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EDUCATION

Ph. D.	Mechanical Engineering, University of California, Davis (1999).
M. S.	Mechanical Engineering, University of California, Davis (1994).
B. S.	Aeronautical Engineering, University of California, Davis (1992).

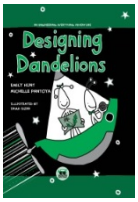
EXPERIENCE

1/14 – Present	J.W. Wright Regents Endowed Chair Professor, Mechanical Engineering Department, Texas Tech University
9/10-12/13	Professor, Mechanical Engineering Department, Texas Tech University, Lubbock, Texas.
9/05 – 9/10	Associate Professor, Mechanical Engineering Department, Texas Tech University, Lubbock, Texas.
9/00 – 9/05	Assistant Professor, Mechanical Engineering Department, Texas Tech University, Lubbock, Texas.
6/01 – 9/01	Visiting Scholar, Los Alamos National Laboratory, Combustion and Energetic Materials Division
1/99 - 8/00	Gas Turbine Research and Development Program Manager, California Energy Commission, Sacramento, California.
9/98 - 7/00	Part-Time Faculty, California State University, Sacramento.
6/94 - 1/99	Graduate Research Assistant, University of California, Davis and Lawrence Livermore National Laboratory, Livermore, California (Supervisor: Ben Shaw).
1/92 - 6/94	Graduate Research Assistant, University of California, Davis and NASA Ames Research Center, Moffett Field, California (Supervisor: Bruce White).
1/97 - 6/98	Graduate Teaching Assistant, University of California, Davis.
5/92 - 10/92	Combustion Engineer Intern, Sandia National Laboratory, Combustion Research Facility, Livermore, California.

Patents

1. Nanostructured Metallic Alloys for Antibacterial Applications, Emily Hunt and Michelle Pantoya filled with US Patent Office October 2011 (filed jointly by Texas A& M University and Texas Tech University). Patent Number 37488.
2. Energetic Materials and Methods of Tailoring Electrostatic Discharge Sensitivity of Energetic Materials, Inventors: Michael A. Daniels, Ronald J. Heaps, Ronald S. Wallace, Michelle L. Pantoya and Eric Collins, filled with US Patent office October 2013. US Patent Number 2939-11946.

Books – Juvenile



1. Emily Hunt and Michelle Pantoya, Designing Dandelions, Published by Texas Tech University Press, ISBN: 978-0-89672-849-3, Library of Congress Control Number: 2013938821. Available online (www.amazon.com) and at book stores.
2. E.M. Hunt and M.L. Pantoya, Pride by Design, Westcom Press, ISBN 13:978-0-9835003-4-6. Available for purchase at Texas Tech University, Office of the President and the Science Spectrum. December, 2011.
3. E.M. Hunt and M.L. Pantoya, Engineering Elephants, AuthorHouse publishing, 2010. ISBN: 978-1-4490-5816-6. Available online (www.amazon.com) and at book stores.

4. E. M. Hunt and M. L. Pantoya, Engineering in Space: Adventures of an Astronaut Engineer, Authorhouse Publishing, 2014, In Press

Books – Professional

1. C.M. Weir, M.L. Pantoya and M.A. Daniels, Electrostatic Discharge Sensitivity of Composite Energetic Materials, Lambert Academic Publishing, (an imprint of AV Akademikerverlag GmbH & Co.), Saarbrucken, Germany. ISBN 978-3-659-22065-4 (2012).
2. E. M. Hunt and M. L. Pantoya, Nanostructured Metallic Alloys: Synthesis, Properties and Applications, ISBN: 978-3-8364-3438-6, VDM Verlag Dr. Muller publisher 2007.
3. S.W. Dean and M. L. Pantoya, Effects of Gas Generation on Nano-Al Fueled Energetic Materials: A comparative study of two nanothermites, VDM Verlag, ISBN-10:3639174240, July, 2009.

Book Chapters

1. O. Mulamba and M.L. Pantoya, "Combustion Characterization of Energetic Fluoropolymer Composites," In Handbook of Fluoropolymer Science and Technology, Smith, D. W., Jr.; Iacono, S. T.; Iyer, S., Eds. Wiley, 2014, in preparation. (ISBN 9780470079935).
2. M. Pantoya, K. Kappagantula, C. Farley, "Characterizing Metal Particle Combustion In Situ", Chapter 11 In: Metal Nanopowders. Production, Characterization, Applications and Safety, Editor: Alexander Gromov. Wiley in Press 2013.
3. E. Hunt, P. Lockwood-Cooke and M. L. Pantoya, Mechanical Engineering Education: Preschool to Graduate School, Chapter 5 in Mechanical Engineering, Editor: Murat Gokcek, Published by InTech Publishing, ISBN: 978-953-51-0505-3, 2012.
4. M. Pantoya, S. Son, W. Danen, B. Jorgensen, B. Asay, J. Busse, and J. Mang, "Characterization of Metastable Intermolecular Composites (MICs)," Chapter 16 in Defense Applications of Nanomaterials, ACS Symposium Series 891, Miziolek, A. W., Karna, S. P., Mauro, J. M., and Vaia, R. A. Editors, Copyright American Chemical Society, pp. 227-240, 2005.

Journal Publications Accepted and In Print (in chronological order)

1. "New Estimates of Minimum Wind Speeds for Raising Dust on Mars," Greeley, R., R. N. Leach, M. B. Lacchia (Pantoya), B.R. White, D.E. Trilling, and J.B. Pollack, *Bull. Amer. Astron. Sci*, 26:1129-1133 (1994).
2. "Aeolian Behavior of Dust in a Simulated Martian Environment," White, B.R., M. B. Lacchia (Pantoya), R. Greeley, and R. N. Leach, *Journal of Geophysical Research* 102 no. E11, Nov. 25, pp. 25629-25640 (1997).
3. "Studies of Energetic and Non-energetic Materials Immersed in Molten Salts," M. B. Lacchia (Pantoya) and B. D. Shaw, *Combustion Science and Technology* 139: pp. 59-73 (1998).
4. "High-Speed Imaging of LX-04 and LX-17 Decomposition in Molten Salts," M. B. Lacchia (Pantoya), B. D. Shaw, and E. A. Megas, *Propellants, Explosives, Pyrotechnics* 25(1), 19-25 (2000).
5. "Growth and Potential Applications of Large Spherical Bubbles Using Reactive Gases," B. D. Shaw and M. L. Pantoya, *International Communications in Heat and Mass Transfer* 27(6), 807-814 (2000).
6. "Molten Salt Destruction of Energetic Materials: Emission and Absorption Measurements," M. L. Pantoya and B. D. Shaw, *Journal of Energetic Materials* 20(1), (2002).
7. "Non-Uniform Laser Ignition in Energetic Materials," J. Granier, T. Mullen and M. L. Pantoya, *Combustion Science and Technology* 175(11), 1929-1951, (2003).
8. "The Effect of Size Distribution on Burn Rate in Nanocomposite Thermites: A Probability Density Function Study," J. J. Granier and M. L. Pantoya, *Combustion Theory and Modelling* 8(3), 555-565 (2004).
9. "The Role of the Al_2O_3 Passivation Shell Surrounding Nano-Aluminum Particles in the Combustion Synthesis of NiAl," J. J. Granier, K. B. Plantier and M. L. Pantoya, *Journal of Materials Science* 39(21), 6421-6431 (2004).
10. "Nickel Aluminum Superalloys Created by the Self-propagating High-temperature Synthesis (SHS) of Nano-particle Reactants," E. M. Hunt, J. J. Granier, K. B. Plantier and M. L. Pantoya, *Journal of Materials Research* 19(10), 3028-3036 (2004).
11. "Nano-scale Reactants in the Self-Propagating High-Temperature Synthesis of Nickel Aluminide," E. Hunt, K. Plantier, M. Pantoya, *Acta Materialia* 52(11), 3183-3191 (2004).
12. "Laser Ignition of Nanocomposite Thermites," J. Granier and M. Pantoya, *Combustion and Flame* 138(4), 373-383 (2004) [DOI: 10.1016/j.combustflame.2004.05.006].
13. "A Laser Induced Diagnostic Technique for Velocity Measurements Using Liquid Crystal Thermography," E. M. Hunt and M. L. Pantoya, *International Journal of Heat and Mass Transfer* 47(19/20), 4285-4292 (2004).
14. "A Spreadsheet-Based Analysis for Two-Dimensional Transient Laser Heating of a Cylindrical Solid," T. A. Mullen and M. L. Pantoya, *Heat Transfer Engineering* 26(2), 63-74 (2005).
15. "The Effect of Nanocomposite Synthesis on the Combustion Performance of a Ternary Thermite" D. Prentice, M. L. Pantoya, B. Clapsaddle, *Journal of Physical Chemistry B* 109(43), 20180-20185 (2005).

