College of Engineering Undergraduate Research Advisor Award presented by the Student Engineers’ Council

Graduate Awards

- Sandia National Laboratories/Texas A&M University Doctoral Fellowship in Engineering (2002-2006)
- Texas A&M Association of Former Students Distinguished Graduate Student Award for Excellence in Doctoral Research, 2007-2008
- Texas A&M University Regents Fellowship (1999-2000)
- Elected to Membership in: Phi Kappa Phi
- 1st Place, Student Research Week, Texas A&M University, 2006
- 1st Place, Student Research Week, Texas A&M University, 2005
- 2nd Place, Student Research Week, Texas A&M University, 2004
- 3rd Place, Student Poster Session, 3rd Annual TiiMS-URETI Review Meeting, 2005
- Honorable Mention, Student Poster Session, 2nd Annual TiiMS-URETI Review Meeting, 2004
- 1st Place, Student Poster Session, 1st Annual TiiMS-URETI Review Meeting, 2003
- Selected for Engineering Sciences Summer Institute, Sandia National Laboratories, 2000

Undergraduate Awards

- Graduated Magna Cum Laude
- Selected for Science and Technology Outreach Program, Sandia National Laboratories, 1999
- Harrison Study Abroad Scholarship, 1998
- France ’98 Study Abroad Scholarship, 1998
- TEES Summer Research Fellowship, 1997
- Aggie Spirit Scholarship, 1999
- Weingarten Reality Scholarship, 1999
- Greater Heights Chamber of Commerce Scholarship, 1994
- Elected to Membership in: Tau Beta Pi, Sigma Gamma Tau, Golden Key National Honor Society
- 1st Place, Bovay Ethics Essay Award, 1998

UNIVERSITY AND DEPARTMENTAL SERVICE - VIRGINIA TECH

- Served as Interim Assistant Department Head for Academic Affairs (Fall 2017 – Spring 2018)
- Served as College of Engineering Representative to the Commission on Graduate Studies and Policies; Assigned to subcommittee on Graduate Student Appeals. (Fall 2013 – Summer 2015); Serving as Vice Chair (Fall 2015 – Spring 2016)
- Served as Chair of the Graduate School’s Graduate Curriculum Committee (Fall 2015 – Spring 2016)
- Serving as AOE Assessment/ABET Coordinator (Fall 2018 – Present)
- Serving as AOE Departmental Representative to the Engineering Faculty Organization Executive Committee (Fall 2012 – Spring 2015; Alternate Fall 2015 - Present) (Served as Secretary for the Executive Committee)
- Serving as Faculty Advisor to Sigma Gamma Tau (Fall 2011 - Present)
- Served as Interim Faculty Advisor to the Microgravity Team (Fall 2013/Spring 2014)
- Serving on departmental Committee for Graduate Studies (Fall 2015 – Present)
- Serving as departmental Structure Curriculum Lead (Fall 2015 – Present)
- Serving on departmental Committee for Strategic Planning (Fall 2013 – Present)
- Served on departmental Committee for Mentoring (Fall 2012 – Fall 2016)
- Served on departmental committee for maintaining and updating the AOE Department Display Case in Hancock Atrium. (Spring 2010 – Spring 2015)
- Serving as departmental AOE Structures Curriculum Chair (Fall 2016 – Present)
- Serving as structures group coordinator for MTS testing equipment in Hancock 107 laboratory. (Spring 2010 - Present)
- Provided facilitated discussion seminars on ethics as part of the Graduate School’s GTA Workshop (Fall 2015).
- Delivered a seminar “Multiscale Modeling and Characterization of Multifunctional Nanocomposites” to Galileo/Hypatia Learning Community (Fall 2017).
- Delivered a seminar “Multiscale Modeling and Characterization of Multifunctional Nanocomposites” to incoming freshman as part of the Center for the Enhancement of Engineering Diversity (CEED)'s STEP program (Summer 2015).
- Organized a session with Prof. Michael Philen on "How Smart Materials can lead to Intelligent Structures" for the Center for the Enhancement of Engineering Diversity (CEED)'s CTech2 program (Camp for High School girls) (Summer 2016)
- Organized a session with Prof. Michael Philen on "How Smart Materials can lead to Intelligent Structures" for the Center for the Enhancement of Engineering Diversity (CEED)'s CTech2 program (Camp for High School girls) (Summer 2014)
- Organized a session with Prof. Michael Philen on "How Smart Materials can lead to Intelligent Structures" for the Center for the Enhancement of Engineering Diversity (CEED)'s Imagination program (Camp for 6th - 7th grade students) (Summer 2013)
- Organized a session with Prof. Michael Philen on "How Smart Materials can lead to Intelligent Structures" for the Center for the Enhancement of Engineering Diversity (CEED)'s CTech2 program (Camp for High School girls) (Summer 2013)
- Organized a session with Prof. Michael Philen on "Why Airplanes Fly" for the Center for the Enhancement of Engineering Diversity (CEED)'s Imagination program (Camp for 6th - 7th grade students) (Summer 2012)