16. "Ferrihydrite Gels Derived in the $Fe(NO_3)_3 9H_2O$-C_2H_5OH-CH_3CHCH_2O Ternary System," E. F. Talantsev, M. L., Pantoya, C. Camagong, B. Lahlouh, S. M. Nicolich, and S. Gangopadhyay, *Journal of Non-Crystalline Solids* 351(16-17), 1426-1432 (2005).
17. "Ignition Dynamics and Activation Energies of Metallic Thermites: From Nano- to Micron-scale Particulate Composites," E. M. Hunt and M. L. Pantoya, *Journal of Applied Physics* 98(3), 034909 (2005). [DOI:10.1016/j.combustflame.2004.10.009]
18. "Combustion Wave Speeds of Nanocomposite Al/Fe_2O_3: The Effects of Fe_2O_3 Particle Synthesis Technique," K. B. Plantier, M. L. Pantoya and A. E. Gash, *Combustion and Flame* 140(4), 299-309 (2005) [DOI: 10.1016/j.combustflame.2004.10.009].
19. "Combustion Velocities and Propagation Mechanisms of Meta-stable Intermolecular Composites," B. S. Bockmon, M. L. Pantoya, S. F. Son, B. W. Asay, J. T. Mang, *Journal of Applied Physics* 98(6), 064903 (2005) [DOI: 10.1063/1.2058175].
20. "Combustion Behaviors of Highly Energetic Thermites: Nano versus Micron Composites," M. L. Pantoya and J. J. Granier, *Propellants, Explosives, Pyrotechnics* 30(1), 53-62 (2005) [DOI: 10.1002/200400085].
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23. "The Effect of Slow Heating Rates on the Reaction Mechanisms of Nano and Micron Composite Thermite Reactions," J. J. Granier and M. L. Pantoya, *Journal of Thermal Analysis and Calorimetry* 85(1), 37-43 (2006).
24. Moore, K. and Pantoya, M.L., "Combustion Effects of Environmentally Altered Molybdenum Trioxide Nanocomposites," *Propellants Explosives Pyrotechnics* 31(3), 182-187 (2006).
25. Moore, K., Pantoya, M.L., and Son, S.F., "Combustion Behaviors Resulting from Bimodal Aluminum Size Distributions in Thermites," *Journal of Propulsion and Power* 23(1), 181-185 (2007). [DOI: 10.2514/1.20754]
26. Levitas, V. I., Asay, B. W., Son, S. F., and Pantoya, M. L., "Melt Dispersion Mechanism for Fast Reaction of Nanothermites," *Applied Physics Letters* 89(7), 071909 (2006). [DOI: 10.1063/1.2335362] (Reprod. in *Virtual J. Nanoscale Sci. & Techn.*, 2006, Aug.)
27. E. B. K. Washington, D. Aurongzeb, J. M. Berg, D. Osborne, M. Holtz, M. Pantoya, H. Temkin "A New Mechanism for Formation of Spatial Oscillations in SHS of Ni/Al Bilayer Foils," *International Journal of SHS* 15(2), 121-132 (2006).
28. Prentice, D., Pantoya, M.L., and Gash, A.E., "Combustion Wave Speeds of Sol-gel Synthesized Tungsten Trioxide and Nano-Aluminum: The Effect of Impurities on Flame Propagation," *Energy & Fuels* 20(6), 2370-2376 (2006). [DOI:10.1021/ef060210i].
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31. White, R.B., Dean, S.W., Pantoya, M.L., Hirschfeld, D.A., Gill, W., and Erikson, W.W., "The Effect Of Aluminum On The Heat Flux From A Simulated Rocket Propellant Flame," *Journal of Prop. and Power* 23(6), 1255-1262 (2007). [DOI: 10.2514/1.28161].
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33. Jackson, M., Pantoya, M.L., and Gill, W., "Characterization of a gas burner to simulate a propellant flame and evaluate aluminum particle combustion," *Combustion and Flame* 153(1-2), 58-70 (2008). [DOI:10.1016/j.combstflame.2007.11.014]
34. Levitas, V.I., Pantoya, M. L., B. Dikici, "Melt-Dispersion versus Diffusive Oxidation Mechanism for Aluminum Nanoparticles: Critical Experiments and Controlling Parameters," *Applied Physics Letters* 92(1), 0011921 (2008). [DOI:10.1063/1.2824392]
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41. Rivero, I.V., Rajamani, K., Pantoya, M.L., Hsiang, S.M., Fitts, E.P., "Correlation of reactant particle size on residual stresses of nanostructured NiAl generated by self propagating high temperature synthesis," *J. of Mat. Res.* 24(6), 2079-2088 (2009).
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43. Dikici, B., Pantoya, M.L., Levitas, V.I., Jouet, R.J., "The Influence of Aluminum Passivation on the Reaction Mechanism: Flame Propagation Studies", *Energy & Fuels* 23, p4231-4235 (2009). DOI:10.1021/ef801116x.
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45. Levitas, V.I., Pantoya, M.L., Chauhan, G., and Rivero, I., "Effect of the alumina shell on the melting temperature depression for nano-aluminum particles," *Journal of Physical Chemistry C*, 113(2), 14088-14096, 2009.

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49. Dikici, B., Pantoya, M.L., Levitas, V.I., The Effect of Pre-heating on Flame Propagation Behavior in Nanocomposite Thermites, *Combustion and Flame* 157(8); 1581-1585 (2010).
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92. Kappagantula, K., Crane, C., Pantoya, M.L., Factors Influencing Temperature Fields During Combustion Reactions, *Propellants, Explosives, Pyrotechnics* 39(3), 434-443, June 2014.

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94. Stacy, S.C., Zhang, X., Pantoya, M.L., Weeks, B., Effect of Density on Thermal Conductivity and Absorption Coefficient for Consolidated Aluminum Nanoparticles, *International Journal of Heat and Mass Transfer*, 73, 595-599, 2014.
95. Mulamba, O., Pantoya, M.L., "Exothermic Surface Chemistry Promoting Reactivity of Aluminum Particles", submitted to *Applied Surface Science*, In Press 2014.
96. Kettwich, S.C., Kappagantula, K., Kusel, B.S., Avjian, E.K., Danielson, S.T., Miller, H.A., Pantoya, M.L., Iacono, S.T., Thermal Investigations of NanoAluminum/Perfluoropolyether Core-Shell Impregnated Compoistes for Structural Energetics, *Thermochimica Acta*, In Press 2014.
97. Poper, K., H., Collins, E.S., Pantoya, M.L., Daniels, M.A., Controlling the Electrostatic Discharge Ignition Sensitivity of Composite Energetic Materials Using Carbon Nanotube Additives, *Journal of Electrostatics* 72, 428-432, 2014.

Journal Publications Submitted

1. Hunt, E.M., Pantoya, M.L., Synthesis of Antibacterial Metallic Nanofoams, *MRS Communications*, August 2013. Manuscript Number MRSCOM-2012-0044.R1.
2. Levitas, V.I., McCollum, J., Pantoya, M.L., Improving Micron Scale Aluminum Core-Shell Particles Reactivity by Pre-Stressing, Submitted to , January 2014.
3. Collins, E., Skelton, B., Pantoya, M., Irin, F., Green, M., Daniels, M., Ignition Sensitivity and Electrical Conductivity of a Composite Energetic Material with Conductive Nanofillers, In Review *Combustion and Flame*, May 2014.
4. Clark, B., Pantoya, M., Granier, J., Development of a Detonation Bomb Calorimeter for Analysis of Explosives, Submitted to *Review of Scientific Instruments*, June 2014.
5. Meeks, K., Apblett, C., Pantoya, M.L., Effects of Mixing Conditions on Reaction Propagation for Blade Cast Mg/MnO_2 Films, Submitted to *Surface Coatings and Technology*, ???? 2014.

Conference Proceedings (Peer Reviewed - Selected)

1. Mulamba, O., Pantoya, M.L., Oxygen Scavenging Enhances Exothermic Behavior of Aluminum Fueled Thermites, North American Thermal Analysis Society (NATAS), Bowling Green, Kentucky, August 2013.
2. Dikici, B., Pantoya, M., Shaw, B.D., Deflagration Analysis of Aluminum Droplet Combustion, Paper No. HT2012-58553, International Conference on Heat and Mass Transfer, Costa Rico, 2012
3. Hunt, EM, Pantoya, ML, Hunt, AS, Reeves, A., Weir, C., Introducing Young Children to Engineering Through Early STEM Literacy, 118th ASEE Annual Conference and Exposition, Vancouver, BC, Canada, June 26-29, 2011. Session M144B Using Web Resources and Literature to Teach Engineering.
4. Shaw, B.D., Dikici, B., Pantoya, M.L., Models for fast combustion waves in nanocomposites thermite powders, International Combustion Dynamics of Explosive Reactions Symposium (ICDERS), The Combustion Institute, Newport Beach, CA July 2011. Proceedings #43.

5. Hunt, E.M., Pantoya, M.L., Reeves, A.M., "Engineering Elephants: Introducing Young Children to Engineering," Invited Proceedings Number XX-01, Materials Research Society Fall Meeting, Boston, MA Nov 30-Dec 2, 2010. Also highlighted on the Meeting Scene: (http://www.mrs.org/s_mrs/doc.asp?CID=27969&DID=333594)
6. Dikici B., Pantoya M.L., "The Effect of Pre-heating on Flame Propagation in Nanocomposite Thermites", ASME Banquet, Poster presentation, 22 April 2010, Lubbock, Texas
7. Dikici B., Pantoya M.L., Shaw B.D. "Analysis of the Influence of Nanometric Aluminum Vaporization on Flame Propagation in Bulk Powder", Paper Number AIAA-2010-1598, 48th AIAA Aerospace Sciences Meeting Including the New Horizons Forum and Aerospace Exposition, 4-7 January 2010, Orlando, Florida.
8. Dikici B., Pantoya M.L., "The influence of Aluminum Passivation on the Reaction Mechanism: Flame Propagation Studies", 37th Annual North American Thermal Analysis Society (NATAS) Conference, 21-23 September 2009, Lubbock, Texas
9. Farley, C., Pantoya M.L., "Effect of Al Particle Size on the Thermal Analysis of the Al-I2O5 Reaction, 37th Annual North American Thermal Analysis Society (NATAS) Conference, 21-23 September 2009, Lubbock, Texas
10. Crane, C., Dunn, J., Pantoya M.L., "Infrared Diagnostics to Examine Energy Transfer to a Target from a Reacting Thermite", 37th Annual North American Thermal Analysis Society (NATAS) Conference, 21-23 September 2009, Lubbock, Texas
11. Stacy, S, Pantoya M.L., Daniel J. Prentice, Eric D. Steffler, and Michael A. Daniels, Underwater Nanometric Aluminum and Polytetrafluoroethylene Combustion, 37th Annual North American Thermal Analysis Society (NATAS) Conference, 21-23 September 2009, Lubbock, Texas
12. Dikici B., Pantoya M.L., "The Effects of Perfluoroalkyl Carboxylic Acid Coating of Al Particles to Flame Propagation", 2009 ASME International Mechanical Engineering Congress and Exposition, 13-19 November 2009, Lake Buena Vista, Florida
13. "Quantification of Heat Flux from a Reacting Thermite Spray," E. Nixon, M. L. Pantoya and D.J. Prentice, Proceedings of the 2009 ASME Heat Transfer Conference, July 2009, Paper No. HT 2009-88219.
14. "Quantifying Energy Transfer From a Reacting Thermite to a Target Using Infrared Diagnostics," C. Crane, M. L. Pantoya, J. Dunn, Proceedings of the 2009 ASME Heat Transfer Conference, July 2009 Paper No. HT2009-88156.
15. Dikici B., Pantoya M.L., "The influence of Aluminum Passivation on the Reaction Mechanism", 45th AIAA Aerospace Sciences Meeting Including the New Horizons Forum and Aerospace Exposition, 2-5 August 2009, Denver, Colorado
16. The effect of pre-heating on flame propagation in nanocomposite thermites, B. Dikici and ML Pantoya, 47th AIAA Aerospace Sciences Meeting, Paper No. AIAA-2009-1626, 5-8 January 2009, Orlando, FL.
17. "Infrared Imaging in Engineering Applications," E.M. Hunt and M.L. Pantoya, InfraMation 2008.
18. "Fast Reaction with Nano Aluminum: A Study on Oxidation vs. Fluorination," M. L. Pantoya, K. Watson and V. I. Levitas, 7th International Symposium on Special Topics in Chemical Propulsion, Kyoto, Japan, 2007
19. "Combustion behaviors of pre-heated nanocomposite thermites," Granier, J. J., M. L. Pantoya, 42nd AIAA Aerospace Sciences Meeting and Exhibit, AIAA Paper pp. 2417-2424, 2004.
20. "Synthesis and characterization of mixed metal oxide nanocomposite energetic materials," Clapsaddle, B. J., Zhao, L., Gash, A. E., Satcher, J. H., Shea, K. J., Pantoya, M. L., Simpson, R.L., *Mat. Res. Soc. Symposium Proceedings* v800, *Synthesis, Characterization and Properties of Energetic/Reactive Nanomaterials*, 2003, p. 91-96.
21. "Nickel aluminide superalloys created by SHS of nano-particle reactants," E. Hunt, K. Plantier, M. Pantoya, *Mat. Res. Soc. Symposium Proceedings* v. 800, *Synthesis, Characterization and Properties of Energetic/Reactive Nanomaterials*, pp. 137-142 (2003).

22. "Ignition and Combustion Behavior of Nanocomposite Al/MoO3," J. J. Granier and M. L. Pantoya, *Mat. Res. Soc. Symposium Proceedings* v. 800, *Synthesis, Characterization and Properties of Energetic/Reactive Nanomaterials*, pp. 173-178 (2003).
23. "Burn rates of nanocomposites Al/Fe_2O_3: The effects of Fe_2O_3 particle synthesis technique," K. Plantier, M. Pantoya, A. Gash, 2003 International Conference on Nanotechnology & PM^2, Providence, R.I., September 2003
24. "A Wind Tunnel Study of Heat Transfer Over Complex Terrain," M. Pantoya, K. Shifflett, W. Oler, B. Burton, *AIAA Collection of the 2003 Wind Energy Symposium Papers*, AIAA-2003-1187 (2003).

Conference Proceedings (Non-Peer Reviewed)