- Organized a session with Prof. Michael Philen on "Why Airplanes Fly" for the Center for the Enhancement of Engineering Diversity (CEED)'s Imagination program (Camp for 6th - 7th grade students) (Summer 2011)
- Participated in Freshmen Engineering Research Seminar (Fall 2011, Fall 2012, Fall 2013, Fall 2014, Fall 2016, Fall 2017).
- Organized and delivered departmental presentation with students on Design Build Compete opportunities in the AOE Department as part of the College of Engineering Open House (Spring 2009, Spring 2010, Spring 2014, Spring 2015, Spring 2016).
- Initiated, organized and delivered departmental presentation with students on Undergraduate Research opportunities in the AOE Department as part of the College of Engineering Open House (Spring 2010, Spring 2014).

PROFESSIONAL SERVICE

- Chair, AIAA Materials Technical Committee (Spring 2013 – Spring 2015)
- Vice Chair, AIAA Materials Technical Committee (Spring 2011 – Spring 2013)
- Secretary, AIAA Materials Technical Committee (Spring 2010 - Spring 2011)
- Vice Chair, Adaptive Structures and Material Systems Branch in the Aerospace Division of ASME (Fall 2017 – Fall 2018)
- Treasurer, Adaptive Structures and Material Systems Branch in the Aerospace Division of ASME (Fall 2017 – Fall 2018)
- Secretary, Adaptive Structures and Material Systems Branch in the Aerospace Division of ASME (Fall 2016 – Fall 2017)
- Chair, ASME Active and Multifunctional Materials TC (Spring 2018 – Present)
- Co-Chair, ASME Active and Multifunctional Materials TC (Spring 2016 – Spring 2018)
- Member, Adaptive Structures and Material Systems Branch in the Aerospace Division of ASME (Fall 2015 – Present)
- Member, AIAA Materials Technical Committee (Spring 2010 - Present)
- Member, ASME Materials Division Composites and Heterogeneous Materials Technical Committee (Fall 2008 – Fall 2012)
- Member, ASME Applied Mechanics Division Materials Technical Committee (Fall 2008 - Present)
- Member, ASME Active and Multifunctional Materials TC (Fall 2013 – Present)
- Member, AIAA Materials Technical Committee, Materials Handbook Sub-committee (Spring 2009 - Spring 2011)
- Served as Materials TC representative to the Crichlow Award selection committee (Spring 2014)
- NSF Panel Review Member (Spring 2009, Spring 2010, Summer 2012, Spring 2015, Spring 2017)
- Mentor, NASA Motivating Undergraduates in Science and Technology (MUST) Project 2008/2009, 2010/2011, 2011/2012 Academic Years.
- AIAA Materials Technical Committee Representative to the 54th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference 2013.
- AIAA Materials Technical Committee Representative to the 53rd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference 2012.

- AIAA Materials Technical Committee Representative to the 52nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference 2011.
- 2015 Society of Engineering Science 52nd Annual Technical Meeting, Symposium on Micromechanics & Multifunctional Nano Composites (Symposium Organizer)
- 2018 Conference on Smart Materials, Adaptive Structures & Intelligent Systems (SMASIS) Symposium 1: Multifunctional Materials (Symposium Chair)
- 2017 Conference on Smart Materials, Adaptive Structures & Intelligent Systems (SMASIS) Symposium 1: Multifunctional Materials (Symposium Chair)
- 2016 Conference on Smart Materials, Adaptive Structures & Intelligent Systems (SMASIS) Symposium 1: Multifunctional Materials (Symposium Co-Chair)
- 2015 Conference on Smart Materials, Adaptive Structures & Intelligent Systems (SMASIS) Symposium 1: Development and Characterization of Multifunctional Materials (Symposium Co-Chair)
- 2014 Conference on Smart Materials, Adaptive Structures & Intelligent Systems (SMASIS) Session SYMP 1-4 Shape Memory Polymers (Technical Session Chair)
- Topic Organizer, 3-35 Multiscale Modeling of Damage in Composites, 2012 ASME IMECE
- SubTopic Co-Organizer, 1-11 Advances in Aerospace Materials and Structures, Subtopic: Materials for High Temperature Applications, 2012 ASME IMECE
- Topic Co-Organizer, 12-17 Mechanics of Multifunctional and Nanostructured Materials - Modeling and Characterization, 2010 ASME IMECE
- Topic Co-Organizer, 12-35 Mechanics of Multifunctional and Nanostructured Materials - Modeling and Characterization, 2009 ASME IMECE

PROFESSIONAL SOCIETIES

- Associate Fellow, American Institute of Aeronautics and Astronautics (AIAA)
- Member, American Society of Mechanical Engineers (ASME)
- Member, Society of Engineering Science (SES)
- Member, American Society for Engineering Education (ASEE)
- Member, Society for Natural Philosophy (SNP)