1. K. Kappagantula, C. Farley, M. Pantoya, J. Horn, Influence of Organic Acid Coatings On Energetic Nanocomposite Combustion Performance, 2013 AIChE Annual Meeting, San Francisco, California (November 3-8, 2013).
2. Meeks, K., Pantoya, M.L., Apblett, C.A., Combustion Characterization of Blade Cast Magnesium and Manganese Dioxide, 60th International American Vacuum Society (AVS) Symposium and Exhibition, Session on Energetic Thin Films, Long Beach, CA, October 31, 2013.
3. Meeks, K., Canos, J., Pantoya, M.L., Combustion Characterization of Magnesium and Manganese Oxide, XII International Symposium on Self Propagating High Temperature Synthesis, October 21-24, South Padre Island, TX 2013.
4. K. Kappagantula and M.L.Pantoya, Thermal Transport Properties of Energetic Composites with Graphene and Carbon Nanotubes: An Experimental Study, 12th Annual AIChE Meeting, Pittsburgh, PA, Oct. 28- Nov. 1 2012.
5. C. Weir, E. Collins, M.L. Pantoya, Electrostatic Discharge and Ignition Sensitivity of Composite Energetic Materials, American Institute of Chemical Engineers (AIChE) Annual Meeting, Pittsburgh PA, Oct. 28- Nov. 1, 2012.
6. K. Kappagantula, M. Pantoya, Reaction Kinetics of Metalized Fluoropolymers for Energetic Material Applications, American Chemical Society (ACS) Division of Fluoropolymers, Oct. 14-17 2012.
7. B. D. Shaw, B. Dikici, M. L. Pantoya, "Detonating Nanocomposite Thermites: A Mechanism Describing Powder Propagation," 20th International Conference on Nuclear Engineering, ASME 2012 Power Conference, (ICONE20POWER2012-54608) July 30-Aug3, 2012, Anaheim, CA.
8. B. Dikici, M.L. Pantoya, B.D. Shaw, Deflagration Analysis of aluminum droplet combustion, ASME Summer Heat Transfer Conference, Puerto Rico, USA, July 2012
9. A. Vijayasai, T. Dallas, E. Collins, M. Pantoya, Comparison of engineered nanocoatings on the combustion of aluminum and copper oxide nanothermites, International Conference on Metallurgical Coatings and Thin Films, Session TS3, Energetic Materials and Micro-Structures for Nanomanufacturing, San Diago, CA, May 2012.
10. R. Russell, S. Bless, A. Blinkova, M. Pantoya, T. Chen, Sporicidal Effects of Iodine-Oxide Thermite Reaction Products, 26th International Symposium on Ballistics, Miami, FL, Sept 12-16, 2011.
11. S.Datta, M.L. Pantoya, "Reaction Dynamics of Aluminum-Viton-Acetone Droplets," 18th International Conference on Composites or Nano Engineering, Anchorage, AK, July 2010.

12. S.Datta, M.L. Pantoya, B. Dikici, S. Ekwaro,"Reaction Dynamics and Probability Study of Aluminum-Viton-Acetone Droplets," 46th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Nashville, TN, July 2010.
13. Eric Nixon, Eric Collins, Charles Crane, and Michelle Pantoya, "Reaction Dynamics of a Thermite Spray Gun" 2010 Spring Technical Meeting/The Central States Section of the Combustion Institute, Champaign IL, March 21-23, 2010.
14. Dikici B., Pantoya M.L., Shaw B.D. "Analysis of the Influence of Nanometric Aluminum Vaporization on Flame Propagation in Bulk Powder", Paper Number AIAA-2010-1598, 48th AIAA Aerospace Sciences Meeting Including the New Horizons Forum and Aerospace Exposition, 4-7 January 2010, Orlando, Florida.
15. Dikici B., Pantoya M.L., "The influence of Aluminum Passivation on the Reaction Mechanism: Flame Propagation Studies", 37th Annual North American Thermal Analysis Society (NATAS) Conference, 21-23 September 2009, Lubbock, Texas
16. Farley, C., Pantoya M.L., "Effect of Al Particle Size on the Thermal Analysis of the Al-I2O5 Reaction, 37th Annual North American Thermal Analysis Society (NATAS) Conference, 21-23 September 2009, Lubbock, Texas
17. Crane, C., Dunn, J., Pantoya M.L., "Infrared Diagnostics to Examine Energy Transfer to a Target from a Reacting Thermite", 37th Annual North American Thermal Analysis Society (NATAS) Conference, 21-23 September 2009, Lubbock, Texas
18. Stacy, S, Pantoya M.L., Daniel J. Prentice, Eric D. Steffler, and Michael A. Daniels, Underwater Nanometric Aluminum and Polytetrafluoroethylene Combustion, 37th Annual North American Thermal Analysis Society (NATAS) Conference, 21-23 September 2009, Lubbock, Texas
19. The effect of pre-heating on flame propagation in nanocomposite thermites, B. Dikici and ML Pantoya, 47th AIAA Aerospace Sciences Meeting, Paper No. AIAA-2009-1626, 5-8 January 2009, Orlando, FL.
20. "Energy Transport In Nanocomposite Energetic Materials: Mechanisms vs Modes," S. Dean, M. L. Pantoya, A. Gash," 42nd JANNAF Combustion Subcommittee Meeting. Boston, MA: 12-16 May 2008
21. Stacy, S.C.; Pantoya, M.L.; Prentice, D; and Steffler, E. "Hydrodynamics of Deflagrations of Nanometric Aluminum/Teflon Composites Underwater." 42nd JANNAF Combustion Subcommittee Meeting. Boston, MA: 12-16 May 2008
22. "Impact Ignition of Energetic Materials," A. Hunt, A. Purl, E. Hunt, M. L. Pantoya, Materials Research Society, Spring Meeting, San Francisco, CA April, 2008.
23. "Energy Transport In Nanocomposite Energetic Materials: Mechanisms vs Modes," S. Dean, M. L. Pantoya, A. Gash, Central States Section of the Combustion Institute, Tuscaloosa, AL, April 2008.
24. "Nanostructured energetic materials: aerogel thermite composites," A. Gash and M. Pantoya, Division of Polymer Chemistry for the 236th ACS National Meeting, Philadelphia, PA, Aug 17-21, 2007.
25. "Effects of Particle Size on Flame Propagation of Al/Teflon Mixtures," Osborne, D. Watson, K. W., Pantoya, M. L., Proceedings of the 34th North American Thermal Analysis Society Conference (NATAS), p. 129, Aug 5-9 (2006) Bowling Green, Kentucky.
26. "The Effects of Fuel Particle Size on the Thermal Degradation of Al/Teflon Mixtures, " Osborne, D. T. and Pantoya, M. L.Proceedings of AIChE-World Congress on Particle Technology 5 April 23-27, 2006, Orlando Fl
27. "Heat Flux Measurements of Aluminum Particles in an Acetylene-Oxygen Premixed Flame," White, R.B., Pantoya, M.L., Hirschfeld, D., Gill, W., Erickson, W.W, Proceedings of the 22nd JANNAF Propulsion Systems Hazards Subcommittee JANNAF meeting, Charleston SC (2005).

28. "Combustion Behaviors Resulting from Bimodal Aluminum Size Distributions," K. Moore, M. L. Pantoya, S. F. Son, 41st AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Paper AIAA-2005-3605, Tucson, AZ, June, 2005
29. "Material Characterization of Nano-Structured Al-Ni Intermetallic Composites using Residual Stresses," K. K. Rajamani, I. V. Rivero, M. L. Pantoya, Proceedings of the 2005 Institute of Industrial Engineers (IIE) Annual Conference, May 14-18, Atlanta, Georgia, 2005.
30. "Thermite Combustion Enhancement Resulting from Bimodal Aluminum Distributions, K. Moore, M. L. Pantoya, S. F. Son, 31st International Pyrotechnic Symposium, Colorado, July, 2004.
31. "Combustion Behaviors of Pre-heated Nanocomposite Thermites, J. J. Granier and M. L. Pantoya, AIAA Paper, 42nd AIAA Aerospace Sciences Meeting and Exhibit, Paper No. AIAA-2004-0238, p2417-2424, Reno, NV, January 2004.
32. "Burn rates of sol-gel synthesized nanocomposites Al/Fe_2O_3," K. Plantier, M. Pantoya, A. Gash, JANNAF 39th Combustion Subcommittee, Colorado Springs, CO, December, 2003.
33. "Combustion Behavior of Nanocomposite Thermites as a Function of Bulk Density," J. Granier, M. Pantoya, JANNAF 39th Combustion Subcommittee, Colorado Springs, CO December, 2003.
34. "Kinetics of a Thermite Reaction: Effect of Particle Size at the Nanoscale," M. L. Pantoya, P. Bernazzani and S. L. Simon, Proceedings of the North American Thermal Analysis Society (NATAS), September (2003)
35. "An Analysis of Convective Cooling over Complex Terrain," K. Shifflett and M. Pantoya, Proceedings of the 11th International Conference on Wind Engineering," June 2003.
36. "Ignition and Flame Propagation in Nanocomposite Energetic Materials," M. Pantoya, J. Granier, B. Bockmon, S. Son and B. Asay, 2003 Nano Materials For Aerospace Symposium, Corpus Christi, Texas, January (2003).
37. "Ignition Studies of Nanocomposite Al/MoO3," J. Granier and M. Pantoya, US Joint Section of the Combustion Institute Meeting, March (2003).
38. "Combustion Synthesis of Porous Materials From Nanocomposite Reactants," E. Hunt and M. Pantoya, US Joint Section of the Combustion Institute Meeting, March (2003)
39. "Combustion Behavior of Sol-Gel Synthesized Nanocomposite Thermites," K. Plantier, M. Pantoya and A. Gash, US Joint Section of the Combustion Institute Meeting, March (2003)
40. "Burn Rate Measurements of Nanocomposite Thermites," B. Bockmon, M. Pantoya, S. Son and B. Asay, Proceedings of the 41st AIAA Aerospace Sciences Meeting, Energetic Materials, Paper Number: AIAA-2003-0241, Modeling, Diagnostics Session, Reno, NV (2003)
41. "Laser Ignition Characteristics of Nanocomposite Thermites," J. Granier and M. Pantoya, Proceedings of the 41st AIAA Aerospace Sciences Meeting, Energetic Materials, Paper Number AIAA-2003-0244, Modeling, Diagnostics Session, Reno, NV (2003)
42. "A Laser Induced Surface Flow Visualization Technique Using Liquid Crystal Thermography", E. Hunt and M. Pantoya, Proceedings of the 41st AIAA Aerospace Sciences Meeting, Paper Number AIAA-2003-0739, Aerodynamic Measurement Technology Session, Reno, NV (2003)
43. "Propagation Studies of Metastable Intermolecular Composites," S. Son, J. Busse, B. Asay, B. Bockmon, M. Pantoya, The International Pyrotechnics Society, The 29th International Pyrotechnics Seminar, Colorado, July 14-19 (2002).
44. "Modeling Laser Ignition and Heat Propagation in Nanocomposite Thermites," J. Granier and M. Pantoya, Paper number: AIAA-2002-3030, Proceedings of the 8th AIAA/ASME Joint Thermophysics and Heat Transfer Conference, June (2002).
45. "Combustion Performance of Metastable Intermolecular Composites (MIC)," S. F. Son, J. R. Busse, B. W. Asay, B. Bockmon and M. L. Pantoya, Proceedings of the JANNAF Interagency Propulsion Committee, Destin, FL, April (2002).
46. "A Laser Induced Surface Flow Visualization Technique," E. G. Hunt and M. L. Pantoya, Presented at the ASME Graduate Student Technical Conference, Texas A&M Kingsville, March 21-24 (2002).

47. "Reaction Propagation Physics of Al/MoO_3 Nanocomposite Thermites," S. F. Son, H. L., B. W. Asay, J. R. Busse, B. S. Jorgensen, B. Bockmon, and M. Pantoya, The International Pyrotechnics Society, The Twenty-Eighth International Pyrotechnics Seminar, Adelaide, Austraila, November 4-9, 2001.
48. "Wind-Generated Electricity: A California Perspective", Pantoya, M. L. and G. Simons, Proceedings: *Windpower 2000*, American Wind Energy Association, Palm Springs, CA (2000).
49. "California Wind Energy Forecasting Project," McGowin, C. and Pantoya, M.L., Proceedings: *Windpower 2000*, American Wind Energy Association, Palm Springs, CA (2000).
50. "Spectroscopic Measurements During Energetic Material Combustion in Molten Salts," M. L. Pantoya and B. D. Shaw, Proceedings from the First Joint Meeting of the United States Sections of the Combustion Institute, Washington DC, March 14-17 (1999).
51. "Emission and Absorption Measurements of Energetic Material Combustion in Molten Salt," M. Pantoya and B. D. Shaw, Proceedings of the 36th Heat Transfer and Fluid Mechanics Institute (F. H. Reardon and N. D. Thinh, eds), pp. 281-293 (1999).
52. "Behaviors of TATB-Based and HMX-Based Energetic Materials Immersed in Molten Salts," M. B. Lacchia, B. D. Shaw, and E. A. Megas, paper 98S-51 Proceedings from the 1998 Spring Meeting of the Western States Section of the Combustion Institute, Berkeley, CA, March 23-24 (1998).
53. "Decomposition of DNT Particles in Molten Salt," M. B. Lacchia and B. D. Shaw, pp. 663-667 of the Proceedings of the 1996 International Conference On Incineration and Thermal Treatment Technologies, Savannah, GA, May 6-10. Also presented as a paper at this same conference.
54. "Combustion of Waste Energetic Materials in Molten Salt Baths," M. B. Lacchia and B. D. Shaw, presented at the 33rd Annual Technical Meeting of the Society of Engineering Science, Arizona State University, Tempe, Arizona, October 20-23, 1996.
55. "The Behavior of Dust in a Simulated Martian Environment." Pantoya-(Lacchia), M. B., B. R. White, R. Greeley, and R. N. Leach, *Proceedings from the Response of Aeolian Processes to Global Change Conference*, Desert Studies Center, (1994).
56. "Dust On Mars: New Values For Wind Threshold," Greeley, R., M. B. Pantoya-(Lacchia), B.R. White, R.N. Leach, D.E. Trilling, and J.B. Pollack, *Lunar Planet. Sci*. 25, 467-468, 1994.

Invited Talks (Select)

1. "Propagation Physics and Ignition of Nanocomposite Energetic Materials," Stanford University, Department of Mechanical Engineering, Stanford, CA, January, 2003
2. "The effects of nano-scale Aluminum in the Solid Combustion of Energetic Materials," Sandia National Laboratory, Albuquerque, NM, May, 2003.
3. "Performance evaluation of Nano-Aluminum Based Energetic Composites," Los Alamos National Laboratory, (September: 2002, 2003, 2004).
4. "Kinetics of a Thermite Reaction: Effect of Particle Size at the Nanoscale," North American Thermal Analysis Society (NATAS), September (2003)
5. "Energetic and Thermal Behavior of Novel Nanostructured Energetic Materials," 2nd Advanced Energetics Technology Exchange, Aberdeen Proving Ground, MD, September, 2003.
6. "Ignition and Combustion Behavior of Nanocomposite Al/MoO3," M. Pantoya, Invited paper/presentation, Material Research Society (MRS), Boston, MA, December, 2003.
7. "Characterization of Nano-Energetic Composites," Aberdeen Proving Ground, Army Research Laboratory Seminar Series, May 25, 2004.
8. "Combustion Performance of Nanocomposite Thermites", Indian Head Naval Surface Warfare Center Seminar Series, May 26, 2004.
9. "Unique Combustion Behaviors of Composite Energetic Materials Containing Nano-Aluminum," Gordon Research Conference, May 2004.
10. "Ignition and Energy Release Properties of Nano-Energetic Composites," 31st International Pyrotechnic Symposium, Colorado, July 2004.

11. "Combustion Behaviors of Composite Energetic Materials: Nano Versus Micron," Contemporary Energetics Research Conference, July 20th, 2004, McLean, VA.
12. "Ignition and Flame Propagation in Nanocomposite Energetic Materials," Energetic Material Intelligence Seminar, 7-9 September, 2004, McLean, VA
13. "Big Bangs From Little Particles," Texas Nanotechnoloy Initiative Meeting, Austin, Texas, Oct. 20, 2004.
14. "From Texas Tech to the White House," Lubbock Women's Club (20th Century Club), Lubbock, Texas, January 26, 2005.
15. "Fast and Slow Oxidation Processes in Nanocomposite Thermites," University of Texas, Austin (Mechanical Engineering Department Seminar Series), Oct., 2005.
16. "Nano-Energetics: A New Energy Source", Nanomaterials Applications Center of Texas State University San Marcos and Winstead Sechrest and Minick PC ("Winstead") a Texas professional corporation, Oct. 17, 2005.
17. "Al Particle Size Effects on the Thermal Degradation of Al/Teflon", Materials Research Society (MRS) Meeting, Boston, MA, December 2005.
18. "Laser Ignition and Heat Propagation in Metastable Intermolecular Composites (MICs)," 44th AIAA Aerospace Sciences Meeting, Reno, NV, Jan 9-12, 2006.
19. "Reactive Aluminum Nanothermites", Idaho National Laboratory, Idaho Falls, February 8-10, 2006.
20. "Combustion Behaviors of Nano and Micron-Scale Thermite Composites for Slow and Fast Ignition Conditions," Department of Mechanical Engineering Seminar Series, Vanderbilt, Nashville, Tennessee, Feb., 2006.
21. "Nano-thermites for Ordnance Applications," QinetiQ (a branch of the United Kingdom Ministry of Defense), Drs. Clive Woodley and Michael Taylor, Fort Halstead, UK March 2, 2006.
22. "Bubbleology: The difference between math, science and engineering by exploring and exploding bubbles", 45 minute seminar to pre-K (4-6 y ear olds) demonstrating the concepts associated with math, science and engineering using bubbles, Child Development Research Center, Texas Tech University, June 2006.
23. Session Leader, "Nanoenergetics" Gordon Research Conference: Energetic Materials, Tilton School, Tilton NH, June 2006.
24. "Macro-scale Combustion Phenomena in Nanothermites," University of Texas, Institute for Advanced Technology (IAT), Austin, TX July 2006.
25. "Effects of Particle Size on Flame Propagation of Al/Teflon Mixtures," Osborne, D. Watson, K. W., Pantoya, M. L., 34th North American Thermal Analysis Society Conference (NATAS), Aug 5-9 (2006) Bowling Green, Kentucky.
26. "New Perspectives on Nanoparticle Combustion", presented at JANNAF Interagency Propulsion Committee Workshop on R&D Required to Implement New Energetic Ingredients in Munitions, Aug 29-31, 2006.
27. "Fast Reaction with Nano Aluminum: A Study on Oxidation vs. Fluorination", (Plenary Lecture) 7th International Symposium on Special Topics in Chemical Propulsion (7-ISICP), Kyoto, Japan, September, 2007.
28. "Energy Transfer Studies from Fast Reacting Nano-Thermites," 4th Workshop on Explosive Behaviors, Santa Fe, NM November 2007.
29. "Characterization and Energy Transfer from Nano-Energetic Composites," Aberdeen Proving Ground, Army Research Laboratory Seminar Series, December 2007.
30. "Characterizing reaction mechanisms and modes of energy propagation in nano-Al based energetic materials," University of California, Davis, April 2008.
31. "Melt Dispersion Mechanism: Theory and Experiments" Energetic Materials Gordon Conference, Tilton School, NH, June 2008
32. "Understanding Combustion in Nanocomposite Energetic Materials," Texas A and M University, College Station, September 23, 2008.

33. "Infrared Imaging in Engineering Applications," Keynote Speaker, InfraMation Conference, Reno, NV, Nov 3-7, 2008.
34. "Integrating Energetic Materials into the Classroom: Education Initiatives in Energetic Materials," Michelle Pantoya and Emily Hunt, 47th AIAA Aerospace Sciences Meeting, Orlando, FL, 5-7 January, 2009, AIAA-2009-1610.
35. Dikici B., "Progress on the Melt Dispersion Mechanism for Nano-Energetic Material Combustion", Invited Seminar, Office of Naval Research, Advanced Reactive and Energetic Materials (AREM) Program Review and Planning Meeting, 16-17 September 2009, Arlington, Virginia
36. Farley, C. Pantoya, ML., "Thermal Analysis of Al-I2O5", Defense Threat Reduction Agency Program Review, October 2009, Arlington, Virginia.
37. Clark, B., Pantoya, ML, "Biocidal Reactions for the Destruction of Spore Forming Bacteria, Defense Threat Reduction Agency Annual Program Review, Oct, 2009, Arlington VI.
38. Hunt, E.M., Pantoya, M.L., Reeves, A.M., "Engineering Elephants: Introducing Young Children to Engineering," Invited Presentation, Materials Research Society Fall Meeting, Boston, MA Nov 30-Dec 2, 2010. Also highlighted on the Meeting Scene: (http://www.mrs.org/s_mrs/doc.asp?CID=27969&DID=333594).
39. Hunt, E.M, Pantoya, M.L., "Nanofoams created through a diamond laser coating process: synthesis and efficacy," LaserCo and Diamond Coating Technologies, Brussels, Belgium, July 2011.
40. Mulamba, O., Clark, B., Pantoya, ML and Hunt, E.M., "Biocidal Reactions for the Destruction of Spore Forming Bacteria," Defense Threat Reduction Agency Annual Meeting, July 2011, Arlington VI.
41. Hunt, E.M, Pantoya, M.L., "Antibacterial Metallic Coatings for Food Safety," Anuga Food Fair, Cologne, Germany, October 2011. (Invited keynote speaker (plenary) for international conference).
42. Hunt, E.M., Pantoya, M.L., "Engineering Elephants: Story Books, Activities and Language Tools to Improve STEM Learning in the Early Years," 2012 Annual American Society of Engineering Education (ASEE) Workshop on K-12 Engineering Education, San Antonio, TX June 2012.
43. Hunt, E.M. and Pantoya, M.L., Engineering Elephants: Story Books, Activities and Language Tools to Improve STEM Learning in the Early Years at the 2012 Annual ASEE Workshop on K-12 Engineering Education "Employing Engineers for STEM Learning" Saturday, June 9, 2012.
44. Invited Seminar: Reaction Kinetics of Metalized Fluoropolymers for Energetic Material Applications, American Chemical Society (ACS) Division of Fluoropolymers, Oct. 14-17 2012.
45. Invited Seminar: The Melt Dispersion Mechanism for Nanoparticle Combustion, Texas Weather Modification Association Annual Meteorologist Workshop, October 25-26, San Angelo, Texas 76901.
46. Invited Speaker: Inspiring the next generation of Texas Tech engineers, The Texas Tech Foundation, Nov. 9, 2012, Merket Alumni Center.
47. Invited Seminar, Energetic Material Combustion, Arizona State University, April 2013.

CONSULTING: Consulting to Nanotechnology, Inc (Austin, TX) on pressing Metastable Interstitial Composites; POC: Dr. Kurt Schroder. 2004-2005. (This company's name was changed to Novacentrix in 2007).

SYNERGISTIC ACTIVITIES

1. Certified to teacher educator for the Engineering is Elementary (EiE) curriculum to elementary school teachers. Conduct professional development workshops through the Texas

Region 17 Education Service Center instructing EiE units to elementary school teachers, once a month.(2013- Present).

2. Member of the Board of Directors for the Science Spectrum, Lubbock, TX. A local science museum (2012-Present).
2. Participated in T-STEM project with Slaton Independent School District (ISD) summer school 3rd-5th grade program integrating Engineering Elephants into their curriculum and enhancing their math and science literacy and critical thinking skills (2010). Prepared instructional aides and gave in-class lessons and book readings/discussions. Each week of the summer school program, selected topics from the book were introduced to students with engaging hands-on activities designed to enhance students' creativity while spurring their excitement about engineering. Although impact of the approach was not empirically tested, improvements in standardized test scores were observed. Overall, the scores increased by 6 points in science. ***Scores for Hispanic students increased by 13 points, 7 points for White students, 42 points for special education students and 9 points for economically disadvantaged students.***
3. Coordinated and Developed a professional development workshop for elementary school teachers entitled Engineering Elephants: Story Books, Activities and Language Tools to Improve STEM Learning in the Early Years at the 2012 Annual ASEE Workshop on K-12 Engineering Education "Employing Engineers for STEM Learning" Saturday, June 9, 2012.
4. Developed a series of outreach seminars/ educational activities for local elementary schools introducing Pre-K – 3rd graders to fundamental engineering ideas using Engineering Elephants. These in-class book readings and associated activities are delivered throughout the year to selected classrooms.
5. Signed a Book Series Contract with Texas Tech University Press to develop a children's engineering book series for middle readers. Series title: *Engineering Everything*. TTUP editor-in-chief: Dr. Judith Keeling.
6. Developed in-class combustion-centered demonstrations and experiments for the Shake Hands With Your Future (SHWYF) (4-6 grade curriculum) via the IDEAL program and a new undergraduate engineering research course in the Mechanical Engineering Department at Texas Tech. These demonstrations were inspired by Michael Faraday's lecture series: The Chemical History of a Candle and also serve as motivational lectures to recruit Texas Tech undergraduate students into graduate school and/or K-12 students into engineering. This curriculum was integrated into a new research methodologies course first offered in Fall 2011, creatively entitled: The Chemical History of a Candle.
7. Proposal Reviewer: Ongoing – Recent Reviews: DOE SERDP Review Panel (2010); NSR CAREER panel (CBET Division) 2010; NIST Proposal Review Panel (2010); NSF CAREER panel (Combustion) 2007; ARO Proposal Reviewer: Energetic Materials 2003-2012; AFOSR Proposal Reviewer 2006-2012; NSF Unsolicited Proposal Reviewer (CBT Division) 2003-2012
8. Referee for: *Combustion Science and Technology*, *Combustion and Flame*, *Propellants Explosives Pyrotechnics*, *Metallurgical and Materials Transactions B*, *Heat Transfer Engineering*, *Advanced Materials*, *Journal of Materials Research, Journal of Materials Science, Journal of Heat Transfer, Chemistry of Materials, Journal of Applied Physics, Journal of Physical Chemistry, Journal of Alloys and Compounds, Journal of Thermophysics and Heat Transfer, Journal of Propulsion and Power, Inorganic Chemistry*

COURSES TAUGHT

Undergraduate	Graduate
Heat Transfer Fluid Mechanics Thermal Fluid Laboratory Combustion The Chemical History of a Candle - An Introduction to Engineering Research	Advanced Heat Transfer Combustion

STUDENTS SUPERVISING

M.S. Students (2 total): Ms. Richa Padhye; Mr. Kade Poper
Ph.D Students (7 total): Mr. Billy Clark; Ms. Keerti Kappagantula; Mr. Evan Vargas; Ms. Jena McCollum; Ms. Kelsey Meeks; Mr. Michael Bello; Mr. Brandon Skelton
Undergraduate Research Assistants: (4 total) Jamie Vredenburgh; Jesus Cano; Ms. Holly Ready; Mr. Logan Smith.
High School Research Assistants: (1) Ryan Steelman (Frenship High School)

STUDENTS GRADUATED

M.S. Students (25 total): Mr. Bryan Bockman (May 03); Mr. John Granier (May 03); Mr. Kenneth Shifflet (May 03); Ms. Emily McFather Hunt (December 03); Mr. Keith Plantier (May 04), Mr. Mathew Jackson (May 05), Mr. Kevin Moore (May 05); Mr. Randy White (May 06); Mr. Daniel Prentice (May 06), Mr. Dustin Osborne (May 06), Mr. Kyle Watson (May 07), Mr. Andrew Francis (December 07), Mr. Jonathan Burkhard (December 07), Ms. Garima Chauhan (December 07), Mr. Shawn Stacy (May 08), Steven Dean (Dec. 2008); Kavya Balupari (Aug. 09); Eric Nixon (Aug. 09); Billy Clark (May, 2010); Sanjana Datta (May 2010); Keerti Kappagantula (August 2010); Amanda Gordon (May, 2011); Jeffrey Gesner (May, 2012); Chelsea Weir (May, 2012); Ms. Kelsey Meeks (August 2013)
PhD Students (9 total): Mr. John Granier (May 05), Ms. Emily Hunt (May 05), Mr. Matt Jackson (May 07), Ms. Birce Dikici (May 10) Mr. Charles Crane (May 2013), Mr. Shawn Stacy (May 2013), Mr. Cory Farley (May 2013); Mr. Eric Collins (August, 2013); Mr. Oliver Mulamba (December, 2013).

AWARDS, HONORS, FELLOWSHIPS AND MEMBERSHIPS (selected)

1. Outstanding Research, Texas Tech University 2012-2013
2. Texas Tech Today Article: Honored by a TTU Mother's Day article entitled *Engineering Balance: A day in the life of Michelle Pantoya*, Texas Tech Today, May 13, 2012 by Karin Slyker. http://today.ttu.edu/2012/05/engineering-balance-a-day-in-the-life-of-michelle-pantoya/
3. F.A.C.E. Award (Faculty Academic Contribution Exhibit) 2010-2011 http://www.facebook.com/video/video.php?v=838340042838
4. Award Winning Finalist in the Children's Non-Fiction category of the "Best Books 2010" Awards, sponsored by USA Book News http://www.usabooknews.com/bestbooks2010.html 2010

http://today.ttu.edu/2010/04/elephants-build-future-engineers/
http://www.youtube.com/watch?v=8NBok0nKPLU&feature=player_embedded

5. Integrated Scholars Award, Texas Tech University 2010
   See You-Tube movie: http://www.youtube.com/watch?v=iCGftWdk4l8
6. Ed and Linda Whitacre Faculty Fellow, Texas Tech University 2008-2011
7. Excellence in Research Award, College of Engineering, TTU(external funding $ 250-500k) 2008
8. Excellence in Research Award, College of Engineering, TTU(external funding $ 250-500k) 2007
9. Raymond B. Davis Award, Citizen Hero Award, University Medical Center & City of Lubbock 2007
10. Texas Tech Outstanding Researcher Award 2006
11. Presidential Early Career Award for Scientists and Engineers (PECASE) 2004
12. Young Investigator Program Award Department of Defense 2002
13. Alumni Association's New Faculty Award, Texas Tech 2002
14. Best Professor Award, Mechanical Engineering Department, Pi Tau Sigma, Texas Tech 2001
15. Teaching Learning and Technology Center Faculty Teaching Award 2001
16. NRC ASEE Summer Faculty Fellowship, AFA 2001
17. UC Davis Fellowships, UC Davis 1993-1998

Member (some may have lapsed): Sigma Xi, Society of Women Engineers (SWE), American Institute of Aeronautics and Astronautics (AIAA), American Society of Mechanical Engineers (ASME), The Combustion Institute, Materials Research Society (MRS), honorary member of Pi Tau Sigma, and the Cal Aggie Alumni Association.

Community Memberships: Lubbock Science Spectrum

SECURITY CLEARANCE: DOE Q-Clearance Active Status

PROPOSALS FUNDED

Current

1. Characterizing Energetic Material Response to Microwave Energy, PI: M. L. Pantoya; Co-PIs: M. Saed, B. Weeks, Source: Air Force Research Laboratory, AFRL; Project Location: Texas Tech University; Total Award: $390,000; Duration: September 2013 – September 2016. Person-Months Per Year Committed to the Project. Cal: 0.0, Acad: 0.00, Sumr:0.5.
2. Combustion Enhancement of Liquid Fuels via Nanoparticle Additions; PI: Michelle Pantoya; Source: Systems and Materials Research Corporation (SMRC); Project Location: Texas Tech University; Total Award: $20,000; Project Duration: September 2013- September 2014; Person-Months Per Year Committed to the Project. Cal: 0.0, Acad: 0.00, Sumr:0.0.
3. Characterization of Nano-Silicon Combustion; PI: Michelle Pantoya; Source: Systems and Materials Research Corporation (SMRC); Project Location: Texas Tech University; Total Award: $50,000; Project Duration: September 2013- September 2015; Person-Months Per Year Committed to the Project. Cal: 0.0, Acad: 0.00, Sumr:0.0.
4. Effective Practices Integrating Engineering and Literacy in the Early Years; Co-PI: Michelle Pantoya. Source: National Science Foundation (Fostering Interdisciplinary Research In Engineering – FIRE program), NSF Award Number DRL – 1249874; Project Location: Texas Tech University; Total Award: $400,000; Duration: June 2013- May 2015. Person-Months Per Year Committed to the Project. Cal: 0.0, Acad: 0.00, Sumr:0.5.

5. Aluminum Combustion in Composite Metal Materials, PI: Michelle L. Pantoya; Co-PI: Valery Levitas; Source: Office of Naval Research; Project Location: Texas Tech University and Iowa State University; Total Award: $625,000; Duration: June 2012 – May 2017. Person Per Year Committed to the Project: Cal: 0.00, Acad: 0.00, Sumr: 0.50.
6. Multiphase Combustion of Metalized Nanocomposite Energetic Materials; PI: Michelle Pantoya; Source: Army Research Office; Project Location: Texas Tech University; Total Award $300,000, Duration May 2011-April 2014, Amount $300,000. Person-Months Per Year Committed to the Project. Cal: 0.00, Acad: 0.00, Sumr: 1.00
7. Resolving the complexity of hot spots caused by weak energy concentration and coupling in composite energetic materials; PI: Brandon Weeks, Co-PIs: Greg McKenna, Michelle Pantoya and Louisa Hope-Weeks; Source: Office of Naval Research; Project Location: Texas Tech University; Duration May 2011-Aug 2017, Amount: $1,000,000. Person-Months Per Year Committed to the Project. Cal: 0.00, Acad: 0.00, Sumr: 0.50
8. Electrostatic Discharge Ignition, PI: Michelle Pantoya; Source: Idaho National Laboratory (Department of Energy), Total Award: $20,000; Duration 10/01/2012-09/30/2014; Project Location: Texas Tech University. Person-Months Per Year Committed to the Project. Cal: 0.00, Acad: 0.00, Sumr: 0.50

Pending

1. Navy on a Chip: An MEMS Based Program Introducing Naval Inspired STEM Concepts, PI: Michelle Pantoya, Co-PIs: Tim Dallas and Zenaida Aguirre-Munoz. Source: Office of Naval Research; Project Location: Texas Tech University; Total Award: $600,000; Duration 01/01/2014 – 12/31/2016; Person-Months Per Year Committed to the Project. Cal: 0.0, Acad: 0.00, Sumr: 0.5.
2. Characterizing Ignition, Combustion, and Energy Transfer from Composite Energetic Materials; PI: Michelle Pantoya. Source: Army Research Office; Project Location: Texas Tech University; Total Award: $378,656; Duration 10/01/2014 – 09/30/2017; Person-Months Per Year Committed to the Project. Cal: 0.0, Acad: 0.00, Sumr: 1.0.
3. Diagnostics for Analysis of Surface Reactions in Composite Energetic Material Combustion; PI: Michelle Pantoya. Source: Army Research Office; Project Location: Texas Tech University; Total Award: $224,580; Duration 06/14/2014 – 06/13/2015; Person-Months Per Year Committed to the Project. Cal: 0.0, Acad: 0.00, Sumr: 0.0.

Successfully Completed

1. Variable Effects Warhead for Tactical Missiles and Strike Weapons; PI: Michelle Pantoya; Source: Energetic Materials Products Inc.; Project Location: Texas Tech University; Duration: 10/2010-6/2012; Amount $79,000. Person-Months Per Year Committed to the Project. Cal: 0.00, Acad: 0.00, Sumr: 0.00.
2. Energetic Thin Films, PI: Michelle Pantoya; Source: Sandia National Laboratory (Dept. of Energy), Total Award $20,000 per year for 3 years starting 10/2012.
3. Biocidal Energetic Materials; PI: Emily Hunt, Co-PI: Michelle Pantoya; Source: Defense Threat Reduction Agency (DTRA); Project Location: Texas Tech University; Project Duration: 7/31/10-8/1/12; Amount: $200,000. Person-Months Per Year Committed to the Project. Cal: 0.00, Acad: 0.00, Sumr: 0.00

4. Melt Dispersion Mechanism for Energetic Reactions of Aluminum Nanoparticles; PI: Valery Levitas (ISU), Co-PI: Michelle Pantoya (TTU); Source: National Science Foundation; Project Location: Texas Tech University; Project Duration: May 2008-April 2012; Amount $300,000; Person-Months Per Year Committed to the Project. Cal: 0.00, Acad: 0.00, Sumr: 0.00.
5. Impact Driven Reactions in Biocidal Reactive Materials for WMD Applications; PI: Stephen Bless (UTexas), Co-PI: Michelle Pantoya (TTU), Source: Defense Threat Reduction Agency (DTRA); Project Location: Texas Tech University; Duration: 03/08-02/12; TTU Amount $265,000 (total award $900,000); Person-Months Per Year Committed to the Project. Cal: 0.00, Acad: 0.00, Sumr: 0.00.
6. Fundamental Understanding and Improvement of Energetic Reactions of Aluminum Particles with Oxidizers and Metals, PI: Valery Levitas, Co-PI: Michelle Pantoya, Office of Naval Research, Project Duration 12/07-11/10, $300,000.
7. Diagnostics for analyses of gas phase chemistry from novel propellant super igniter formulations, Army Research Office DURIP, PI: Michelle Pantoya, $148,189, Duration 5/2009-4/2010.
8. "Combustion Behaviors of Nanocomposite Energetic Materials", M. Pantoya, Department of Defense Army Research Office Presidential Early Career Award for Scientists and Engineers, PI: Michelle Pantoya, Project Duration: August 2004-July 2010, $500,000. Additional $37,000 awarded for July 2010 – December 2010.
9. NIRT: Nanocomposite Reactions in the Self-propagating High Temperature Synthesis of Materials, National Science Foundation; PI: M. Pantoya, Co-PIs: J. Berg, S. Gangopadhyay, M. Holtz, H. Temkin, Project duration August 2002 – July, 2006, $1,000,000.
10. Cory Farley: Energetic Materials Center Fellowship, Lawrence Livermore National Laboratory, PI: Michelle Pantoya, Amount: $46,000, Duration: 8/2009 – 12/2010.
11. Energetic and Thermal Behavior of Novel Nanostructured Composites, PI: M. Pantoya, Co-PIs: L. Menon, S. Gangopadhyay, Department of the Army TACOM-ARDEC Picatinny Arsenal, Project Duration 1/03-12/05, $450,000.
12. Propagation Physics and Ignition of Nanocomposite Energetic Materials, M. Pantoya, Department of Defense Army Research Office Young Investigator Program, Project Duration: August 2002-July 2005, $150,000, Program Manager: Dr. David Mann.
13. Improving the Performance Reliability of Metastable Intermolecular Composites, M.L Pantoya, Department of Energy – Los Alamos National Laboratory, $62,500, Project Duration 10/1/02-9/30/03.
14. "Safety of Missile Components in High Temperature Combustion Environments," PI: M. Pantoya, Department of Energy - Sandia National Laboratory, $80,000, Project Duration 10/1/02 – 9/30/04.
15. "Infrared Diagnostics for Mesoscale Analyses of Munitions Under Extreme Conditions" PI: M. Pantoya, Department of Defense, Defense University Research Instrumentation Program, Army Research Office, 08/01/05-07/31/06, $150,000.
16. "Fundamental Understanding and Improvement of Energetic Reactions of Aluminum Particles with Oxidizers and Metals", PI: Valery Levitas, Co-PI: Michelle Pantoya, Office of Naval Research, Project Duration December 2006 - December 2007, $150,000.
17. "Diagnostics for Performance Evaluation of Nano-Engineered Energetic Materials," PI: M. Pantoya, Department of Defense Army Research Office, Project Duration 05/04-04/05, $262,000.
18. "Engineering Link: A Mentorship Program", M.L. Pantoya, Texas Tech University Teaching Learning and Technology Grant, $5,000, Project duration January 2002-August 2002.
19. "Propagation and Characterization of Nanocomposite Thermite Reactions," PI: M. Pantoya, Co-PI: M. Holtz, Texas Tech University Multidisciplinary Seed Grant, $18,700, Project duration June 2002- May, 2003.
20. "Flame Physics: the impact of a space environment on combustion reactions," Texas Space Grant Consortium, PI: Michelle Pantoya, Project Duration: 9/07 – 8/09, $15,000.

21. "Examining the Combustion Behaviors of Nanocomposite Thermites in Aqueous Environments," Department of Energy via Idaho National Laboratory, PI: Michelle Pantoya, Project Duration March, 2007 – March 2009, $162,000.
22. "Combustion Performance of Energetic Materials in Microgravity," M. Pantoya, M. Holtz, Texas Space Grant Consortium, Project Duration 9/1/02 – 8/30/03, $50,000, Program Manager: Dr. Mark Fischer.
23. "Development and Implementation of Propellant Fire Plume Particulate Sampling Techniques," M. Pantoya, Department of Energy - Sandia National Laboratory, $28,000, Project Duration 10/1/04 – 9/30/05.
24. "Energy transfer studies of pyrophoric iron for food heating applications," Texas Emerging Technology Fund, PI: Brendan Coffey (Ironbridge Inc.), Co-PI: Michelle Pantoya (TTU), TTU portion $29,999, Duration 11/5/2008-11/4/2009.
25. "Energy transfer studies using thermite thermal batteries for food heating applications," National Science Foundation, SBIR program, PI: Brendan Coffey (Ironbridge Inc.), Co-PI: Michelle Pantoya (TTU), TTU portion $15,540, Duration 1/2009-7/2009.